A treatise on the human hair, and its diseases / by Bela C. Perry.

A

TREATISE

ON THE

HUMAN HAIR,

AND ITS DISEASES.

BY

BELA C. PERRY.

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PREFACE.

THE intention of the author, in presenting to the public his method of treatment for all diseases which destroy the hair, is to supply a knowledge of that portion of the external economy of the human system, which has hitherto been over looked by most writers. The study of the anatomical exterior of the body, discloses a mechanism of astonishing regularity and beauty, excelling the highest effort of artistic ingenuity. The object of this TREATISE is to present to the reader, a clear view of the structure of the investments of the body, and the membranes connected with them, giving at the same time a description of the complicated arrangement of the PERSPIRATORY SYSTEM; a knowledge of the MINERAL, METALLIC and ANIMAL composition of the hair; the cause of its large variety of colors and shades, with the changes to which it is subjected, and its entire dependence on the condition of the cuticle.

No greater inducement could be offered for a proper consideration of the natural organization of the hair, and the diseases to which it is subjected, than to obviate as speedily as possible, the existing practice which prevails among all classes to a very great extent, of destroying the ornament which they desire to perpetuate.

DEDICATION.

After mature deliberation of the able MEDICAL FACULTY of this city, upon the governing principle and practical results of this New System of treatment for CAPILLARY DISEASES, they have unhesitatingly expressed their approbation and unqualified approval of the advantages to be derived from a knowledge of these hitherto unexplained maladies and of the remedy for their removal. The interest which they have manifested in the investigation of the author's method of treatment, and his regard for their opinion have induced him, very respectfully, to dedicate this Book to the PHYSICIANS of NEW BEDFORD, MASS.

BELA C. PERRY.

REFERENCES.

Many testimonials to the excellency of this mode of treating the hair have been received and are thankfully acknowledged, which we do not consider proper to publish in a Scientific Treatise. They are from medical gentlemen of high standing in this country, and also from others who have derived immediate benefit from this system of treatment. We take the liberty to publish a few names and beg respectfully to refer to them, as indorsing the system developed in these pages:

WM. C. WHITRIDGE, M. D.,
ANDREW MACKIE, M. D.,
M. B. ROCHE, M. D.,
JOHN H. JENNINGS, M. D.,
DANIEL WILDER, M. D.,
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REV. J. J. TWISS,
REV. J. S. WHITE,
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CHAPTER FIRST.

THE EXTERNAL SKIN.

Describing its minute perforation—Its connection with the perspiratory secretion—Its resemblance to sensitive skin in particular localities—Difference between the external and internal skins—Length of the perspiratory tube—Number of pores to a square inch—Its connection with the hair—number of hairs to a square inch, also, on the whole head—The effect of a suppressed secretion.

The information contained in this work will prove a sufficient remedy to an early or premature loss of hair. The instruction obtained, and substantiated by the result of a long practice with the diseases which affect the scalp and destroy the vitality of the hair, including their nature, cause and effect, also the most efficient method for their immediate relief and permanent cure are definitely explained in these pages.

The treatment best adapted to promote a healthy action of children's hair, has occupied a large share of the author's attention. Considering that

the hair of youth is intended by the Creator to adorn the brow of age, we have been particular to devote a few pages to unmistakable directions for its cultivation, to be observed as a method of government by those who have the management of children, presuming that it would contribute largely to the gratification of parents to realize a degree of perfection in the management of an ornament so essentially indispensable to personal appearance.

This system of treatment has been so arranged that they may regulate and control the hair of their children, so that its preservation will continue to an advanced age.

But to arrive at a systematic method of treatment, for the various diseases which are destructive to this beautiful ornament, it will be essential, first, to understand the formative structure of the surface upon which it is implanted. And this knowledge can be obtained by a careful examination of the anatomy of the *external* and *internal skins*, the *cuticle and cutis.*

The secretions existing in, and which are incessantly being generated from, the system, and occupying the space between the skins, require as much attention as any portion of this subject, because of their active influence upon the *roots of the hair*, and the capillary sheath.

Having become familiar with the external and in-

ternal organization of the investments of the body, including their law of regulation, then the mystery about the preservation of the hair, which has baffled the learned of every land, is no longer a matter of doubt to us.

Every one, however unacquainted with the external formation or anatomy of the body, knows that the skin consists of two layers, or separate portions, each performing an independent action; yet harmoniously combined by their existing analogy. This distinction is noticeable in the action of a blister, which invariably displays the entire separation existing between them; hence their evident disconnection is unquestionably obvious.

The external covering of the *body* is termed the *cuticle* or *epidermis*, and that portion which retains its connection in substance with the body, is called the sensitive skin, "the *cutis* or *derma*."

We shall now commence the examination of the external portion of the human structure, which discloses a construction of wonderful minuteness, and immutable regularity, surpassing in beauty of proportion, and mechanical elegance, the conceptions of the most imaginative mind.

The rough and horn like surface of the cuticle, presents a system of perforation on the largest scale, and to such an extent is this natural perforation, that it is not possible for the point of the finest

needle to rest upon the spaces which divide the *pores*, without being in contact with *these important miniature channels*. In the language of Professor Wilson, which is fully corroborated by that eminent German chemist, Liebig, "the little perspiratory *tube*, with its appended gland, is calculated to awaken in the mind very little idea of the importance of the system to which it belongs; but when the vast number of similar organs comprising this system are considered, (for it includes the sebaceous organs, which are also agents in perspiration,) we are led to form some notion however imperfect, of their probable influence on the health and comfort of the body."

He observes, "I use the words 'imperfect notion' advisedly, for the reality surpasses imagination and almost belief."

It is evident that the human structure, with its incessantly accumulating maladies, from decomposition of *animal* and *vegetable* matter, beyond its consumption, would inevitably become an infected mass of deadly corruption, if there was no source of relief from its surplus accumulation.

But there is an unmistakable grandeur of finish to be found in all departments of natural economy, which is decidedly explanatory of the powerful mastery of the great Author of animal existence.

We may examine any of the different objects which have emanated from His creative hands, and endeav-

or if it be possible to find an unfinished, or even an imperfect specimen of His workmanship. But these examinations, though ever so astute, will be attended as they always have been, (since creation dawned upon chaos,) with the discovery of that beautiful degree of magnificent architectural perfection, which harmoniously blends the rough with the smooth, the strong with the weak, the beautiful with the homely, and the turbulent with the calm, all being types of His greatness, which are everywhere witnessed in the material world.

Thus in the structure of the human organization, we find that relieving economy is concentrated in the cuticle, the construction of which is so completely adapted to the purposes of drainage, that immediately on its formation it becomes the great channel of the system, through which is transmitted from the body, all the unconsumable, health-destroying liquid substances. Every pore is known to be an active agent, incessantly engaged in freeing the body of its surplus secretion, which flows therefrom in the form of a sensible, or an insensible perspiration; thereby rendering essential assistance to the organs of consumption, by disposing of the accumulating fluids.

The external skin is a membranous covering, enclosing the whole surface of the body, following its prominences, its depressions, and its curves, and according to the best anatomical information, the inter-

nal, like the external, is covered by a similar skin, which from its constantly moistened condition, is denominated mucous membrane or lining; and on the surface of the various joints, the external is continuous with the internal skin or mucous lining, and in these situations, from their similarity of structure, it is difficult to distinguish between them.

This difficulty is increased by the circumstance, that when a portion of skin is made to occupy an internal position, it assumes the humid character of *mucous* membrane; and when a portion of the latter becomes external, it loses its moisture by evaporation and assumes the ordinary appearance of skin.

This reciprocal metamorphosis of the two great investing membranes of the body, is frequently witnessed in domestic life, and is, therefore, alluded to in this place.

Their existence, obviously, depends on the analogy of structure subsisting between them; hence the importance of that medical law which is founded on their continuity and similarity.

This law resolves itself into four conditions, namely: that disease which affects a part of a membrane is liable to debilitate the whole; secondly, any disease of the mucous lining may spread to the skin; thirdly, any disease of the skin may affect the mucous lining; and fourthly, that disease of a part of a mucous membrane may become transmitted to a distant part

of the skin, even to the most extreme position from the seat of the disease.

An illustration of the various *rashes*, or any eruption which is manifested upon the surface of the body, would clearly demonstrate the truth of this law.

Notwithstanding their near approximation, we find these two investing membranes performing different offices in the economy of the human structure, and essentially differing from each other in form. From the published investigations of a learned anatomist upon the surface of the body, we learn that the cuticle is an insensible layer, which proves to be an excellent sheath of protection to the highly sensitive skin located beneath it. "The latter *feels* while the former dulls the impressions which occasion feeling, and in some localities is so dense and compact as to exclude any ordinary impressions."

Joseph Turner, an old author, uses the following language in relation to this subject: "some of its chief uses are, to be the medium of the touch to defend the parts of the true skin from being injured by occurring bodies, to close the mouths of the little vessels and glandules dispersed through it, and yet, at the same time to let forth superfluous humors through its pores, and to form a covering for its inequalities underlying, and to give ornament and comeliness to the whole."

The perspiratory tubes which find an outlet through

the cuticle, are the most complicated specimens of minuteness which are known to exist in animated nature. And to demonstrate the indispensable nature of their connection with this important portion of our bodies, we must arrive at something like an estimate of their capability.

We are informed by one of England's best Dermatologists, that he counted the pores on the palm of the hand, and found their number to be 3528 to the square inch. He further remarks, "that each of these pores is the apartment of a little tube about a quarter of an inch long."

Hence it follows, that in a square inch of skin on the palm of the hand there is a length of tube equal to "882 inches, or 73 1-2 feet." On the pulp of the fingers where the ridges of the sensitive layer of the true skin are somewhat finer than in the palm of the hand, the number of pores on a square inch a little exceed that of the palm, "and, on the heel where the ridges are coarser, the number of pores on the square inch is 2268, and the length of tube 567 inches, or 47 feet."

To obtain an estimate of the length of tube belonging to the perspiratory system of the whole surface of the body, this eminent anatomist further adds, "that he thinks 2800 might be taken as a fair average of the number of pores in a square inch, and 700, consequently, of the number of inches in length."

Now the number of square inches of surface in a man of ordinary height and bulk is 2500; the number of pores, therefore, is 7,000,000, and the number of inches of perspiratory tube 1,750,000, which is 145,833 feet, or 48,600 yards, or nearly twenty-eight miles."

The reader will perceive that the cuticle is necessarily the great channel through which the excess of water flows from the body. Now this liquid accumulation is continually occurring, either in the form of a sensible or insensible perspiration. If the body is in a quiet state, the perspiratory fluid forms an imperceptible vapor, which is usually called *insensible perspiration*. But when the chemical combination is active, and the *nervous system* rather excited, the *perspiration* is no longer vaporous or insensible, because it forms a perceptible liquid, which at times is exceedingly copious, and in this state, it is termed *sensible perspiration*.

Hence, by this process of evaporation, the body is always being relieved of its unconsumable fluids. Thus we see by this remarkable process, how the human structure is protected from the disastrous consequences resulting from an accumulated moisture, a process preserving the body in a comparatively healthy condition as long as it is actively continued.

It is evident, then, that one of the principal offices of the *cuticle* consists in relieving the body of its

fetid liquids. Yet it would not be supposed that this mysterious *architectural structure*, (the minuteness of its formation precluding all unassisted investigation,) was capable of the successful accomplishment of the enormous labor, which the law of active economy requires it to perform.

But the principles of Philosophy have established the capability of the cuticle to consist in the complication of its structure, which is the cause of its adaptation being eminently serviceable at one and the same time in a number of positions. But what is one of the most remarkable of its characteristics, is that its various duties in the system, are controlled by that unvarying law of admirable regularity and order, which governs all creations of Divinity.

The investigation of the structure of the external skin, considered in connection with its complicated duties, would lead to the conclusion of its inability to be of further service to the body, or even to continue a healthy operation in its previously mentioned position for any considerable length of time. But while this work is being executed, and the whole organic structure relieved of its liquid impurities, we find it engaged as a means of natural defence in the shielding process for the entire human system. Its complete occupancy in all external portions of the body, convey to the mind the utter impossibility for

the slightest bruise to be inflicted—a perforation of any description to reach, or ever so insignificant a wound to disturb the acute sensations of the body, unless by the destruction of that portion of the cuticle which incases the sensitive skin.

If the body should be deprived of this seemingly insignificant source of protection, the misery attendant upon the frequent contact with harder substances would prove detrimental to a prolongation of vital existence.

And if we continue this examination, the uninvestigated duties of the cuticle will be found as interesting as any of the disclosures which this apparently feeble auxiliary to the vitality of the body has yet made. Its consideration, in connection with the capillary organization is surprising, because there is not a hair which is protruded through the surface but what is wholly dependant, and I might add solely indebted to this agency for its visible existence.

The entire propagation of this universally admired and elegant ornament is principally controlled and influenced by this powerful agent. Its support is derived direct from its regulating influence upon the perspiratory organization. The almost incredible number of 120,000 hairs constitute the capillary covering of the head, all of which are sustained, controlled, and regulated by the external skin; and what is equally mysterious in this maze of or-

ganic matter, each hair preserves a separate existence, by usually occupying a distinct *follicle* or *tube*.

Yet, occasionally, we find protruding from very large tubes, a cluster of hairs varying from *three* to *five*. This clustering process, however, only is witnessed in rare cases; when the hair tubes are unusually large, and not unfrequently in diseased scalps do we observe this deviation from the general law of the capillary system. It would not require much reasoning to demonstrate the inability of the mind, to comprehend the extraordinary amount of action necessary to sustain this *structure of fibres*.

In its present state, it would be impossible for the hair to harmonize with the vitality of the body, if it were not for its subjection to the influence of the *cuticle*. Thus we see how important is the position which is occupied in the structure of man by this investment. But the consequences resulting from an interruption of the law which governs the external skin, would be attended with an unprecedented fatality.

Suppose we unthinkingly oppose one of the unvarying laws of the system by closing most of the pores of the skin, thereby confining by a rigid suppression, a portion of the liquid impurities of the body in the space between the two skins. In this case nature would first warn us by her agent, *pain*, that such a process was inconsistent with her usual

regularity of operation. But perhaps we might neglect this notice, and become accustomed to its unpleasant sensations, which may not be severe at first, and for the time being pass off; yet nature never changes her course to accommodate the thoughtlessness of man. In a short time we find the surface of the body covered with an eruption of red pimples, small and scarce at first, but increasing with alarming rapidity in size and number, until the advice of the *family physician* is deemed indispensable to our immediate relief. In his examination, our case may be pronounced a violent attack of Scorbutis, manifested by a cutaneous eruption, and if the nerves are weak, attended by a general prostration of the *nervous system*, he seldom considers an explanation of the cause of this sudden prostration advisable. Yet we are soon awakened to another source of discomfiture, by the rapid disappearance of the hair, which always had grown strong and luxuriant, yet by some influence beyond our conception, it becomes loosened in its sheath or socket to such an extent, that its immediate departure from our control is too plainly evident to be agreeable. Notwithstanding the regret for the loss of this ornament, it nevertheless continues to fall, and the rapacity of this despoiling process is never modified, until the last vestige of the splendid dark, auburn, or golden tresses, no longer adorns the head. And even

after their departure, there remain only a few dry white hairs, as mementoes of their past beauty, to occasionally remind us of the invaluable treasure which we have lost.

Yet while this devastation is rapidly depriving us of this beautiful appendage, its pernicious influence is spreading through the sensitive skin, which increases the debilitation of the system to such an extent that its symptoms become so alarming as to baffle the skill of the physician, until at last it is announced that a general decline has taken place, and the restoration to health is beyond the reach of medical influence.

We have thus far carefully investigated some of the principal points in the structure of the cuticle, including a glance at one of its organic appendages, together with some of its offices. Yet to obtain a thorough knowledge of the true principles upon which a proper method of treatment for the diseases of the hair should be based, our attention must next be called to an examination of the sensitive skin, which will be found to exercise a very important influence upon the condition of the hair.

CHAPTER SECOND.

THE SENSITIVE SKIN.

Describing its formation—Its connection with the perspiratory system—Its influence upon the external skin—The method of conducting the blood to the sensitive layer of the derma.

The sensitive skin, or derma, the true skin, as it is called by anatomical writers, according to Dr. Beau, performs the dissimilar, and as it might at first sight appear, incompatible offices of an organ of exquisite sensation, and defence to the deeper parts of the body. Yet, it is thought by several writers that the former of these functions is fulfilled by the superficial stratum of the derma, which is particularly constructed for that purpose. In harmony with this distinction of the derma, into a sensitive and defensive portion, is the division of it made by anatomists into a papillary lining, or corium, or a thick skin, and a very thin lining. The defensive part of the skin is made of extremely minute fibres, which are gathered into small bundles, or

strands, and these latter are interwoven with each other, so as to constitute a firm flexible web.

In the superficial part of the corium, the web is sufficiently close to give it the character of a porous felt, but more deeply, the pores become progressively larger, and, upon the deepest surface, they have a diameter somewhat less than an inch. The pores are round and oval shaped, and are separated from each other by strands of fibres double their own diameter, which give to the under portion of the skin, the appearance of a coarse net. The strands are connected with the fibrous web in which the subcutaneous fat of the body is deposited, and the open meshes are filled with little bags of fat.

There is, also, a membrane of considerable strength, which is constructed to present different qualities at different points of its depth, within the surface of a felt-like construction suitable to provide an even support to the finely organized sensitive layer which rests upon it. And upon another layer may be found a coarser net-work, having the power of adapting itself to the principles of distention in all directions, and possessing the capacity of assuming its original shape again. To prevent any check to the process of contraction and distention, each of the open meshes is filled as has before been mentioned, with a pliable and compressible cushion of fat; hence the whole sensitive skin is preserved from violent con-

tusions by being pillowed on a soft and elastic medium. The subcutaneous fat of the body which breaks the force of a blow by yielding before it, together with the arrangement herein described, is calculated to elicit considerable admiration.

More wonderful, however, is the constitutional vitality of this membrane. The fibres of which the strands are composed, are of four kinds; the greater part are white and comparatively inelastic, the elasticity of the membrane which they contribute to form, being derived from their manner of distribution. Some are yellow, highly elastic, but brittle; a third set are reddish, possessing both strength and elasticity, and enjoy a contractile power above, and apart from, their other properties; while a fourth, without strength or elasticity, have the power of independent motion, which is often manifested by the skin, when the erection of the hair occurs from the influence of mental emotion, or physical sensation.

The sensitive layer of the skin is soft and uneven, pinkish in hue, and composed of vessels, which confer its various tints of red, and nerves which give it the faculty of sensation. Its unevenness has reference to an important law in *animal organization*, namely, that of multiplying the surface for the increase of function, and the method of effecting this object is by the extension of its substance into little elongated,

conical prominences, technically called *papillæ*. These papillæ are microscopic in size, as may be inferred from their being imperceptible to the naked eye.

We have seen, already, that the openings in the thick skin are a provision for elasticity, which purposes they fulfil, for in this as in most of the operations of *natural laws*, we meet with frequent illustrations of great beauty, fully suggestive of the expressive lines of Pope:

> "In human works, though labored on with pain,
> A thousand movements scarce one purpose gain:
> In God's one single, can its end produce,
> Yet serves to second to some other use."

It is always interesting to observe the modifications of a known principle of structure to suit a special purpose, and an instance of this modification is seen in the palms of the hands, and on the soles of the feet, and on the corresponding parts of the fingers and toes.

On the parts indicated, the sensitive layer of the derma is raised in the form of small ridges, which are curiously arranged, as may be seen by inspecting them on the hand in their *epidermal dress;* some are traced in concentric ovals; others pursue a serpentine course; others separate abruptly and suddenly diverge, and some are seen to part for a short distance and again unite.

These little ridges, when examined by the microscope, are marked at distances corresponding with the width of the ridges into small square allotments, and each allotment is made of a tuft of *papillæ*, from ten to twenty in number.

It is in the sensitive layer of the derma, that the *blood* of the skin is chiefly distributed, being conducted to this layer by small vessels (*tubes*) termed *arteries*, which find their way to the surface, through the regular interstices of the strands of fibres of which the corium is composed. And having reached the porous layer of the thick skin, the small arteries empty their blood into a very beautiful and rich network of minute vessels.

The blood having performed its circuit in the skin, takes a retrograde course through the interstices of the thick skin by the side of the arteries and returns again to the heart. The vessels which convey back the blood are termed *veins*.

But as it is intended to explain the formation of the body, only as far as it is intimately connected with the *diseases of the hair, and its treatment*, we will refer the instructive and interesting investigation upon the blood to some of the excellent works on physiological science.

Our examination, thus far, has been particularly descriptive of the external and internal investments of the body, and their attending membranes, togeth-

er with a portion of the perspiratory system, including a slight description of the implantation of the hair within the skins; all of which are necessarily connected with its health and growth, and indispensable to a correct method of treatment for the diseases which attack the capillary organs.

Having sufficiently considered the external investments of the body, to show how entirely dependent upon them is the existence of the hair; we will next commence the examination of that beautiful appendage, and endeavor to investigate it as thoroughly as our acquaintance with its nature will admit.

CHAPTER THIRD.

THE FORMATION AND STRUCTURE OF THE HAIR.

The want of intelligence relating to its formation—Injurious results of applying preparations composed of sebaceous, or oily substances—Effect of Sugar of Lead and Sulphur—Immediate influence of the condition of the external skin—The implantation of the hair within the skin—The oil tube—The cause why the hair splits at the point—Its diversity of size and length—Formation of the roots—Difference of the hair between male and female—Thickness of the hair—Deleterious results of shaving the head—Cause of its variety of colors and shades—Its mineral, metallic and animal composition.

The nature of this ornament which grows in such profusion upon the head, as if it were the finishing touch given by the great Master of creation, to complete the living, thinking structure of organic vitality, without hesitation is a subject of vast importance to all classes of society.

Sacred history, in numerous instances, clearly shows the high estimate with which this ornament was always regarded by the ancient prophets, and there is no portion of the human system which has ever elicited from all classes of society such a universal degree of admiration as has the subject of this chapter; and perhaps it would be difficult to find in this age of change and wonders, one who would hesitate in the slightest manner to bestow praises upon a beautiful head of hair.

In this chapter, we shall endeavor to confine our description to that portion of the capillary organization, which forms the covering of the head; knowing in the mean time, that the whole surface of the body is evidently adapted, with the exception of the palms of the hands, and soles of the feet, to the propagation and growth of the hair.

Notwithstanding the long cherished fondness for the perpetuity of this desirable ornament, which the inhabitants of the past, as well as the present, have endeavored to cultivate with ardent assiduity, yet there is not an artery, vein, nerve, or bone, in the entire human structure, which is not more perfectly understood by the masses, than is the cause of the large variety of shades and colors which form the different species of hair.

The composition of any quality of this fibrous organization, is, at the present time, and always has

been considered an unsolvable mystery; a secret beyond the general conception of human intelligence; and its diseases, or rather the diseases which produce its destruction, we may observe with that degree of confidence which daily investigation satisfactorily attaches to a subject, have scarcely ever been scientifically examined, much less their different causes and results publicly explained after proper investigation.

We are justified in presuming, then, that the masses do not attribute the loss of hair to the result of any disease which might affect the scalp, and also, that the disease, or diseases, are equally as varied in their symptoms and effect, as the internal maladies, which invariably prove so destructive to the healthy existence of the system.

This, undoubtedly, will seem to the reader to be a strange conclusion, but it is a true one. It is evident there certainly is a premature disappearance of the hair always occuring, which is considered to be rather a universal than an isolated mode of deprivation. But the cause of its disappearance having never been publicly demanded, is, perhaps, the reason why it has remained in obscurity in this age of mental progress. Yet, if scientific men had permitted their attention to have been called to the investigation of these diseases, they would have been remedied before this late date in the history of the world's advancement.

But as we before mentioned, there is no portion of the human structure with which the public are so slightly acquainted as they are with the subject of this chapter; nevertheless, we will not hesitate to acknowledge that if the judgment were to be governed by the advertisements of the numerous recommended quackeries, (each bottle being an infallible remedy for all diseases which in any manner are productive of a loss of hair,) that fill the European and American market, this statement would become an absurdity too ludicrous to be countenanced.

But the anatomy of the external covering of the body, which is explained in the chapter on the external skin, at once apprises the most unintelligent, if they will be controlled by common sense, that preparations of Castor Oil and Alcohol, which comprise every fashionable Lustral and Fluid, prepared Marrow, Lard and Tallow, and the very popular *Bear's Oil*, together with Sweet and Lard Oil, all of which form the pomades, pomatums and oils, which are regarded by the ladies as indispensable auxiliaries to the toilet; and sugar of lead, sulphur and rose water, or sugar of lead, sulphur, castor oil and alcohol, sugar of lead, sulphur and diluted vinegar (acetic acid), or sugar of lead, sulphur, soft water and turpentine, all of which form the miserable compounds of Mrs. Allen, Professor Wood, Mr. Hemstreet, General Twiggs, and the celebrated

Alpine Hair Balm, according to their chemical properties will inevitably destroy the hair if applied to the surface of the scalp.

But we shall hereafter fully explain the method of preparing these deleterious nostrums, including how they effect their work of destruction upon the hair, and at present, leave the reader to judge of the wisdom which is manifested by the proprietors of the above-mentioned compounds, while we hasten to the consideration which a familiar acquaintance, (assisted by the principles of natural philosophy) may suggest, of the formative structure of the hair.

By the assistance of microscopical power, we can arrive at a correct decision of its nature and structure, including its implantation and mode of growth in various localities. And by this method we shall find it to be an appendage of the external skin, not attached to the skin proper, but principally governed by the condition of the external investment and whatever state that may assume, the effect immediately is perceptible upon the hair; as in the action of a blister, scalding, decomposition, or any cause which may separate the external from the internal skin.

The hair always survives or perishes with the cuticle; nevertheless, within the internal surface of the body it is separately and firmly inclosed in a socket or tube slightly above the root at its extremity, and

this little tube performs the double office of sustaining both shaft and root at the same time.

Professor Wilson observes, that the hair tube traverses the skin like the perspiratory and oil tubes, and it bears a close resemblance to the latter, and also is similar to them in formation.

This gentleman further remarks, "that the tubes of many of the downy hairs, are at the same time oil tubes combined, which frequently perform a double function; and even when this simplicity of structure does not exist, oil tubes are connected with hair tubes and open into them, sometimes one to each tube, sometimes two, as in the case of the hair on the head; indeed the principal formation of these three kinds of tubes, namely, perspiratory, oil, and hair tubes would appear to be the same."

An article in the "Encyclopedia Metropolitana" on Dermatology, describes the shape of the hair to be cylindrical for the smaller kind, and more or less oval for those which grow to any length.

The hair of the head is never perfectly cylindrical, and that of the eye-brows and beard is more or less oval in contour. When left to its natural growth, the end, or tip, is always conical and pointed; and in animals, it is common to find that portion of the shaft which is nearest the skin, somewhat smaller than the middle or tip.

The difference in the thickness of the same hair

at different points of its length is easily explained, for the producing organ is small at first, and as the formation of the hair advances, it becomes larger until its final growth is completed.

A French anatomist of great celebrity, *M. Mande*, states that the "hair will become pointed at its extremity, after being cut, by a process of horny matter in solution, which finds a passage from the roots through the shaft."

This conclusion is unquestionably erroneous and we have no hesitation in stating that his principle is inconsistent with the formation of the hair, or any observation which may be attached to it. For if the hair is not cut before it arrives at a mature length and is permitted to grow untrimmed, it is often liable to split and present a very ragged appearance at the ends; to ensure its health, the hair should regularly and carefully be clipped as often as once in every month, either with ladies or gentlemen.

The usual length of the hair on the head varies exceedingly with the sexes. The hair of the *female* by its correct measurement ranges between twenty and thirty-three inches, the latter being considered unusually long. Its length in some instances greatly exceeds the above description, as is the case with a number of ladies with whom we are acquainted whose hair would trail on the ground when they stood erect, if permitted, and by actual measurement would not

vary far from *one and three quarters of a yard in length.* We suppose of a similar length must have been the hair of the lady to whom the poet alludes, in the following lines :—

"Like her to whom at dead of night,
The bridegroom, with his locks of light,
Came in the flush of love and pride,
And scaled the terrace of his bride!
When as she saw him rashly spring,
And midway up in danger cling,
She flung him down her long black hair,
Exclaiming breathless, there, love! there!"

In Haller's quotations from the eminent Withof, he states "that the hair of the beard grows in length about six and a half inches per year."

Now if a man should live to the advanced age of seventy years, his beard would attain the enormous length of four hundred and fifty-five inches, or thirty-seven feet and eleven inches. Perhaps to many, this growth may seem quite remarkable and almost incredible; but we have noticed the record of a carpenter, whose portrait hangs in the Prince's Court at Eidam, whose beard was nine feet in length, and to prevent any inconvenience when engaged in labor, confined it in a bag expressly provided for that purpose.

It may not be improper to record another instance of these *long bearded* gentlemen, in the case of Hans Steiningen, whose memory becoming treacher-

ous upon one occasion, when he was ascending the stairs leading to the Council-Chamber of *Brunn*, he unfortunately trod upon his beard, and being deprived of his equilibrium, was instantly killed by the fall.

There are numerous instances of historic record which might be produced illustrative of the uncommon and inconvenient length the hair and beard will attain with different persons, if permitted. Intending, however, to devote a chapter to the historical incidents, events, and emotional circumstances which have been connected with the capillary covering of the head, we shall endeavor to suppress as much as possible, all allusions to the marvellous description of the hair, in any of the subsequent pages.

An ancient author, the celebrated Malpighi, compared the hair in its tube to a plant in actual growth; the comparison, however, is by no means correct, for the length of the hair tube has accurately been ascertained to be several times longer than its breadth, and bears a much closer resemblance to a sheath of large dimensions, than it does to the bulb or stem of a plant, for there exists an almost imperceptible space between the cylinder of the hair and the outer skin of the tube. Dickenson mentions, "at its lower end, the hair tube terminates in a cul-de-sac, which forms a cavity that is filled by an accumulation of granules and freshly formed cells, which constitute

the *root, or bulb of the hair.*" He further observes on this point, that the mass of cells separate into two parts, which constitute a central and a cylindrical figure, which is the newly formed hair. The process by which the formation of the hair is achieved, consists of a deposit of blood, on the top of the vascular layer of the tube, which is first converted into *granules*, then into *cells*, and the cells by a natural modification of their arrangement and formation are converted into the *Bulbs* or *Roots* of the hair, which immediately begin to generate and develope its strands, when its completion is effected.

By this process we are endowed with the elegant tresses whose variety of shades and colors are admirably adapted to the gratification of every conceivable degree of thought and fancy. Yet even in this, at first sight comparatively feeble construction, do we witness that masterly hand which is manifested in every department of creation.

The construction of the *human organization* with its vast powers of thought, which at will are adapted to the principles of *originating*, *planning*, *executing* and *completing*, is not surrounded with a greater mystery than is the insignificantly worthless portion of any substance which scarcely if ever is sufficiently attractive to arrest the attention.

Having now become acquainted with the method of production which the generative power of living

animality has instituted for the constant propagation of the hair, we will now proceed to examine the *number*, *growth* and variety of colors which characterize this adornment. *Professor Withof*, has fully investigated the number of hairs grown upon the head. He found upon a square inch of skin on the scalp, 598 black hairs, 648 chestnut, and of very light or flaxen hair, 728. This observation, and those which we have made to complete the elucidation upon this point, compare favorably. A square inch of the surface of a scalp under examination, the hair being dark brown, was found to contain 744 hair tubes or pores. Supposing each pore to produce only a single hair, the number of hairs to the square inch, consequently would be 744. According to the established measurement the surface of the scalp presents about 120 inches, and the consequent number of hairs which grow upon the entire head, would, therefore, be 89,280, or, in round numbers, not far short of ninety thousand. This calculation, however, has reference only to a thin head of hair, for many of the tubes or follicles produce from three to five hairs. If we suppose two hairs emanate from one half of the follicles, it would augment the number of hairs of a superficial square inch to 1,116, and according to this calculation, the whole perceptible capillary covering of the head, would amount to 133,920 hairs. We have a right to sup-

pose, according to the formative principles of the hair pore, as is probably the case in many thick heads of hair, that it would average two hairs to a pore. The number would in this case, equal 1,488 to the square inch, which would increase in this ratio the total number for the whole head to 178,560; or as a correct average of the number of hairs which grow upon the head, a proper estimate would be, to take the number in a superficial square inch at 1000, and the entire number on the head, therefore, would amount to 120,000.

By this illustration of the smallest possible number of hairs combined with what may be considered a fair average found upon the head, we readily perceive the extent of this multiplicity which baffles every attempt of the imagination to comprehend the required amount of labor to sustain the vitality of this structure.

Perhaps it will not be considered uninteresting to examine the size and thickness of the hair, which is indispensably connected with a knowledge of its organization. We will apply to the table of measurement which has recently been established by that Prince of Microscopists, Erasmus Wilson, of London, who found the diameter of two thousand hairs, taken from the head of thirty-eight persons, to range between 1–1500 and 1–400 of an inch; the finest, ranging from the former number to 1–500,

the coarsest from 1–400 to 1–140. This gentleman, also made similar observations on a hundred and fifty hairs, obtained from the heads of three South American Indians; and on fifty-five from a New Zealand Chief, which comparatively resulted as follows:

	No. of hairs examined.	Finest.	Coarsest.
British,	2,000	$\frac{1}{1500}$ $\frac{1}{500}$	$\frac{1}{400}$ $\frac{1}{140}$
South American Indians,	150	$\frac{1}{1000}$ $\frac{1}{450}$	$\frac{1}{240}$ $\frac{1}{210}$
New Zealand,	55	$\frac{1}{450}$	$\frac{1}{200}$

Having ascertained the exact thickness of hairs, according to the above table, he next sought to obtain a knowledge of the average of this measurement in the two thousand hairs of British persons, ranging between 1–550 and 1–250, the mean being 1–400. The mean average of the South American Indian was about the same; that of the New Zealander somewhat coarser, namely, 1–350 of an inch, consequently the mean average, or in other words, the ordinary thickness of human hair as it exists upon the head according to the best authors upon this subject is 1–400 part of an inch in thickness, or if four hundred hairs were laid side by side they would cover the space of one inch.

The following table of his arrangement shows the exact relation of the measurement in question:

British, - - - -	$\frac{1}{550}$ to $\frac{1}{250}$
South American Indians, - -	$\frac{1}{450}$ to $\frac{1}{300}$
New Zealander, - - -	$\frac{1}{350}$

The above examination has suggested the idea of a continuance with respect to the modifications which are produced in the hair by the sex. It would scarcely be believed that the hair of the *males* was finer than that of the *female*. We must admit the result of our observations is decidedly in favor of the feminine hair being coarser than the masculine. This is, however, contrary to our previously formed opinions, because the finer organization and the greater delicacy of the animal textures, which are known characteristics of the female had established with us the principle that all portions of the female structure were formed with a nicer delicacy than the male.

And the popular method of keeping the hair short, which has prevailed among all classes of men for the past two centuries, we had considered previous to our examinations, was productive of strength, bulk and coarseness. But this consideration, we have since found to be by no means an invariable rule, which has been proved to an unmistakable degree of exactness in more than ten thousand instances within

the past five years with both ladies and gentlemen. When the ancient custom of shaving the head repeatedly, has been practiced for three months in succession, to give strength to the hair, we have seldom known it to grow again so well as before, and the hair never exceeded the medium average of size; hence it may be inferred from this description of experiments, that cutting is only productive of convenience and health.

The range of thickness of the hair, in sixty-two persons of different sexes, is stated in the accompanying table:

	No. of heads.	No. of hairs.	Range of thickness.
Men,	31	1226	$\frac{1}{525}$ to $\frac{1}{300}$
Women,	31	1118	$\frac{1}{500}$ to $\frac{1}{250}$

It is obvious that age naturally exerts an influence on the dimensions of the hair, and it may be an established rule, that the hair of children is in a majority of cases, much finer than that of adults. Our observation of children's hair has been scarcely less extensive than of adults, and the measurement of 497 hairs was as follows:

No. of hairs.	Range of thickness.
497	$\frac{1}{550}$ $\frac{1}{500}$

It may be also noticed that on the same head, great diversity exists with regard to the thickness of the hair, and the following instances selected from a

number of experiments will prove the correctness of this statement:

No. of hairs.	Finest.	Coarsest.	Average.
98	$\frac{1}{1500}$	$\frac{1}{230}$	$\frac{1}{450}$
69	$\frac{1}{1500}$	$\frac{1}{300}$	$\frac{1}{400}$
91	$\frac{1}{1250}$	$\frac{1}{230}$	$\frac{1}{450}$
86	$\frac{1}{750}$	$\frac{1}{250}$	$\frac{1}{400}$
62	$\frac{1}{550}$	$\frac{1}{210}$	$\frac{1}{250}$
67	$\frac{1}{500}$	$\frac{1}{240}$	$\frac{1}{400}$

The chief thickness of the hair is formed by a process of elongation not uncommon in the construction of the cells, converting them into fibres, and the outer circumference is formed of a thin circle of flattened scales, similar to those of the exterior skin of the body, or the contiguous layer of cells which constitute the internal membrane of the hair tube; therefore, the pliant condition of the hair presents three separate sections; the soft cellular section in the center, a strong section of parallel fibres which become more dense towards the circumference, and, externally to this latter, a transparent glassy layer of flattened cells, constituting the highly polished surface of the hair.

The fibrous portion of the hair is the source of its strength, and the degree of strength possessed by these delicate threads is almost incredible. "A sin-

gle hair from a boy eight years of age," says Dr. Robinson in his *Essays on Natural Economy*, "supported a weight of 7,812 grains, and one from a man aged twenty-two, 14,225, and the hair of a man fifty-seven, 22,222 grains."

Ehrenberg found that a human hair fifty-seven times thicker than a silk worm's thread, would support a weight of 2,069 grains, and a horse's hair seven times thicker, 7,970 grains. A portion of this extraordinary strength is doubtless owing to its elasticity. Weber found that a hair ten inches long would stretch to fifteen inches in length.

The outer layer of the hair formed as we have seen of flattened cells, or scales, of an oval shape, exhibits a singular arrangement of those small pieces, they being so disposed that each new circle overlaps the preceding one *like the feathers on a bird, or scales on a fish.*

With this formation of the hair in view, we at once perceive the reason of the rough feeling of the hair when drawn between the fingers from the point to the root, and the smooth when drawn in the opposite direction. This is also explanatory of the hair's getting inside of unprotected wounds, or underneath the nails.

We think it would be difficult to find a single hair perfectly uniform in its dimensions.

Not long since, an experiment on a single hair,

nine inches in length, and apparently of an equal diameter throughout, was performed in our presence, and we were astonished to find the extremes of size to range between 1–540 and 1–320 of an inch. In another, they ranged between 1–480 and 1–1020; while a perceptibly enlarged white hair presented the diversified range of 1–490 to 1–240, the diameter of its point measuring 1–2850 of an inch.

The color of hair is an associated condition with its diversity of thickness. All of our investigations invariably have shown flaxen to be the finest, and *black* and *red*, the coarsest. Gray hair never varies much from its general diameter, excepting when it is the result of premature blanching. Light brown hair transcends all other colors for extensiveness of range. The general average of the different colors is noticed in the following measurement:

Flaxen,	$\frac{1}{550}$ to $\frac{1}{400}$	of an inch.
Chestnut,	$\frac{1}{525}$ to $\frac{1}{350}$	"
Red,	$\frac{1}{450}$ to $\frac{1}{400}$	"
Dark Brown,	$\frac{1}{500}$ to $\frac{1}{300}$	"
Light Brown,	$\frac{1}{500}$ to $\frac{1}{250}$	"
White,	$\frac{1}{450}$ to $\frac{1}{300}$	"
Black,	$\frac{1}{400}$ to $\frac{1}{350}$	"

This schedule perfectly agrees with Withof and Wilson. There are other observations which these inquiries have presented, among which is one relating to the thickness of hair in congenital disease; for instance, in a child bearing unmistakable indications of a scrofulous temperament, the hair was remarkably thin and dry. The medium average of diameter did not exceed 1–500 of an inch.

CHAPTER FOURTH.

THE COMPOSITION OF THE HAIR.

Different color of hair, with the various races—The material of which it is formed—Cause of the variety of color—The natural moisture and its origin—Its power of withstanding decay—Peculiar condition which produces blanching.

We will now proceed to the analyzation of this long considered enigma, and obtain, if possible, by the assistance of analytical chemistry, an acquaintance with the composition of the hair, including the causes of its variety of colors and shades. Many writers express the idea that the shades of color which the hair assumes among mankind, although considerably varied, are referable for the most part to some prevailing type. For example, if we visit the north, the hair is lighter than at the south, where, as we proceed, it deepens in its hue. *Blumenbeck*, makes the uniformity of color and texture of the hair, one of the characters of his five varieties of men. Thus, the inhabitants of mid-Europe, the Caucasian variety, have hair of a "nut-brown, running on the one hand, into yellow,

and, on the other, into black, soft, long and undulating." The Mongolian variety, have hair which is "black, stiff, straight and sparing," with an olive colored skin, as we witness in the natives of the East Indies, the Chinese, Laplanders and Esquimaux. The Ethiopian variety, have "hair black and crisp," and also a black skin. The American, copper-colored skin, and hair black, stiff and sparing, like that of the Mongolian race; and the Malay variety, which comprises the inhabitants of Malacca, the East Indies and the Pacific Islands, is characterized by a tawny skin, and hair black, soft, curled, thick and abundant.

These suggestions of *Blumenbeck* are mere speculations, based upon the general complexion of the inhabitants of these regions.

But the hair, certainly, possesses a formation, and that formation is evidently productive of both structure and color; and it must be either *vegetable*, *animal*, *mineral* or *metallic*. Professors *Clark*, *Liebig*, *Wilson*, *Mandel* and *Stockton*, all agree in their analysis, showing a large animal *basis*, a certain proportion of an oily substance, a quantity of salts of lime which enter into the composition of bone, lead, iron, sulphur and manganese. The amount of sulphur is very considerable. The disagreeable odor evolved by hair during combustion, is mainly attributable to this substance.

It is said that the constituents of various colors also present some differences; for instance, red hair contains a reddish colored oil, a large proportion of sulphur, and a small quantity of iron. Fair hair, a white oil with phosphate of magnesia, and the white hair of the aged, a considerable quantity of bone earth, or phosphate of lime. According to the latest ultimate analyzation, light hair contains the smallest amount of carbon and hydrogen, and most oxygen and sulphur. Black is next in connection, and brown hair has the largest proportion of carbon, with considerably less hydrogen than black hair, and with a very small quantity of oxygen and sulphur."

The above illustrations may be correct, but we can discern no cause given in these observations of the eminent gentlemen for the variety of colors and their shades.

Theoretical illustrations and allusions, would have served a better purpose, one hundred, or even fifty years ago; but the present age of thought and action, will be satisfied in its demands only by illustrated causes and their effect, substantiated in every instance, by incontrovertible evidence. Our observations, however, are in favor of Prof. *Dickerson's* speculative description, although he leaves us with a degree of uncertainty; yet his theory is by far the most feasible of any which we have yet examined. He admits the presence of "animal matter" in the

composition of the hair; yet also gives a firmer base of a metallic and mineral combination, the presence of which, at a glance, is perceptible from the impossibility of decomposition of the hair. We have never heard of, or witnessed, an instance of the decay of the hair; yet we have particularly observed its exposure to the various degrees of temperature of which this climate is so proverbial, and have also witnessed its excavation after being buried in the earth several years, and found its organization to be perfect; we could not distinguish that any change had taken place, whereby its substance was at all affected.

We have also noticed the perverseness of its mineral and chemical combinations to the power of petrification. For example, *Christopher Delano*, the petrified man of the Island of *Ichaboe*, whose hair, when exhibited in New Bedford in 1854, was in a state of original preservation, although every other portion of the structure was completely petrified.

Thus do we perceive the power of its assimilated metallic and mineral combination over animal matter. The latter would be subject to a speedy decomposition, while the former would be as adverse to the effect of time, as the very *ore* from which it was formed.

According to the investigations of this gentleman, the composition of the hair consists of a slight portion of animal matter, a large quantity of iron, sulphur and lime, lead, magnesia, and oxygen.

His conclusion of the organization of the hair, we have found to be similar to our own observations upon this subject; therefore, it would be proper to suppose that we have a correct principle upon which to base the cause of the variety of its colors. If all hair is composed of iron, sulphur, lime, lead, magnesia and oxygen, and these differing widely in proportion, we are safe in supposing that we can discover in these proportions the cause of the diversity of colors.

Black hair contains a larger quantity of iron than of any other ingredient. It would be safe to state that six-eighths of its composition is iron. Now a nitrate of this metal, connected with organic matter, will produce a black color and no other. Dark brown hair upon the same principle, will be found composed of six-eighths sulphur, which gives the brown color, and with the light brown, or flaxen, there is an excess of magnesia. The red is derived principally from oxygen. The yellow of the beautiful golden hair which was held in high esteem with the ancients, will be found principally composed of lead. Gray hair, of lime. Now, these are chemical conclusions, and if the nitrates are formed of the above-mentioned metals, and metallic oxides, there will never be a doubt again in the mind of the student relating to the cause of the different colors of hair.

It would be fair to presume, that there has been

sufficient evidence adduced, to establish the early development of the hair, by the causes which have been mentioned; and it now becomes a question, to what extent the hair, after its full development, and completion in length, is susceptible to an influence from the source of its formation.

It may be observed, that through the entire length of the hair runs a cylindrical channel, through which passes an albuminous fluid, bearing a close resemblance and relation to oil, which gives the moistening or softening state to the hair.

This oily substance, like the hair, is a secretion of the sensitive skin, and seems to be the fluid composition from which the hair is formed, being, therefore, adapted to assist harder substances of its own nature, by supplying their deficiencies with their own composition in a fluid state.

The effect of this natural oil upon the hair, wholly depends upon the condition of the sensitive skin, its generator; and the quantity of this fluid is also modified by the same source. Therefore, if the skin is perfectly healthy, its secretions, and their compounds cannot be otherwise, and by this principle, any oil which is generated from a healthy source, must certainly be free from a debilitating influence; consequently, its assimilation with organic matter, would be productive of vigorous vitality; hence, a healthy condition of the oil is immediately

perceptible upon the hair, in its rich, glossy, and lively appearance which always attracts the attention. Whenever debilitation exists in the formative ingredients of this oil, its effect upon the hair is plainly manifested by the loss of its rich gloss, the lank, straight shaft, and its dry and faded appearance.

But this description of combination, color and general formation, would be incomplete unless the cause of its premature blanching was properly described. We have therefore spent considerable time in endeavoring to solve this mystery, and have found the shades of hair which partook largely of iron, to change, or blanch earlier in life than any other color; because iron is not supplied from atmospheric sources. Upon careful examination we find that the iron which disappears is superceded by lime, for it being the most active agent with which it is associated, lime assumes the position which has been abandoned by the loss of the iron. But sulphur possesses an atmospheric attraction, which renders dark brown hair exceedingly insensible to the action of lime, because of its affinity for carbon, which is always mingling with the sulphur in the hair and sustaining its vitality.

The golden hair has very little iron, therefore its susceptibility of change is not so great as the darker colors. The light brown, or flaxen hair, being the magnesia hair, is not in any manner controlled or influenced by the action of lime. But sulphur slightly

affects it by turning it darker as we emerge from childhood, until age consigns it to its original shade, when it again assumes the pure flaxen hue, unaffected by the influence of time.

But what has appeared very singular in these researches upon this subject, we have never discovered in youth the preponderance of lime, but it invariably exhibits itself as age increases. A premature gray head in childhood is a phenomenon which has never yet been witnessed.

We have now quite fully investigated the entire combination of the structure of the hair, and we trust some of the explanations herein presented, perhaps, may be considered elucidative of the great variety of its colors and shades; and being governed by this conclusion, we will continue the examination of other important considerations of this structure.

CHAPTER FIFTH.

THE PECULIARITIES OF THE HAIR AND ITS EMOTIONAL INFLUENCES.

Its electrical properties—The connection existing between the concomitants of the hair and the body—Its protection to the scalp—Illustrations of premature blanching—The cause assigned by several authors—Its proper cause—The restoration of its original color in advanced age—Fabulous conceptions of the ancients upon the seat of the hair—A description of the supposed growth of hair after death.

The curling peculiarities have given rise to much speculation on the part of physiologist—one, attributing it to the flatness of the shaft, another, to unequal distribution of the fluids in the substance of the hair; a third, to an impediment in its escape from the aperture of the hair tube; a fourth, to an obstruction in traversing the deep layer of external skin; and a fifth, to a deficiency of its natural oil; among all these theories none seem to be sufficiently practical for the present age.

Dickerson observes that he is indebted to Dr. Tilt, for a lock of hair from the head of a *Bosgeman girl*, fourteen years of age, being the most remarkable that he ever saw, consisting of minute curls, like those of a doll, the curls being beautiful, but not covering the head. The individual hairs were not deficient in length, but excessively fine. He states that a similar formation and disposition occur on the head of one of his Nubian servants, the hair being soft, fine and very curly, and gathered all over into little flocks which very imperfectly covered the head.

Mr. St. John, in his travels in the valley of the Nile, states that the effect of the climate of Egypt upon the hair is remarkable. His beard, while in Europe, was soft and silky, and nearly straight, but began immediately on his arrival at Alexandria, to curl, to grow crisp and coarse, and before he reached Es-sowan, resembled horn-hair to the touch, and was all disposed in ringlets about his chin. This is no doubt to be accounted for by the extreme dryness of the air, which, operating through several thousand years, has in the *African* changed the hair into a kind of wool. He further says, that on his return to Europe, when he reached Malta, he had lost all his curls.

Dickerson thinks that Mr. St. John, in the above paragraph, speaks of the hair of the *African* as authors are wont to do. But according to his obser-

vations, the hair of the *African* is finer than that of Europeans; and as the term wool is here expressed, perhaps it will be well to mention that wool is hair, differing in nothing essential from the hair of the Caucasian.

There is a well-known electrical condition existing in hair, which is clearly demonstrated by friction. Manton and Dickerson agree that hair is negative in reference to electricity, and they also consider it a non-conductor of the electric fluid.

The luminous sparks of the human hair are equally observable with those which we see in animals that have been commented upon by many able Physiologists, without a definite explanation of their electrical cause.

I have known an instance of severe suffering in the head produced by neuralgia which had an important action upon the development of this quality, inasmuch, that while the influence of the malady existed, the hair assumed a highly electrical condition, the effect of which was exceedingly perceptible in each hair, because of its repulsion to an association with its fellow. Now this supposed mysterious agent in the formative structure of the hair, we consider to belong entirely to the general system without any direct connection with the hair, but it frequently uses the hair tube to escape from the confinement of the body, and it is when the passage through the

pore of the hair is being made that its presence upon the surface is perceptible.

The defence of hair against heat is curiously illustrated by the inhabitants of low latitudes. The prevailing custom of the Egyptians is to shave their heads, but they always have a substitute for the natural covering, which protects the head from the heat of the sun. Two red felt caps, (tarboosh) and also one of double calico, form the not very airy covering of those people; and as the season advances and they proceed further South, a thick handkerchief is thrust into the crown by way of auxiliary to the caps. In Mr. St. John's description of the Ababde and Bisharm Arabs, he found them clad in brown sacks without the *tarboosh*, or *turban*, relying upon their enormous growth of black, curly hair to defend their heads from the sun.

In his reference to a Nubian travelling with a laden ass, whose head was entirely shaved, except that important tuft which is reserved on the *crown* by which the *Angel* of *Death* carries all true believers to Paradise, he says: "though the sun was sufficiently hot to scorch his brain to a cinder, yet this man walked with his head uncovered with comparative composure."

According to Herodotus, a frequent exposure of the uncovered skull causes it to become hard and thick, and possibly may produce an injurious effect

upon the brain, as in the case of the Dervishes and Santons, whose lunatic phantasies constitute some of the principal performances in the streets of the cities of the East.

A protection of the brain from the effects of constant heat, nature has furnished to all of her children, and a careless neglect, or deprivation of this protection is usually attended with a penalty; for she seldom permits her laws to be disobeyed with impunity.

The ornamental purposes of the hair, no doubt, are evident to all who choose to bestow upon it a single thought. Located upon the most conspicuous portion of the body, as if it were intended to attract the first attention, we are little prepared to find it so disfigured for the uses and enjoyment of man, as is found to be the case in some of the Islands of the Indian Archipelago, where the natives color their hair white, black and red. Nature teaches us that the hair which grows on the apperture of the nostrils should be a source of protection to the membranes of the nose. We also find this defensive arrangement exercising its protective influence over the ear-tube, the cavities of which, it defends from insects and dust. By an unaccountable power of conducting outward impressions, the hair is the messenger to the office of touch, a fact which is frequently illustrated by the presence of a

fly upon its surface, which is instantly conveyed to the sense of feeling, although the little creature may be a considerable distance from the skin.

But the whole range of emotional influences to which the hair is susceptible, seems to be almost incomprehensible. We presume a want of knowledge on this point is occasioned by misunderstanding the principles of vital chemistry, which, when considered, present a definite elucidation of this mystery. Therefore we are unable to account for the sudden blanching or whitening of hair, by a known principle of science. Yet such a change has occurred in a single night. Many are unbelievers in this sudden transition of a head of rich black hair to one of aged whiteness in less than twenty hours. We were convinced of the existence of this powerful influence by observing the effect of its operation upon the head of a gentleman who resided in New Bedford. We conversed with him the night previous to a terrible calamity which befell him. His hair was beautifully black and exceedingly fine. We remarked that its superior, or even its equal in beauty, could scarcely be found. Meeting him towards the close of the following day, his personal transformation was so complete, that his identity was scarcely distinguishable. His features had assumed the haggard appearance of a criminal condemned to death; the change his hair had undergone was

extremely marvelous; instead of the glossy black of the previous night, it presented all the indications of the frost of seventy years.

There recently appeared in the London journals a description of the sudden blanching of hair, which was couched in the following language: "A lady now in her sixty-second year, had an early and long attachment for a gentleman to whom she was affianced, and who, at the period to which is referred, was on his voyage from Hull to London, to complete his marriage engagement. On the morning of November 19, 1853, a few days after the time when he had promised to return, a letter was put into her hands, which conveyed the news of his shipwreck and death. She instantly fell to the ground insensible, and remained in that state five hours. On the following evening her hair, which had been of a deep brown color, was observed by her sister to have become as white as a "cambric handkerchief." Her eyebrows and eyelashes retained their natural color. The distress into which this poor lady was thrown by the sad news, was such, that she was unable to leave the house for six months. Her whole system underwent convulsions; the fountain of life seemed for a time to be dried up, and the very color of her blood exhausted. Subsequently, the whole of the white hair fell off, and when another crop appeared, it was gray as it still remains." These details, cor-

roborated by the sister, who first perceived the change, were told to the gentleman alluded to, even at this distance of time with a quivering lip and moistened eye.

Lord Byron has recorded in words as durable as time, in his "Prisoner of Chillon," an instance of emotional blanching:

> My hair is gray, but not with years,
> Nor grew it white,
> In a single night,
> As some have grown from sudden fears.

Professor Manton remarks, that a literary lady acquaintance informed him that her aunt had become gray in a few days, in consequence of a shock occasioned to her nervous system, by finding, on waking in the morning, a beloved sister lying dead by her side.

We are told that Sir Thomas Moore turned gray during the night preceding his execution.

Thornton informs us, that two gentlemen, the one a native of Languedoc, the other a Spaniard, were so violently affected, the first, by the announcement of his condemnation to death, the latter, by the bare thought of having incurred the risk of a serious punishment, that both became blanched in a single night.

Joseph Turner observes, "that Don Diego Osoreus, a Spaniard of a noble family, being in love with a young lady of the Court, had prevailed with her for

a conference within the garden of the King of Spain, but, by the unfortunate barking of a little dog, their privacy was betrayed, and the young gentleman, being seized by some of the King's guard, was imprisoned; it was a capital crime to be found in that place, and he, therefore, was condemned to die. He was so terrified at the hearing of his sentence, that one and the same night saw the same person young, but in appearance old, having turned gray as those stricken in years. The Jailor moved at the sight, related the incident to King Ferdinand as a prodigy, who thereupon pardoned him, saying, 'he has been sufficiently punished for his fault.'"

A young nobleman was cast into prison, and on the morrow after, condemned to lose his head; he passed the night in such fearful apprehensions of death, that the next day, he appeared so unlike himself, that he was known to none that were present, not even to Cæsar himself; the comeliness and beauty of his face having vanished, his countenance was like a dead man's; his hair and beard were turned gray, and in all respects he was so changed, that the Emperor at first thought some counterfeit was substituted in his room. He caused him therefore to be examined, to see if he was the same, and trial to be made of his hair and beard, to ascertain if they were not thus changed by art; but finding nothing counterfeit, and astonished at the countenance

and strange visage of the man, he was moved to pity, and mercifully gave him pardon for the crime he committed.

Somewhat like this, is that related by Esquire Bogle, who tells us that "when he was in the County of Cork, in Ireland, there was an Irish Captain, who, coming to deliver himself up to Lord Berry, commander of the English forces in those parts, (according to a pardon proclaimed to those Irish, who were willing to surrender themselves and lay down their arms,) he was casually met, with some of his followers, by a party of English, and intercepted, the Governor being absent. Whereupon the poor Captain was so apprehensive that he should be put to death before the Commander's return, that the fear and anxiety of his mind quickly changed the color of his hair, in a peculiar manner, not uniformly, but interspersedly, some of his locks being turned perfectly white, the rest of them retaining their wonted reddish color."

In the Archives Generales de Medecine, Dr. Herbert records the case of a woman thirty years of age, who, on being summoned before the Chamber of Peers, to give evidence upon the trial of Lovel, underwent so powerful a revolution, that in the course of one night the hair was completely blanched, and a furfuraceous eruption appeared all over her head, upon her chest, and upon her back.

Henry Third, of Navarre, on hearing that the Edict of Nemours was conceded, was so exceedingly grieved that in the course of a few hours a part of his mustachios whitened, and one person from the same event, had some of his eye-lashes blanched from mental agitation.

The writer of the article on Dermatology in the Encyclopedia Metropolitan, knew of an instance of a banker, who underwent much anxiety during the great panic of 1825, and whose hair became gray in three days in consequence; and also of another gentleman, who, at his marriage, when about 40 years old, had a dark head of hair, but on his return from his wedding trip, became completely snow-white, even to his eye-brows, so that his friends almost doubted his identity.

Dr. Clarence mentions his acquaintance with an aged man, whose snow-white hair and a countenance deeply marked by the furrows of care, inspired the respect which we owe to age and misfortune. "My hair," said he, "was as thou seest it now, long before the latter season of my life. More energetic in their effects than assiduous toil and long-erring years; grief and despair at the loss of a wife most tenderly loved, whitened my locks in a single night. Judge then the force of my suffering! I still bear them in frightful remembrance!"

We frequently find instances of a gradual change of color in the hair at particular periods of grief,

as was the case with the grayness of Marie Antoinette, and of Mary Queen of Scots.

Manton records that after a severe illness, a head of brown hair was exchanged for one of bright red, and in another person, from having been brown, the hair became deeply black. Several instances are narrated in which brown hair became fair; and in an old person the white hair fell off and was replaced by brown. John Weeks, who lived to the age of 114 years, recovered the brown hue of his hair some years before his death. Sir John Sinclair reports that a Scotchman, who died in his 110th year, had his hair restored to its original color in the latter years of his life. And thus it is recorded that Susan Edmunds, in the 95th year of her age, had her hair changed black; it again became gray previous to her death, at the age of 105.

Dr. Mc Dermont, in detailing the constitutional peculiarities of a particular family, observes, in regard to one of its members, a young lady of seventeen, deaf and dumb from birth, that "each time she is attacked by a fever, peculiar to herself, she undergoes a change in the color of her hair, from a pleasing blonde to a dusky red, but as soon as the febrile symptoms diminish, the natural color returns."

Prof. Manton, a physician of Fontainbleu, to the Academy of Medicine in Paris, communicates a very perplexing case of a woman of sixty-six years of age

afflicted with consumption, who had fair hair transparent as glass, and four days before her death, this hair became jet black.

In the second volume of the Memoirs of the French Academy of Science, is the narrative of a female, whose hair changed from brown to blonde during an illness, which otherwise presented no remarkable feature.

Mont Flora, in an article communicated to the Dictionary des Sciences Medicres, relates the case of an infant, the whole of whose hair on one side of the head was perfectly white, while the opposite was equally remarkable for its jetty blackness.

Ridlinus, and others, have seen the entire head of young persons uniformly white, although different in appearance from that of age, and approaching very slightly towards the blonde.

Thornton details the case of a young man whose beard grew white on its first appearance.

Dr. Channing observes that the ladies of China turn gray sooner than the men; the former are often bald, the latter seldom.

There is a farmer residing in Freetown, who frequently draws wood to the New Bedford market, whose hair and eye-brows we have attentively observed, because of their peculiar kind of whiteness, differing essentially from gray or blonde, and being a peculiar kind of white which never has been mani-

fested in the various shades of hair that we have witnessed.

The Portland Transcript of November 20th, 1858, gives an account of premature blanching, which was purely the result of fear:

"It had long been the custom with the citizens of Vienna, whenever the Emperor made a triumphal entry into the city, for the sexton to stand on the pinnacle of the tower of St. Joseph's Cathedral, and wave a banner while the procession passed.

When Leopold was chosen Emperor at Frankfort, and was about to make his grand entry into Vienna, the sexton of the Cathedral, being a very old man, was unable to perform the duty of waving the banner, which he had proudly discharged several times in his early life. He publicly declared, that he would give free permission to any honest young man, to woo and win his daughter, who would relieve him of the responsibility of waving the banner. The offer was immediately accepted by Gabriel Petersheim, who had long since won the affections of the lady, but who never was in high favor with the father. It was evening before the Emperor was expected to arrive, and the old sexton, deeming it a good opportunity to make a final disposition of the young man, bargained away his life with two desperadoes, Lawrence and Albert, who closed the trap-door of the upper stairway, thereby leaving the young man to

cling to the slender sculptured spire, his feet resting upon a surface scarcely ten inches in circumference, exposed to the horror of his position and the frost of a winter night. Endowed with a strong constitution and a firm will, he succeeded in sustaining himself until morning; but when rescued his curly locks were white as snow, his rosy cheeks yellow and wrinkled, and his bright eyes dim and sunken; that night of horror had added forty years to his age."

Premature blanching is seldom the result of protracted illness; yet we have known it sometimes to occur, as was the case with Stephen Manchester, a lad about twelve years of age, the son of Asa Manchester, a watchman in the New Bedford Depot. On recovering from a fever, two years ago, one half of the hair on this boy's head, one eye-brow, and the lashes of one eye were turned completely white, and remain so to this day. We examined his head December 10th, 1858, and found the original color of the hair to be dark chestnut, and presenting a very singular appearance. The blanching was confined to a direct line from the crown forward and backward, and not at all mixed with the unaffected half of the head.

In the Spring of 1857, we also witnessed a case of very sudden blanching of the hair. A lady residing in New Bedford was attacked with erysipelas, and her hair nearly all changed from a very dark

brown to a perfect white, in about four days; but by using proper remedies we succeeded, after a few months, in restoring it once more to its natural color.

The animal kingdom furnishes many important illustrations of this rapid blanching of the hair. Several of the animals which inhabit the Polar regions are known to become white during the winter season; among the most remarkable is the lemming.

Sir John Ross remarks, that finding the lemming, like the Polar hares, which had been tamed and kept in confinement, preserves its usual color during the winter, he placed one in the open air on the first of February, when the thermometer stood at 30° below zero. The next morning the fur of the cheeks, and a spot upon each shoulder had become perfectly white. On the following day, the remaining part of the body had changed to a dirty white hue, and at the end of the week, the animal was entirely white, with the exception of a saddle shaped patch on the centre of the back. No other change ensued, although the poor animal was kept exposed to the cold, until it perished. When the skin was examined, the white hairs were found to be much longer than those of the unchanged patches, the blanching being confined to that portion which exceeded in length the natural hairs, and when the ends were cut off, the animal appeared to have re-

gained with very little alteration, its summer coat, without any reduction in the length of its fur.

The case of John Libeny, who attempted the assassination of the Emperor Francis Joseph of Austria, is fully demonstrative of the principle of premature blanching. The correspondent of the London Times remarked, "that when the criminal was brought to the place of execution, one week after the attempted crime, his appearance was greatly changed. His hair, which was originally black, had become nearly snow-white in the preceding forty-eight hours, and hung wildly about his head; his eyes seemed to be started from their sockets, and his whole frame was convulsed."

The speculations on the *modus operandi* of the blanching of hair, a subject which has engaged the attention of several professional gentlemen, among whom are Vaquelin and Wilson, the former a French chemist of much celebrity, are not worthy of the high standing of these gentlemen.

Vaquelin thus expresses the cause of these phenomena: "At the critical moment when nature is in revolution, and when consequently the natural functions are suspended or changed, an agent is developed in animal economy, which passes into the hair, and decomposes its coloring matter." He adds, "this agent must be an acid."

The conclusions given by Wilson indicate a

wavering decision. He carefully says: "These phenomena *may* be the result of electrical action; they *may* be the consequence of chemical alteration wrought in the very blood itself; or they *may* be a conversion for which the tissue of the hair is chiefly responsible."

The opinions which have been quoted, it will be perceived, convey no definite idea of the cause of these singular emotional manifestations, but merely attribute the changes to an unexplained reason, for which no satisfactory evidence can be given.

Now we must be permitted to differ from these learned gentlemen; because this sudden blanching is plainly traceable to a constitutional defect, produced by emotional excitement, operating upon the structural affinity existing between the body and the hair. If we examine a portion of the chapter on the composition of the hair, there will be found a passage relating to the large amount of iron in dark shades and colors, the color being governed by the quantity. Hence it would be safe in this case to resume the method of argument used in explaining the cause of the variety of shades, for by no other means is the mystery soluble, save by an analyzation of the structure of the hair.

We have seen that most cases of blanching have occurred by physical suffering, constitutional affliction, terror, anxiety, fear, and grief, which produce

such a revolution in the economy of the body, that its influence extends to the hair. We have never known a case of blanching to occur in light hair, which, being free from iron, fully precludes the whitening process.

Having now established a basis for argument, we are prepared to open the case. According to a law of animal economy, there is an evident relation, based upon the affinity existing between organic vitality and its concomitants, that each part should control the structure in the ratio of its greater or less importance. This law is often illustrated in the suffering experienced through the entire structure, by an injury to the remotest appendage from the seat of mental vitality. Therefore we have a right to infer that there is no metallic, mineral or animal constituent of the hair, which is not dependent upon all parts of the human organization, and also that all parts of the body are proportionally dependent upon every vein and artery which can be found in the system. Here we see a beautiful illustration of an independent dependence, so to speak, controlling the entire organization.

We also learn, by the laws of analytical chemistry, that a large quantity of iron is diffused throughout the body; that it enters into the composition of the blood, and is the source from whence is derived that beautiful rich color indicative of perfect health.

This blanching of the hair may accurately be traced in a large majority of cases to the decrease of its constituent iron; the position surrendered by which is quickly assumed by the subtle activity of carbonate of lime. The supremacy of lime in the system is distinguishable by the sallow and bloodless appearance of the countenance. Hence, by this elucidation of the relative connection of all parts of the system, we would be justified in the supposition that a detrimental influence upon the body would effect in ratio to its position, its components and appendages.

Therefore, extreme grief, or terror, possessing sufficient power to blanch the countenance, and suspend the activity of the iron constituent, will, as a matter of course, whiten the hair, and also even blanch the nails. Indeed, any affliction of sufficient severity to blanch the skin, will invariably display its whitening process upon the hair. And if it permanently lessens the quantity of iron in the body, it also subjects the hair to unchangeable whiteness.

Thus we perceive that the process of premature blanching is, in the main, a natural law, governed and controlled under all circumstances, by the state of the body, and based upon the augmented or diminished quantity of iron in the system, which is the most important coloring agent in the structure of animal economy.

Having now investigated these phenomena, according to their connection with the system to which they belong, this chapter would be incomplete, if there was no allusion made to the absurd representations, to which ignorance of the nature of the hair has given birth, and this is the more necessary, because such stories are circulated among intelligent people and sanctioned by high names.

It will be difficult to find among medical authors, a more celebrated name than Bichat, and this gentleman declares that he found hairs growing on the mucous membrane; and many scientific writers have stated the root of the tongue to be the seat of hair. But the extravagant conceptions of the ancients on the locality of the hair, transcend all modern ideas and imaginations. In the *Philosophical Collections*, it is recorded, that "Pliny and Valerius Maximus are united in testimony, that the heart of Aristamanes was hairy. Corlius Rhodigirus represents the same hypothesis existing with Hermagenes the Rhetorician, and Plutarch, of Leonidas, the Spartan."

We might continue to narrate the unphilosophical opinions of the ancients, if the knowledge we require upon the peculiarities of the hair, could, in the slightest manner, be increased. But deriving no benefit from these ancient opinions, it will be best to leave them with their originators.

Our consideration will now be called to the inves-

tigation of another peculiarity which has been sustained by the prevailing opinion of several modern writers, who unhesitatingly assert that the hair grows after the suspension of vital existence. "The hair, by some authors," writes Dr. Turner, "is denied to be a proper part of the body, and is not nourished by the common life of the whole, it being observable that the hair and (some say) the nails also grow after death." And Diembrock compares them to a polypod, or to a small fibrous shoot out of an old tree, which continues to grow after the tree is dead, having a proper vegetation of its own, differing from that of the root or trunk from whence it arises.

These statements are mere speculations. We are, however, willing to admit that previous to decomposition, the suspension of the vitality of some of the components of the body may not be entire, and whatever connection these may have with the hair, it will be effected in proportion with the strength of the relation which exists between them. "It is said that when the sarcophagus containing the head of Charles I, was opened, the hair was found to have grown to an extraordinary length." And again, in the Physiological Collections, to which previous reference has been made, there is an account given by Demotier, of a "woman buried at Nuremberg, who, on being disinterred forty-three years after

her death, her hair had grown completely out of the seams of the coffin." But natural philosophy shows the perfect inability of the hair to grow after the moisture of the body is gone, because the presence of decomposition immediately suspends all vitality in the structure.

The downy and invisible hairs of the body rarely appear above the level of the skin. We may best illustrate them by referring to a position in which their presence is invariable; we allude to the nose, which is ordinarily bald; but if the unctuous product of an oil-gland be squeezed out of its tube, and examined beneath the microscope, one or more of these little hairs will be detected in the centre of the mass. Indeed, when the unctuous matter has been detained in the oil-tube for any length of time, the number of hairs may be considerable, as, for example, twenty, thirty, or even forty. Now, the whole of these hairs have, as far as we have been able to ascertain, been produced by a single follicle, and having attained maturity, have been shed and carried out of the oil-tube with the unctuous substance; but when the latter was retained, they had time to collect, as we have seen in astonishing numbers.

We should be inclined to infer from this circumstance, that these little hairs grow very quickly, and are shed at short intervals of time. On no other

hypothesis can their number be satisfactorily explained. In their normal state and position, these little hairs are colorless and transparent, having rounded, blunt points and brush-like roots; but under the influence of augmented action of the skin, they are susceptible of growth to a considerable extent, both in length and bulk; in fact, of becoming equal in dimensions to the short hairs of the body. Of this, we have an example as stated in the occasional visible growth of hair upon the nose. We may refer, also, to the disproportionate development of hair in sexes, and may adduce, besides, some curious illustrations of the growth of the hair.

Shenkins and Ambrose Pare give accounts of cases in which the entire body was covered with hair, and Turner, quoting from Peter Massias, remarks that upon the confines of Pisa, at a place called "Holy Rock," a girl was born all over hairy from the mother's unhappy ruminating upon a picture of St. John the Baptist, hanging by her bedside drawn in his hairy vesture.

Ruggieri published the account of a woman, in 1815, twenty-seven years of age, who was covered from her shoulders to her knees with black, soft, and woolly hair, like that of a poodle dog.

In a late embassy to Burmah, in 1829, a man was seen at Ava, who was completely hairy from head to foot. On his face, ears and nose, it was

eight inches long, and on the breast and shoulders, four or five inches.

Another remarkable instance of a similar kind is related by Fry, in his travels, as having been witnessed in a Fakir, the hair on whose breast measured sixteen inches.

A French physician, Olliver, writing recently, narrates the case of a young lady, remarkable for the fairness of her skin and the beauty of her deep black hair, who was the subject of a fever, and while recovering, perceived the whole surface of her body to be in a state termed "goose skin." In a few days the little elevations looked dark at the top and were surmounted, each with a short black hair, which grew so rapidly that at the end of a month every part of her body, with the exception of her face, the palms of the hands, and soles of the feet, was covered with a short hairy coat of about an inch in length.

Eble narrates that during the reign of Maria Theresa, a woman who served in the army for many years as a hussar, and rose to the rank of Captain, had a strong mustachio. The bearded virgin of Dresden, who lived in 1732, and whose portrait is preserved in the gallery of the Kings of Poland, was still more remarkable. Her beard, according to Michelis, grew from each side of her chin, and was three inches long and of snowy whiteness. She

cut it at first every month, then every fortnight, afterwards, twice in the week. On her upper lip was a mustachio of short black hair. She had a powerful voice, ate enormously, and became exceedingly bold and courageous.

An article in the London Times, from the pen of Dr. Chowne, mentions the case of a young woman of twenty-two, a native of Switzerland, who, in consequence of possessing whiskers and a beard four inches long, and remarkably bushy, applied in 1857 to the Charing-cross Hospital for a certificate of her sex, with a view of removing the scruples of the clergyman to the celebration of her marriage. Excepting the hair upon her face, and a longer growth upon her back and limbs than is usual in woman, she presented no other indications of belonging to the sterner sex. The certificate procured her the means of marriage, and she has since been exhibited in London as "The Hairy Prodigy." She stated that she was born with hair upon the face, and, that at the age of eight years, it was two inches long. She further mentioned the singular circumstance that she had a brother as deficient in beard as she was prolific. She had no mustachio, her upper and lower lip being both as smooth as is customary with her sex. It subsequently appeared that she had a sister two years younger than herself, similarly constituted.

Dr. Grass, of Louisville, mentions a similar circum-

stance of an old woman, seventy-eight years of age, enjoying excellent health and the mother of a very large family. The sides of her face, chin and lips were all thickly covered with coarse hair, which she was obliged to shave off regularly once a week. Her whole aspect was remarkably masculine, and but for the length of the hair of the head, she might easily have been mistaken for a male.

In the arrangement of the hair on the surface of the body, it might be inferred that little existed to attract attention, but this is not the fact. The hair-tubes are not placed perpendicularly, but obliquely in the skin; hence the direction of the hairs after their escape from the tubes, is inclined in the same way towards the surface, and the direction of growth of the hair, from the root to the point, is governed by a law as precise as that which regulates any other of the secondary vital functions. Thus, on the head, the hair radiates from a single point from the crown to every part of the circumference, making a gentle sweep behind, towards the left, and in front, to the right. The direction of this sweep is naturally indicated on the heads of children by the way which the hair is turned. On the forehead, the downy hairs proceed from the middle vertical line, with a gentle curve to the right and left, curving downwards towards the situation of the

whisker and forming by their lower border, the upper half of the eye-brow.

At the inner angle of each eye is situated another centre like that of the crown of the head. The upper and inner lines from this centre, ascend to the lines between the eye-brows, where they meet those which are proceeding from the opposite centre, and those, also, which are diverging from the vertical central line of the forehead; so that here the great centre is formed, which is the point of approximation of the hair from four different quarters. It is this circumstance that gives to the hair of the inner end of the eye-brow a direction towards the middle line; and occasionally we see instances in which, from the unusual development of the hair, the eye-brows meet at the base of the forehead, and form a little crest for a short distance along the root of the nose.

The upper and outer rays curve along the upper lid, forming by their margin the lower half of the eye-brow. And the lower lines, together with these, forming the side of the nose, mouth, and chin, make a gentle sweep over the cheek and side of the face.

On the upper lip, a current is directed from the apertures of the nose outwards, which forms the sweep of the mustachio. A similar disposition is observed at the middle line of the lower lip, near its free edge; while the beard is formed by the converg-

ence of two side sections, which meet at the middle of the chin.

At the period of birth, the human infant, independent of sex, is generally covered with a thick down, and that time affords the best opportunity for observing the direction of the hair; for, during the first year, nearly all of the temporary hair falls off, and is succeeded by another growth, which appears upon the surface only in some situations. The first which is developed is upon the eye-brow, then upon the upper lip and around the mouth, and at a later period the hair of the head is developed. The last perceptible growth of hair is upon the fingers and upon the surface of the ear.

Now the cause of this position of the hair would appear to be some obstruction in the tube, or pore, from an accumulation of small scales from the oil glands. But when the hair attains sufficient strength, they are cast off, and it bursts from its temporary confinement.

In reflecting upon the purposes of the hair in animal organism, we must not pass over its chemical constitution. Large quanties of carbon and hydrogen are, by its means, separated from the system; and, although several other organs are engaged in the more abundant removal of the same elements, yet it would not be judicious to deny that the comparatively trifling aid of the hair is, under some cir-

cumstances, of vast importance to the relief of the system.

The learned French writer, Moreau, narrates the case of a young lady who was cured of mania by the cutting of her hair.

Another relates, that a Capuchin Friar, was cured of a serious disease by shaving his beard.

Having now examined the external and internal investments of the body, not overlooking the importance of the perspiratory organization; and having investigated the formation, structure and material of the hair, the principle whereby its variety of shade is determined, its strength and number upon the scalp, its chemical combination and connection with the body, its assumed peculiarities, and its subjugation to emotional influences, we think we shall now be at liberty to investigate the nature, cause and effect of its diseases.

CHAPTER SIXTH.

GENERAL DISEASES OF THE HAIR.

Augmentation of the hair—Description of "moles"—Removal of hair from improper situations—Effect of depilatories—Diminution of the quantity of hair—Origin of cutting the hair—Method of stimulating the scalp by various practitioners—Substances derived from the animal and vegetable kingdoms for promoting the growth of the hair—Altered texture of the hair—Altered direction of the hair—Effect of dyes upon the hair.

In taking a survey of the disorders of the hair, the divisions previously adpoted for the morbid affections of the perspiratory and oil-producing apparatus will be applicable. The unnatural conditions in which the hair and hair-tubes are involved are referable to augmentation and diminution in quantity, alterations in texture, direction and color, diseases of the hair, and diseases of the hair-tubes.

Augmentation of hair in quantity can only be regarded in the light of a peculiarity, so long as it is confined to those parts of the body which are prop-

erly organized for the production of long hair. It does, however, sometimes happen that hair is produced in places where such a growth is unnatural, and that the unnatural growth is accompanied by an altered state of the entire skin. This is the case in those little patches and spots which sometimes disfigure the face, and are called "moles." Moles are of a dark color, generally covered with hair of a longer or shorter growth, and come under the popular designation of "mother's marks."

Under the circumstances above detailed, and in others to which I need not more particularly refer, it comes to be a question: How hairs in improper situations are to be disposed of? They may be removed without difficulty down to the level of the skin either by certain substances called *depilatories* or by the razor, but they speedily grow again, because the root remains behind, and is too deeply implanted to be reached by such means. Occasionally, even the temporary removal of the hairs by the depilatory, and its repetition from time to time, has been embraced as a boon. Several such instances have occurred to me, and, indeed, first set me to the task of seeking out the most efficient and least mischievous compositions to be employed as depilatory agents. The ordinary components of depilatories are quicklime, soda, and a combination of sulphur and arsenic; when misapplied or allowed to remain

on the skin too long, they are apt to excite inflammation, and, therefore, require to be used with care. I was visited one morning by a young lady, who had been making an experiment of this sort upon her forehead, for the purpose of getting rid of a peak which interfered with the fashionable mode of wearing the hair; she had unfortunately permitted the depilatory to remain on the skin too long, and the consequence was a mortified spot of about the size of a shilling piece. Another mode of disposing of extraneous hairs is by the tweezers; but this process is painful, and, like the preceding, only temporary. It is equally apt with depilatories, to cause a stronger growth of the hair, and sometimes give rise to ugly marks and scars.

Diminution of hair in quantity, from decadence, involves much more serious considerations than the opposite condition. I do not now allude to the fall of the hair dependent on age; this is a natural consequence on man's infirmity, and cannot be regarded in the light of a disorder; but sometimes the fall of the hair takes place in young persons, and then it becomes a serious evil. The degree of evil is necessarily much modified by circumstances; if the subject be a lady, the inconvenience is greater than if it be of the opposite sex. If the fall be limited to parts usually bald in the aged, the visitation may be bearable even in a young man.

But when, as I have frequently seen it, the entire scalp is laid bare, and with it the eye-brows, eye-lashes, whiskers, and beard are lost, the case is one of no common affliction. A wig but ill supplies the place of Nature's foliage, and burned cork for eye-brows is only passable as a stage effect. But the annoyance is greater than all, when, instead of a total fall, round white patches of scalp become denuded, giving the idea, most unjustly, of some disagreeable or degrading disease. This is one of the numerous family of the ringworms of the public, but, like many other popular medical notions, wholly incorrect. The grounds of the misnomer are simply these: a disease recognized under the name of ringworm, produces a fall of the hair on the part affected; then comes the popular deduction, that every fall of the hair is occasioned by a ringworm.

Turner, speaking of this disease, remarks that, although unattended with danger, "yet has it much of turpitude or disgrace, insomuch that the slaves among the Romans laboring under this malady, were undervalued and sold, as Sennertus saith, at much viler price."

But in partial baldness of the scalp occurring in round patches, the skin is white, as smooth as if polished, and obviously thinner than the surrounding skin. This thinness of the scalp is very remarkable in the baldness of age; the skin is almost transparent;

the seams of the bones may be distinguished through it, and it appears to have scarcely any substance whatever. Partial baldness of the scalp is entitled to the designation "scall;" but I think it better to abstain from the use of this word, as scalled head is the term usually employed to distinguish those cases of baldness of the scalp occurring in patches, resulting from watery or mattery pimples, or from another disease shortly to be described, the true ringworm. Partial baldness may occur in any one, and at any time, and more usually attacks adults than children.

In the preceding paragraph, we have not particularly adverted to the loosening of the hair, which frequently occurs in young persons, or in those of the middle period of life, and which, if neglected, would become real baldness. Such a state as we are describing is not uncommon in women, and generally terminates, in its mildest form, in excessive loosening of the hair. The case, however, is far from being the hopeless one which is generally imagined; and, if proper treatment be pursued, the hair will grow afresh, and assume all its pristine strength.

A useful practice for men and also for ladies, and which never should be omitted under any circumstances with children, would be to wash the head every day with cold soft water, containing one ounce of the aromatic spirits of ammonia to one pint of water.

And now, as to the question of *cutting* the hair. We apprehend that it was nature's intention in giving us hair as a partial clothing, that we should wear it as it grew; but that circumstances soon arose which rendered it convenient, if not necessary, to cut it in various ways. Thus, hanging before the eyes and impeding the view, the front hair was cut short off across the forehead; then other circumstances following in course of time, made it at last the fashion for the male sex to wear a short crop. Ladies still enjoy the privilege of wearing their hair the length that nature gave it, and so long as it retains its health, they have no need of the process of cutting. But the hair is apt to split at the ends, and such split ends require to be snipped off; that is, such is the present practice, for among our forefathers some attempt seems to have been made to restore this "affect incident to the hairs" by medical means; with this view, "some authors have anointed the ends of them with gall, and subsequently washed them with a decoction of babery-bark." Another need for cutting is created by the mode in which fashion ordains the wearing of the hair. Some of these modes are very destructive to the hair; it becomes uneven and ragged, and then the scissors are called into use to set it straight. These are the true circumstances which have given origin to, and serve to perpetuate the habit of cutting the hair

of women. The operation is, in reality, one of trimming, of co-ordinating, not one either of advantage or necessity to the growth and maintenance of healthy hair. In such cases as we are describing, the short hair offers every variety of thickness, color, and condition, and requires the kind of cutting and trimming which a gardener would give to his roses.

The cause of weak hair and baldness, in numerous instances, is the result of an unnatural excitation and stimulation of the skin, which can in almost every case be reproduced by proper means.

An old lady who practices the art of hair-producing in London, gets, as we are informed, her patient between her knees, and then begins a system of pommelling, pinching, rubbing and shampooing the skin of the head, until she stimulates every part of it effectually; another dredges the head with a blistering powder, and a third uses fluid irritants. As far as the end is concerned, the ladies all tend to the same goal; they simply take different paths, and in their want of knowledge of the philosophy of medicine, each believes that her own is the only certain and right road. The same observations apply to the thousand and one remedies and specifics for producing and restoring the hair; the greater part of them are stimulants; though some, it must be admitted, rest their claim upon more doubtful attributes.

As an illustration of the nature of the multitude

of remedies, proposed from time to time for the purpose of promoting the growth of the hair, we have arranged the following lists, which are far from including all the substances which have been accredited with this power.

Substances derived from the animal kingdom.

Fat of the bear, deer, hedgehog, rabbit, man, mole, goose, snake.

Ashes of the hedgehog, hedgehog skin, mouse, goat's hair, horse's teeth, bees, wasps.

Spanish flies; house flies distilled with honey in milk; honey; bee glue; red coral.

Substances derived from the vegetable kingdom.

Raisins: Aloes, amber, benzoin, euphorbium, frankincense, laudanum, mastich, myrrh, pine rosin, balsalm of Peru, cedar tar, common tar, turpentine.

Oils: Of bays, chamomile, dill, paper, southernwood, spikenard.

Roots: Cyclamen, hellebore, lily (white,) onion, orris, reed, squill, sweetflag, verbascum.

Seeds: Almonds (bitter), beans (flour), colocynth, fennel (wild), mustard, nasturtium, nutmeg (burnt), rockett, stavesacre.

Other parts of plants: Agallochum, althea, asarabacca, chamomile flowers, cinchona (bark), cresses, cyperus, dock, fœnugreck, fig leaves, house leek,

lavender (stæchas), maidenhair, malva, melilotus, myrtle leaves, parietaria, pomegranate bark and flowers; poplar buds, reeds, bark and leaves burnt, rose leaves, red rose, rosemary, salvia, St. John's wort, thapsia, verbascum, wormwood.

The only member of the mineral kingdom, that we have found alluded to, is sulphur. And among products not admissible into the above lists, are honey-water and burnt linen cloth.

In reviewing the catalogue of ninety substances, the greater part will be found to be stimulants, but some are recommended on a different principle; for example, the fats, which were intended to be nourishers of the hair. In selecting the kind of fat, that of the bear was probably chosen on account of the hairiness of the animal; that of the hedgehog for the strength of its spiny covering; while the fat of the human scalp was supposed to be particularly advantageous, probably on account of its previous offices to its original owner; and in choosing the scalp, we apprehend it must have been a point of the first importance that it was one well grown with hair. The fats, however, were not relied on solely; they were always preceded by bathing and frictions, and were generally combined with one or more of the many stimulants mentioned in the list. Some of these substances, besides being stimulants, also possess astringent qualities, which render them suitable

to those cases where the loss of hair "comes after sickness, or proceeds from too great amplitude of the pores or relaxation of the skin."

As an internal medicine in cases of baldness, Pliny informs us that "the sponge growing out of the wild rose, reduced to ashes and mixed with honey, is one of the noblest remedies."

Alteration of texture of the hair is a phenomenon too frequently occurring to admit of question or dispute. Under the influence of this change, the hair is inelastic and brittle, and breaks in the operation of combing and brushing. This state obviously depends upon a want of health of the skin, and a deficiency of the proper constituents of natural hair. A similar condition is sometimes seen in the short and stiff hairs of the body, as in the whiskers, where, instead of breaking entirely, the hair bends at an acute angle, and its texture is merely bruised. The bruises are detected on the shaft of the hair, by being lighter in color than the rest of the shaft. Oftentimes there are five, six, or even more, bruised points upon a single hair of an inch or two inches in length; and when seen in the mass, the numerous white points suggest the idea of a scurfy or dusty condition of the hair. When examined more closely, the hair looks as if it were jointed. In an instance which lately fell under our notice, of this state of hair, affecting the whiskers, the appearance was

so remarkable as to have attracted the attention and comment of passing friends. Under the head of altered texture of the hair, must also be included the bent, twisted, dry, brittle, hemp-like hairs of common ringworm, and the turgid and swollen hairs of the matterated secretion.

Altered direction of the hair may be discussed in a few words; the only situation in which the hair is known to give rise to inconvenience by irregularity in the direction of its growth, is upon the margin of the eye-lids, where the lashes sometimes grow inwards, and by pressing against the front of the eye-ball, occasion irritation, and even inflammation. When such a state as this occurs, the erring hair must be removed by means of a pair of fine tweezers, and the inflammation afterwards subdued by cooling and slightly astringent lotions.

In the chapter upon the peculiarities of the hair, we have narrated some instances of altered color, and given an explanation of the nature of that change. Such alterations are curious, rather than of any practical importance, and they occur so rarely as to call for nothing more than a brief notice. A more frequent change, however, is that in which the coloring constituent ceases to be produced. This state constitutes "blanching of the hair." It must be a matter of common observation, that in those instances in which the darkening constituent presents

the deepest hue, blanching most frequently occurs, and grayness is most common; while in persons with light hair and light complexion, blanching is comparatively rare. There can be no doubt that the production in this climate of a dark color, is a greater exertion to the economy than one of a lighter kind. It is wisely ordained that it should be so, for color of the hair is one of the conditions of existence most easily spared, and it is one also that may well serve as a monitor of human decay.

Seeing that cessation in the production of color is a consequence of deficient tone in the hair, resulting from weakened energy in its composition, we have an explanation at once of blanching of the hair ensuing after fevers or constitutional disease, or of the same state following intense anxiety or alarm. From such a moment, the color is no longer elaborated, and all the hair produced, subsequently to the shock, is white; even that already formed is not free from the change, as we have exemplified in the chapter on the emotional peculiarities of the hair. These considerations lead us to another kind of remedy for blanched hair, one which acts only on the formed tissue, and has no power either of reaching that which is implanted below the level of the skin or the root. I allude to "dyeing." There are persons who have been led to adopt this artifice under the supposition that the hair being once dyed will grow

forever after of that color. If they had reflected in time that the dye acts only on the hair above the level of the surface, and that the hair continues to grow of the objectionable color, so as to require a frequent repetition of a disagreeable process, they would, we think, have hesitated before they had offered themselves so willingly to a barbarous practice. In the use of coloring, staining, and dyeing the hair, and indeed, in all the other administrations about it, great care is to be had of the brain, lest, whilst we are busy about adorning those parts of the body, we bring some inconvenience or detriment to the more noble residence of the soul, placed underneath. The gray hairs of the ancients, which give that venerable aspect, and for which, if their deportment correspond with their years, they ought by all sober persons to be held in honor, ought not to be tampered with. Whoever thinks thus to stave off old age, by coloring his white and hoary hair, that he may seem young again, only renders himself a byword. Yet, if untimely or immature baldness comes on, remedies no doubt may be used; or, if the hair turns gray in youth, there are some who propose by art to change it black; others to strike the golden dye, or make the yellow locks, which in former ages were held so lovely, and at this time highly esteemed in some countries, though despised by our people.

CHAPTER SEVENTH.

DISEASES WHICH DESTROY THE HAIR.

Their classification—A debilitation of the cuticle—The connection of disease of the hair with this debilitation—The cause of the debilitation—The displacement of the hair—Remedy for debilitation of the external skin—The method of preparing the remedy.

We have now arrived at the cardinal position assumed at the commencement of this work, which consists in conveying instructions for the relief of all diseases which are connected with the hair. A definite conclusion upon this point depends upon a correct classification of those maladies; and although there is evidently a distinction existing between them, yet, their similarity is so close, that a proper classification is exceedingly difficult.

We have found these complicated diseases to consist of the following variety: A debilitation of the cuticle; a suppression of the perspiratory secretion; an inflammation of the under side, or lining of the cuticle; an inspissated secretion; an inflamma-

tion of the sensitive skin, or derma; a matterated secretion; a distended bulb, and all the eruptions of the scalp; also, including the animalcule malady, which bears the appellation of *Hair Eater*, or Steatozooen Folliculorum.

The effect of a debilitation of the external skin upon the perpetuity of the hair is terribly disastrous. In fact, it is the foundation of all, or nearly all, the diseases which destroy its graceful and beautiful appearance. We have scarcely seen an instance of the loss of hair which could not be directly traced to the destructive influence of this cause. Perhaps many might suppose there was no greater reason for a debilitation of the cuticle on the top of the head, than on other portions of the body, but such suppositions are inconsistent with the principal connection existing between this and other parts of the structure. For, to every square inch of skin on the surface of the *scalp*, as has been before remarked, there are *three thousand five hundred channels*, or *perspiratory tubes*, incessantly engaged in relieving that particular portion of the human structure of its surplus fluid, and, in the mean time, it is required always to sustain and propagate *five hundred and twenty*, and not unfrequently, *six hundred hairs to the square inch.*

Hence, we find this external investment performing two thousand times more labor to the inch upon this

locality, than upon any other position of the body. Therefore, with this knowledge in view, it will not be at all difficult to perceive the debilitating influence of an overworked surface, particularly when the propagation of an organic structure is deriving its whole vitality therefrom; hence it may be observed, that the loss of hair is to be attributed in a large majority of cases, to the condition of the external covering of the head. Therefore follows the necessity of commencing the enumeration and explanation of the diseases which afflict this part of the structure, by the examination of the outer skin, or cuticle, which can be considered in no other way, but as their principal foundation; because an inability of this investment to perform its duties would most certainly induce a suppression of the *perspiratory secretion*, to the effect of which, our attention will hereafter be directed. This disorder can always be detected by the extremely weak and shriveled appearance of the scalp, and not unfrequently attended by a dry, brittle, faded and unhealthy condition of the hair; the ends of which become pointed and split to a considerable extent. The surface in this case is fully illustrative of the disorder with which it is afflicted; for its appearance is indicative of a total loss of strength and vitality; and whenever this debilitation occurs, its inability to sustain the hair within the sheath is obviously perceptible.

The strands, or shafts, are so generally loosened that the slightest contact with comb or brush immediately displaces them, and with such a degree of rapidity is this displacement conducted, that in an incredible short time, the natural covering has all been removed, and the bare skin is left unprotected by its former ornamental guardian. For this disease we have found an effective remedy in the frequent application of the *Tincture of Wild Indigo Root;* the strengthening properties of which we have fully tested in this malady, with very beneficial results, which have favorably established our confidence in the efficacy of this plant, insomuch, that there need be no hesitation in recommending it to be a speedy and infallable remedy in most cases. If the strengthening and healing properties of this plant were more definitely understood, it would occupy a much higher stand, not only in the *Botanicœ Medicœ*, but also the *Materia Medica.* The plant is a native of North America, and may be found in profusion upon the hills and pastures of New England.

We have found in our practice, that a saturated tincture is the most effective method of preparing this remedy—the formula of which, consists of the following directions: To 4 oz. pulverized *Wild Indigo Root* add one pint of alcohol, diluted with an equal quantity of soft water. This preparation, if applied regularly, once every twelve hours, will pro-

duce an activity in the cuticle, sufficiently strong to throw off all secretions which may be generated within the scalp.

The strengthening properties of this herb are very extraordinary when applied to the surface of the body, and whatever the existing debilitation may be, a relief will immediately follow a few applications. Perhaps it may not be improper to add that this debilitation is not confined to age, or sex, but is as frequently manifested in youth as at any other period of life, and occurs as often in the cuticle of the *female* as that of the *male*.

Therefore, to obviate these destructive maladies, the utmost precaution should be observed to prevent the occurrence of this debilitation. But whenever it takes place and is sufficiently apparent not to be misconstrued, the application of the tincture which we have mentioned, should immediately and unremittingly, according to the specified directions, be applied until an improvement in the feeling and condition of the external skin is perceptible. Now, if the directions which are herein given as a remedy for this derangement are adhered to, the preservation of the luxuriant hair of thousands will be insured, which otherwise would have been totally destroyed.

CHAPTER EIGHTH.

SUPPRESSED SECRETION.

The cause of flesh being attached to the end of the strand—The splitting of the roots—Symptoms of this disorder—Reproducing power of the formative structure of the hair—Method of preparing and applying the remedy.

The effect of a suppressed secretion upon the hair is exceedingly inflammatory, which fact may be ascertained by the large portions of white or yellow flesh, attached to that end of the strand, which is forced out of the scalp; yet many suppose this white or yellow substance is the entire root or bulb, which falls with the strand to which it was attached previous to its ejection from the skins, others consider it to be the hair-eater. This conclusion, however, is not as a whole correct, but the root which has been extremely swollen, sometimes splits and separates from the main body, and is frequently found to adhere to that end of the strand to which it was previously attached.

We have never witnessed a total displacement of

the root in connection with falling hair, but invariably in cases of suppressed secretion have seen portions, which, from excessive swelling, are separated by the force of distention from the bulb proper; hence, it would be safe to infer that the final decay of the root of the hair takes place within the skin, and in the identical socket to which it belongs.

This adhesion of flesh to the end of the strand is the evidence by which a suppressed secretion notifies its presence in the space between the skins. We trust no one will be mistaken in the symptoms of this malady, for this separating and distending process upon the bulb is produced by no other disease which afflicts the capillary organization. The inherent qualities of reproduction and regeneration which are invested in the capillary organization are truly wonderful, and seem to partake largely of the nature of those grasses, which, in any position, and under all circumstances, with scarcely any attention, are capable of reproduction.

Therefore, it will be observed, according to the natural qualities of the reproducing organs of hair, that it need not be considered essential in all cases to have youth on the side of desired reproduction in order to promote a healthy growth.

Perhaps it may be asked, what is the cause of this distended or swollen root which has been particularly mentioned in connection with a suppressed secre-

tion. The cause will be found to emanate from a violation of a natural law, which is demonstrated by the evident inability of the organs of consumption, to use up all of the substances which pass into the body. If this inability did not occur, there would be no necessity for a perspiratory arrangement to be intimately connected with vital existence. But we are taught by the anatomy of the human system that there is an unconsumable fluid with an extensive natural arrangement for its escape, which consists of a perforation of the whole external surface of the body. Consequently, it might be correctly inferred, if a self-generating liquid with such ample provisions for its exit should be confined in a narrow space, it would of itself beget disease of such a nature as to be manifestly injurious to whatever it might be connected with.

The fact is, by confining the perspiration in the space between the sensitive skin and cuticle, by a rigid contraction of the perspiratory tubes, it will produce an unnatural heat sufficiently strong to destroy the harmony of the surface through which it passes, and upon which it rests; and, soaking and swelling the bulb of the hair in a liquid, six degrees hotter than is required for its healthy action, creates such an inflammation and distention, as to force the strands from the capillary sheath.

We have used as a remedy for this disease with almost perfect success, a Tincture of Black Alder root. The bark prepared similar to the Root, makes an excellent tonic wash, to apply for its relief. The best method of preparing the Alder Tincture to obtain its full strength, is to pulverize half a pound of the root, to which add one quart of alcohol and one of soft water; close the mouth of the vessel in which it is placed to prevent evaporation, and after standing eight days, it may be used. The bark is prepared the same way with a difference in quantity, which requires to be doubled to obtain the requisite amount of strength. When the Tincture of Bark, or Root is made, it should be applied once or twice every day, being careful in the mean time to wet the surface well. The applications should be continued until an improvement in the state of the hair is perceptible; after which an application once in two days will be sufficiently often.

CHAPTER NINTH.

IRRITATION OF THE SCALP.

Inflammation of the inside of the external skin—The cause—The effect upon the scalp—Result of deleterious applications—Their effect upon the hair.

The inflammation of the inner surface of the cuticle produces an incessant irritation, or itching of the head, the suffering from which is intensely severe. This annoyance is not confined to a particular locality of the head, neither is its attack governed by any regulation of time, as it frequently commences its disagreeable sensations in church, at parties, and in the night, and generally when we are quite unprepared for it.

It will be perceived that this is not the common itching of childhood, but a terrible affection of unprecedented irritation, which requires the immediate employment of one hand, with the other engaged as a confidential assistant, accompanied with sundry combs and brushes, all proving unavailable to alleviate the annoyance. For the alleviation of this

malady, there is a resort to every supposed remedy obtainable, without considering the nature of the disease for which it is to be applied. The non-familiarity with this disorder often induces applications which operate differently from what is required, because of their contribution to the strength of the inflammation by the aggravating properties which they contain.

Nevertheless, these so called remedies are resorted to, not from any knowledge of their efficacy, but by the recommendation of friends or acquaintances, who often advise the following compounds: A solution of salt and water; brandy and sweet oil; castor oil and alcohol, and often applications of the Tincture of Cantharides, which if applied to an irritated or inflamed surface, possess sufficient power to greatly enhance the acuteness of the irritation. All of these compounds increase the strength of the very disease which their remedial properties are said to cure.

Perhaps it would be well to be particular in describing this disease, because it is one of the most annoying afflictions which attack the scalp, being extremely obstinate and treacherous in its nature, and even when supposed to be cured, if the proper means have not been used, it relapses into a double force of malignance, and with renewed vigor again commences its assault upon the scalp. Now, be it observed,

whenever this relapse takes place, the disease is not confined to the interior of the cuticle, but is disagreeably visible upon its surface, which becomes so susceptible to pain, that a comb or brush in the arrangement of the hair, produces an unpleasant sensation. This malady is the result of a suppression of the evaporating liquid of the body, confined in the space between the skins. Its natural condition is changed to such an extent, that it at once becomes highly inflammatory and produces inflammation upon the sensitive portion of the external skin. The presence of this inflammation can always be known by the frequent and almost incessant itching, or irritation of the scalp.

We trust the description which has been given of this disease is sufficiently elaborate to prevent the occurrence of any mistake or misunderstanding of its presence and nature. In its treatment, an immediate and permanent relief may be found in the frequent application of pure juice of the Pine Apple, which may be preserved by adding a small quantity of alcohol. The head should be carefully wet with this liquid two or three times a day, until the itching has entirely disappeared, and the scalp has assumed its former condition of strength. If this method is adhered to, the relief will in every case be infallible.

CHAPTER TENTH.

DANDRUFF.

Inspissated secretion—General considerations respecting this disease—Its effect upon the scalp—Its cause—Its presence manifested upon the surface—Origin of dandruff—Its tenacity to the scalp—The remedy.

We now come to the consideration of inspissated or thickened secretion. This state is frequently assumed by the perspiratory fluid, and we presume has always been considered harmless to the hair, if ever thought of at all; but sometimes the necessity of its presence is advocated as a means for promoting a healthy condition of the scalp, and giving strength, beauty and permanence to the hair.

Yet this, like all other ideas upon the diseases of the hair, which have been advanced, and by far too often practiced, is based upon that principle of guessing, of which they all so largely partake.

It will be observed by the most casual thinkers, that nowhere in the whole category of oral or written opinions, or advice upon this subject, can be found

an idea which is substantiated by philosophic principles, or even common-sense, but an utter want of method is every where visible in the instructions which *the would-be-wise* have given to the public.

No real elucidation seems to have been arrived at upon this point, but a promiscuous series of hasty conclusions occupies the whole range of thought upon this subject. We think it would be impossible to find any class of diseases which belong to other parts of the human structure which are so generally misunderstood as those which afflict the scalp. Yet in the mean time there is no knowledge connected with the human system which possibly can be considered more conducive to personal appearance than would be an acquaintance with the laws which govern the hair.

Those who have pretended to furnish the required information have omitted in this case, as in all others, to give the actual cause or reason for the maladies which occur so frequently.

The cause of an *inspissated* or thickened secretion, has never been given to the world as the result of a conclusive investigation. In fact, we recollect never to have seen any reason whatever assigned for its presence. But the law of disease readily informs us there must be a primitive cause, otherwise it would not exist any more on the scalp than upon other portions of the body.

Whenever we perceive upon the surface of the

scalp, a white bran-like substance, which usually is termed dandruff, seeming to have no particular affinity for the surface upon which it is located, never adhering closely to the skin, but consisting of separate particles, which are easily displaced by the comb or brush, leaving the head for the time being apparently clean and *free from a second accumulation*, we may conclude that it is a case of thickened secretion. The deception of this cleansing operation is usually perceptible on the second or third day, when the surface becomes covered again with a thick coating of this dry substance, and thus in succession until its cause has been removed.

We have before remarked that the body is continually casting from its surface a liquid vapor, either in the form of a sensible or insensible perspiration. Should the sensible perspiration be confined in the space between the sensitive skin and cuticle, and permitted to remain there sufficiently long to grow thick, which requires little time, as is the case with all fluids when confined, it certainly would produce upon the head a heavy coating which is usually termed dandruff.

This condition of the perspiratory secretion is the main cause of all the humors which afflict the body. It soon begins to force itself out of the pores in an inspissated form, and when the limpid or watery porition becomes evaporated by atmospheric influ-

ences, the scaly particles are at once perceptible. Be it observed now, that this altered secretion may exist for years; in fact, one may be troubled with it through life, unless the proper remedies are employed.

It will be fully understood that the state or condition of the perspiratory secretion, mainly depends upon the activity and strength of the cuticle. For wherever there is an active surface of the head, it is impossible to find any dandruff or inspissated secretion; but whenever a morbid action predominates, then the perspiratory secretion is generated much faster than it can be removed. Therefore, in this stage of debilitation, the thickening operation is always occurring. We have seen cases of twenty years standing, which have been permanently cured within a few weeks by daily attention to copious applications of a compound of Morilla Bark, and Mulberry Root, both formed into separate tinctures, then combined; the Mulberry being used for the purpose of strengthening, and the Morilla operating as an equalizing alterative tonic. Perhaps it may be well to add that the active qualities of these two plants have a great affinity for each other, probably greater than any two plants which are known to possess such medicinal properties, and when they are properly combined, their immediate effect is decidedly astonishing.

The Tincture of Mulberry should be prepared after the formula which has been given for the relief of the debilitated cuticle, and the Morilla after the following directions: To one pound of Morilla bark, nicely pulverized, add one quart of eighty per cent. alcohol, diluted with one pint of soft or distilled water. Place the mixture in a tight vessel and let it stand six or eight days; after which mix equal parts of each Tincture, which apply freely to the head once in twelve hours, sometimes twice, if the case is *very* aggravated, but it would be advisable to adhere to the twelve hour rule, because each application would then be permitted to convey all its properties to the parts affected, and the relief is usually more permanent and satisfactory. By persisting in the application of this mixture, the most difficult cases can be permanently removed, even if they have been standing a series of years.

CHAPTER ELEVENTH.

INFLAMMATION OF THE SENSITIVE SKIN.

Its Cause—Symptoms—Result if permitted to remain—Effect upon the system—Remedy for its removal.

We will now proceed to an examination of the cause of an inflammation of the sensitive skin or derma, together with the symptoms attending this inflammation.

We frequently hear the complaint of an excruciating pain in the head, when the digestion, appetite, and general condition of the body is free from any irregularity whatever; yet this sickening pain seizes upon the head without previous notice, and is exceedingly severe, frequently leaving the traces of its presence upon the countenance, while we can assign no cause at all for its appearance. Eminent physicians are consulted, who decide it to be what is usually termed a nervous, or a sick head-ache, proceeding from a nervous derangement in the head, the removal of which depends upon a course

of medicine particularly adapted to remedy a weakened state of the nervous system. Now in hundreds of cases of *headache*, the locality of the malady could never be reached by internal means, because the seat of disease is located in the *outer layer of the sensitive skin*. This difficulty of the sensitive skin is by no means an isolated one, for thousands are now, and have been for a number of years, great sufferers from this cause; yet there have been no available means employed to obtain relief. It has entirely exhausted the skill of the medical Faculty, and, as a last resort, it has been concluded that there was no remedy for it. But if the locality of the disease had been properly understood, it certainly could have been removed. We wish to be understood that we are not speaking of those pains in the head resulting from a disordered stomach, affection of the nervous system, or a general debilitation of the organization; but those which result from an inflammation of the sensitive skin.

This inflammation is produced by an accumulation of perspiratory secretion upon the sensitive skin, which becomes easily affected through any irregularity of the perspiratory tubes, for, if the sensitive skin is frequently covered by an unhealthy accumulation of an inflamed liquid substance, it surely would partake of the nature of the inflammation which rested upon its surface; following

this theory, we should not be at all surprised to find this inflammation in ratio to the amount or strength of heat, attended with severe pain. The following remedy has proved beneficial in many painful cases; some of them of several years standing have been permanently removed in a few days. The buds from the *Balm of Gilead Tree* have long been used for purposes of healing, and for extracting the sensitiveness of a *bruise*. In fact, it is one of the best remedies for a malignant eruption that has ever been discovered. But we think it has never been recommended for the purpose of extracting the inflammation from the sensitive skin, notwithstanding its properties are remarkably adapted, and seem to be naturally formed, for the removal of inflammation anywhere about the human structure. We should not be surprised, if, in the course of a few years, it formed the chief application for these purposes. The mode of preparation consists of half a pint of *Balm of Gilead* buds; to which add one quart of New England rum, or diluted alcohol, as recommended in forming tinctures. When ready for use, bathe the head all over two or three times a day with the liquid, and a pleasant change will be perceptible in three or four days, which will, if the application is continued, verge into a permanent cure, conveying a lasting benefit, which, perhaps, might never have been obtained from any other source.

The buds should be gathered just before the development of the leaf, because the strength being all which is required, we should be careful to pick them when they contain the most. It would be advisable, for those who have been for several years afflicted with what is considered an incurable pain in the head, to try this remedy.

CHAPTER TWELFTH.

MATTERATED SECRETION.

Why this condition is assumed by the secretion—Its effect upon the external skin—The hair and integument—The color of the discharge—Its obstinacy of removal—The terrible irritation of the scalp—The result if neglected—Its offensive odor—Its attack upon the scalp of infants—Its chronic condition—Its difference from ringworm—Treatment—Remedy and method of preparation.

No doubt a matterated state of the perspiratory secretion will, to many, appear an impossibility and, perhaps, an absurdity; yet, in the examination of life, we find many supposed impossibilities, and at first sight, absurdities, interwoven with the intricate multiplicity of diseases which attack the system.

The condition assumed by the secretion to which we shall devote this chapter, is of frequent occurrence with adults, as well as children, surpassing in acuteness all other forms of disease assumed by the perspiratory fluid, and it may justly be considered the foundation of all eruptions of the

scalp, because no eruption can occur unless preceded by a pural matter. Whenever, from the continuance of any of the preceding forms of altered secretion, for a lengthened period, either as a result of the severity of the original disease, or mismanagement in its treatment, the scalp becomes irritated by an ichorus discharge, the deeper textures of the integument become more or less involved in the morbid action; the cuticle becomes inflamed and swollen, the tissues become dense, while new excoriations with deep and extensive chaps and fissures are produced, and a profuse and heavy secretion oozes from within the diseased structure, which is always obstinate and troublesome under treatment, and frequently, in defiance of the best management, endures for several months; we are when in this state afflicted with matterated secretion. Sometimes the secretion diminishes in quantity and concretes into thin yellow scales, which fall off from time to time, and are replaced by successive deposits of thinner scales; when this phase is assumed, then the surface upon which they rest becomes less hot, and the diseased skin appears to be gradually progressing towards cure, when suddenly the redness and tumefaction return, a fresh discharge is produced, which goes through the usual course in a shorter space of time than the first. In this manner, fresh and fresh attacks are at intervals developed, and the morbid

action is kept up for months, and even for years. This disease is often attended with severe itching, which greatly increases with attempts made by the patient to obtain relief by scratching. The disease may be limited to a part, or it may attack the whole of the scalp, from which it is liable to extend to the face, the ears, and the neck. The scalp is in this case always swollen, and pours forth an abundance of thick secretion, which collects around the hairs and involves them in a thick matterated crust.

If the disease be neglected, and indeed sometimes when great watchfulness has been used in the treatment of the patient, it is liable to fall into a chronic state. Whenever it manifests a chronic form, the scalp becomes thickened, and sometimes fissured; the lymphatic glands frequently become enlarged; subcutaneous abscesses occasionally form, the quantity of secretion is diminished, and the itching is not so great. The destruction of the hair, and sometimes, that upon the eye-brows and lids, takes place from the distended condition of the hair follicles. In its milder form, it is modified in its characteristics by its development on the seat of the hair. The hair is matted together by the discharges; thick crusts are formed to which the matted hairs act the part of felt. If this crust be allowed to remain, the morbid secretions collect beneath and give forth an offensive odor; the scalp is irritated and inflamed by their pres-

ence; the hair falls when the crust is removed, leaving the skin bald and thickened. The formative structure of the hair, however, is not destroyed or materially injured; but can, upon the removal of the disease, and restoration of strength and health to the scalp, be reproduced. Be it remembered, that this state of the scalp, when once established, will last for months, and even for years, unless its cause be entirely removed.

This disease of the scalp frequently occurs with infants at the breast, in children during dentition, and on those whose heads have been subject to hard impressions of the fine comb, which produces a separation of the external layer of the cuticle, thereby diminishing its strength. But it is very common with those who have applied, or do apply sebaceous substances, such as oil, pomades, &c., to the head.

It has been asserted by writers upon this subject, that it is apt to occur either sympathetically, as a consequence of some constitutional disturbance, or as an effect of the application of local irritants to the scalp.

Of the former kind, are the changes which take place in the system under hygienic influences, as during the spring and summer season of the year, particularly when accompanied by atmospheric vicissitudes, or affections of the digestive organs; the irritation produced by unsound milk in infants at

the breast, and stimulating and improper food and drinks, in persons of all ages. Affections of the uterine system, are said to produce this malady; a derangement of the nutritive system, as scrofula; and also of the nervous system, as mental emotions, particularly of the depressing kind. Several have supposed the local causes of this disease consisted in heat, and cold, together with friction and irritation of the skin produced in any imaginable manner. A variety of thought has been suggested relating to its original cause; but there seems to have been a general oversight of a particular idea, connected with its origin which might, perhaps, if carefully examined, lead to a definite result; and great difference of opinion has existed with regard to its nature, in consequence of the variety of names which have been assigned it, and, also, from the fact of the generic title, comprehending diseases of a totally different character. Moreover, the names themselves, are ill chosen, and were selected only because they were terms used for a particular purpose.

Some writers have definitely stated their investigation of this disease to be in favor of its being the common Ringworm.

Dickerson and Stockton both agree, that the scalp is open to the ravages of Ringworm, whenever the symptoms of the present subject appear upon its surface.

We, on the other hand, find the difference between common *Ringworm* and *Matterated Secretion*, to be as great as that existing between other distinct diseases, although their origin may be as similar as the existing connection between one disease and another will allow.

According to Dr. John Hall, Davies, and Professor Stockton, the common ringworm, when it attacks the head, is frequently seen on the neck, on the arms, and other parts of the body. The patches of the disease in these situations are circular in shape; they have a reddish ground, dusted over with extremely fine white scales, are slightly elevated and papillated at the margin, but uniform with the sur rounding skin in the centre. Sometimes the elevation of the margin is absent, and then, if the powdery scales are collected on the surface in great numbers, the patches look whiter than the adjoining skin. In children having a brown hue of skin, the white appearance of the patches are not uncommon. The difference which ringworm presents, when viewed on the head and body at the same time, is easily explained, when we remember the dissimilarity of organization of the two regions, the highly developed condition of the hair follicles and hair, of the one, and the smaller dimensions of those structures in the other. The ringworm of the body seems to have but little hold upon the skin, in comparison with that

of the scalp; sometimes the prominent margin of one ring remains, while the disease propagated from its periphery throws up a second, or even a third ring, clinging as tenaciously to the flesh as the first, which renders its removal so difficult to accomplish.

There has been a controversy existing for years among the Faculty, relating to the contagion of ringworm. Dr. Wilkinson remarks in his excellent work on *Cutaneous Diseases*:—"I have watched the disease with care, and have satisfied my mind with regard to its communicability; my observations of a great number of children in the *St. Pancras* workhouse, as well as in private practice, leads me to the conclusion that it is contagious."

The same author in another page of his work observes—"As some of the profession doubt whether ringworm can be produced in any other way than by contact, I have paid particular attention to this point, and am convinced that some children are capable of generating the disease."

He further observes, "that four children were brought to him, who had never been out of their parents house, but in their carriage, never had any other children to visit them, and never visited any; in short, the mother informed him that they were so strictly particular in association, that they did not suffer the servants, who attended upon the children, to have any communication with others. Yet, notwith-

standing this extreme precaution by the parents, one of the children generated ringworm, and in less than three weeks all the others were similarly affected." Hence we perceive, according to this author, that he is not decided upon its origin.

We might thus continue to dwell upon the opinion of physicians, in relation to the supposed contagion connected with ringworm, but our object being only to establish the difference between Ringworm and Matterated Secretion, we therefore conclude the description of the nature of ringworm, supposing there has been sufficient mention made of the difference in the nature of this disease to make it easily distinguishable from any other.

It will be observed in cases of matterated secretion, that the hair close to the skin is imbedded in a thick matter, which seems to ooze from the space between the internal and external skins, and will appear as often as removed, unless a cure is effected. Even if particular pains are taken to remove every particle of scurf, at the end of two days, this disagreeable effection will again assume its mastery upon the scalp, and thus will it continue to agglutinate the hair in such a manner as to render combing impossible, while its destructive properties are inoculating every portion of the cuticle, thereby changing a smooth and polished surface into an imperfect mass of corruption.

This disease is supposed by many to be contagious, and that it may be transmitted in a comb or brush. People who have applied to us for treatment, have observed, that they thought it strange that they were thus afflicted, and considered that they were inoculated by using a hair brush belonging to another. We have also witnessed some of the worst possible cases where the strictest abstinence from the democratic habit of using sundry toilet articles had always been observed.

We do not intend to assert its impossibility of communication, but wish to be understood that it may be generated where no contagion has, or ever could appear. We are rather in favor of its contagious properties when properly communicated, and should advise all who are able, and there are certainly very few who are not, to use their own brush and comb, dispensing, in this instance, particularly, with the accommodating practice of lending.

This disease will sometimes produce blanching upon the hair, in heads not predisposed to blanch, by destroying the activity of its main constituent, the rest of the compounds being incapable of resisting the influence of the lime, the quantity of which is generally augmented in disease. We have noticed in some of the most feeble maladies of the scalp; when the attack was commenced, there were no gray hairs to be seen; but after a few months and even

after a few weeks the silvery appearance of the surface but too plainly indicated the presence of this unwelcome visitor.

It is very clear that disease changes the nature of the hair, in such a manner that in a few months its original color can scarcely be distinguished; the shades varying according to its virulence; but if the shade should be altered at all, perhaps there would not be a manifestation of inconsistency in supposing that gray might constitute one of the changes. We have known instances when children were afflicted with matterated secretion in its worst forms; it was considered imprudent to stop the discharge, or even attempt to relieve the patient, fearing that it would prove fatal to the general health of the child. Our observations, however, are not confined to children, for we have witnessed a disposition of unbelief in relation to its cure, existing with some of the most intelligent ladies and gentlemen that we have ever known, who could not be induced to try a method which had always proved successful in several cases with their immediate friends and acquaintances, who were supposed to be past all cure. But we must be permitted to differ from those who entertain such an opinion, because we consider all diseases which attack the body are susceptible of a curative influence to a greater or less extent, depending solely upon their advancement. But all, whether in first or

advanced stages, can be benefitted more or less. Therefore we hope no one will despair of relief from this disease; and no one possessing an ordinary share of intelligence should ever be reconciled to the idea of benefit being derived from a *Matterated Perspiratory Secretion*, because its very nature in its first stages largely partakes of putrefaction, and continues to increase until its ravages have produced the entire destruction of the hair, and the loss of this appendage is quickly followed by the loss of the external skin, which leaves the head almost simultaneously with the hair; chronic cases excepted, which have been previously explained.

The origin of this disease admits of considerable speculation. But there is only one point to which it will be necessary to direct our attention in the investigation of its origin, and perhaps no difference of opinion would ever have existed, if this position had received the attention which it demands. The point to which we allude as being the primitive cause of this affection, is an inspissated condition of the perspiratory secretion. It may be observed that any malady can assume a variety of changes before it arrives to the highest point of severity; and these changes are as sure to occur as the malady is to exist. Upon this principle of change, the common cold of this week, becomes the influenza of the next, the pleurisy of the third, the affection of the lungs

on the fourth, and the fifth finds the system struggling with the first attack of consumption. And thus, in regular succession it will be perceived that the slightest maladies are transformed into the severest. It would be safe to conclude that this transformation is not confined to internal diseases, but exists with every malady with which we are liable to be afflicted. Now, if such should be the correct conclusion, and perhaps it never has been argued to the contrary, then we have an undoubted right to suppose, that matterated secretion is the direct change from an inspissated, because no condition of fluids will, or can, produce matteration until they have become thickened, and unless the thickened state is obviated, the matterated will be sure to follow, as a consequent change of the previous condition of the deranged state of the perspiratory fluid.

We might carry our theory back to the first principles of attack, and find it centered in a debilitation of the external skin, because of the evident connection observable between the diseases. It may be that our conclusion upon the origin of this disease is correct; we shall leave the decision with the reader, and proceed to prescribe remedies, which have operated satisfactorily in a large number of cases that have been under our care for the past few years.

TREATMENT.

The treatment of matterated secretion must be regulated by the severity of the symptoms, and the particular nature of the malady. In the first symptoms, we have employed with good effect, an application of some moderately stimulating curative lotion, which excited the skin to a more healthy action. By this process could be started an active circulation of the morbid fluid which originates this disease. A Liniment of *Quinine* and *Olive Oil*, should be well rubbed into the scalp every morning, and completely washed off in six hours after the application. By that time it will be perceived the properties of the lotion will be transmitted to the skin.

The above directions are intended to be used only in the commencement of the malady. They would have no curative effect upon a seated disease, but would rather enhance, by the power of irritation, its acuteness. Hence, a case of long standing, or one firmly seated upon the scalp, whether chronic or not, requires soothing and healing applications, with a strict observance to cleanliness, as an indispensable auxiliary to facilitate its removal.

It is advisable that the scalp, or other parts affected, should be thoroughly cleansed, twice every day, with a solution of Keelyie bark, which rub well into the diseased parts, after which rinse out the solution carefully, and apply the compound lotion of spruce and

bayberry. It will be necessary to form this into a tincture, as the best manner to obtain its strength, and also the most convenient to apply. Therefore, put half pound of bayberry root pulverized, and three ounces oil of spruce, in two quarts of alcohol, to which add one quart of soft water; after standing the time required for tinctures, it will be ready for use. This compound of bayberry and spruce, should be applied when the previous solution has been thoroughly washed out of the head.

Be it remembered, that the frequent application of both lotions, must be discontinued as soon as a favorable change has taken place in the scalp, and as fast as the scalp becomes healthy, continue to omit the application of the solutions. Being governed by these directions, the disease will be entirely removed and the hair will again make its appearance in a few weeks.

It is advisable that this method of treatment should be continued twice a week for three weeks, after the disease has entirely disappeared; by that means a prevention of a relapse is insured.

CHAPTER THIRTEENTH.

RINGWORM.

Its appearance upon the scalp—Its effect upon the electricity of the hair—The resemblance to matterated secretion—Its injurious result upon the health of the hair—The opinion of learned gentlemen—Its supposed contagious qualities and method of conveyance—Its power of generation—Prevention and remedy.

Drs. Dickerson and Manton, all agree that this disease is characterized by a dry and furfuraceous state of the skin occurring in circular or oval patches of variable size. The hair growing on the patches, is twisted or bent, shriveled, and brittle, and in some instances broken off near the skin, which is the case when the skin is augmented in thickness by an accumulation of scurf condensed into thin yellow or gray crust.

When the scalp is affected with this disease, and kept clean, the patches look parched, and the hair covering them withered and dried up; at a later

period, the patches are left more or less bald, but never completely so, as in matterated secretion.

The early attack of common ringworm, closely resembles inspissated secretion, for the only appearance of disorder that can be detected, is the formation of a thin layer of scurf, either in separate scales around single hairs, or in patches including several, or a more considerable number. This formation is accompanied by a slight degree of itching, which is relieved as soon as the scurf is torn away by the nails, or removed by the aid of the comb. At a later period, the skin upon which the scales are dusted, appears reddish and slightly raised; the pimples next make their appearance on the reddish patches, and subsequently there is a peculiar alteration of the hair.

The hairs in this disease have been compared, not inappropriately, to "tow." They are remarkable for their bent and twisted shape, and resemble the fibres of hemp in color, as well as in apparent texture. They are irregular in thickness, and are broken off at variable distances from the scalp. In dark-haired children, the stumps of the broken hairs frequently present little black knobs at the mouths of the tubes.

The crusts which form over the morbid patches when the disease is neglected, are composed of a scurfy substance, and diseased hairs agglutinated

together by the matter which rises from the skin; they are grayish and yellowish in color, and when of large size are apt to break up in consequence of the movements of the integument into several angular compartments. Moreover, on the surface of the crust, which is dry and harsh, the tow-like fibres of the diseased hairs may generally be perceived.

According to Willan and Bateman, this disease can always be detected by the condition of the hair. It falls off, becomes thin and less strong in its texture, and frequently lighter in color.

Wilson remarks, "that it occurs principally in adults, especially in females." We are not prepared to agree with him upon that point, because a majority of cases unquestionably occur with children.

In the early part of its course, common ringworm is wholly unattended with a discharge of any kind, and sometimes this absence of secretion is conspicuous throughout its entire existence. At other times, however, and especially when neglected, the crust gives rise to considerable itching, and the attempts made to relieve this annoyance, aggravate the inflammation of the skin, and produce a discharge of a white matter, and occasionally, as a complicated disease dependent on increased inflammation, matter forms around the apertures of the hair follicles, and a crop of small pimples is the result. If there be a poison in ringworm, as has been stated by some

authors, it must be a local affection, engendering a kind of poison which is conveyed to the second person by means of combs, brushes, caps, or towels.

Wilson remarks that, "the hairs will break off when gently pulled or combed. In the course of a few weeks, the greater number of the hairs will have been broken off, and the patch will be left comparatively bald. The baldness, however, is not complete, for numerous short stumps of hair remain, and some of larger growth; but these vestiges are bent and twisted, and more like tow than hair." These grizzly remains of hair, give one the idea of a plot of grass withered under the conjoined influence of blight and drought; and a similar character may sometimes be observed over the entire head; the hair is slender, dry, of various length, and obviously starved and impoverished. In a more advanced stage of the disease, crust, composed of matted hair and scurf, glued together by a watery discharge poured out under the influence of irritation, covers the patch and spreads more or less extensively over the surface. It rarely happens that only one patch exists on the head; usually there are several, sometimes as many as fifteen or twenty, and often similar spots are found on the face, the neck, the arms, and the trunk of the body.

Turner, speaking of this complaint, observes, that the hair "falls off not altogether from the root, but by piecemeal." He then plunges into the error

which gave origin to the term ring-*worm* as applied to this disorder. We now know that there is no worm, or living creature in the case, but that the breaking off of the hair, is due to the brittleness occasioned by diseased formation. The appearance of the short stumps of hair is, however, very suggestive of the operations of the moth-grub, and very like the effect produced upon furs by that little agent of destruction. Continuing Turner's remarks upon the broken hair, he speaks of their "being eaten asunder by a small worm like that bred in old wax, decayed fruits, or perhaps the common mite, scarce discoverable by the aid of glasses." Sennertus says he has often seen them, although mentioned by very few authors, and has been consulted by way of prescription to destroy them.

By means of the microscope, we ascertained that the hairs in ringworm are considerably swollen, and that their structure is entirely altered from its original type; that, for example, the outer portion of the fibrous part is converted into small granular cells, having a diameter of about 1–5000 of an inch; that many such cells are introduced between and among the fibrous part, so that the latter is, as it were, disintegrated by the intrusion of these granules, and consequently weakened in its tenacity. This is the cause of the enlargement of the hair, of its lighter color, twisted appearance, and fragility.

Shaving the head is unnecessary, if proper attention be paid to cleanliness. It is scarcely necessary to observe, that every precaution should be used which is calculated to prevent contagion. Ringworm carries with it an unpleasant *prestige*, and although we are firmly of the opinion that the disease is not contagious, yet we would not recommend the neglect of the means adapted to render such an event impossible.

Popular remedies for ringworm are numerous, and comprehend several dangerous applications, such as men educated to the study of medicine would hesitate to prescribe. As this is the case, all should be looked upon with suspicion. Ringworm is a disorder most easy of cure when the proper remedies are employed; most obstinate and most serious, in a physical sense, when improperly treated or neglected. It is no argument that because John walked on the edge of a precipice without destruction, Frank, and all who follow, may be equally fortunate. A sense of duty compels us to convey this caution. We have seen the misery caused by this disease and its mistreatment, and we desire to warn the sufferer in time from a similar fate. BEWARE OF THE POPULAR REMEDIES FOR RINGWORM.

One of these remedies, a great favorite, particularly in schools, may be adduced as an instance of the ludicrous rather than of the serious. Common

black ink is usually, but by no means always, made of copperas, that is, sulphate of iron, and gall-nuts. Now these substances belong to the class of astringents, and, taken separately, are calculated to form passable, but inferior remedies for ringworm. But we have first of all to determine whether the ink about to be used be really compounded of these substances: then comes another and not unimportant question. Is the eruption, supposed to be ringworm, (there are twenty ringworms), really that kind of ringworm which may be usefully treated by an astringent application? How mischievous it is that these simple reasonings are omitted by the advocates of popular poisons? But even admitting that copperas, or gall-nuts alone, may be remedies of the lowest class, how monstrous to use them in that combination which constitutes an application of a dirty, and often of an irritating kind. There has been serious ulceration of the skin, caused by the use of ink to a cutaneous eruption. Another terrible remedy, occasionally employed, is tobacco-water, a poison so rank and powerful, as to be banished entirely from medicine, on account of its dangerous qualities.

Another kind of ringworm is distinguished by the swollen condition of the hair, which is distended with a reddish colored fluid, and has the appearance of being converted into flesh. The scalp is much

diseased, and bleeds on the slightest touch, and so much pain is occasioned by the trifling movement which accompanies the cutting of the hair, as to give rise to the impression that the diseased hair is really endowed with nerves. A large quantity of this fluid flows from the hair-tube, and agglutinates the hair into a repulsive mass, the removal of which requires from ten to twelve days to accomplish.

The hair-tubes are liable to a peculiar disorder, that produces around them a yellow, paste-like substance, which collects in sufficient quantities to destroy the bulbs of the hair, and by its further increase, to give rise to a most serious form of disease of the scalp. The development of this disorder is attended with irritation and itching, and when the skin of the head is examined, a small patch of redness will be detected as the seat of the diseased action. Upon further inspection, a number of, and perhaps all the hairs included within the area of this patch, will be found encircled at their base by a minute yellow spot. In a few days, this spot expands; and still later, the yellow matter, continuing to increase, forms a small shallow cup around the hair, the concavity of the cup being directed outwards, and its convexity towards the skin, which it deeply depresses. It generally happens that a number of these yellow cups, upon a small circular patch of skin, form a cluster. Wilson remarks,

that, "at other times, they are distributed singly over the scalp. When they exist in the clustered form, they have somewhat the appearance of a piece of honeycomb embedded in the hair." The disease obeys the law of extension, namely, exhausting itself in the part first attacked and extending its circumference, carrying devastation as it goes, and destroying the hair completely. If it remain unchecked, it will destroy the whole of the hair on the scalp, and give rise to a deep-seated disease, with enlargement of the glands of the neck.

Bitchet says, it is not the least curious part of the history of this complaint, that when the yellow paste of the crusts is examined with the microscope, it is found to be composed of numberless cells, connected together in such a way as to suggest the idea of a vegetable formation of the lowest type. Many of the cells are so arranged as to give the idea of stems from which branches pass off; and at the ends of the branches are smaller bodies, that have the character of seeds. Thus the plant is complete, and the German discoverers of this peculiar structure, conceived that the mode of propagating the disease by contagion, was simply the conveyance of the seeds from head to head, and that, finding an appropriate and propitious soil, they at once struck root, and began their existence as independent organisms. We have thus presented to us the curious proposition of a dis-

ease of the human body, being a vegetable growth, this vegetable, endowed with the power of establishing itself upon any favorable part of the skin where its seeds may chance to fall, and there producing fresh seeds, propagate its race from head to head.

But then comes the question, Does it do so? If it did, the disease would be common, but it is rare; the disease would run through a family or a community, which it does not. We had once the opportunity of observing a boy affected with this disorder; he mingled with the other boys, in school, at play; no restriction was put upon him or them; but the disease went no further. And so it frequently happens that a little hard-headed, practical sense, as it is termed, dissipates the most promising scientific theories.

The advocates of the vegetable theory, do not hesitate to assert the power of its communicability; but Dr. Walter Dick completely annihilates this hypothesis, in his treaties on cutaneous diseases. He observes, " we have seen ringworm attacking two or three subjects in the same family, almost at the same time, when the occurrence of the disease could not be traced to contagion." Therefore, according to that gentleman's opinion, it is capable of being originated by the peculiar state of the body.

We do not, however, propose to explain the cause

of its origin, or its power of transmission. It is enough for us to know of its existence, to induce an effort for its removal. Many physicians recommend the practice of shaving the head, which in our opinion, should never be resorted to, because the advantage that it holds out, is not commensurate with its evils. If the hair be short, the head may be washed, and kept in proper order, and to facilitate this convenience, we presume the head has often been ordered to be shaved. As the principle of local management for this complaint is cleanliness and a stimulating lotion, we recommend the head to be frequently cleansed with a solution of Salts of Tartar, prepared in the following manner: To two ounces Salts of Tartar, add one quart of soft water, one gill alcohol, and wash the head in this solution every morning. Care must be taken to rinse it entirely out of the hair, after which, moisten the patches with a weak solution of the tincture of Iodine, the strength of which continue to augment as the disease disappears.

CHAPTER FOURTEENTH.

THE STEATOZOON FOLLICULORUM, OR HAIR EATERS.

Its formation—Power of distention and contraction—Influence upon the hair—Manner of fixing itself upon the strands—Its adhesion to the strands—Probable origin—Remedy.

Dr. Gustave Simon, of Berlin, in his investigations of the investments of the body, discovered an *animacule* in the fatty substance with which the hair follicles are commonly filled. This gentleman's researches were directed principally to the Sebaceous Glands of the nose, where he found this insect in great numbers, even where the skin presented all the characteristics of perfect health.

In the hair follicles where they exist, perhaps there may not be more than one or two of these insects, but where the sebaceous substances are concreted, their number is considerably enhanced. They are tardy in their movements, but retain their vitality for a considerable length of time. Dr. Simon found them moving from eight to twelve hours, after their extraction, he having confined them be-

tween two plates of glass. Not being acquainted with the nature of the insect, he finally refers its examination to an eminent dermatologist of Berlin.

But Professor Stockton gives a more accurate description of this animalcule than has been given by any of the professional writers. He remarks, that "the breast which is the broadest and thickest part of the animal, is flattened on its under surface; it is composed of four broad circles, which are joined by a connecting membrane on the sides. These circles are somewhat connected in their diameter, particularly at the upper part, so that the outline of the chest in this situation has the appearance of being slightly fluted, and the circular structure of the breast permits a certain degree of movement in this part of the creature. The legs are eight in number, four attached to each side of the breast. The movements of the legs are a forward and backward movement. The abdomen is somewhat variable in point of length, but generally more than two or three times longer than the breast. It is flattened on its under surface, and convex above, and tapers gradually from its base to its extremity, where it terminates in a rounded point. It is composed of a series of extremely narrow circles, which overlap each other. When examined on either surface, the margin of these circles presents the appearance of a regular succession of transverse lines, and when seen

along the outline, they give to it the character of a serrated edge. The extremity of the abdomen is sometimes lengthened out into a small point, which is permitted to move with considerable freedom, and to curve in any direction."

The following are the extremes of measurement of the perfect animal in fractions of an English inch, according to the examination of Wilson:

Entire Length.	Length of Abdomen.	Breadth of Breast.
$\frac{1}{135}$ part of an inch.	$\frac{1}{227}$	$\frac{1}{555}$

This animal is divided into three parts, the head, thorax, and abdomen. Professor Stockton found the head to "represent in form, a truncated cone, flattened from the forward part of the trunk. It is composed of two large lateral and an intermediate organ."

The triangular organ, which includes the mouth of the creature, is composed of two elementary parts, viz:—First, a triangular point, a prolongation of the membranous case of the animal, from the neck along the middle line of the upper surface of the head to the extremity of the latter, when it turns downward, and in the latter situation, consists of two parallel pieces placed side by side. Second, of a funnel-shaped and tubular organ, or sucker, occupying a central position with regard to all the other organs.

According to the same author, the head is connected to the forward circle of the breast by a loose membrane, marked on its surface by lines, which indicate its susceptibility of being thrown into folds. This membrane is intended to admit of retraction and extension, and by this means the entire head may be drawn in, and buried deeply beneath the level of the membranous fold, here described, so that the head is entirely lost to view, and the animal looks decapitated, the fold of the neck membrane, forming a perfectly straight border in front.

This peculiarity in the structure of the animal, he observes, has been passed over by Dr. Simon; he makes no allusion to any such power, and he undoubtedly would have done so, had he noticed its presence, for the effect of the retraction is too remarkable not to be instantly recognized. In fact, when the animalcule is alternately retracting and extending its head, the impression on the eye of the observer is that of a creature, one while furnished with a well defined head, and the next instant decapitated back almost to the level of the anterior segment of the thorax.

It will be perceived that we have thus far been confined to the opinion of Professor Stockton, and Dr. Simon, in relation to this imperfectly understood animalcule, they being the only authorities to refer to; therefore we have extensively quoted

from them in order, if possible, to obtain that information, which could not be found any where else. It will be observed, however, that they have left us without attempting a description of the effect it has upon the hair, or its method of attack, or the result of its presence upon the hair. They have not even prescribed any means for its removal, but have simply given a stated description of its formation.

We have particularly observed its effect upon the hair in several instances, and always found wherever it existed, the hair would become dry and brittle, the strands changing from a dark to a yellow hue, or interspersed with dark and yellow outlines, which continue to retain their variegated hue until the strands were entirely eaten off. This insect in form, is oblong and tapering, of rather a blueish color, resembling a nit in size, but different in color and shape. It fixes itself upon the hair just above the surface of the scalp, and defies almost any means which are used for its removal. The hardest brush seems to be ineffectual in making an impression upon it; it is also decidedly secure against the impressions of a fine comb, and it becomes completely embedded after a short time in the centre of the strand to which it is attached. Whenever it lodges upon a strand, it always retains its hold until it is destroyed by a local application. We have witnessed its ravages upon

the head, where a terrible effect was produced before its presence was known to the patient.

In its mode of attack it seems to enwrap the hair by encircling it entirely within its folds, which in a short time is eaten nearly, if not quite off, and if there are many hair eaters upon the surface, the top of the scalp will soon become denuded.

There is a strange peculiarity attending the locality which this animalcule selects upon the scalp. It may be found, if existing upon the head at all, either upon the top or apex of the head, and close down to the border of the hair which fringes the neck. We do not recollect to have ever seen them upon any other portion of the head. The hair in these localities manifest their presence by its altered condition and frequent falling. Another of its peculiarities is the utter annihilation of the recuperative properties which are contained in the formative structure of the hair.

We have never known a case when left to its own power of reproduction, that ever grew at all after being visited by this scourge. It seems to eat far enough into the hair, to pour into the tube which passes through the strand, a destructive substance which, if not immediately attended to, will prevent all future reproduction.

The loss of hair by hair eaters is more difficult to remedy than by any other cause, because of the

poison which they convey to the root through the tube. But a solution of Hyd. Bichlor would prove an excellent remedy for this difficulty. A few applications destroy the animalcule and counteract the effects of the poison.

CHAPTER FIFTEENTH.

THE MANAGEMENT OF CHILDREN'S HAIR.

Injurious results of a fine comb and hard brush—Advantage of frequently cleansing the head by ablutions—Pernicious effect of sebaceous, or oily substances—At what age the hair should be cut—How to ensure its permanence when it becomes very long—Compounds best adapted for applications, either for the hair or skin.

It is singularly noticeable, that in all the instruction which has been given for the regulation of the nursery, a method to promote a healthy growth of hair, has entirely been omitted. Yet a proper course of management for this ornament, is by far more indispensable to personal appearance, than is the regulation of any other appendage which is attached to the system. Therefore the omission of suitable instructions for the propagation of this appendage is decidedly unpardonable, on the part of the professed Physiological Instructors of the Nursery.

A sufficient degree of experimental knowledge will teach us, that a large majority of cases of premature baldness, commence in the tender years of childhood, and this is enhanced to a great extent, by the ignorance of those whose charge it is to assist in the full development of every part of the natural organization, which has been confided to their attention.

Yet the ancient custom of hard combing, brushing, &c., with copious applications of oily substances, characterizes the sum total of attention generally bestowed upon the hair of children, and that old practice has so long been considered indispensable to the toilet, that we find it exceedingly difficult to dissuade persons from persisting in a habit so deleterious to the beauty of the hair. According to the anatomy of the body, we are convinced of the weakness which pervades its internal and external structure in infancy, which being governed by its connections, extends to every portion of the system, conveying the debilitation of the internal to the surface of the external, and frequently to such an extent that humors originating internally, make their appearance in large eruptions, upon a surface which previously had appeared perfectly healthy.

But irrespective of any debilitating influence, the external skin must necessarily be very thin and tender in childhood, requiring much strength to keep up

a lively action in the perspiratory department. We can notice the extent of its weakness, by the languid operation in the formation of the hair. It is not at all rare or by any means an isolated case to witness a child from twelve to twenty months, and sometimes three years old, with scarcely any covering but a fine down upon the head, which is ample evidence that age is required for its full development. Therefore, in consideration of the extreme delicacy of the cuticle, its management demands the most careful attention, in order to fully bring forth its dependencies. We have noticed some of the worst diseases, to have originated from hard combing or brushing, while the cuticle was in this delicate condition. The diseases were occasioned by separating the top layer of the external skin, leaving it wholly unprotected from atmospheric changes, for the removal of the top layer originates an ever accumulating scurf, which partakes so much of the cuticle as to render its removal extremely difficult, and, in many cases, impossible by absorbing its entire vitality, and destroying the controlling power of this investment. Hence we see the absolute necessity of avoiding the use of a hard brush, and at all times the *fine comb*, which is the most destructive article in use for toilet purposes; because its constant use, is very sure to produce a severing of the cuticle, by frequently scaling off small portions of its integument.

It should never be used except in cases of necessity, at which times it may be indispensable to comfort. But the benefit conferred is not equal with the injury; therefore we see the imperative necessity of using both brush and comb very lightly upon children's heads. There is another error which is adhered to very closely, having no possible claim to any known principle of philosophy, and it should have been disregarded years ago. The error to which we allude, is the objection which many have to the use of water baths for the head, and this objection is based upon the dryness which water is said to impart to the hair; in consequence of this supposition, it has been in numerous cases excluded from the catalogue of baths for the head; the result of which has been, an accumulation of scurf on the scalp, being the effect of a corroded secretion, which is sure to occur if not properly removed. The mineral qualities of hard or well water, render it unsuitable for cleansing purposes for the hair, leaving it hard and brash, eradicating the natural oil which flows from the tube, and is deposited upon the surface.

But we think it *is* advisable, to wash the hair or head in soft, or rain water baths, always omitting hard water. To destroy the animalculæ in the water, it should be boiled once, then kept in a vessel for that purpose; if this course is pursued, hair eaters will be scarce and seldom, if ever found upon the

head. Children's heads should be subject to frequent baths of Keelye lotion, or brown Windsor soap suds, accompanied with careful rinsing, omitting in all cases fixed alkalies, such as borax, salts of tartar, soda, &c., all of which deprive the hair of its natural elasticity and flexibleness.

If the head should at any time assume a scurfy condition, an equal quantity of 80 per cent. alcohol, and aromatic spirits of ammonia and soft water, used daily, will, at any time, remove the affection in a few days. We think it would be well to add a little alcohol to all the water baths for children; it might possibly be productive of benefit, when it could do no harm.

Particular attention should be observed, in relation to the application of those fashionable pomades, oils, and washes, which are constantly kept before the public. No matter how highly recommended they may be, their composition is always of the same nature and possesses the same properties, and in most cases the ingredients are such as would be thought too common to constitute a portion of a fashionable toilet.

We trust it will not be required in this chapter, to mention the composition of the various *nostrums* which fill the columns of the public journals in this country, as we have devoted a whole chapter to that purpose, and shall frankly endeavor to explain their injurious influence upon the hair, when

applied to the scalp in any form whatever. There should be a total abandonment of their use upon the delicate scalp of children, because hundreds, nay thousands of heads, which would have produced splendid tresses of luxuriant growth, have been injured by their pernicious effect. The same gummy, or glutinous basis of which they all so largely partake, must necessarily operate more detrimentally, upon a thin and delicate surface, than it possibly could upon one which was strong and coarse. The former would be likely to loose its active vitality, and become exceedingly languid, in the performance of its obligations to the system, and whenever this state occurs in the scalp of infants or youth, it not unfrequently becomes chronic, and defies all attempts to remove it, beside being a life lasting annoyance to the patient, either from a constant accumulation of dandruff, premature blanching, or a rapid and early disappearance of the hair, and nearly all of the diseases which destroy the hair in early life may result from this cause.

Our observations fully substantiate the unwelcome truth, that a natural exuberance of this elegant ornament, is by no means common upon the scalp of children. And it is quite uncommon to see a child's head covered with a healthy growth of hair; for upon at least one half of the children from four to twelve years of age, there is an evident predisposition to the

diseases which lead to its destruction. Therefore, we cannot be too earnest, in soliciting the attention of parents, to the condition which the scalp assumes in childhood, through this influence, and retains through life.

If the hair should at any time become unmanageably dry, an application of the Tincture of Bayberries, will immediately cause it to assume a soft, glossy and flexible state, perfectly manageable in any desirable form.

We recommend this tincture, because its effect is not in the slightest possible degree injurious to the health of the scalp, or growth of the hair, being quite free from that gummy or glutinous basis which enters so largely into the composition of fixed oils.

The volatile, or evaporating properties of the bayberry, are more rapid in their action than those of more sebaceous substances; hence the moisture which may be imparted to the hair by this application will not be very durable, but sufficiently so, to answer all practical purposes. There is no animal, fish, or vegetable oil which approximates so closely to sperm oil, as that which can be extracted from the bayberry; therefore, we have no hesitation in recommending it in the form of tincture, as an excellent application to soften the hair.

There are many families, who use some softening preparation, which they consider essential to apply to

the hair, to enhance its flexibleness and promote that rich and glossy appearance, which is required by the admirers of beautiful tresses; and we presume such considerations have established the custom which is so prevalent with American ladies and gentlemen, of resorting to the numerous compounds which over stock this country, to accomplish that object. Now, wherever this custom prevails, the tincture which we have recommended, will serve all purposes and answer all demands, without producing that debilitating influence, which results from the use of the nostrums for the hair.

There is a variety of opinion about trimming, or cutting children's hair,—that is not at all conducive to its health or durability, many have established the custom of permitting the hair from its first appearance upon the scalp, to go untrimmed until the fifth or sixth year, or whenever its inconvenience requires an immediate application of the scissors.

Now, a single thought upon this subject, will clearly demonstrate the incompatibility of this proceedure with the permanent health of the hair, because the point of the hair will always close, if permitted to grow to great length, or go untrimmed for several months. And when this closing process occurs, then the oil, or animal portion of the hair, which flows through the tube of the strand from the root, cannot

escape through the outlet at the point; and it would be reasonable to conclude, that it would again seek its source, and there resolve itself into another condition, and its presence be no longer visible within the strand.

The loss of this constituent of the hair, can always be detected by the dry, faded, and split appearance of the points, which often extends half the length of the strands.

We have seen hundreds of children, whose hair was thus effected, which was quickly remedied by taking off from one to two inches of its length, if the hair was short, or from two to four inches, if long; a sufficient length should be taken from the hair, to fully open the tube some distance up the strand, thereby permitting the free escape of the softening fluid, which nature has bountifully supplied to render the hair flexible.

It is advisable for those who have the charge of children, never to allow the point of the strand to become closed, no matter how beautiful the curls may seem, or how dependent the attraction of the countenance may be upon the length of the hair. We think it much more conducive to its durability, to be deprived of a few inches occasionally, than to let it grow to its full length at as early an age as possible, because the latter course would ensure an early loss of this indispensable auxiliary to

personal beauty. Therefore, we shall recommend the hair to be slightly trimmed or clipped, as often as once in every four, or six weeks, just enough being taken from the point to prevent its closing, which will always keep the tube open, and prevent splitting at the point or up the strand, and will tend to obviate that dry and faded state to which children's hair is so frequently subject. This cutting process should be commenced, when the hair becomes sufficiently long to reach the eye, for by that time all its natural concomitants are fully developed, and it assumes its firm position upon the scalp, with all the characteristics which govern it through life.

This course should be pursued from the time we mention, until we have no further use for this appendage, if such a period of existence ever occurs. And if any one has dwelt upon this planet long enough, to tell at what time of life we can dispense with the hair, and will inform us of the exact period, it will supply a degree of information which is not generally known.

Many very intelligent persons suppose it necessary to observe the changes of the moon, when about to trim the hair, and also about the time when it should be permitted to grow to its full length. It is needless for us to observe that this idea is purely chimerical, but by taking a very small portion from the point once a month, the hair will gain in length,

and in the course of a few years the child's hair will become healthy and luxuriant, and with suitable management will continue so.

The washes best adapted for applications for the hair and skin, are generally, as in all other departments of life, confined to the most simple combinations, embracing in the mean time, all the requisites of cleanliness, strength and elasticity which are so essential to the promotion of a healthy existence.

Hundreds of different remedies have been applied to the surface without producing the slightest possible benefit; but on the contrary, much disadvantage and discomforture. But we have found the *Aromatic Spirits of Ammonia* to be decidedly the best general wash for daily ablution, surpassing all others in immediate effect. By putting a wine-glassful into a basin of water, it makes an exceedingly pleasing and agreeable bath for the body, especially in warm weather. It removes all perspiration and glutinous deposits, leaving the skin soft and fresh. It has all the properties of other alkalies, or soap; but being a *volatile* fluid, it entirely evaporates, leaving no alkaline deposit upon the skin.

For washing the hands, it is very efficacious; removing grease or stains instantly. For this purpose, double the proportion may be added to the water.

For head-ache, or vertigo, bathe the head and forehead freely with it, mixed with cold water, the colder

the better. Inhaled from an handkerchief, its volatile quality and perfume, render it very agreeable and beneficial for faintness and low spirits.

Mixed with water in about the proportion mentioned first, it constitutes the most effectual shampooing fluid, either for ladies or gentlemen. With about half the above proportions, it makes a suitable and elegant bath for children. Avoid, however, its getting into the eyes, as it will cause a few minutes of unpleasantness.

It instantly dissolves and washes out lamp oil, tallow, or any kind of grease, tar, or paint, from the floor or clothing. The Spirits of Ammonia is composed of volatile alkali, pure spirits and aromatics, and can be obtained of any druggist at a very low price.

The remedies which are given for the removal of the diseases which we have described, should carefully be prepared from materials containing their most active properties; compounds from fresh roots and barks are more efficacious and operate with greater facility. Care should also be taken to prevent evaporation, as it greatly reduces the strength of the compound.

But if any difficulty should occur in obtaining the required ingredients, which form the remedies herein mentioned, or any misunderstanding ensue relating to the diseases or their symptoms, perhaps it might

not be considered improper to suggest that an ample stock of carefully prepared remedies, can be obtained of us at No. 148 Union Street, New Bedford, Mass.

We shall now proceed to the examination of manufacturing all kinds of hair cosmetics, consisting of depilatories, dyes, washes, &c.; but desire not to be considered in any possible manner whatever responsible for their efficacy; on the contrary, we definitely and explicitly oppose their use as remedies for the diseases of the hair and scalp.

CHAPTER SIXTEENTH.

THE MANUFACTURE OF POPULAR COSMETICS FOR THE HAIR.

We shall commence the examination of the numerous compounds which have been and are now sold to promote the growth, and enhance the beauty of the hair, by presenting to our readers the method of preparing the sulphur lotions, which are said to change its color.

It may be stated, once for all, that this practice is decidedly injurious. It may fail altogether in producing the desired result; it is never unattended by a certain amount of unpleasant circumstances, and frequently with evil effects.

In the first place, the alteration of the natural color, so far as the general aspect of the face is concerned, has an effect the very reverse to that which was intended. Every constituent part of man tends to make the human structure one harmonious whole; the figure, the stature, the skin, the hair, the gait, &c.

Fair hair is associated with a sanguineous and lymphatic temperament, a fine and white skin, blue eyes, and a soft and mild expression. Black hair,

on the contrary, is generally connected with a bilious habit of body, a muscular and nervous temperament, a dark and yellowish skin, lively black eyes and a bold, proud air. Red hair is associated with a peculiar constitution, although closely approaching to the fair type. In this variety the skin is transparent, fresh, and presents a peculiar limpidity, which belongs exclusively to the color of hair mentioned

To what absurd contrasts, then, are those persons exposed, who, from idle vanity, attempt to break the bond of union which exists between the hair and the rest of the body? If, then, from the impression that red hair is a disfigurement, it is dyed black, what relation can exist between this new color, and the soft blue eye, and a skin so fine and so susceptible, that the sun's rays seem to penetrate it, in the form of those lentiginous spots, commonly called freckles.

These objections do not apply with equal force to those cases, where the object is merely to disguise partial discoloration of the hair; but, at the same time, it is not always easy to produce the exact shade of the original color, and when the hair begins to grow, the partial discoloration reappears and discloses the dye.

Finally, when this change is widely diffused over the head, and requires an extensive application of the dye, in the case of an old man for example,

the hair will then present a lustre, brilliancy and tint, in melancholy contradistinction with the faded and wrinkled skin, dull leaden eye, furrowed cheek, and broken and tottering gait.

Besides, experience has sufficiently established the fact, that the ingredients of which the dyes are composed, are far from being free from danger or inconvenience. The texture of the hair itself is deteriorated by them.

Composed as they are generally, of very active remedies, they arrest the natural secretion of the hair and favor the production of baldness. They also frequently produce inflammation of the scalp. We have met with many cases, in which ladies who had been in the habit of using those dyes, were reduced to the sad alternative of maintaining a disagreeable and painful eruption, the result of the ingredients employed, or to abandon the disguise they were intended to produce.

From the earliest time the following substances have been employed to blacken the hair:—The oil of cade, gall nuts, the lye of vine branches, preparations of lead; ravens' eggs have been extolled, probably because the color of that bird is the most perfect black; putrified swallows, colocynth, &c.

Preparations of silver are used in various forms; as, for example, a pomade composed of nitrate of silver, cream of tartar, ammoniac, and prepared lard.

This pomade is to be applied to the hair by the aid of the brush and comb. They are also used in the form of paste:—Nitrate of silver, proto-nitrate of mercury, and distilled water. Dissolve, strain, and wash the residue with sufficient water to make a paste.

A clear paste is made of this solution and a sufficient quantity of starch, which is then carefully applied to the hair in the evening. The head is covered with a cap of gummed taffeta during the night, and the following morning the paste is washed off, and the hair anointed with any simple ointment.

THE UNIQUE HAIR POWDER.

To 6 oz. lime, reduced to a powder by wetting it with water, add 2 oz. litharge, when it becomes dry, sift it through a fine cloth.

It is said to be the most effectual hair dye that has ever yet been discovered. But the application of it is not very agreeable, though simple enough:—Put a quantity of it in a saucer, pour boiling water upon it, and mix it up with a knife like thick mustard; divide the hair into thin layers, with a comb, and plaster the mixture thickly into the layers to the roots, and over the hair. When it is all completely covered, then lay over it a covering of damp blue, or brown paper; then bind over it, closely,

a handkerchief, then put a nightcap over all, and go to bed; in the morning, brush out the powder, wash thoroughly with soap and warm water, then dry, curl, oil, &c. Hair thus managed will be a permanent and beautiful black, which most people would prefer to either gray or red. We very much doubt, whether one person in a hundred, would be content to envelope the head in batter of this description, and then retire to rest. To rest! did we say? We envy not the slumbers enjoyed under these circumstances. We fancy that we can do something still better for those who are ashamed of their gray hairs. The hair dyes formerly used produced very objectionable tints. Latterly, several perfumers have been selling dyes, consisting of two liquids to be used in succession, at exceedingly high prices, which we shall hereafter mention.

ORFILA'S.

Take 3 parts of litharge and 2 of quick-lime, both in fine powder, and mix them carefully. When used, a portion of the powder is mixed with hot water or milk, and applied to the hair, the part being afterwards enveloped in oil-skin, or a cabbage-leaf, for 4 or 5 hours.

Litharge 2 parts, slaked lime 1 part, chalk 2 parts, all finely powdered, and accurately mixed. When required for use, mix the powder with warm water,

and dip a brush in the mixture, and rub the hair well with it. After 2 hours, let the hair be washed.

Litharge 4½ oz., quicklime ¾ oz.; reduce to a fine powder, and pass it through a sieve. Keep it in a dry, close bottle. Wash the hair first with soap and water, then with tepid water; wipe it dry, and comb with a clean comb. Mix the dye in a saucer, with hot water, to the consistency of cream, and apply it to the hair, beginning at the roots. Place over it four folds of brown paper, saturated with hot water, and drained till cool; and over this a silk cap and a nightcap. Let it remain from 4 to 8 hours, according to the shade required. When removed, oil the hair, but do not wet it for 3 or 4 days. This constitutes the sum total of that gentleman's dyes.

CHEVALLIER'S.

Mix 5 dr. of fresh slacked lime with 1½ oz. of water, and strain through silk; put the milk of lime into a 4 oz. bottle. Dissolve 5 dr. of acetate of lead in sufficient water, and add enough slaked lime to saturate the acetic acid (a drachm, or rather more;) let it settle, pour off the liquor, wash the precipitate with water, and add it to the milk of lime.

DR. HANMANN'S.

Levigated litharge 11 oz., powdered quicklime 75 oz., hair powder 37 oz.; mix. When used, a portion

of the powder is mixed with warm water in a saucer, and applied to the hair with the fingers, taking care to cover the hair to the roots. Cover the whole with a sheet of cotton wadding moistened with water, and this with a folded cloth. Let it remain on for 3 hours; or better, for the night.

WARREN'S.

Sifted lime 16 oz., white lead 2 oz., litharge, in fine powder, 1 oz.; mix well together, and keep dry. To dye *black*, mix a little powder with water to the consistency of cream. To dye *brown*, use milk instead of water. Apply with a small sponge to every hair.

TWIGG'S HAIR COLORING.

Take 1 dr. lac sulphur, ½ dr. sugar lead, 4 oz. rose water. Mix carefully. Apply to the hair repeatedly, till it assumes the desired shade.

MRS. ALLEN'S.

To 16 oz. of rose-water diluted with an equal part of soft water, add ¼ of an ounce of sulphur and ¼ oz. of sugar of lead; let the compound stand 5 days before using.

MR. HEMSTREET'S.

To 8 oz. of 80 per cent. alcohol, add 2 oz. of castor oil, 1 dr. of sulphur, 1 dr. sugar of lead.

PROFESSOR WOOD'S.

To 8 oz. vinegar diluted with an equal part of soft water, add 2 dr. sulphur, 2 dr. sugar of lead.

ALPINE HAIR BALM.

To 16 oz. of soft water, add 8 oz. of alcohol and ½ oz. spirits of turpentine; put ¼ of an oz. of sulphur and ¼ oz. sugar of lead.

MRS. SULLIVAN'S PREPARATION.

To 1 pint of diluted rose-water, put ¼ of an oz. of sulphur, ¼ oz. of sugar of lead.

THE GLYCERINE PREPARATION.

This is a new preparation just introduced. New rum 1 quart, concentrated spirits of ammonia 15 drops, glycerine oil 1 oz., lac sulphur 5½ dr., sugar of lead 5½ dr.; put the liquor in a bottle; add the ammonia, then the other components; shake the compound occasionally for four or five days.

The last named compound in this catalogue of coloring preparations, is far superior to any of the sulphur washes which we have named. But we are taught that sugar of lead in any form, is unsafe to apply to the highly susceptible surface of the scalp, because of its liability to absorption. Its active properties are exceedingly subtle, and immediately penetrate the external skin and deposit their poisonous influence upon the sensitive skin be-

neath; the nerves, membranes, and even the arteries are sometimes deranged by this metallic salt.

Its presence within the skin is often manifested by a debilitation of the optic nerve, which greatly impairs the sight. The acuteness of the sense of hearing also at times becomes greatly impaired, and we have known a complete prostration of the nervous system to follow the application of this popular, but dangerous poison. Therefore, we advise all who are using a compound containing this poisonous ingredient, immediately to abstain therefrom, unless it is prepared, or prescribed by a regular practicing physician. It would be better to wear the hair through life as white as the driven snow, than to be deprived for one month of the pleasure conferred by the organs of sight, or hearing.

INSTANTANEOUS LIQUID HAIR DYES.

These compounds invariably have a basis of nitrate of silver, accompanied with acidulated mordants, or settings, and many of them have become exceedingly popular with all classes of society, whether youthful or antiquated. Among the most celebrated are Batchelor's, Christodora's, Phalon's, Bogles', Rothe's, Harrison's, and Perry's, all being manufactured from similar ingredients, only differing in proportion. We propose to give the formula of them all, and shall commence with what is said to be.

BATCHELOR'S.

No. 1. To 1 oz. of gallic acid dissolved in 8 oz. of alcohol, add ½ gallon of soft water.

No. 2. To 1 oz. of nitrate of silver dissolved in 1 oz. of concentrated aqua ammonia, and 3 oz. of soft water, add 1 oz. of gum arabic, and 4 oz. of soft water.

CHISTADORO'S.

No. 1. To ¼ oz. of gallic acid dissolved in 8 oz. of alcohol, add ½ gallon soft water.

No. 2. To 1 oz. of crystallized nitrate of silver dissolved in 1 oz. concentrated aqua ammonia and 2 oz. soft water, add 2 oz. gum arabic and 5 oz. soft water.

PHALON'S. [One Preparation.]

To 1 oz. of chrystallized nitrate of silver dissolved in 2 oz. of aqua ammonia, add 16 oz. soft water.

This is not an instantaneous dye, but after exposure to the light and air, a dark color is produced upon the surface to which it is applied.

PHALON'S INSTANTANEOUS.

No. 1. To 1½ oz. of gallic acid and ¼ of an oz. of tannin, dissolved in 8 oz. of alcohol, add ½ gallon of soft water.

No. 2. To 1 oz. crystallized nitrate of silver dissolved in 1 oz. concentrated aqua ammonia, add 1½ oz. gum arabic and 8 oz. of soft water.

HARRISON'S.

No. 1. To ½ oz. of gallic acid, 1 oz. of tannin dissolved in 10 oz. of alcohol, add 2 quarts of soft water.

No. 2. To 1 oz. of crystallized nitrate of silver dissolved in 2 oz. of concentrated aqua ammonia, add 12 oz. of soft water and 1½ oz. of gum arabic.

No. 3. 1 oz. hydro sulphate of potassa dissolved in ½ gallon of soft water. This last ingredient is intended to produce a deep black color, if the others should fail.

ROCHE'S INIMITABLE.

No. 1. To 2 oz. gallic acid dissolved in 12 oz. of alcohol, add three quarts of soft water.

No. 2. To 1 oz. of crystallized nitrate of silver dissolved in 2 oz. of concentrated aqua ammonia, add 1 oz. of gum arabic and 8 oz. of soft water.

We positively assert that every "liquid hair dye" which is instantaneous, has a silver basis; silver being the only metallic mineral which is yet known that will instantaneously produce a dark shade.

Perry's Dye is made as follows:

No. 1. To 1 oz. of gallic acid dissolved in 8 oz. of alcohol, add ½ gallon of soft water.

No. 2. To 1 oz. of crystallized nitrate of silver dissolved in 2 oz. of concentrated aqua ammonia, add 9 oz. of soft water.

The above comprise the principal Instantaneous Liquid Hair Dyes which are now before the public.

ATMOSPHERIC LIQUID HAIR DYES.

These are solutions of nitrate of silver; in applying them it must be remembered that they stain the *skin* as well as the hair. Hence there is more difficulty in applying than in the preceding; but they are considered to impart a finer color to the hair, with the disadvantage, however, of rendering it dry and crisp. The following are some of the most approved formulæ:

DR. CATTELL'S.

No. 1. Nitrate of silver 11 dr., nitric acid 1 dr., distilled water 1 pint, sap green 3 dr., gum Arabic 1 dr.; mix.

No. 2. Nitric acid 1 dr., nitrate of silver 10 dr., sap green 9 dr., mucilage 5 dr., distilled water 37½ fluid oz.

No. 3. Silver 2 dr., iron filings 4 dr., nitric acid

1 oz., distilled water 8 oz. Digest, and decant the clear solution. To be carefully applied with a close brush.

No. 4. Hydrosulphuret of ammonia 1 oz., liquor of potash 3 dr., distilled water 1 oz. Mix. Apply this with a tooth-brush for 15 or 20 minutes: then brush the hair over with the following: Nitrate of silver 1 dr., distilled water 2 oz., using a clean comb to separate the hair. [Pyro-gallic acid also stains the hair an indelible brown.]

These dyes must not be allowed to touch the skin; but only the hair, taking care that every hair receives the stain.

LA FOREST'S COSMETIC WASH FOR THE HAIR.

Red wine 1 lb., salt 1 dr., sulphate of iron 2 dr. Boil for a few minutes, add common verdigris 1 dr.; leave it on the fire 2 minutes, withdraw it, and add 2 dr. of powdered nut-gall. Rub the hair with the liquid; in a few minutes dry it with a warm cloth, and afterwards wash with water.

PHALON'S HAIR RESTORATIVE.

To 8 oz. of 90 per cent. alcohol, colored by a few drops of tincture of alkanet root, add 1 oz. of castor oil, and perfume with a compound of bergamot, narolie, verbena, and orange.

BOGLE'S HYPERION FLUID.

To 8 oz. of 90 or 95 per cent. alcohol, colored red with alkanet, add 1 oz. of castor oil, perfume with geranium and verbena.

LYONS' KATHAIRON.

To 8 oz. of 80 per cent. alcohol, colored yellow by a few drops of the extract of annotto, add 2 oz. of castor oil, and perfume with a little bergamot.

DELIGHT'S SPANISH LUSTRAL.

To 8 oz. of 80 per cent. alcohol, add 2 oz. of castor oil without any perfume whatever.

WHITE'S HAIR RESTORATIVE

Is made in the same manner, with the addition of a little perfume.

Now it will be perceived that the above preparations are very similar in their formula, because as we before stated, alcohol and castor oil form the principle components of all the lustrals and liquids which are offered to the public, as no other fixed oil will mix with alcohol. Therefore, no one need ever be deceived in the formation of these compounds.

POMATUMS AND POMADES FOR EMBELLISHING AND STRENGTHENING THE HAIR.

These are composed usually of animal fats, variously perfumed. The lard, veal fat, beef and mutton

suet, bears' fat, and beef marrow, employed for this purpose, require to be prepared with great care. The following is perhaps the best mode. Cut the raw fat into pieces, carefully removing the fleshy and bloody portions of membrane, &c., and beat it in a marble mortar; melt it in a well-tinned vessel placed in boiling water, and strain the melted fat through a hair-sieve without pressure (reserving the residue to be heated again and pressed for more fat, to be used for commoner purposes.) Keep the melted fat for some time gently warm, without disturbing it; remove any scum which may have arisen, and pour off the clear fat, taking care that none of the dregs or watery liquid pass with it. A mixture of these fats form the basis of many varieties of pomades. Sometimes a little white wax is added. A greater degree of whiteness is said to be given, by adding to the liquefied fat a few grains of citric acid. The same end is promoted by assiduously beating the pomade while cooling, with a wooden spatula.

To perfume pomatums, various essential oils, &c., are added; but the finer sorts are perfumed by infusing fresh flowers in the melted fats for some hours, and straining; or, in other cases, the simple pomade is thinly spread on plates of glass set in frames, and the fresh flower stuck in the scored surface of the fat; changing the flowers daily till the pomatum

is sufficiently perfumed. As these compounds can seldom be prepared to advantage by the retailer, a few varieties only require to be noticed here.

COMMON POMATUM.

Mutton suet (prepared as above) 1 lb., prepared lard 3 lbs.; which melt in a water-bath, pour it into an earthen basin, and beat it assiduously with a wooden spatula. When sufficiently cool, add 2 oz. essence of bergamot, or of lemon, and continue the stirring till nearly cold.

ROSE.

Prepared lard 16 oz., prepared suet 2 oz.; melt with a gentle heat, and add 2 oz. of rose-water, and 6 drops of otto of roses. Beat them well together, and pour it into pots before it is too cold. For making jessamine, violet, and orange pomade, put the same quantity of water, and 1 dr. of the essence.

MARROW.

Beef marrow and beef suet, colored with a little annotto, may be employed for this and other yellow pomatums.

POMADE.

Oil of sweet almonds a pint, spermaceti 1½ oz.; purified lard 2 oz.; melt with a gentle heat; when nearly cold add any agreeable scent, and pour it into pots or wide-mouthed bottles.

BEARS' GREASE. [ARTIFICIAL.]

Bears' grease is imitated by a mixture of prepared veal suet and beef marrow. It may be scented at pleasure; oil of lavender with a very little oil of thyme is sometimes used. The following are some of the compounds sold under this name:—

No. 1. Prepared suet 3 oz., lard 1 oz., olive oil 1 oz., oil of cloves 10 drops, compound tincture of benzoin 1 dr.; mix.

No. 2. Lard 1 lb., solution of carbonate of potash 2 oz.

No. 3. Olive oil 4 flasks, white wax 4 oz., spermaceti 2 oz.; scented with otto of roses and oil of bitter almonds.

BLACK POMATUM,

In sticks, for the eyebrows, whiskers, &c. Prepared lard melted with a third of its weight of wax in winter, or half in summer, and colored with levigated ivory black, and strained through any material which will permit the fine particles of ivory black to pass through. Stir it constantly, and when it begins to thicken pour it into paper moulds.

BROWN AND CHESTNUT

Is prepared in the same way, but colored with umber, &c.

EBONY POMATUM.

Melt 4 oz. of white wax with 12 oz. of any kind pomatum, and add 2 oz. of powdered ivory black. Proceed as above, and pour into pots.

POMMADE DE JEUNESSE.

Pomatum mixed with bismuth is said to turn the hair black.

GREEN BEARS' GREASE.

Bears' grease digested with fresh walnut leaves, and strained. This is repeated with more leaves till the pomade is sufficiently colored; it is then scented with oil of rosemary, thyme, and bergamot.

GERMAN POMADE.

Take 8 oz. of purified marrow, melt it in a glass or stone-ware vessel, and add 1½ oz. of fresh bay leaves, 1 oz. of orange leaves; 1 oz. of bitter almonds, ½ oz. nutmegs, ½ oz. of cloves, and 1 dr. of vanilla, all bruised; cover the vessel, and let the whole digest for 24 hours, with a gentle heat; strain while warm through linen, and stir it as it cools.

HARD, OR ROLL POMATUM.

No. 1. Suet 5 lbs., white wax 8 oz., spermaceti 2 oz., oil of lavender and essence of ambergris each ½ oz.

No. 2. Beef suet 16 oz., white or yellow wax 1 oz.. with 1 dr. of oil of lavender or bergamot.

No. 3. Lard melted with one-third or half its weight of white wax, and poured, when nearly set, into semi-cylindrical paper moulds. This is sold under the name of *cosmetique*. It is sometimes colored to match the hair.

COLORED.

The coloring matters employed are annotto, alkanet, marigold, carmine, indigo, cobalt blue, umber, ivory-black, &c.

CIRCASSIAN CREAM.

Two flasks of oil, 3 oz. of white wax, 2 oz. of spermaceti, ½ oz. of alkanet-root. Digest the oil with the alkanet till colored, strain, melt the wax and spermaceti with the oil, and when sufficiently cool add 2½ dr. of English oil of lavender, and ½ dr. of essence of ambergris.

CRYSTALLINE CREAM.

Oil of almonds 8 oz., spermaceti 1 oz.; melt together; when a little cooled add ½ oz. or less of essence of bergamot, or other perfume; put into wide-mouthed bottles, and let it stand till cold.

Camphorated Crystalline Cream may be made by using camphorated oil (Lin. Camphoræ) instead of oil of almonds.

CASTOR OIL POMADE.

Castor oil 4 oz., prepared lard 2 oz., white wax 6 dr., essence of bergamot 2 dr., oil of lavender 20 drops, eau de Cologne ½ dr.; stir till cold.

CRYSTALLINE CASTOR OIL POMADE.

Castor oil 16 oz., spermaceti 1¾ oz.; melt together, and when a little cool add 1 oz. of essence of bergamot, ½ dr. oil of verbena, ½ dr. oil of lavender; pour it into wide-mouthed bottles, and let it stand till cold.

FOX CREAM.

Marrow pomatum 2 oz., oil of almonds 2 oz.; melt, and add while cooling, with constant stirring, essence of jessamine or of bergamot 2 dr.

DUPUYTREN'S POMADE.

The recipe given by Bateman and Rennie for this celebrated preparation—viz.: Almond oil, lard, suet, and essential oils, is remarkable as entirely omitting the active ingredient. It is probable that the preparation first employed by M. Dupuytren was more simple in its form than what he subsequently adopted, but *cantharides* was always the essential constituent. The first formula we met with was—Tincture of cantharides (made according to the Paris Codex, 1 part of flies to 8 of proof spirit) lard 9 parts.

The following are said more nearly to represent the compound in its improved and more elegant form. M. Cap prescribes—Beef marrow 2 oz., spirituous extract of cantharides (made by evaporating the above tincture) 8 gr., rose oil 1 dr., essence of lemon 50 drops. M. Fontaine directs—Beef marrow 4 oz., calomel 2½ dr., extract of cantharides 18 dr., otto of roses 2 drops. But the following, by M. Recluz, is said to have been acknowledged by Dupuytren as the true formula: Beef marrow 6 oz., nervine balsam 2 oz., Peruvian balsam 2 oz., oil of almonds 1½ oz., extract of cantharides 16 gr.; melt the marrow and nervine balsam with the oil, strain, add the balsam of Peru, and lastly the extract, dissolved in a drachm of rectified spirit. M. Guibourt says that no better than the following can be used: Beef marrow 1 oz., nervine balsam 1 oz., rose oil 1 dr., extract of cantharides (dissolved in spirit) 6 gr. These pommades should be rubbed on the scalp once or twice a day for some weeks. If any soreness is prouced it should be less frequently applied.

POMMADE CONTRE L'ALOPECIE.

Fresh lemon-juice 1 dr., extract of bark (by cold water) 2 dr., marrow 2 oz., tincture of cantharides (as above) 1 dr., oil of cedrat 20 drops, oil of bergamot 10 drops; mix. First wash the head with

soap and water, with a little eau de Cologne, then rub it dry. Next morning rub in a small lump of pomade, and repeat it daily. In 4 or 5 weeks the cure of baldness is effected.

The above ointments and liquids require to be used for some weeks, in order to produce a decided effect, either in curing or preventing baldness. Those which contain cantharides in any form are the most active, and must be used with caution. They should be applied once or twice a day, according to the effect produced; but if the scalp become sore, their use must be omitted for a time, or longer intervals allowed, as the case may require. When employed to prevent the hair from falling off or becoming gray, they need not be applied so frequently as for baldness.

The basis of these oils is either almond oil, olive oil, or oil of ben; whichever is used should be perfectly fresh, and of the finest quality. The perfume is communicated in three ways: by infusing the flowers in the oil by a gentle heat; by placing layers of flowers alternately with folded cotton soaked in the oil, in proper frames, and pressing out the oil when sufficiently imbued with the odor of the flowers; or simply by adding essential oils, &c., to the fixed oil. An example or two of each method will be sufficient.

OIL OF ROSES, BY INFUSION.

Heat in a water-bath 1 lb. of olive oil, and add 1 lb. of fresh picked petals of Provence roses. Let these remain together in the water-bath for half an hour; then remove from the bath, and leave them together for 24 hours, stirring them twice during the time. Strain through a cloth, and express all the oil. To this oil add fresh roses, and proceed as before; repeating this for 5, 6, or 7 times, till the oil is sufficiently perfumed.

OIL OF JESSAMINE, PERFUMED WITH THE FLOWERS.

Fold pieces of white cotton cloth twice or four times; moisten them with fine olive oil, slightly pressing them, and place them in proper frames. Then place on the cloths a rather thick layer of fresh-gathered and dry jessamine flowers, carefully deprived of all green parts. In 24 hours carefully remove the flowers, and replace them by fresh ones, till the oil is sufficiently perfumed. The oil is then expressed. The same method is employed in preparing oils from other delicate flowers; as violet, lily of the valley, &c.

OIL OF ROSES, COMMON.

Fine olive or almond oil a pint, otto of roses 16 drops. If required red, color the oil with alkanet

root, and strain before adding the otto. For common sale, essence of bergamot or of lemon is often substituted, wholly or in part, for the more expensive otto.

MACASSAR OIL.

The oil made by the natives in the island is obtained by boiling the kernel of the fruit of a tree resembling the walnut, called in Malay, *badeau.* The oil is mixed with other ingredients, and has a smell approaching to that of creosote. But the Macassar oil sold in this country has probaby no relation to the above, except in name. The following is given by Gray :—Olive oil 1 lb., oil of origanum 1 dr. The following French compound is probably named Macassar oil rather to denote its properties than from any resemblance either to the product of Macassar, or to the oil sold under this name in England :—

HUILE DE MACASSAR, DE NAQUET.

Oil of bean 14 pints, nut oil 7 pints, spirit of wine 1 quart, essence of bergamot 3 oz., tincture of musk 3 oz , spirit of orange (*espirit de Portugal*) 2 oz., otto of roses 2 dr., alkanet to color it. Digest them together with a gentle heat for an hour, and shake frequently for a week.

OIL OF BERGAMOT &c.

To oil of ben, or finest almond or olive oil, add essential oil of bergamot, lemon, &c. For common purposes a drachm of the essential oil may be added to 16 oz. of oil. Some recipes, however, direct as much as 1½ oz. or 2 oz,

OIL OF AMBERGRIS AND MUSK.

Ambergris 2 dr., musk ½ dr.; grind them together in a mortar, then with a small quantity of oil; add more oil to make up a pint, and let them stand together for 12 days, stirring them occasionally. Then decant or filter. Add half a pint of oil to the residue for an oil of second quality.

COMMON OIL OF MUSK AND OIL OF BENZOIN,

May be obtained by mixing a strong tincture of these drugs with fine oil, agitating them frequently together, and, after remaining some hours at rest, decanting the clear oil.

HUILE COMOGENE.

Mix equal parts of oil and spirits of rosemary with a few drops of oil of nutmeg. To be used daily.

HUILE DE PHENIX.

Clarified beef marrow 4 oz., lard 2 oz., oil of mace 4 oz.; melt together, and strain through linen into a warm mortar; stir, and when it begins to cool add

the following solution, and stir constantly till it is quite cold :—Oil of cloves, lavender, mint, rosemary, sage, and thyme, of each ½ dr.; balsam of tolu 4 dr., camphor 1 dr., rectified spirit 1 oz. Put the spirit and balsam in a phial, and place it in warm water till the solution is complete, then add the camphor and essential oils.

HUILE PHILOCOME D'AUBRIL.

Triturate together, without heat, equal parts of cold-drawn nut oil, almond oil, and prepared beef marrow, adding any essential oil as a perfume.

DR. BOYLSTON'S COMPOUND.

To 8 oz. of soft water add 1 oz. of sweet oil and 1 dr. of concentrated aqua ammonia, which immediately combines the water with the oil, making a milky solution. This compound is sold for the sap of the grape-vine, but we think it partakes more of the *sap* than it does of the *vine*.

The celebrated Milk of Roses is made by the same formula.

DEPILATORIES FOR REMOVING SUPERFLUOUS HAIRS.

Any remedy is doubtful; many of those commonly used are dangerous. The safest plan is as follows :—The hairs should be perseveringly plucked up by the roots, and the skin, having been washed

twice a-day with warm soft water, without soap, should be treated with the following wash, commonly called Milk of Roses. Beat 4 oz. of sweet almonds in a mortar, and add ½ an oz. of white sugar during the process; reduce the whole to a paste by pounding; then add, in small quantities at a time, 8 oz. of rose water. The emulsion thus formed, should be strained through a fine cloth, and the residue again pounded, while the strained fluid should be bottled in a large stopped vial. To the pasty mass in the mortar add ½ an oz. of sugar, and 8 oz. of rose water, and strain again. This process must be repeated three times. To 32 oz. of fluid, add 20 dr. of the bichloride of mercury, dissolved in two ounces of alcohol, and shake the mixture for five minutes. The fluid should be applied with a towel, immediately after washing, and the skin gently rubbed with a dry cloth till *perfectly* dry. Wilson, in his work on *Healthy Skin*, writes as follows:—"Substances are sold by the perfumers called depilatories, which are represented as having the power of removing hair. But the hair is not destroyed by these means; the root and that part of the shaft implanted within the skin still remain, and are ready to shoot up with increased vigor as soon as the depilatory is withdrawn. The effect of the depilatory is the same, in this respect, as that of a razor, and the latter is, unquestionably, the better remedy. It must not, however,

be imagined that depilatories are negative remedies, and that, if they do no permanent good, they are, at least, harmless; that is not the fact, they are violent irritants, and require to be used with the utmost caution. After all, the safest depilatory is a pair of tweezers and patience.

All depilatories require caution, as they are apt to injure the skin; and those which contain sulphuret of arsenic (orpiment) may also act as poison by absorption. The powders require to be kept in close bottles or boxes, and no more should be mixed with liquid than is required to be used at once.

No. 1. Mix lime and water to a thick cream, and pass through the mixture 25 or 30 times its volume of sulphuretted hydrogen gas. When the gas escapes, stop the process. The pulpy mass is spread on paper, and applied for 12 or 15 minutes, and then washed off with a sponge and water. The only objection to this is its disgusting smell.

No. 2. Quicklime 4 oz., orris powder 1½ oz.; mix. Applied as No. 4.

RAYER'S.

No. 3. Quicklime 1 oz., carbonate of potash 2 oz., charcoal powder 1 dr. Mix, and keep in a well-stopped bottle. The last two formulæ are intended to obviate the danger attending the use of arsenical compounds.

No. 4. Quicklime 12 oz., orpiment 1 dr., plain or scented hair powder 10 oz.; form it into a paste, at the time of using, with a little water; apply it to the parts, and wash it off when dry.

No. 5. Quicklime 12 parts, hair powder 10 parts, powdered palm soap 4 parts, orpiment 1 part. As the last.

No. 6. Turkish Rusma. Quicklime 8 parts, orpiment 1 part; mixed into a paste, at the time of using, with white of egg and soap lees. This is more active than the preceding.

COOLEY'S.

Quicklime 1 oz., nitre ¼ oz., orpiment 3 dr., sulphur 1 dr., soap lees 4 oz. Mix, and evaporate to a proper consistence.

CHINESE.

Quicklime 16 oz., pearlash 2 oz., liver of sulphur 2 oz. Reduce to a fine powder, and keep it in a close bottle. Use it as No. 4.

Mr. Redwood recommends a strong solution of sulphuret of barium, with sufficient powdered starch to form a paste: to be left on for a few minutes, then scraped off with the back of a knife.

TO RESTORE HAIR WHEN REMOVED BY ILL HEALTH OR AGE.

Onions rubbed frequently on the part requiring it. The stimulating powers of this vegetable are of ser-

vice in restoring the tone of the skin, and assisting the capillary vessels in sending forth new hair; but it is not infallible. Should it succeed, however, the growth of these new hairs may be assisted by the oil of myrtle-berries, the repute of which, perhaps, is greater than its real efficacy. These applications are cheap and harmless, even where they do no good; a character which cannot be said of the numerous quack remedies that meet the eye in every direction.

BALDNESS.

The decoction of boxwood, successful in cases of baldness, is thus made:—Take of the common box, which grows in garden borders, stems and leaves four large handfuls; boil in three pints of water, in a closely-covered vessel, for a quarter of an hour, and let it stand in a covered earthen-ware jar for ten hours or more; strain, and add an ounce and a half of Eau de Cologne, or lavender water, to make it keep. The head should be well washed with this solution every morning.

EYELASHES.

The mode adopted by the beauties of the East, to increase the length and strength of their eyelashes is simply to clip the split ends with a pair of scissors about once a month. Mothers perform the operation on their children, both male and female,

when they are mere infants, watching the opportunity whilst they sleep; the practice never fails to produce the desired effect. We recommend it to the attention of our fair readers, as a safe and innocent means of enhancing the charms which so many of them, no doubt, already possess.

Our object in communicating the method of preparing the numerous pretended remedies which we have so largely arranged, is to prevent, if possible, any further mistake by the public, concerning their composition.

Even if properly prepared, and when manufactured from excellent materials, and no doubt intended by some of their compounders to be of great service in promoting the growth of the hair, yet they are all unsuitable to be applied to the scalp. A chemical analyzation of them would disclose properties which are in direct opposition to the laws of health as connected with the draining process of the general system.

All fixed oils, excepting one, and all sebaceous substances, contain in their formation a large quantity of gum, or glutinous matter, and fixed oils are those from which the Hair Oils are made. Therefore, frequent applications of these preparations would tend to close, by their gummy properties, the perspiratory channels, thereby producing a suppressed secretion, the impurity of which, at any time, is suf-

ficient to produce a deranged state of any active function with which it may become connected.

If it should be considered that an application of oil is essential to enhance the beauty of the hair, we advise an immediate resort to sperm oil, because its components are perfectly free from gum of any kind, and it would not tend to retard the process of fluid evaporation from the system. Its entire freedom from gum, renders it suitable to be applied to any surface, where no deposit by evaporation is required.

But nature, in this case, as well as all others, has amply provided for supplying the necessities which the hair may require, by causing a small tube to be placed in the center of the strand, extending from one end to the other; and this tube is always, (unless the hair is unhealthy,) filled with a softening fluid which partakes of the composition of the strands, and if proper attention is paid to systematic brushing, this softening emollient is pressed out of the tube, and upon the bristles of the brush is conveyed upon the hair, causing it immediately to become soft, glossy and beautiful.

Therefore, we are strongly opposed to the application of oils to the hair in any form whatever, because they can be of no service at all, and in a large majority of cases their operation is manifestly injurious, not only to the general condition of the hair, but by causing the scalp to become the seat of

diseases of such a malignant type, that the perpetuity of the hair is at once, and in too many instances, forever destroyed.

In the description which we have given of the hair, and the variety of diseases attending its destruction, we have endeavored to be as explicit as our information of the subject would permit, avoiding the concealment of any principle of vital importance, in any manner connected with its perpetuity.

But our experience is daily adding new discoveries in connection with the capillary organization, and we doubt not but what perseverance will yet obtain for us a much higher degree of information relating to the prevention of a continued premature blanching, than any which we now possess.

There seems to be an unexplained principle of philosophy connected with this change, which requires considerable investigation; it often happens that when the cause which produced blanching has entirely disappeared, and the oxygen again has resumed its duties in the system, that in numerous instances the whitened condition of the hair remains impervious to all renovating influences. But we shall direct our attention to the intricacies of this phenomenon and trust that we may be rewarded by being capable of returning with the activity of the oxygen, the original color of the hair.

There are also other phases, connected with this subject, which we have been obliged to omit and which may to many seem unworthy of investigation, because their frequency upon the hair precludes the astonishment which otherwise would be induced by their presence. But we find some of them invested with a controling influence, sufficiently strong to change materially the condition of the hair, investing it with a shade which is not at all connected with it originally. But careful investigation of any supposed mystery, not unfrequently results in a complete development of its governing principles.

The method for treating the diseases of the hair, which we have presented in this treatise, may receive the disapprobation of those who have been engaged in practicing upon the public a system of unprecedented gullibility and deception; but *duty, irrespective of favor*, is our motto, and demanding that candor of examination to which all new developments, whether scientific or metaphysical are entitled, we unhesitatingly submit to the public our system of treatment, as founded on the truest principles of Medical Science.

We shall conclude this volume by presenting to our readers a description of the color and texture of the hair which covered the heads of the Chief Magistrates of this country, from President Washington down to President Buchanan—men whose names

are as familiar as "household words," but who in reality live only in history and the remembrance of the past.

We find that the hair of Washington was nearly a pure white, fine and smooth in its appearance.

That of John Adams was nearly the same in color, though perhaps a little coarser.

The hair of Jefferson was of a different character, being a mixture of white and auburn, or a sandy brown, and rather coarse. In his youth, Mr. Jefferson's hair was remarkable for its bright color.

The hair of Madison was coarse, and of a mixed white and dark.

The hair of Monroe was a handsome dark auburn, smooth and free from any admixture whatever. He was the only President, excepting Pierce, whose hair had undergone no change in color.

The hair of John Quincy Adams was peculiar, being coarse and yellowish gray in color.

The hair of General Jackson was almost a perfect white, but coarse in its character, as might be supposed by those who have examined the portraits of the old hero.

The hair of Van Buren is white and smooth in appearance.

The hair of General Harrison was a fine white, with a slight admixture of black.

The hair of John Tyler is a mixture of white and brown.

The hair of James K. Polk was almost a pure white.

The hair of General Taylor was white, with a slight admixture of brown.

The hair of Millard Fillmore, is, on the other hand, brown, with a slight admixture of white.

The hair of Franklin Pierce is a dark brown, of which he has a plentiful crop.

James Buchanan's is rather inclined to coarseness, perfectly straight, and about as white as that kind of hair usually becomes with one of his age.