

From the "Skin Health and Disease."  
**THE STRUCTURE OF THE SKIN.**

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The external envelope or natural covering of the human body, as well as that of most of the other members of the animal kingdom, presents to the eye a smooth and minute surface, and is so constructed as to be perfectly adapted to its function. To the unaided eye it appears but as an ordinary dry membrane, and though not wanting in beauty and variety in the different races and conditions of the human family, it unfortunately but rarely receives that due care and attention which are essentially necessary to our health and well-being. Who that has not investigated with the aid of a powerful microscope, the complexity of its structure, would imagine that in the small space of a single square inch of almost any part of the surface of our bodies there exist some thousands of channels which open externally, and which serve as outlets for certain effete and noxious matters, whose expulsion from the system is indispensable to the maintenance of health. Yet that such is the case, no one acquainted with the true physiology of health, or the functions of the skin in relation thereto, will pretend to deny.

It is described by Dr. Cuvier as consisting of three principal layers, or superficial one, called the cuticle, or epidermis; the middle one, called the corium, or dermis; and 3, the subcutaneous tissue. These are usually associated with some of the deeper structures, such as the adipose tissue, or fat, and the delicate network of cellular tissue.

The epidermis or cuticle, the most superficial layer of the skin, has been considered as a perfectly inorganic substance, as it is devoid of nerves, and its composition. To this is due the want of feeling which may be cut to a pain, a fact which is in one's experience: and blood-vessels, or their want of vitality is inferred from the absence of a pulsation.

The texture of the cuticle varies considerably in different parts of the body, as well as in different individuals, as evidenced by the soft hand of a lady and the sturdy grasp of a laborer. As a general rule, those parts least exposed to friction and contact with foreign substances, conversely, in the soles of the feet, and the palms of the hands, especially in the habit of manual labor. The epidermis possesses a considerable degree of transparency: larger veins are plainly seen, also the several hues it assumes in various diseases, as the jaundice.

The main function of the cuticle—it acts as an ever-ready shield to the delicate structures which it everywhere encloses. This shield is constituted of a cellular tissue which is perpetually renewed, and as it is constantly thrown off.

If examined by the aid of a microscope, the outer surface of the cuticle is found to be very considerably in the different parts of the body, being smooth, or nearly so, in some, and in others presenting an extraordinary arrangement of ridges and regular elevations. This peculiar contrivance is most manifest upon the points of the fingers and toes, and so in the former, the seat of sense of touch, where the ridges are arranged in a somewhat circular form. The cuticle is covered with an immense number of invisible pores, which are channels for the secretions hourly accumulating within the body, and under the true skin. These are the openings for the hair, and the charge of the secretions necessary for its growth and preservation.

The Rete Mucosum, or second skin, is that structure which is peculiar to the dark races, being comparatively absent in the fair and delicate complexion. The cells which are produced in a similar manner to those of the cuticle, but are not thrown off and reproduced with an equal rapidity.

The main use of the rete mucosum appears to be to serve as a barrier to the rays of the sun, preventing them from penetrating to the highly organized structures beneath it. Hence we find it most developed in those latitudes where the heat of the sun is most powerful. Persons of fair complexion, when they reside in hot climates, soon become darker than before, and that to an incredible degree.

The next portion of the skin, known as the Dermis, or True Skin, is by far the most important of the three layers; in fact, the Rete Mucosum and the Cuticle may be considered as merely appendages upon the surface of the True Skin. The structure of this is of the most highly complicated organization, and viewed under a well-defining microscope, presents a spectacle of marvellous beauty and interest. It is mainly composed of minute blood-vessels, in multitudinous ramifications, and the ultimate filaments and nerves. The element of this structure consists of cellular tissue, in which the vessels and nerves ramify, and which also give lodgment to the globules of the perspiration and fatty matter in various parts of the body. Within it are also the roots of the hair, with their

vessels and appendages. The most superficial portion of this wonderfully complicated structure varies in different parts of the body, being in some nearly if not quite smooth, in others raised in the form of conical sections; and in others, again, presenting circular ridges, as in the ends of the fingers.

The blood-vessels, abounding in infinite profusion in every part of the dermis, (a fact evidenced by the sudden blush to which the face and neck are liable in cases of sudden excitement,) must be considered as consisting of both arteries and veins—the terminations of the one, that is, and the commencement of the other. The arteries dividing into small branches, and multiplying their ramifications as they proceed towards the surface of the body, are the channels of the bright red blood in its passage from the heart to the very ultimate capillaries, which have been styled intermediate vessels, and may, perhaps, justly be so considered. These intermediate vessels, or capillaries, are at the same time in equal and similar connexion with the whole system of veins, which carry back the now exhausted and impure blood to the right ventricle, where it passes to the lungs for purification.

Before closing this brief review of the structure of the skin, it will not perhaps be considered out of place to make a few remarks relative to its colour. It has long been customary with writers upon this subject to consider the colour of the skin as referrible solely to circumstances of temperature, climate, solar heat, and various atmospheric causes and conditions. How far such causes as these may operate in inducing a change of bodily complexion upon individuals exposed to them, we have briefly noticed above, and it is not relevant to our present purpose to inquire further: the effects of the sun's rays upon the hues of the cuticle, when it is for a long period exposed to their action, are known to all, and have indeed been more or less experienced by most. Nor is the state of pallor and almost complete etiolation resulting from confinement in dark, ill-ventilated, and unwholesome localities unknown to the general observer. But the powers of light and darkness, of tropical heat and polar cold, can go no farther than this. They cannot, and never could, make a red man, to say nothing of a red race, black, nor a white man red or copper-colored. The difference of complexion is a fact independent of all such secondary agencies, and is a question of races, not of latitudes.

Were the theory which ascribes the conditions of colour to certain supposed harmonizing conditions of temperature, the true one, it can be supposed that confirmation of its truth would be wanting throughout the various populations of the world! Should we not see, as we approach the equator, the numerous nations growing darker and darker as they spread beneath the tropics, until they were seen black as Ethiopians beneath the fiery rays of a vertical sun—and black only there? Again, as we receded towards the pole, should we not find them losing color with every degree of latitude, till, in the northern regions, we beheld them white almost as their own eternal snows? Either such must be the case, or something very like it, or else the theory of solar heat and temperature is not the true theory of complexional colour.

But what are the actual facts, and how far do existing circumstances on our globe tally with or discountenance the theory in question? Let us see:—

In the whole length and breadth of North America, embracing every degree of latitude from the Arctic circle to the tropics, and upwards of fifty degrees of longitude, the whole of the aboriginal or native races, with a very few trifling exceptions, (exceptions that tell more against the theory of temperature than for it), are of one uniform copper-colored complexion. Pretty corroborations, this, of the theory of climate! Again: in the Brazil, the very hottest part of the southern continent of America, have existed for ages two oppositely-colored races, both indigenous, the one very dark, almost black, the other nearly white, both living in a state of barbarism, and both equally exposed to the influence of temperature and solar heat. Nay, in Peru, under the very line, are found white aborigines, living at the foot of the Andes, while, on the temperate table-land of the same mountain-range, live the proper Peruvian tribes, the darkest of the south American races!

If we go to the Polynesian Islands of the Pacific, we find two totally dissimilarly-colored races living under the same equal sky, the one not a shade darker than the average European tint, the other a perfect negro. In the Indian Archipelago we meet with the same equally marked distinction, existing in the Malay and Papuan races, indigenous in the same latitudes, exposed to precisely the same atmospheric agencies, and leading the same out-door, semi-barbarous life, yet differing as much in complexional hue as do the English and North American Indians; the Malay having a brown complexion and black hair—the Papuan being black as soot, with hair short, woolly, and frizzled!

In Africa, among the Negro races of the torrid regions, we find Arab races, who have resided among them for thousands of years, and are yet only brown. Add to these the Tawrick race, who have wandered for ages among the burning sand of the Great Desert, and yet still retain their fair complexion!

Travel where we will, if we carry the same impartial spirit of investigation along with us—through central Africa—across the vast plains of Western Tartary—through the dense hives of China—or further, among the lately-discovered antipodal regions—we shall find Nature in her broadest manifestations every where giving the lie to the theory of climate and temperature. There is no necessity in a place to

ransack the globe for further evidence. Enough has been said to show that this absurd though long-received theory is totally at variance with the actual facts of the case, and therefore unworthy of longer countenance.

#### ANECDOTE OF NELSON.

A correspondent of the London Times mentions the following anecdote:—The late Rear Admiral Anselm John Griffiths, with whom I was very intimate, related to me the following anecdote, which, as it relates to the darling naval hero of Britain, may be interesting to your readers:—The Admiral (at that time Captain Griffiths), when commanding a frigate, fell in with the Victory, having the lifeless body of Nelson on board, and another line of battle ship, steering for England. Captain Griffiths went on board the line of battle ship, whose captain presented him with a sheep. He then went on board the Victory. 'Well, Griffiths,' said Captain Hardy, 'how are you off for live stock?' and upon Captain Griffiths informing him that he had no fresh meat on board, he gave him a sheep belonging to Nelson's own private stock. The line of battle ship's sheep was killed directly on board the frigate, and, when that had been consumed, it was Nelson's sheep's turn to be slaughtered. Captain Griffiths's while pacing the quarter deck, observed the ship's butcher loitering about as if wishing to speak to him, though afraid to do so. 'Well my man,' said the captain, 'what do you want?' Upon this the man answered, 'we hope, sir, you will not kill Lord Nelson.' 'What do you mean?' said the captain, 'Nelson is already dead.' 'Why,' said the man, 'We hope you will not kill Nelson's sheep, which we call Lord Nelson.' 'Why, what shall I do for fresh meat,' said the captain, 'as the other sheep is already eaten?' 'Well, Sir,' said the man, 'the crew will be very much obliged if you will not kill the sheep.' 'Well, then, I will not have it killed,' said the captain. Upon this the man ran down to tell the crew, and immediately a general and universal cheer ascended the hatchways. The crew made a pet of the animal, and upon the frigate's arrival at Portsmouth, Captain Griffiths wrote to Mr. Henty, of Tarring, near Worthing, to offer him the sheep, with a proviso that he should preserve it alive. The loyal Mr. Henty sent a cart to fetch it from Portsmouth, and a crowd assembled to see the sheep land. The sheep lived for sixteen years upon Mr. Henty's farm, and the visitors of Worthing used to go to see the animal that once belonged to the immortal and illustrious Nelson.

#### THE VATICAN.

The Vatican, which crowns one of the seven hills of Rome, is an assemblage or group of buildings, covering a space of 1260 feet in length and 1000 feet in breadth. It is built upon the spot which was occupied by the gardens of Nero. It owes its origin to the bishops of Rome, who erected a humble residence on its site, in the early days of the sixth century. Pope Eugenius III. rebuilt it on a magnificent scale about the year 1150. A few years afterwards, Innocent II. gave it up as a residence to Peter II., King of Arragon. In 1305, Clement V., at the instigation of the King of France, removed the Papal see from Rome to Avignon, when the Vatican remained in a condition of obscurity and neglect for more than seventy years. But soon after the return of the pontifical court to Rome, an event which had been so earnestly prayed for by the pet Petrarch, which finally took place in 1370, the Vatican was put into a state of repair, again enlarged, and it was thenceforward considered as the regular palace and residence of the popes, who one after the other, added fresh buildings to it, and gradually enriched it with antiquities, statues, pictures, and books, until it became the richest repository in the world. Its library was commenced fourteen hundred years ago. It contains 40,000 manuscripts, among which are some by Pliny, St. Thomas, St. Charles, Borromeo, and many Hebrew, Syriac, Arabian and Armenian Bibles. The whole of the immense buildings composing the Vatican are filled with statues, found beneath the ruins of ancient Rome, with paintings by the great masters, and with curious medals and antiques of almost every description. When it is known that there has been exhumed more than 70,000 statues from the ruined temples and palaces, some idea may be formed of the riches of the Vatican.

From Baines's History of Liverpool.

#### CASTLE OF LIVERPOOL.

The position of the Castle of Liverpool had some advantages as a place of strength. It stood where St. George's Church now stands, and included the ground extending from St. George's Church on one side, to Preeson's row on the other. When it was built, the ground was on all sides, and sloped rapidly down to the river and the pool. The water thus approached it on three sides of the four, with little more than a bow shot, so that the fire from the castle commanded three fourths of the circuit, and rendered it untenable by a besieging force. The form of the castle was a square. Each corner of the building had a circular tower, and the side which faced up the present Castle-street was strengthened by a much stronger tower and gatehouse. The front of the castle facing in that direction was thirty-six yards in breadth. That facing down Lord-street, where the castle orchard and gardens were situated, was thirty-six yards in breadth. The front facing towards the pool, where the quay and landing place were situated, was thirty-seven yards in breadth; and that facing towards the present James-street

was thirty-five yards in breadth. A covered way ran down to the river on that side, through which supplies could be introduced into the castle. The castle was surrounded by a ditch, from twenty to thirty feet deep. With these defences it was as strong as most castles were at the time, and always afforded a place of refuge for the inhabitants of the town in turbulent times. The foundations of the castle still exist, and the outline of the ditch can be traced. The foundation of one of the circular towers was laid bare a few years since, and the old ditch was opened whilst digging the foundations of the North and South Wales Bank. Its depth was about twenty feet below the present level of the ground, and must have been much more before the brow of the hill was cut away. The castle itself was destroyed as a fortress, by order of Charles the Second, who did not like the spirit which the inhabitants of Liverpool had shown during the great civil war; and the ruins of the castle were swept away in the reign of George the First.

#### SENSATIONS OF THE DYING.

The pain of dying must be distinguished from the pain of the previous disease, for when life ebbs, sensibility declines. As death is the final extinction of corporal feeling, so numbness increases as death comes on. The prostration of disease, like healthful fatigue, engenders a growing stupor—a sensation of subduing itself into a coveted repose. The transition resembles what may be seen in those lofty mountains, whose sides exhibiting every climate in regular gradation, vegetation luxuriates at their base, and dwindles in the approach to the regions of snow, till its feeblest manifestation is repressed by the cold. The so-called agony can never be more formidable than when the brain is the last to go, and the mind preserves to the end a rational cognizance of the state of the body. Yet persons thus situated commonly attest that there are few things in life less painful than the close. 'If I had strength enough to hold a pen,' said William Hunter, 'I would write how easy and delightful it is to die.' 'If this be dying,' said the piece of Newton of Olney, 'it is a pleasant thing to die; the very expression,' adds her uncle, 'which another friend of mine made use of on her death bed a few years ago.' The same words have so often been uttered under similar circumstances, that we could fill pages of instances which are only varied by the name of the speaker. 'If this be dying,' said lady Glenorchy, 'it is the easiest thing imaginable.' 'I thought that dying had been more difficult,' said Louis XIV. 'I did not suppose it was so sweet to die,' said Francis Suarez, the Spanish theologian. An agreeable surprise was the prevailing sentiment with them all: they expected the stream to terminate in the dash of the current, and they found it was losing itself in the gentlest current.

From the Anglo Saxon.

#### CAUSE OF DRUNKENNESS.

Look at the population of our large manufacturing towns. In their infancy they are fed on laudanum and gin, and in their adolescence they are almost exclusively confined to a vitiated atmosphere. We speak now of that class who are sufficiently lucky to find a miserable employment in their youth, in that degrading and poisonous den, a modern factory; but who, when they come to years of maturity, not having received any physical, mental, moral, or spiritual training worth mentioning, and without any suitable places to which they can resort in their leisure hours, oppressed by bodily disease, or an uncultivated mind, with nothing around, about, or within them having a tendency to refine the feelings, elevate the taste, or minister to their amusement, it is no wonder they fly to the beer house to seek temporary enjoyment, excitement or forgetfulness, in the midst of pot companions with similar tastes and in similar circumstances to themselves.

From Griffith's Chemistry of the Season.

#### INTERESTING EXPERIMENT.

Two hundred pounds of earth were dried in an oven, and afterwards put into a large earthenware vessel; the earth was then moistened with rain water, and a willow tree, weighing five pounds was placed therein. During the space of five years, the earth was carefully watered with rain water, or pure water; the willow grew and flourished; and to prevent the earth being mixed with fresh earth, or dust blown into it by the winds, it was covered with a metal plate, perforated with a great number of small holes, suitable for the free admission of air only. After growing in the earth for five years, the willow tree was removed, and found to weigh one hundred and sixty nine pounds, and about three ounces; the leaves which fell from the tree every autumn were not included in this weight. The earth was then removed from the vessel, again dried in the oven, and afterwards weighed; it was discovered to have lost only about two ounces of its original weight; thus, one hundred and sixty four pounds of lignin or woody fibre, bark, roots, &c. were certainly produced—but from what source?

INFLUENCE OF NEWSPAPERS.—Small is the

sum that is required to patronize a newspaper, and simply rewarded is its patron, I care not how humble and unpretending the gazette which he takes. It is next to impossible to fill a sheet with printed matter without putting into it something that is worth the subscription price. Every parent whose son is away