

susceptibility to inflammation and other disorders. This is in some measure attributable to the mechanical laxity which follows the distention they have undergone; but it is also apparently augmented by an increased sensibility of the nerves, and a diminished tone of the vessels. To these acquired peculiarities of the uterus and its appendages we must doubtless look for the physical disposition of parts necessary to puerperal inflammation; for any cause of excitement, whether specific or not, operating on this condition of parts, might be allowed as sufficient to produce the disease.

Now disorders are said to fall most heavily upon those parts which have these acquired peculiarities; but perhaps it would be better to use more precise terms. Certainly they influence these parts the most, but, in the great majority of cases, they operate with equal force on the rest. In fact, that shock which other parts can sustain with impunity, here produces a great amount of mischief, just as any shock which a complicated piece of machinery may receive, is only evident in the more delicate parts of the mechanism. The whole, of course, feels the concussion; but that part which is the weakest alone shows any permanent indication of violence. The subject might be illustrated in various ways, if it were necessary, but it is sufficiently obvious on the smallest consideration.

In concluding these observations on the subject of constitutional peculiarity, I may just notice what are called the *temperaments* of the body, because I omitted to mention the subject in my former paper. I conceive the word temperament, in its customary application, does not differ essentially from the term constitution; but perhaps the former may be regarded as not merely expressing the physical condition of the body, but also as comprehending the influence of this condition on the functions of the body generally, and on the brain in particular. In this view, temperament includes the consideration both of the constitution of the body and the effects of such constitution. The term has long been in use, and is now commonly, though somewhat vaguely, employed. It seems to owe its origin to an ancient doctrine, it having formerly been supposed that the various elements of the body were mixed in different proportions, producing a kind of tempering according to the admixture. The temperaments usually enumerated are, —1st, the sanguine; 2nd, the phlegmatic; 3rd, the choleric; 4th, the melancholic; and 5th, the nervous; but with regard to the last, Dr. Prichard* remarks, that it is not sufficiently definite to deserve a place in the scale. The characteristics of the several temperaments are pretty generally known. The sanguine is denoted by the florid complexion, light hair, blue eyes, large bloodvessels, soft skin, and full and frequent pulse; the phlegmatic, by the light hair, grey eyes, pallid skin, small bloodvessels, slow pulse, deficient energy, and cold surface; the choleric, by the dark hair and eyes, with the swarthy and ruddy complexion. The melancholic temperament differs from the last, in the lank hair, slow pulse, and unhealthy hue of the complexion.

These various peculiarities of constitution certainly deserve a consideration; but it is to be regretted that the division is not more precise and scientific. Long ago, Sir Gilbert Blane remarked on the want of a good classification of temperaments, and I think the subject would well repay any one who would bestow on it the requisite attention. The common classification is indeed extremely difficult of application, nor is it always possible to say whether the case in point can be fairly expressed by any of the customary designations. It cannot be denied, however, that there are in reality a great many palpable varieties of constitution which we all recognise at once, and yet have no names to represent them. Were they to be fairly described and properly denominated, it would be of much assistance in the consideration of disease; though were too much nicety of discrimination attempted, I fear it would only still further perplex this interesting and important inquiry. With these remarks I shall, for the present, take my leave of the readers of *THE LANCET*.

In concluding these essays on general pathology, I have to regret many imperfections, and some errors, which have arisen in the condensation of the matter for the pages of *THE LANCET*; I have also to regret that arrangements have not permitted their publication in a more consecutive form. My object has been, as I stated at the commencement, "to insist on the importance of a philosophical analysis of morbid phenomena, with a view to a just estimation of the various elementary conditions of disease; and more especially to direct a proper attention to the laws of association by which these conditions are united, and to the modifications produced by their co-existence and complications."

* Vide Cyclopædia of Practical Medicine.

ON THE MISCHIEFS OF UNCLEANLINESS, AND THE PUBLIC IMPORTANCE OF ABLUTION.

By JOHN COVENTRY, Esq., Surgeon, King's Hatfield, Essex.

IN common, doubtless, with no small share of the readers of *THE LANCET*, I have frequently observed the very meagre contributions of medical men to the subject of hygiene, and regretted, that whilst every species of therapeutic enginery has been most diligently plied, the philosophy of health-preservation should have remained at so heavy a discount.

The ancient, venerated shrines of the "Dea Hygea," melancholically indeed contrast with the rampant Morrisonian lion crowning the New-road establishment, whose imposing externality so admirably conceals the ignoramus enclosed in his hide,—"Asinum latere sub leonis specie."

The application of the fasces to quackery's thrice-contemptible carcass I leave to other and abler lictors; my present purpose is to excite attention to a most important but neglected section of hygiene—ablution, and to elucidate the various evils of dirtiness as deduced from the structure and functions of the skin.

Professing no new discovery, nor the instruction of the practitioner, I have presumed (and on that presumption ground my claims for admission into your columns) that I am placing in a striking and useful light a subject of the utmost interest to the lay readers of *THE LANCET*,—a numerous and influential class, including, more especially, members of the clerical and scholastic professions, managers of unions, prisons, insane asylums, and the like. In other words, I throw myself more upon the exoteric than the esoteric sphere of your periodical, for I hold it a great detriment to the community at large, to ostracize topics relative to our sanatory condition as a people from the medical periodical press, or, at best, very grudgingly admit them. The principal hygienic agents are, diet, climate, exercise, sleep, mental regulation, and ablution.

In a state of unsophisticated nature, man's instinctual tendencies doubtless form his best hygienic guides; he eats when hungry, drinks when athirst, reposes when tired, shelters and defends himself by clothing against summer-heat and winter-cold, in common, to a great extent, with the lower animals, and all this in virtue of the most cogent instincts, his reason being little concerned in the matter.

How different with man in a high state of social economy and artificial existence, when his complicated physical and moral relations render a rational code of hygiene a desideratum of no slight value.

Of the above-named hygienic agents, one, be it observed, labours under many disadvantages; it partakes less of the instinctive character than its fellows, asserts its claims to observance in vocables less peremptory, and possesses less self-evident, sensible recommendations. The infringements of its laws are not followed by such immediate chastisement, still, though the dart so long shaken over the culprit's head delays its stroke, the blow when struck is not the less severe. Hunger, thirst, raiment, labour and rest successive,—the timely dews of sleep, the tired muscle and the heavy eyelid, assert their rights in far too urgent a tone for refusal. Not so with uncleanness, the mischiefs of whose long-continued, silent operation are only at length recognised in their final issue in some formidable disease.

The clearest perception will be obtained of the uses and advantages of ablution, from a concise glance at the elaborate construction and manifold offices of the skin, that much-abused member of the body corporate, a covering dearer to a man than even the tailor's,—says the poet,—alas, too often, how infinitely less attended to! and to which ablution, neglected ablution, forms as natural a food as sleep to the drooping eyelid, or diet to the craving stomach.

The basis of the human skin is gelatine; in the language of organic chemistry, composed of fibrine or animal flesh plus ammonia and oxygen, and familiarly recognised by the two insoluble compounds it forms with tannic acid and boiling water,—leather or tanno-gelatine and animal jelly, hydro-gelatine. Into this gelatine foundation—corium or true skin—shoot countless bundles of nerves, absorbents, and bloodvessels, constituting the papillary layer of the corium, *textus papillaris*.

Common sensation and the special sense, touch, are given by the nerves, whilst the vascular elements of the corium secrete the remaining proper cutaneous structures,—to wit, the colour-cells, *rete mucosum*, and superficial stratum of the skin, (epidermis, or cuticle.)

A fundamental organic distinction exists between the corium and the superincumbent cutaneous structures. The former is a

most exquisitely vitalized formation; the latter consist of the mere unorganizable products exuded from the corium.

The cuticle is, *quoad* our present subject, a structure of singular interest. Nerveless and unvascular, it possesses no inherent property of absorption and reposition; no capacity of accomplishing that ceaseless alternation of decay, removal, and regeneration, which characterizes every living substance. It is a perfectly extraneous exudation,—a *skin-skeleton*,—akin to the oyster or snail shell; or, equally low in the organic scale, it ranks under the category of hair, horns, nails, quills, feathers, and such like appurtenances of the higher animals.

The cuticle is exuded by the corium as soft, centrally-nucleated cellules, which coalesce into layers, the lowermost and last exuded constituting the pigment apparatus; and as the process of cell-formation constantly occurs from below, the upper tiers of vesicles become compressed by a *vis à tergo*, and, at the same time, their moisture continually evaporating from the surface, they at length desiccate: then, having no capability of spontaneous removal, they remain in the form of hard, horny scales, encasing the body, and obstructing its pores, unless removed by the timely use of the bath and flesh-brush.

There are certain morbid skin conditions, which admirably illustrate the true position of the epidermis in the organic series. Thus, a horn skin constitutes the singular disease, ichthyosis; a shell skin, the equally curious one, molluscum. In the well-known instance, the porcupine family,—casts of whose skins are amongst the trophies of the magnificent museum of Guy's Hospital,—the horny skin was not only acquired, but transmitted from parent to offspring.

The above-enumerated characteristics of the human epidermis render the question feasible as to how far uncleanness might have operated in the original causation of these and other remarkable skin affections.

The human hair and nails originate and grow on exactly the same plan as the cuticle; yet whilst few would commit the un-Chesterfieldian crime of allowing the hair to grow to eagle's feathers, or the nails to bird's claws, an unwashed skin is comparatively little thought of.

The cuticle is the immediate and actual seat of the skin-functions; how many and various conditions, then, has this structure, so elaborate in its simplicity, to realize! How distinct, yet consentaneous, are its diverse operations!

1st. The skin is an external lung, an aërating mechanism spread out over the body's entire surface. Both lungs and skin abstract oxygen from the atmosphere, which they replace by carbonic acid and watery vapour. A healthy cuticle, then, must be freely permeable by elastic fluids, (gases and vapours.)

2nd.—The cuticle is very profusely perforated by minute valvular orifices, openings of the sweat-ducts; the skin is the grand drainage-pipe of the body; and when, on indubitable authority, we learn, that computing 2500 square inches as the body's superficial contents, its linear amount of drainage-pipe is about twenty-eight miles—an hour's railway ride, forsooth! (Wilson)—we shall arrive at something like an appreciation of the importance of keeping this pipeage pervious.

Now, from the two just-named properties, the skin is manifestly complementary or vicarious in its functions to those two vital organs, the lungs and kidneys; therefore an obstructed skin throws the whole onus of elaboration upon these latter organs, which consequently become overworked and diseased.

3rd. This is not all. The skin is a decarbonizing organ; opening into the cuticle, in common with the hair follicles, are the orifices of the "fat glands," which secrete an oily matter (for the skin's lubrication) from the blood; if allowed to collect, this fatty matter checks the "transpirability" of the skin, by glazing it over with a sort of natural varnish, thus throwing the whole work of decarbonization upon the liver; its fat-cells become gorged, and thus arises that most grave malady, "fatty liver," good enough in a pasty, if there be, that is, any virtue in *pâté de foie gras*, but no trivial calamity to any unfortunate human possessor.

Carbon is retained, moreover, in the blood, depriving the sentient lining of the arteries and left heart of their proper stimulus; and carbon thus, with saline and other impure matters circulating through the brain, deranges that organ of organs. The connexion, then, between a clear head and a clear skin is closer than the unlearned might suppose.

4th. Many years back, Drs. Blackall and Osborne discovered that dirtiness was a great source of dropsy. To understand this, it must be recollected that in an impure obstructed skin are checked two of the skin's main functions—evaporation and exhalation.

A few words on each of these processes.

Exhalation and evaporation are operations common to plants and animals; in both, the former is a vital, the latter, a physical action. The vegetable exhaling organs are glands dispersed beneath the epidermis of the leaf, and open by pores upon the cuticle. In mode of formation, the closest similarity exists between the vegetable and the animal cuticle; both consist of indurated exuded cells, centrally nucleated, and similar physical causes similarly influence both vegetable and animal evaporation and exhalation.

The occurrence of evaporation, equally in dead as in living plants and animals, causing both to shrivel and desiccate, proves its purely physical nature.

Heat, drought, and motion, are the main promoters, both of evaporation and exhalation.

Liquid exhalation being constantly vapourizing on the surface of plants and animals, abstracting much heat, the free caloric of the body becomes latent in the vapourizing perspiration; and as elevation of temperature and increase of perspired liquid bear a direct ratio to each other, the human body can bear with impunity an incredible degree of heat. Thus, Sir Joseph Banks and Sir Charles Blagden made themselves comfortable in a room 52° Fahrenheit hotter than boiling water, and Chabert, the fire-king, remained unbaked in an oven heated to 600° Fahrenheit; one step more, and he might have cooled himself on a gridiron as in a freezing mixture!

In the pathology, too, or derangements of evaporation and exhalation, plants and animals strictly agree. My friend, Dr. Williams, (Swansea,) produced a state of blanching in the leaf by varnishing its surface, so as to obstruct the breathing or exhalent pores, (stomata,) and Dr. Fourcault, in the year 1844, dropsied various animals by varnishing their cuticles.

Now, perceiving that an unclean skin was a kind of natural varnish and cement to boot, composed of cuticular detritus, sebaceous secretion, adventitious dirt and impurities, and seconding experiment by observation, Dr. Fourcault traced many dropsical cases to this original. Séguin estimates the amount of skin-secretion at about seven grains per minute; Dr. G. Bird, at thirty ounces in twenty-four hours. At all events, it is a quantity which, refuse material as it is, cannot be retained in the system without serious injury.

5th. The skin—*à fortiori*, the cuticle—heats as well as cools the body. Breschet and Becquerel found, that on shaving off the hair of rabbits, and greasing the cuticle, the temperature quickly sunk.

6th. Lastly, in the wake of these significant facts in proof of the mischiefs of uncleanness, follow what may be termed the local effects of dirtiness—skin-diseases proper; a whole cohort of pimples, blotches, parasites, "evils and chimeras dire," upon which it is not now the intention to expatiate.

In quitting the subject of the cuticle, its prolongation over the hair may be noticed. Dr. Bidder was the first to point out this fact, since which, Mr. Erasmus Wilson has aptly compared the hair-stem to a microscopic tree-stem, both consisting of three concentric layers of different densities,—in the tree known as pith, wood, and bark,—in the hair, (as shown by the microscope on either a vertical or horizontal section,) composed of nucleated cells, concentrically arranged, and also differing in density and compactness; the similitude to the tree-stem being indicated, however, by a soft central layer, the pith; a middle fibrous layer, the wood; an outer scaly layer, the bark. How unexceptionable the perfection of creation's works, alike evinced in the simplest and most complex! Contemplating the ineffable care and skill displayed in the construction of a hair or a straw, we cease to wonder at the extension of a superintending Providence to the meanest created object, and that even the very hairs of our head are all numbered!

With respect to the hair, dirtiness has its share in the production of disease. Thus, the extraordinary disease, *plica polonica*, is scarcely known, excepting amongst the unkempt serfs of the unfortunate country whose name it bears.

Having traced so large an amount of disease and misery to uncleanness, how deeply must we regret that London is still the "great unwashed," as tightly packed as the hides in a tannery. From year's end to year's end, the skins of the metropolis, "glazed and varnished," reek in their accumulated sordes, to the sad detriment of comfort, comeliness, health, and longevity. One would almost fear that, *more majorum*, the Knighthood of the Bath were the sole distinction between patrician and plebeian. Cheap baths for mechanics and artisans do exist, it is true; but alas! for their purity. They usually appear as if they had passed through an Augean stable, or ever they lave the soiled surface of the begrimed working man. How detrimental to our citizens to know, that

throughout all Scotland, from Maidenkirk to John o' Groat's, and in every considerable continental city, baths of the requisite purity and cheapness are within reach of the labouring classes. St. Louis, too, that magnificent hospital, daily proffers a gratuitous bath to the labouring public of Paris. The enormous funds of our metropolitan hospitals, and the well-known liberality of their governors, cause us to hint that, in the delay of parliamentary interference on the subject, they might follow so good an example. It is gratifying to ascertain that several eminent distillers and vinegar-makers in and about London,—Messrs. Beaufoy, for example,—have caused the warm water of their immense refrigeratories to be distributed, gratis, to the poor. In conclusion, should a Council of Health be established, as contemplated by Sir James Graham, may we hope that every facility may be afforded for public bathing; that cleanliness may no longer be viewed as a luxury accessible only to the wealthy, but that, before the ensuing parliamentary session, the pores, as well as the ports, of our mother country may be rid of their imposts, and unreservedly thrown open.

April, 1846.

REVIEWS.

The Veterinary Record and Transactions of the Veterinary Medical Association. April, 1846.

THE *Veterinary Record* continues to be conducted with considerable spirit and ability, and the number before us contains many instructive cases and several excellent essays. Among the former, we may note a case of caries of a tooth, giving rise to symptoms resembling glanders; tetanus following castration; influenza; intussusception, with rupture of the cæcum; hæmorrhagic tumour in the colon; abscess of the brain; softening of the brain; ruptured spleen; hernia, &c. And of the latter, an essay on the purging croton, by Mr. Morton, one of the editors, and an essay, by Mr. Mayhew, on the distribution and use of tendinous structure as connected with muscular structure. We congratulate the editors on the result of their efforts, and trust that the important object which they have set before them—namely, that of elevating the character of the profession of which they are members—will prompt them to continue their exertions.

Mr. Mayhew, in the paper last referred to, gives the following ingenious explanation of the nature of the powers engaged in the maintenance of the integrity of the shoulder-joint:—

“If the fore extremity be allowed to undergo decomposition up to that stage when the muscular fibre easily ruptures, it will nevertheless be found that the integrity of the shoulder-joint is but slightly injured. It will be found easier to break the bones in the attempt than to tear the scapula from the humerus. Why is this? The capsular ligament is not so tense as to hold the bones closely together, nor so constricted as to offer very considerable resistance, while the muscular fibre gives way beneath the fingers. The scalpel will solve the mystery. The muscles of the shoulder are intersected by tendons, which, though expanded within the fleshy substance, can be distinctly traced from the scapula to the humerus in a direct and unbroken line. These tendons passing from bone to bone are the ligaments of the shoulder-joint. They bind the scapula and humerus together; they give security to the articulation; they admit of motion and they limit it. While distributed as intersecting membranes through the bodies of the muscles, they render traction upon the fleshy fibre impossible, yet, by their pliability, are capable of being acted upon when the inherent contractility is excited.

“Wherever muscles appear exposed to tension, there are they found intersected by membranous layers of white fibrous tissue, and the reason is obvious; where the chance of tension is slight, the fleshy fibre is sufficiently protected by its sarcolemma or myolemma, and by its vaginal investment or fascia, both of which I am inclined to regard as not only bracing the contractile fibre and preventing its displacement, but as also resisting any force calculated to excite its vital reaction.”—p. 193.

Mr. Morton adduces several instances in proof of a poisonous effect being produced in the horse by means of croton.

We have already stated that this work continues to be conducted with spirit and ability.

BRITISH AND AMERICAN MEDICAL JOURNALS.

Dr. CUNNINGHAM, in a letter to Professor Dunglison, narrates the following

CASE OF TWINS, IN WHICH ONE CHILD WAS BLACK, AND THE OTHER WHITE.

The writer says, “Since my return from Philadelphia last spring, an occurrence of extreme novelty and interest has fallen under my notice, which may be useful to the profession in a physiological point of view. A negro woman, owned by a planter in this neighbourhood, aged about forty-five, after having given birth to thirteen children during her life, none of which were twins, was, during the last spring, safely delivered of two at one birth, one being black, and the other white. I saw them when they were a few weeks old, and the contrast in colour, hair, &c., was indeed striking, so much so, that four-fifths of those who examined them were of opinion that the negro was not the mother of both, that some deception was being played; but the mother persisted, and still declares them to be her own. That a black woman may give birth, at one time, to a black child and a mulatto, although extremely rare, I believe; but a case like the present is a phenomenon as inexplicable as it is interesting.”

The editor of the *Medical Examiner* thinks it probable, that there is some mistake in the account of the above case, and that the child said to be white is either an Albino or a mulatto.

THE SALE OF GORGED LEECHES.

A pamphlet lately published by M. Chevalier, Professor of the School of Pharmacy, in Paris, contains an account of a fraud which has recently been practised by leech-merchants. The ponds which formerly furnished France with leeches have been for some time exhausted by the cupidity of the collectors, who sold the whole stock, young and old, and thus left no chance of reproduction. France has, for the last eighteen years, been supplied from Egypt, Turkey, Wallachia, Hungary, and Prussia. Between 1827 and 1844, no less than 500,000,000 leeches were imported into France, and the price has increased from fifteen cents. to forty cents. each. Wholesale dealers buy and sell them by the weight, and in order to increase their profit, gorge them with the blood of sheep and other animals, thus making 1000 small leeches, weight two pounds and a half, value seventy-five francs, equivalent, by the addition of two pounds of blood, to four pounds and a half, and obtaining for them 180 or 200 francs. Several members of the Academy of Medicine have investigated the subject, and confirm M. Chevalier's statement, deprecating the fraud, and warning the public against such an imposition, alike injurious to commerce and to health.—*Pharmaceutical Journal*.

METHOD OF FIXING DRAWINGS.

The same Journal affords a hint, which may be useful to some of our anatomical draughtsmen, in fixing their sketches, for which it is necessary to

“Dissolve pale resin in spirit of wine; lay the pencil drawing on its face upon a sheet of clean paper, and brush the back of the drawing with the solution. This penetrates through the paper in a few minutes, and as the spirit evaporates, the resin is deposited as a varnish on the drawing. This has the advantage of not cockling the paper, which aqueous solutions will do, and as the brush only passes over the back of the drawing, none of the pencil-marks are in any degree removed. This process will not answer with drawings on card, or any other substance too thick to be penetrated by the solution. In this case, a weak solution of isinglass may be placed in a shallow dish, the drawing being passed through it so as to wet every part without touching it with a brush.” To this the editor adds, “We can recommend the above processes in the cases alluded to, and agree in thinking that the use of a brush is objectionable. For delicate drawings no method is better than that of preparing the paper previously with a coating of size, and inverting it over steam when the drawing is finished, as well as during the process when requisite.”