

We may observe that it is not our intention to give a complete list of purgatives, but merely to notice a few of the most remarkable or useful. We shall begin with the more drastic:—

Veratria, the alkaline principle which is supposed to give activity to colchicum and white and black hellebore, is a powerful, and it may even be said intractable and dangerous, hydragogue-purgative. In arthritic cases, attended with great plethora and distinct constitutional fever, with torpid and loaded bowels, scanty and high-coloured urine, and tumultuous action of the heart, *veratria* is indicated.

Veratria, one grain; powder of acacia, two scruples and a half; syrup, a sufficient quantity.

The dose may be carried to three pills daily. This is the formula recommended by Majendie. We have seen no good effect from it in paralysis, for which some recommend it.

Veratria may also be used in tincture and ointment.

Elaterium is somewhat analogous in its properties to *veratrum*. Its action, which is that of a hydragogue-purgative, is extremely violent. It is useful in the inflammatory anasarca of robust or young subjects; but its use is to be deprecated in chronic dropsies, and in the cases of persons feeble or aged. I have seen it powerfully check rheumatic fever, and wonderfully relieve rheumatic metastasis to the heart. I have also seen it rapidly reduce the effusion into the cavity of the large joints, consequent on acute articular rheumatism. Some degree of its febrifuge power no doubt depends on the extreme nausea which it usually induces.

From ten grains of the extract of *elaterium*, one grain of an alkaline principle called *elateria*, or *elaterin*, may be obtained. A tincture of this is more manageable than the extract.

Elaterium, one grain; spirits of wine, eight drachms; nitric acid, two minims.

This dose, I may remark, will, with many persons, act drastically. Where it does not operate sufficiently, it may be repeated, in a full or half dose, after three or four hours.

In suspected scirrhus of the pylorus, neither *veratrum* nor *elaterium* should be ordered, unless in very particular exigencies, and then with very particular precaution.

Croton oil is another of our drastic purgatives. In torpid states of the bowels, and when the *vena portæ* is in a state of congestion and distention, constituting what is called abdominal plethora, which some German writers consider a very important pathological condition, croton oil often brings sudden and marked relief. It also decidedly eases cerebral congestion and plethora, promptly dissipating the most intense and alarming headaches. Unless cautiously administered, however, it is a debilitating cathartic, and its use is not to be thought of in irritable states of the gastric or intestinal mucous membrane.

The half of the following combination will be found to be nearly corresponding in strength to a similar dose of castor oil:—

Castor oil, one minim; oil of almonds, two ounces.

We may here observe that oil of turpentine has almost all the advantages, without any of the disadvantages, of croton oil, while the former possesses some good properties which the latter wants. In sluggish and flatulent states of the bowels, in tumid states of the intestinal mucous membrane, with a congested and distended condition of the rectum, oil of turpentine often gives surprising relief. Its nauseating taste and smell; and its tendency, for some time after it is taken, to rise in eructations from the stomach, are its drawbacks. But this is compensated by the singularly warm and invigorating influence it has on the abdominal organs. In gouty, rheumatic, and paralytic cases, it is a most valuable means. It may be used, with great benefit, in injection as well as in draught.

Scammony and colocynth require, in this place, no particular remark. They are, in moderate doses, and properly combined, safe and useful purgatives.

Rhubarb combines, as is well known, purgative and astringent properties; the former, when the dose has been sufficient, acting first; the latter, afterwards. Hence its utility in old and debilitated subjects, who yet require artificial evacuations.

Jalap is a smart, but safe, though nauseating and griping hydragogue-purgative. Properly combined with other purgatives and with carminatives, it is valuable by its promptness and certainty. Nearly the same remarks will apply to senna. Calomel will be considered under the general head, “hydrargyrum;” and of castor oil it is only necessary to observe, that it is the mildest, safest, and most nauseating of all purgatives.

Bentinck-street, Manchester-square.

ON THE

NATURE OF CANCER, AND A SIMPLE MODE OF EXAMINING THE STRUCTURE OF TUMOURS.

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THE present current of opinions concerning cancerous affections, while it adds to and defines the views of our older surgeons, does not seem to me altogether satisfactory, or free from great objections. I am by no means insensible of the great merit of some recent expositions, but I feel a good deal distrustful lest new and minute observations should be allowed to weigh against old and coarser truths. It is indispensable that the two should in the end be made to concur, or I venture to lay the blame at the door of micrography and innovation. The little points which will be referred to here are intended (and it is hoped they are not ill-timed) to lead directly to a simple and fundamental view of the question in hand. I have elsewhere stated “that the general appearances of the organs of those who die sufficiently late of cancer demonstrate, not the absorption and circulation of one kind of (germinant) cancer, but the continual deterioration of one constitutional process—nutritions or growths (successively) less and less normal, and more and more prone to break up.”*

Now, if it can be shown that successive gradations of cancer are commonly, and in good variety, discoverable in one tumour, the observer may be said to hold the fair means of estimating the entire conclusion at his immediate command. Taking any primary fungoid mass removed by operation or post-mortem, (and not a few others,) I have to recommend somewhat urgently that it should be dissected with common care, so as to expose its whole surface, leaving, perhaps for landmarks, traces of its most important connexions. After this, it will be easy to slice the tumour rather finely, leaving every leaf (as of a book) attached to a common base. In this manner, a large amount of the mass may be exposed, and I have a confident hope that the inquirer will be speedily gratified by the facility afforded of tracing the order in which different parts have been evolved. A very little experience will establish him in the main inference, that the firmer substance, and more normal living tissues, have the older dates, while the feebler, but often more vascular, growths are the more recent and rapid. He is supposed to be capable of distinguishing what may be called juices, as well as what has died, and the changes which such matters gradually undergo. Here is the explanation of the appearances on the tubers at the surface of the liver; the margin is most raised because it is the most recent and active growth. An older firm mass is found beneath the periosteum, while a recent fungus has burst through at any one point, and the last growth of all perhaps has broken open through the skin—medullary bleeding and sloughing.

The gradations of serous cysts as a broad anatomical fact, established by Dr. Hodgkin in 1829, cannot be questioned. How many of these end with confirmed cancer? No doubt some capsules are formed on solid and growing contents, and it is evident that tension, with specific humoral dispositions to effuse different contents, and construct walls of variously anomalous tissue, and gradational solidity, are parts of the essential train of events. Is it not manifest that all the coarser or visible arrangements in fibrous humour of the uterus depend on distention? We see countless capsules developed over new inner growths: we cannot imagine a cyst of regular form, growth, and persistence, without an inner mould.

“Tension† has to do with the growth, excavation, repair, and wasting of bone—with its form, and that of each cancellus. To it I refer the ligamentous reunion of divided muscle, tendon, or ligament, as occasionally of bone. It explains the order of initiative ossifications throughout the foetal body, and that of the consolidation of the various epiphyses of the bones, (excepting the effects of breadth of union-surface, &c.) It seems equally to affect the tunics of bones, nerves, vessels, ducts, and organs; fasciæ, elastic tissues, and diseases. Varix is undue daily tension, and defective nightly repair. (Med. Gaz., April, 1844. Med. Chir. Rev., Oct. 1844.)

* This refers to what I am accustomed to teach. See, also, *Med. Gaz.*, Aug. 1845, “On the Frequency of Cancer in the two Sexes, and at different ages, as a point of Diagnosis and Practice;” and again, an analysis of my various papers lately published at the museum of Guy’s Hospital, with some distinct conclusions by an able friend, Mr. Charles King—namely, “that of females dying about forty-four, nearly one-half have some cancer; of males, one-eighth; late in life, still more. Species of cancer—different stages of constitution.”

† Vide “Tension, a fundamental or primary vital agent; physiological, &c.,” in an “analysis” of my paper, published at Guy’s Museum, as a synopsis of lectures and sections of specimens.

"The decline of tension, or even excessive tension, accounts for isolations of parts of bones. (Prov. Med. Journ., August, 1843.)"

"Calvarian Pits, and Dura Matral Ridges, and fossulae, produce Glandulae Pacchioni, with peculiar Tensions. Granulation always minus as to tension. (See Physiological and Pathological Tensions, &c., Med. Gaz., July 3, 1846.)"

The proneness of cancerous growths to die, or to ulcerate, seems, in either case, a constitutional and general trait of individual diathesis.

I am not concerned at present to show what is or is not cancer in its commencement. Simple cysts and growths, like natural tissue, may be very remote, in the order of time, from microscopic cancer; but very common hypertrophies which have not a local cause may be found so often the precursors of medullary cancer, and so much of a gradational series of intermediate evolutions be manifest, that a systematic definition of cancer dare not exclude them.

Sir B. Brodie ("Lectures on Pathology and Surgery") describes a case of cauliflower excrescence of the uterus, brawny, scirrhus mamma, and fungus haematodes of the liver, all concurrent. He relates, too, that a scirrhus tumour was removed from the abdominal paries of a lady. After this, a growth as of feebly organized fibrin sprung up, and was extirpated, but a third mass left to itself was found, post-mortem, quite brain-like.

Such, in point of fact, is the main course of cancer, as observation cannot, I think, fail to establish; and this truth, I hope, will ultimately have its due weight as to the doctrine of cancer germs, as well as the efficacy of local treatment.

Bedford-square, Jan. 1847.

PRACTICAL REMARKS ON DISEASES MANIFESTED IN THE HAIR,

WITH COLLATERAL OBSERVATIONS.

By THOMAS CATTELL, M.D., Braunston.

No. III.

TRICHOLOGY and trichopathy, perhaps, embrace many interesting points familiar to other minds, but which may not have suggested themselves as hitherto to mine. So far, however, as time has permitted me to reflect on the matter, I feel convinced that, viewed in all its aspects, it is much more comprehensive, and encircles a wider domain of experimental inquiry, than on a premature consideration might be supposed.

ANATOMICAL AND PHYSIOLOGICAL RELATIONS OF THE HAIR.

The hairs are filaments of various lengths, always thin in proportion to their length, about $\frac{1}{100}$ of an inch in diameter, more or less cylindrical, and usually smooth. Where this is not the case, the irregularity is apparently produced by some morbid cause. Their attached extremity is a little thicker and always soft; the other is slightly pointed. In the normal state they are seen only on the external cutaneous system, or the skin, covering all its parts, except the palms of the hands and the soles of the feet, where, by a wise provision of Nature, the epidermis is considerably thicker.

It appears that there are two general principles recognisable in the localization of the hair:—

1. That principally around the points of union, between the external and internal cutaneous systems, we find numerous hairs which assume a peculiar arrangement, as on the edges of the eyelids, in the nostrils, at the entrance of the ears, around the mouth, the anus, the vulva, and the mammae.

2. That the law of polarity exists between parts on which the hairs grow in abundance, as on the head and the pubes.

The part first formed in relation to the hair is the follicle—a complete ovum, which surrounds the bulb, and exists, completely formed, before the primitive hairs, or those afterwards developed. It is pierced by the hair, which lengthens outwardly, as the capsule of the tooth is by the tooth. Eichhorn and Lauth have described the epidermis to be continued into the hair follicle as far as the point where the hair is attached, and assert that on removing the epidermis from the cutis such sheaths are often visible. Eichhorn also states that the pores through which the hairs pass can be seen in the epidermis, separated from the skin by looking in an oblique direction. It is this fact which has, in all probability, given rise to the current notion, that the follicle is formed by an involution and evolution of the epidermis.

The hair commences at the bottom of the follicle by a swelling, called the bulb, or root, which is softer than the other portion of the hair, and is always distinguished by the

absence of colour. It is hollow, and contains within it the pulp of the hair, which is supposed to be a vascular prolongation of the part of the follicle alluded to. Indeed, the injections of Hunter exhibit distinct vessels ramifying in the pulp. The bulb appears club-shaped, and, as we have before observed, thicker than the rest of the hair. The pulp is said to become gradually lost in the medullary substance of the hair.

From these anatomical data we are led to conclude, that the substance of the hair is formed by the secretion of a modified horny matter on the surface of the conical vascular pulp—that the hair grows by the addition of new matter at its root, or point of attachment—and that it grows at no other part. The exterior parts of the hair, consequently, are first formed.

With respect to the destination of the nerves of the hairs, anatomists are not agreed; some have asserted that they enter the root, while others demur to the opinion. If the nervous filaments do not enter the roots of the hairs, what solution can be offered of the horrid sensation so often experienced in the scalp under the influence of extreme fear?

It was a recognition of the fact, and not the mere opinion, that led our immortal bard to say,—

"I could a tale unfold, whose lightest word
Would harrow up thy soul; freeze thy young blood;
Make thy two eyes, like stars, start from their spheres—
Thy knotted and combined locks to part,
And each particular hair to stand on end,
Like quills upon the fretful porcupine."

The recent dissections of the nerves of the uterus by Dr. Robert Lee sufficiently demonstrate to what an extraordinary degree of minuteness the ramifications of nerves may extend.

We revert, however, to other facts. When the hairs make their appearance, a portion of cuticle is disturbed, which is subsequently cast off in fine branny scales. The roots of the hairs, though convertible into the shaft, possess apparently a different composition.

During the continuance of the growth of the hair, the root is soft and pulpy, and nearly colourless, while the shaft is hard and horny, and of some determined colour.

Every hair is said to contain a tube, or is hollow interiorly, and admits the pulp for a greater or lesser distance.

As the pulp is intended for the nutrition of the hair, it is found to extend only to that portion of hair which is in a state of growth; the other portion, to which the pulp does not extend, is filled with a dry pith, or series of cells containing air. Duverney informs us, that when a hair is viewed transversely in a microscope, some of the bubbles of air are often perceived. He supposes that the hair is furnished by the pulp for the nutrition of the hair; there is, however, more reason to believe that it is derived from the atmosphere, in consequence of the vacuum produced by the degeneracy or retreat of the vascular pulp, in the same manner as the air of feathers is attracted from the external element.

The hair ordinarily appears round or cylindrical, but the microscope discovers triangular and square ones, which diversity of figure arises from that of the pores or follicles, to the shape of which the hairs always accommodate themselves. Sometimes their extremities have two or more divisions, especially when deprived of sufficient nutritive supply, or suffered to grow too long; so that what appears only a single hair to the naked eye seems comparatively a bush under the microscope.

Several observers describe two substances in the hair—a solid, uniform cortical, and an internal, more cellular substance.

It is stated that a single hair, viewed through the microscope by Mr. Durham, seemed to be one single transparent tube, with a pith made up of fibrous substances running in dark lines, in some hairs transversely, in others spirally.

Professor Weber, however, finds, that human hair consists of a perfectly homogeneous substance, in which no distinction of cortex and medulla can be perceived. Still, in the hair of the beard, these two substances are most evident and are constant.

We are informed in a certain encyclopædia, that "though the external surface of the body is the natural place for hairs, there are many well-attested instances of their being found also on the internal surface."

Amatus Lusitanus mentions a person who had hair upon his tongue; Pliny and Valerius Maximus, that the heart of Aristomenes, the Messenian, was hairy; Cæsar Rhodiginus and Plutarch, the same of Hermogenes and Leonidas.

These cases may be true so far as the ancients are concerned; but in reference to more modern times, the aspect is