

tient is a very tall man, six feet two inches in height, and of average muscular development.

After carefully examining the left hip, it was evident that the head of the femur was dislocated backwards. I had the man placed on his back on a strong bed, and then steadied by an assistant. I now seized the left leg just above the ankle, and flexed it on the thigh, and the thigh on the abdomen; the thigh was then well abducted with the left hand, the leg at the same time being well turned inwards. Immediately, a loud snap assured me that the reduction was effected, and replacing the limb on the couch, it was clear that the head of the femur had returned to the acetabulum. A long splint was, for a short time, applied to the limb, and the man was soon enabled to be discharged.

## Original Communications.

### ON RINGWORM AND VEGETABLE PARASITES.

By THOMAS HILLIER, M.D. Lond., Assistant-Physician to the Hospital for Sick Children.

[Read before the North London Medical Society.]

THE term *Ringworm*, like many other old medical terms especially those which become popularised, has been made to denote two or more distinct affections, and has thus become vague and inexact. It has been sometimes used to include all that writers have classed together under the head of *porrigo*; by which they mean any contagious disease of the scalp. In this sense, it includes *favus*, *tinea tonsurans*, *tinea decalvans*, or *alopecia areata*, and some forms of *impetigo*. In my opinion, the word had better be abandoned, or else confined to *tinea tonsurans* and *herpes circinatus*; in which, together with the contagious character, there is generally the peculiar circular arrangement from which the name has been derived. In this latter sense, it appears to be a very convenient term, and in this manner I am about to use it. I include under it what may be called ringworm of the scalp, and ringworm of the body, face, and limbs. The different names under which these have been described are most numerous, and at times perplexing. Thus, *tinea tonsurans*, *tinea tonsdens*, *tinea proper*, *porrigo furfurans*, *porrigo tonsoria*, *porrigo scutulata*, *porrigo decalvans* (Gibert), *herpes tonsurans* (Cazenave), *trichophyton tonsurans*, *trichonosis furfuracea*, *rhizo-phyto-alopecia*, and common or scurfy ringworm, are all names for the ringworm of the scalp; whilst for the ringworm of the body there are the names *herpes circinatus*, *trichophytie circinée*, and *erythema marginatum*.

The pathology of *tinea tonsurans* was involved in great obscurity till within the last few years, and is still a subject on which considerable differences of opinion exist. It was formerly universally supposed to be due to some constitutional malady, and probably allied to scrofula. In 1844, M. Gruby first described the fungus, which is now generally believed to be the determining cause of the disease. It was named *trichophyton tonsurans* in 1846, by M. Malmsten, a Swede. The peculiarity of the fungus is the great number, the small size and roundness of its sporules, which infiltrate the hairs, causing their fibres to split up, and destroying their structure, so that they become brittle, thickened, opaque, and darker in colour. It also grows in abundance on the epidermic cells, causing their desquamation. The lining of the hair follicles is also infiltrated with them, and thus the follicle becomes more prominent.

The fungus is said to commence its growth between the layers of the epidermis, and near the orifice of the

hair-follicle. Besides the spores, which are most numerous, there are seen at times a few tubes of mycelium, especially at the first outbreak of the disease. The hair-follicle is not permanently injured, so that baldness is not commonly left after the cure of the disease. Mr. Bazin describes a third stage, in which suppuration sets up, and pus being a parasiticide, the sporules are not then to be discovered. In this stage, it may be confounded, he says, with favus. I have never met with cases of this description. Sometimes, it is true, I have seen a few pustules produced by the application of strong irritants, but never any thick scab, such as would bear the most remote resemblance to favus. This third stage appears to me to be introduced mainly with the object of including sycosis under the same head.

In the present day, Mr. Erasmus Wilson still maintains that the disease does not depend on a fungus, but is a change in the nutrition of the hair, a granular degeneration of the hair, depending on constitutional causes, never proceeding from contagion. The microscopical characters and the history of the disease are so unmistakable that, to an unbiassed observer, the question appears to me not to admit of dispute.

With reference to contagion, the disease has been transmitted by inoculation, and it frequently spreads in schools and families. There is no doubt that, to propagate the disease, a favourable soil is required as well as the seeds; that it will not readily attack the scalps of adults; that it flourishes more on the heads of some children than of others. The first change is probably a disorder in the secretion of the hair-follicle. It appears to flourish more on the heads of tuberculous and scrofulous, than of healthy children; of twenty-five cases of which I took notes at St. Pancras Workhouse, ten were of the tuberculous diathesis, two decidedly scrofulous; and there was a decided preponderance of light-haired, clear-skinned children. They were rickety; about half of them were in good health. They were not suffering from the want of suitable food. It would seem that certain atmospheric conditions favour its occurrence. In St. Pancras Workhouse, there is frequently an almost entire absence of the disease for two or three years, and then, for several months, every second or third child in the building gets attacked by it, whilst all external conditions and the class of children remain the same.

Are the two forms of ringworm one and the same disease occurring in different parts? MM. Robin, Bazin and Hardy, recent French writers on the subject, answer in the affirmative, and include under the same head *syosis*, or *mentagra*. Dr. Anderson, who has recently published a book on this subject, is a disciple of Bazin. Mr. Hutchinson classes *tinea tonsurans* and *herpes circinatus* together as one disease.

True syosis is not a common disease in London. It attacks the beard and whiskers, and is attended with a pustular eruption, and a good deal of induration and swelling. The hairs are the seat of a fungus, stated by Bazin and others to be the trichophyton. It was originally described by Gruby as *microsporion mentagraphytes*. The induration, swelling, and pustulation, which accompany this form of the disease depend, says Bazin, only on the different degree of irritability of the part which is attacked.

Dr. Jenner maintains that *tinea tonsurans* and *herpes circinatus* are distinct diseases. There is no doubt that they bear a very close relation to each other, and that they not uncommonly occur on the same subject. Dr. Jenner allows that rings of *herpes circinatus* may exist on the forehead and nape, and, where they encroach on the hairy scalp, after a time become true *tinea* over that extent of their circumference. In order to have true *tinea* you must have the fungus, so that the spores will be seen on microscopic examination; this is the essence of the disease. The fungus is certainly to be seen in

Br Med J: first published as 10.1136/bmj.2.47.552 on 23 November 1861. Downloaded from http://www.bmj.com/ on 28 June 2022 by guest. Protected by copyright.

the epidermic scales of some cases of herpes circinatus. Is this merely an accident; or does this disease, too, essentially depend on the growth of the fungus? Dr. Jenner holds the former view, but considers that the secretions of the part of the skin affected with herpes circinatus form a very favourable nidus for the growth of the trichophyton fungus. He maintains that herpes circinatus frequently exists without the parasite; whilst tinea tonsurans cannot exist without it. This is a difficult point to decide.

The most striking fact in favour of Dr. Jenner's opinion appears to me to be that herpes circinatus is favourable to the growth of favus, or rather of *achorion Schönleini*, the fungus on which favus depends, as well as to the growth of trichophyton tonsurans. He gives an instance of favus under his care at the Children's Hospital, which remained in the ward for some time without spreading to other patients, until a child affected with herpes circinatus came into the ward. This affection spread to two or three other patients, and several of the patches of herpes on two of these children became the seat of true favus. It may be said, then, that these cases prove a similar relation between herpes circinatus and tinea favosa, to what exists between it and tinea tonsurans. Hebra's second plate, issued by the New Sydenham Society, exhibits a combination of the two diseases.

Out of twenty-seven cases in St. Pancras Infirmary, ten had ringworm of the face or body, as well as of the scalp; and, besides these, there were, in the same ward, two other cases, in which there were several rings of herpes circinatus, whilst the head escaped. Sometimes the herpes appeared first, and sometimes the tinea. In one case, a child, 15 months old, was extensively affected by the tinea, and the mother, who was nursing her, had two or three spots of herpes circinatus on her arm. I did not examine with the microscope scales from many of the patches of herpes; but in the cases which I did examine, I found sporules of the trichophyton disseminated through them.

Mr. Wilson, though not believing in contagion, mentions the circumstance that patches apparently of this disease (speaking of tinea tonsurans) occur on the arms or necks of adult females who have had the care of diseased children.

A few weeks since I met with a case in the workhouse, in which a girl, aged 6, had a patch of herpes circinatus on the smooth part of the forehead, at a time when no other case of ringworm was known to exist in the building. This was followed in about a fortnight by a round patch of tinea tonsurans on the vertex. When I saw her, the patch had attained the size of a half-crown piece; the hairs were broken off short; some of the fragments being white and powdery, others dark coloured and thickened. The scalp was rough, owing to branny scales and prominence of the hair-follicles, which gave an appearance resembling goose-skin. Under the microscope, the hairs exhibited the usual appearances, being darker and thicker, and containing a large number of minute rounded sporules, about the 1-7000th of an inch in diameter. The longitudinal fibres were split up, and some sporules were seen attached to the sides of the hairs.

That, out of twenty-seven cases of tinea, ten should be affected by herpes circinatus, can most easily be explained by supposing that the tinea and herpes depended on a common cause. The case where a mother nursing her child with tinea was attacked by herpes, and Mr. Wilson's statements, go towards proving the same point.

Dr. Tilbury Fox (*Lancet*, 1859) draws a distinction between the eruptive and the parasitic element in this and other allied diseases, asserting that the eruption is not a necessary part of the disease. In this I think he is partially right; and I believe that the amount of eruption in tinea tonsurans depends on the condition of

the skin on which it occurs. He goes, however, further than this, and maintains that the affection of the hair only can be considered the true parasitic disease. This point I do not think he establishes. The epidermis is quite as much attacked as the hair; and the opaque white fringe surrounding the orifice of the hair-follicles in tinea tonsurans is as characteristic of this disease as are the changes in the hairs themselves. The centrifugal development of the eruption is probably due to the extension of the mycelium amongst the epidermic scales. In pityriasis versicolor, the hairs are scarcely at all involved; the essence of that disease is the change in the epithelium. The fungus is still present in tinea favosa and tinea tonsurans when all the hairs are destroyed.

Dr. Fox goes further, and maintains that there is but one parasite common to all the tinea, under which he includes tinea favosa, tinea tonsurans, tinea sycosis, tinea tarsi, tinea decalvans, tinea versicolor or pityriasis, and plica polonica. The variations, he says, are in the superadded, rather than in the essential conditions of the disease. The parasitic growth varies but little, and that only in degree, not in kind. The superadded concomitant states, especially eruption and seat, fully account, he says, by their variation, for the differences in physical and minute appearances. He states that he found some large oval sporules, like the achorion, accompanied by bodies resembling sarcinae ventriculi between the epithelial lining and the hair, in a severe case of tinea tonsurans. On one occasion he observed an appearance resembling the torula sprouting from the bottom of the follicle.

A parasite was found by Arnsted of Christiana resembling the corn parasite *puccinia* in a case of favus. Mr. Hogg found the same in tinea tarsi.

Then Mr. Hutchinson's observations (*Med. Times and Gaz.*, Jan. 29th, 1859) appear to show that the trichophyton may produce chloasma or pityriasis versicolor. He has noticed chloasma in several women who were nursing children with tinea, and thinks he produced a patch of pityriasis on a man by placing some scales from tinea under wet lint for three days next to his skin. One or two of my own cases would appear to show that a kind of pityriasis may arise from it. They did not exhibit the peculiar tint of chloasma; nor were the scales so fine, and the skin was harsher. Mr. Hutchinson thinks that the different microscopic appearances of the *trichophyton tonsurans* and *microsporon furfur* fungi depend on their different situations. If this be so, how is it that the fungus found in herpes circinatus, which is on similar situations to those in which chloasma is found, has always the characters of *trichophyton*, and never of *microsporon*?

Dr. Fox thinks that the oïdium of thrush may cause chloasma, because a woman in the General Lying-in Hospital was affected with this complaint at a time when thrush prevailed.

Now all these facts do not, to my mind, prove the identity of the fungi, but merely corroborate what Dr. Fox himself says as to the distinction between the eruptive and the parasitic elements in these diseases. They seem to show that a soil which is favourable to the growth of one fungus may encourage the growth of another distinct fungus; and also that the eruption produced by different fungi may resemble each other. It appears probable that some sort of pityriasis may be caused not only by the *microsporon furfur*, but by *trichophyton*, and possibly by the oïdium *albicans*. It is very natural that any fungus growing in the epidermis should cause a desquamation of it. If the *trichophyton tonsurans* were essentially the same as *achorion Schönleini*, out of twenty-five cases, many of them of the most aggravated kind of tinea tonsurans, which I saw at St. Pancras, is it not probable that some would have gone on to the further stage of favus? The soil may

be presumed to have been favourable, and there was in some great neglect of cleanliness. Where pustules were produced, there was nothing like the characters of favus. The peculiar yellowness of the favus-crust, which is not pus, but mainly fungoid growth; the attacking and destroying the secreting structure of the hairs, as well as the size and shape of the spores,—clearly indicate the existence of a plant whose habits and qualities are quite distinct.

[To be continued.]

## Transactions of Branches.

### BATH AND BRISTOL BRANCH.

#### ON THE HYPODERMIC ACTION OF ATROPIA.

By JOHN KENT SPENDER, Esq., Surgeon to the Eastern Dispensary, Bath.

[Read October 3rd, 1861.]

It is now about three or four years since the hypodermic plan of administering medicines began to be pretty generally employed by the profession. It was recommended by high scientific and practical authority. Physiology sanctioned it by declaring that when a fluid material is introduced into the areolar tissue under the skin, it must necessarily all be absorbed without the intervention of any disturbing chemical or vital agency. Therapeutically, the method in question was announced as an ingenious novelty, ready of application, easy in performance, and so speedy in showing its remedial powers, as to distance all other ways of "exhibiting" drugs, just as locomotion by steam distances all other locomotive processes. Then the cases cited in illustration were nearly always unqualified cures; there was no drawback in the action of the medicine, and seldom anything to mar the permanence of its success. Surely, pharmacy and poly-pharmacy were coming to an end; and the physician would henceforth travel about with his injecting-needle and syringe just as he has been wont to do with his stethoscope, and combine the functions of doctor and nurse, by not only prescribing a dose for his patient, but by administering it too.

And yet, if I am to credit the report of some of my professional friends, scarcely anything but disappointment has resulted in their hands from this much-vaunted "hypodermic" method of giving drugs. It is alleged that the effect of any drug so given is extremely uncertain; that unexpected and unwelcome actions are sometimes developed; and that even when a definite and lasting curative agency is evolved, it is occasionally at the expense of severe physical suffering of some kind. It is further asserted, that in a large percentage of cases no such curative influence is observed, but the patient is placed in a worse state than before; since, in addition to his malady, he has had to encounter the unfavourable workings of a medicine which might have worked unmixt benefit if it had been administered in the ordinary way.

About a year and a half ago, I had the pleasure of reading a paper before this Branch on the hypodermic action of morphia. In my hands, morphia so given had procured immense and rapid mitigation of neuralgia in various forms; in some instances, however, the relief was very transient, and in nearly all at the expense of severe nausea and vomiting. These unfavourable accidents of morphia led me to try atropia, the alkaloid of belladonna, as likely to fulfil the sedative effects of the morphia in a less qualified manner. In some respects, the change has been advantageous. The removal of pain has been sometimes as speedy, and there has certainly been less disturbance of the abdominal viscera.

But the impairment of the functions of brain and of muscle has been much more considerable. Illusions of the senses, delusions of the imagination, disorder of the intellect, and torpor of the muscles, are the characteristic toxic properties of belladonna: they are still more characteristic of the inorganic essence of this vegetable; but when the alkaloid itself is administered in the hypodermic method, it requires only a very minute dose indeed to develop those phenomena in a very emphatic way. And they *must* be developed in a certain measure if we wish to gain any of the desired therapeutical benefits.

One grain of pure atropia may be mixed with exactly four drachms of distilled water, and kept in solution by two or three drops of dilute acetic acid. This will form a standard solution for hypodermic use. Five drops will be the usual dose for an adult female—at least, for the first time; and seven drops for the other sex under the same circumstances. This quantity may, in each case, be cautiously increased until three or four drops are added to the original quantity. If the dose be administered at bedtime, the patient will usually soon fall asleep; he will awake two or three times in the night, and feel thirsty and giddy (one individual, speaking, apparently, from a practical acquaintance with the toxic qualities of alcohol, said he felt "very tipsy"); there is not much perspiration, in this respect contrasting strongly with morphia; the pulse is rather slow and feeble; and the appetite is impaired for two or three days afterwards.

The most unpleasant physiological results of the atropia are the dryness of the fauces, and the sensation of enlargement of the tongue. The pupils are generally a little dilated. The intellectual hallucinations differ greatly; sometimes a person says he is flying about the air—sometimes he is tumbling off a precipice—and often there are strange and fantastic dreams. There has never been any approach to delirium from the moderate doses with which I have employed the medicine. But the alleviation of pain has been always very decided, and more lasting, though generally not so instantaneous, as after the use of morphia. I have tried both remedies at different times in the same person, and requested a comparison of their respective effects. One man, a dispensary patient, declared that the morphia seemed to "sweat the pain out of him," and to make him inexpressibly warm and comfortable for a time; but the pain gradually returned. The atropia caused him to feel very "dreamy and thirsty," but the relief was far more durable.

Is it necessary to inject the remedy over the seat of pain? Foreign and American writers testify in the affirmative; but most British practitioners seem to think it perfectly immaterial. My own limited experience does not justify me in forming a positive opinion, but I incline to the belief that, unless the pain is very superficial, the question is of no practical importance.

A mode of administering remedies which, according to the testimony of numbers of medical men, is often of most notable value, should not be allowed to fall into desuetude on account of its special disagreeable concomitants. Our efforts should be directed, I think, to the removal or diminution of these physiological unpleasantnesses; and to the elevation of the hypodermic method to a definite *status* among the resources of our art. Innumerable, indeed, are the new remedies and the new surgical appliances which find a register in Braithwaite's *Retrospect*, and in Ranking's *Abstract*; and most of them find their tomb there also. But if we sometimes feel overwhelmed by this crowd of new things, born often with puffs and shouts, and if we are unhappily disappointed when we come to take some of these things into our own hands, let us not throw them all upon what the *Saturday Review* calls our "shelves and dustheaps." Let us examine the most worthy with impartiality and care, and feel grateful to "Braithwaite"