the result that out of these 438 persons in only 13 was there any history of venereal disease. Of these 13 persons 4 had had gonorrhœa, and 9 had suffered from syphilis. I do not think there is any reason to doubt their statements on this point, for the natives, as a general rule, are not particularly anxious to conceal the fact of their having had venereal disease. Besides, I very frequently verified their statements by examining their genital organs to see if any scars or discolorations resulting from syphilitic sores existed. From these facts, then, are we justified in thinking that syphilis exercised any peculiar or widespread influence amongst these people in inducing degeneration of the lens? There is, in my opinion, no evidence to support such a view. The proportion of syphilised persons to the whole number operated on (9 in 438) is certainly not greater than we might expect amongst the general population. The question as to the influence which syphilis exerts in causing cataract in India is one to which I have given considerable attention, and my experience so far would lead me to believe that syphilis cannot be regarded as playing any specific or widespread influence in the production of cataract.

The impression that diabetes is a common cause of cataract, or rather that cataract occurs with unusual frequency amongst diabetic patients in European countries, seems to be very generally entertained. Being desirous of ascertaining what part this disease plays in India in accounting for the prevalence of cataract, I have been in the habit of making inquiries in every case of cataract coming under my observation as to the existence of symptoms of diabetes, and of examining diabetic patients with reference to the existence of cataract. I find that amongst the 438 patients who were the subjects of the 512 cataract operations there were only two who suffered from diabetes. In one of these cases I removed both the degenerated lenses, in the other only one. These three operations were successful. During my three years' Indian experience I only remember having met one other case in which cataract and diabetes were present in the same person, though the latter disease is by no means uncommon in this country. My experience of the two diseases is that their existence in the same person is rare. Whether in those cases in which they do occur together they stand to each other in the relation of cause and effect, or that their simultaneous occurrence is due to mere coincidence, is a matter in which I am unable to give a definite opinion. One thing, however, is obvious—viz., that diabetes will not account for the frequency with which cataract is found in India.

That the chief cause of cataract in India, as elsewhere, is that decay of the tissues which is coincident with declining age is, I think, a fact patent to anyone who has paid any attention to the matter. In a large number of the cataract patients that come under my observation I notice that the degenerated lens is but one of the many indications of general decay of the tissues present; and that that characteristic indication of fatty degeneration—the arcus senilis—is very frequently present. There can be no doubt either that the large extent to which natives suffer from dysentery, diarrhœa, malarial fevers, and other diseases which tend to exhaust the system, impoverish the blood, and induce premature old age, has the effect of accelerating degeneration of the lens-tissue at an earlier age than is natural.

In addition to the above considerations there are two important special causes at work in India, to which I think is attributable in large part the excessive frequency with which cataract is met with amongst the natives. These are:—

1. The low system of diet which, owing to their extreme poverty, the masses of the people are compelled to exist on during the greater portion of the year. It must be remembered that the peasantry of India is the poorest in the world, and that the vast majority of the people scarcely ever taste animal food. To the insufficient quantity and innutritious quality of the food is to be attributed in large part that premature old age which is so marked a feature of the people. With this premature decline of the system it is natural that one of the first organs to suffer should be such a one as the lens, which has no direct muscular supply of its own.

2. It seems to me, however, that the main cause of the early degeneration of the lens which is characteristic of the natives of India is to be found in vascular disturbances within the visual organ itself, produced by the extreme heat and glare of the sun. There are few Europeans in India who can, with impunity, expose their unprotected eyes for

any length of time to the excessive glare of the sun in the hot weather. It suggests itself, as a natural inference, that the poor native peasant, who has to work all day without any protection from the fierce rays of a scorching sun, should not escape unharmed. That this inference is supported by facts is obvious to anyone in the habit of making ophthalmoscopic examinations of the eyes of natives. My experience is that congestion of the deep-seated vessels of the eye, especially those of the choroid, is very common amongst the natives, and may exist without any apparent defect of vision. It frequently happens that an ophthalmoscopic examination of the deep-seated parts of the eyes of those affected with cataract is practicable, owing to the partial translucency of the lens. In such cases I have noticed that signs of congestion of the deep-seated vessels are not unfrequently present with cataract. It seems as if a chronic congestion of the choroid may exist for some time without producing any disturbance of vision, and may have the effect eventually of inducing opacity of the lens by interfering with those arrangements by which an efficient nutritive supply is ensured to that part whilst the visual functions of the deep parts of the eye remain unimpaired.

(To be continued.)

ON TINEA BARBÆ: THE SO-CALLED PARASITIC SYCOSIS.*

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WRITERS on cutaneous diseases are almost unanimous in the opinion that ringworm of the beard is an exceedingly rare affection in England and Germany; though more common in France. Three well-marked examples having come under my care during the last few months have led me to think that it is, perhaps, after all, not of so very infrequent occurrence in Scotland, though, from special circumstances, the recognition of its parasitic nature is not always easy. There may be some occult cause which at times influences its prevalence. Hebra, who up till 1874 had during thirty years seen three hundred cases of ordinary sycosis, met with his first instance of tinea barbæ in 1876. Neumann observed a case in 1874; and Lang has recorded another in the *Vierteljahresschrift für Dermatologie und Syphilis*, last year, as being under his care at Innsbruck. Duhring in Philadelphia, and Robinson in New York, have both encountered examples; the latter, indeed, appears to have seen a good many.

CASE 1.—My first case exhibits the disease in its mildest form, in which it bears the closest resemblance to ordinary ringworm of the head. Mr. A. B—, aged twenty-four, a gentleman with fair hair and fine fair whiskers and moustache, was sent to me on Sept. 13th, 1878, by Dr. Connal, of Peebles. A few weeks before he had had his chin shaved by a barber in that district, and soon after began to have small itchy and scaly spots on his chin, which spread in circles. He learned afterwards that there were in Peebles about that time some instances of ringworm of the head in children, and that some others, who were shaved by the same barber as he was, were subsequently affected similarly to himself. It is not quite clear, however, whether the barber ever shaved any of the children's heads who were so affected. When he came to me, there were here and there on the chin slightly erythematous spots, bearing numerous white branny scales, and occasional minute pustules perforated by hairs; but the scaling was the most prominent, the pustulation and erythema the least marked, feature. Acetic acid had been applied, and epilation ordered, and to some extent carried out. On removing one or two hairs—which could be done without much pain, though the hairs were not yet loosened in their follicles—and examining them, after moistening them with liquor potassæ, under the microscope, the mycelium of *Trychophyton tonsurans* was seen ramifying freely over the surface of the hairs, even down to the lowest part of the bulb. It had not yet penetrated into the shaft, so that the fibrous structure was

* Read before the Edinburgh Medico-Chirurgical Society, April 2nd, 1879.

normal, the parasite having only yet insinuated itself between the inner root-sheath and the hair. Little inflammatory action had so far been set up, though the fungus was plentifully present. Daily shaving was recommended, epilation of any loose and diseased or black hairs, and saturating the part several times a day with freshly prepared sulphurous acid.

On the 17th he wrote me that he thought the application had done some good, but that his chin had swollen a good deal and felt very painful when swabbed with the acid. The acid was therefore discontinued, the chin fomented with hot water and dressed with zinc ointment. I learned afterwards from Dr. Connal that Mr. A. B— got quite well and had no further trouble.

CASE 2.—W. M—, aged sixty, porter, presented himself at the Royal Dispensary on the 24th August, 1878. He stated that he had been quite well till three weeks ago, when he was shaved by a barber, who cut his chin and then put a piece of cotton-wool on the wounded part. He did not at first feel any inconvenience, but the part soon became, first itchy, then inflamed and painful. The chin was covered with hair of a grey colour and a quarter of an inch long. In its centre was a circular patch, the size of a florin, covered with a dirty scab. Underneath this the skin was boggy and inflamed, and bore numerous pustules the size of a pin's head and larger, each perforated by a hair. The hairs came out easily over the inflamed area, and on examination in many instances were found to contain spores and to be permeated by the mycelium of trichophyton tonsurans. The crusts were directed to be softened with oil, the part kept shaved, the loose hairs to be extracted, and Hebra's diachylon ointment, spread on strips of linen, to be kept closely applied. I visited the man several times at his lodgings, but he was careless in attending to treatment. He epilated the hairs, however, and the disease did not spread further. On Sept. 7th numerous hairs were examined, but no parasite could now be found. He soon after met with an accident, was admitted into the poor-house and lost sight of, but I learned that he got quite well and the hairs again grew healthily on the previously affected part. In his case also there was no trace of ringworm on any other part of his body, and none of his acquaintances had it, so far as could be ascertained.

CASE 3.—P. B—, aged twenty-four, a joiner, consulted me on March 4th, 1879. Six weeks ago he went to have his chin shaved by a barber, whose shop he frequented. Soon after he noticed a small, very itchy, scaly spot, under his chin, which spread, and at the same time became more hot and irritable. The barber assured him he had not shaved anyone with ringworm, so far as known to him at that time, and by his advice he allowed the beard to grow. There was no dog in the house where he lived. Shortly after another similar spot made its appearance, between the lower lip and chin. He is a healthy, rather florid man, with a thick beard of a light-reddish colour, side whiskers, and moustache. The hairs of the beard were a third of an inch long. He is not married; none of the persons where he lives have ringworm, nor is there any trace of tinea tonsurans on any other part of his body. When first seen there was a red, swollen, and dense protuberance, nearly the size of half a walnut under his chin. It had a somewhat shining surface, was thinly covered with hairs, and pus was seen to exude by the side of some of these. The hairs on this prominence came out with great ease, and without pain; some looked swollen and stunted, and with them came away a certain amount of a gummy material. A similar but smaller spot occupied the space between the lower lip and chin. The hairs examined were crowded with ramifying mycelium, but no great number of spores. He was directed to shave every day, to pull out all the loose hairs, and to apply an ointment composed of equal parts of vaseline and lead plaster, with ten grains of thymol added to each ounce. When the hairs had been removed from the chin by shaving, half a dozen small red scaly spots were disclosed, on which the hairs were as yet not so much loosened. On March 12th the itchiness was quite gone, and the patches had been so thoroughly epilated that no trace of hair was visible. There were some small superficial abscesses, and the lump under the chin was still hard and infiltrated. No fungus elements could now be found in any of a large number of hairs examined, yet the irritation had by no means subsided.

These three cases exhibit a gradually increasing severity, and illustrate the various phases of the disease. In the first

instance, though the affection had existed several weeks, the parasite had obtained but a slight hold, this being probably very much due to the position in life of the patient, and his careful habits as to cleanliness, but also, and perhaps more, to the fact that parasiticide remedies had been used and epilation practised, while the beard had been kept short by the razor. The cure, therefore, was easy, rapid, and complete. In the two other examples all the features which have been described in this form of tinea were markedly present. Both had also not shaved after the disease was first noticed, thus permitting the parasite to effect greater ravages. In none of the cases could any direct source of infection from tinea tonsurans be traced. In the first, it is true, cases of ringworm in children were reported to be prevalent at the same time in the neighbourhood, but in the other two no similar history was elicited. Neumann and others have observed the transmission of the disease from the lower animals, as dogs, horses, and cattle, to man, but here there was no such origin. In Lang's case, already referred to, the source was undoubtedly a house dog. We are shut up to the conclusion, then, that it was directly communicated in shaving, and I am inclined to believe that it is the lather, and not the razor, which conveys it. We know how little effect soap alone has in removing ringworm, even when the strongest and most alkaline is employed; the action is probably that of a solvent to the horny cells of the epidermis, thus a more rapid exfoliation of cuticle is induced, and the parasite is carried off with it *en masse*. The barber strops and wipes his razor, but the brush and soap dish receive little attention; the same brush, dipped, perhaps, for a moment into hot water, is used for all and sundry, and not improbably implants the spores. Once placed in favourable conditions for growth, two opinions are held as to how the fungus enters the hair. One is that, having penetrated between the inner root-sheath and the hair, the fungus descends into the follicle, and having reached the formative papillæ, pierces there the soft cells which compose the bulb of the hair, and is carried up into the shaft. The hair in growing carries the fungus with it, while the mycelium itself insinuates itself through the fibrous structure. Another opinion is that of Dr. Thin, that the fungus never descends deeper into the follicle than a short way below the point where the sebaceous gland opens into it, that it never enters the actively growing cells of the bulb, but finds its true nidus in effete epithelial structures.

With reference to this, I may say that I have found the mycelium in several instances on the surface of the hair bulb, but never within its structure; but before offering an explanation of what takes place, I must ask attention for a short time to a peculiarity in the structure and growth of hair. A hair may be said to consist of a bundle of fibres, enclosed within a layer of flat and partially overlapping cells. These cells are imbricated in a direction from below upwards; the lower sheathing cell projects a little over the one above, giving a slightly serrated appearance to a hair, so that it conveys the impression to the finger drawn along it of being smooth when moved from root to point, but less so when drawn in the opposite direction. This arrangement serves two important offices in the growth and nutrition of hair. By it the hair in growing is enabled to sweep out its own follicle. The margins of the scales covering the hair pointing upwards carry before them as they advance the debris which would otherwise accumulate within, consisting of effete epithelium and sebaceous material. That this is no mere fancy is shown by two microscopic preparations I have now before me. These are sections of a slightly inflamed papule of lichen pilaris, removed from the back of the arm of a young man. In one may be seen the upper portion of the hair-follicle dilated, and the space between the hair and inner root-sheath filled loosely with epithelial scales lying vertically, some even resting on the serrated margin of the hair. The second exhibits the hair just outside the follicle, surrounded by a mass of dead epithelium, arranged also in a direction parallel to the long axis of the hair, and thus composing the papule of lichen pilaris. A second function which this mode of imbrication of scales on the surface of the hair fulfils is that of facilitating the removal of any foreign matters which might otherwise attach themselves to it. This arrangement is not peculiar to hairs. A familiar example occurs in a blade of grass, where the fine serrations all point forwards, and from their hard, silicious nature, cut sharply as a saw does. In grass, however, the function is entirely different from that which we have seen is exercised by the projecting scales of hair;

it is by means of it that the dewdrop is made to tarry on the leaf, where it sparkles as a diamond in the morning sun, and refreshes the thirsty blade through its open stomata, instead of trickling off at once as it would do were the surface smooth.

This peculiarity of the structure of hair, so useful under normal conditions, becomes a source of weakness when the spores of a fungus gain access to the follicle. The mycelium, as it penetrates between the inner root-sheath and the hair-shaft, insinuates itself beneath the projecting edge of the scales, just as ivy does under the slates of a house, and thus reaches the interior, where it branches freely in the fibrous core.

Dr. Robinson, of New York, has shown that in ordinary sycosis the disease begins in the peri-follicular areolar tissue, and affects the interior of the follicle in time by extension; hence the hairs are never loosened in the first instance. In *tinea barbæ*, on the contrary, the lining of the follicle is attacked first, and the surrounding tissue secondarily. The parasite by its presence sets up irritation, the follicular walls are early distended by inflammatory exudation, and the hairs soon become loose. Detection of the fungus is not always easy, as it rapidly perishes as a result of the inflammation and pus-formation. Hairs, however, which no longer contain mycelium or spores are often found to be spirally twisted and deformed, and are long in regaining their healthiness even after the disease is cured.

The reason why in *tinea barbæ* so much greater irritation of the parts is induced than is met with in most cases of *tinea tonsurans* in children seems to me to be due to the preponderance of mycelium over spores in the former. When the structure of a diseased hair from the beard is dissolved by means of long maceration in liquor potassæ little is seen but a meshwork of branching mycelium: a hair from ringworm of the head so treated exhibits multitudes of spores and little mycelium. Actively growing mycelium causes much more irritation than any number of spores, as is well seen in the erythematous ring which marks the advancing margin in *tinea circinata*, and in *eczema marginatum*, and even in many cases of *tinea tonsurans*. It is, then, to the excess of mycelium over spores in *tinea barbæ* that we must ascribe the severe reaction which accompanies it.

Another explanation of the causes of the irritation generally set up by the trichophyton has been suggested to me by my friend Mr. J. Y. Buchanan, late of H.M.S. *Challenger*. It is that the fungus is either itself acid or develops an acid, as the fungus of mould, *mucor*, does. The recent artificial cultivation of the trichophyton by Dr. Atkinson, of Baltimore, lends additional weight to this, as he concludes an elaborate paper on the "Botanical relations of *Trichophyton tonsurans*,"² by stating that "it seems to me that a fungus presenting the features displayed in my cell cultivations (of trichophyton) may, without hesitation, be referred to the *mucors*." Chemistry is here a fit handmaid to the microscope, each confirming the other in an unexpected manner.

As to the treatment of *tinea barbæ*, epilation is the most necessary part; but the kerion, the secondary swelling and inflammation, is often obstinate. Except, then, in the very early stage, any direct parasiticide is unnecessary, and as all are more or less irritating, their use should be avoided. Soothing measures are best suited to the swollen and tender parts, and under their use the inflammation gradually subsides.

A CASE OF ALCOHOLIC EPILEPSY, WITH PARTIAL CONVULSIONS AND TEMPORARY APHASIA.

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I WILL briefly narrate this case, which seems to me to possess several points of interest.

On the 9th of March of last year, Mr. A—, a stout plethoric man, of about fifty years of age, came under my care. I was informed by his wife that he had been drinking hard for the preceding fortnight, and had during that time gone to bed every night helplessly intoxicated. On the

morning of my first seeing him he awoke her, and, having complained that he felt very unwell, he requested her to get him some brandy-and-water. On her return with the brandy she noticed that his speech was affected, for she could not understand very well what he said. He drank the fluid, however, and then lay down and went to sleep; but he had not slept long when he was attacked by a fit, the first Mrs. A— believes he had ever had.

I found the patient lying on his back in bed, quite unconscious, and breathing like one in a deep and troubled sleep. The skin was moderately warm, the face was bloated and congested, the pupils of the eyes were dilated and rather insensible to the action of light, and the teeth were firmly clenched. The pulse was regular, rather weak, and about 84 beats in a minute. He had no appreciable symptom of disease of the heart or kidneys, or of paralysis. Whilst I was examining him he suddenly uttered a subdued cry, and then became convulsed in a peculiar and partial way. The muscles of the right side of the face performed a series of frightful grimaces. His head was pulled violently towards the right shoulder in a series of jerks, and each jerk was accompanied by a short sharp moan, as if caused by severe pain. The right arm was also violently convulsed, each clonic spasm causing it to spring off the bed in a curious manner. No other part of the patient's body was affected with spasm in the slightest degree. The convulsions lasted about three minutes, and towards their termination frothy saliva issued from between the teeth and lips. When the convulsions ceased the patient lapsed into the same comatose state in which he was before their onset.

I prescribed for the patient an enema and a mixture, both containing bromide of potassium. The enema was administered immediately, and a dose of the mixture was to be given to him as soon as he could swallow. Some time after I left the house he was attacked by another severe fit, and when it ended, his attendants by some means opened his mouth and poured a dose of the mixture down his throat. After swallowing this dose he had no more seizures, and when I called in the evening I found him sitting up in bed taking some fluid nourishment, apparently rational, but quite dumb. He had no symptom of paralysis further than that sensation could not have been perfect in his right hand, for occasionally he rubbed it with the left and straightened and bent the fingers as if they were cramped. On the following morning (10th), although the patient's general state had improved, he was still unable to articulate a single syllable. His wife and some of her relations were anxious that he should make his will; the will was made and the patient to all appearance read it over carefully and seemed to comprehend its contents, but when he endeavoured to sign it, the signature was such an unreadable scrawl that it gave rise to some merriment. On the morning of the 11th he was downstairs walking about his sitting-room, and able to speak one or two words imperfectly, but still unable to write his name. After this he rapidly recovered his speech and power of writing, and, with the exception of a very slight attack of delirium tremens, he soon recovered his usual state of health, which is remarkably good.

This patient has, neither before nor since the fits, suffered from epilepsy, nor has he shown any symptoms of brain disease, which would account for one of the most striking symptoms—the local spasms. There can be no doubt, however, from the great quantity of spirituous liquors which he consumed during his fortnight's indulgence, but that his blood at the time of the fits and for several days before their appearance must have contained a very high percentage of alcohol. The formidable symptoms were caused then, I believe, by the direct action of alcohol on the patient's nervous centres, aided in all probability by the alcoholic impregnation of his blood, which prevented the vital fluid from absorbing an adequate supply of oxygen for healthy nutrition. But it is strange that whilst the alcohol, from its equal diffusion through the whole mass of the patient's blood, acted generally on his nervous centres, in addition it should also act specially on limited parts of those centres, as evidenced by the brachio-facial spasms and the aphasia. Why the alcohol should have acted thus locally it is difficult to form an opinion, and the only suggestion I would venture to make in explanation of the fact is that the man is a fluent speaker and a good vocalist—gifts which, if we admit cerebral localisation of function, might indicate some peculiarity of organisation or nutrition of the parts of the brain which preside over these functions,

² New York Medical Journal, December, 1878.