had been powerless to develop a single case, had suddenly acquired the power to breed the disease in the most prolific manner.

I need scarcely add that the bare statement of a conclusion such as this is the best exposure of its extravagant absurdity.

Our difficulties, insuperable as they already are, would not indeed end here. For, even if all this were granted, we should further have to explain how it is that the English people, having once acquired so perfectly the art of brewing this specific poison, should by migrating to Australia and New Zealand, have again altogether lost it. Happily, as yet (although in Australia, at any rate, the conditions of epidemic disease are rife enough), this particular scourge has not once made its appearance in either of these two colonies.

I may add, that the philosopher probably does not exist who would not readily hazard the prediction that, if by neglect or mischance small-pox should be imported into these communities, they would at once appear to have recovered the power of breeding it; and observers with more zeal than knowledge would there, as here, again point to isolated examples of it as proofs of its spontaneous origin.

[To be continued.]

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.]

[Concluded from page 554.]

MR. HOGG maintains that parasitic vegetation is not the cause, but the result of disease, on the following grounds:—"1. The general law that vegetable parasites only attack bodies in a state of lowered vitality." "2. The growth of fungi is not necessarily pathognomic of a special disease, because they have been observed in all kinds of chronic skin-diseases." Mr. Hogg says he has discovered a fungus in psoriasis, lepra, eczema, spilus, ichthyosis, and lichen. "3. Competent observers have not been able to find them in the diseases which they are believed to engender." "4. As to the results of inoculation, the experiments are too few and irregular to afford any basis for argument *pro* or *con*." (*Trans. Microsc. Journ.*, 1859.)

In reply to these statements, it may be said that, in tinea tonsurans and tinea favosa, at any rate, all competent observers find a fungus, with the exception of Mr. Erasmus Wilson, who sees the phenomena, however, but interprets them differently. In the chronic diseases to which Mr. Hogg refers, if a fungus sometimes exist, its presence must be regarded as accidental, and its extent not at all proportionate to the amount of disease, being entirely absent even in aggravated cases of these affections. I have searched in vain for a fungus in several cases of psoriasis and lichen. But in those diseases in which the fungus is never absent, and where the changes produced by the microscope are those most obvious both to the naked eye and to the microscope, we may certainly give the parasite a more prominent place in the pathology of the disease; and it is only reasonable to regard it as the determining cause of the disease, whilst we admit constitutional and local states as predisposing causes.

Tinea tonsurans and tinea favosa cannot exist without their respective fungi. Pityriasis versicolor is always accompanied by a fungus; but pityriasis rubra and pityriasis capitis exist usually, if not always, without a fungus. Herpes circinatus is commonly accompanied by a fungus, and probably some cases are due to the fungus; whilst other cases of this affection are found without the fungus; so that we cannot say positively that it is always a parasitic disease. Sycois probably is always parasitic in its origin. In reference to alopecia areata or tinea decalvans, some observers, including MM. Gruby, Bazin, Hogg, and Lowe, discover a fungus which has been called *microsporon Audouini*. Dr. Jenner and Mr. Hutchinson fail to detect it, and I have been equally unsuccessful. That a fungus sometimes attacks the hairs in these cases, must be admitted on the authority of such observers as those mentioned; but we must also maintain that it is frequently absent; so that I would class this disease with the non-parasitic diseases, in which a fungus is occasionally found, but does not determine the existence of the disease.

The evidence derived from treatment is very strong in favour of the parasitic theory, although it must be admitted that this argument applies partially in reference to some diseases where no parasite has been detected; namely, porrigo larvaris, or the contagious impetigo of the scalp. Alopecia areata, too, will generally yield to solution of sulphurous acid. This may, however, be due to its irritant properties, and not to its power of destroying vegetable life; as blistering is more efficacious than the sulphurous lotion.

Parasitocides will, I believe, in all cases cure tinea favosa, tinea tonsurans, sycois, and pityriasis versicolor. The length of time required to cure tinea tonsurans is owing to the impossibility of getting the parasitocides to the bottom of the hair-follicles in which the fungus has embedded itself. At the very outset, it may be cured rapidly. Newly attacked parts, before the hairs were much attacked, in many of my cases, were cured in a few days.

Dr. Lowe (*Botan. Trans.*, Edin., 1858) endeavours to prove an identity between the fungus in tinea favosa and the *aspergillus glaucus*. He is inclined to concur with Dr. Fox as to the common origin of all the human fungi. He says that *trichophyton tonsurans* is only the sporular form of *achorion Schönleini*. He placed a mass of cells from favus in a solution of brown sugar, and at the end of five weeks he found complete plants of *aspergillus glaucus*, with the fructification in its characteristic form. Remak, who made similar experiments on the development of the achorion, obtained no results from favus-sporules placed in a saccharine solution, but found that those placed on apple germinated and put out processes in twenty-four hours; but on the sixth day the apple was covered with *penicillium glaucum*. He says: "At this time, the surface of the apple changed its colour in a surprising manner to brown: there appeared on the entire surface a rapid growth of *penicillium glaucum* or other kinds of mould, which very much interfered with the distinguishing of those fungi which belonged to the favus from those which belonged to other kinds of mould that has sprung up from unobserved sporules." He also states, that on the fourth or fifth day he had observed in the interior of the piece of crust a powdery substance evidently arising from a decomposition of this favus-fungus. In the saccharine solution he found the crust of favus "take the form merely of slender filaments of mycelium; and by the side of it a powdery mass, which probably owed its origin to the decomposed parts of the favus-fungus." (*Diagnost. und pathogenetische Untersuchungen*, Berlin, 1845, pp. 200-2.) Dr. Lowe thinks that the favus in Remak's experiments originated the *penicillium*; and that it, as well as *aspergillus*, is capable of originating the disease.

Is it not much more probable that the fungi in both cases were developed, not from the sporules placed there by the experimenters, but from unobserved sporules, such as exist nearly everywhere? As Dr. Lowe says, the *aspergillus* is an extremely common fungus growing upon decay; and Remak took the view without hesitation.

Diagnosis is not difficult; at any rate, in the second stage. The roundish patches with clipped hair, roughened with branny scales and prominent hair-follicles, are phenomena not found in any other complaint. The smoothness of the patches distinguishes alopecia areata and the faintness of the hair-follicles; if any hairs exist on the patch, they are pale, and of the most downy description, not thickened and dark in colour.

The thick yellow crust of favus is characteristic, as is usually the peculiar smell. In the very onset of tinea tonsurans, you may not be prepared for so serious a disease, if you are not looking for it; erythematous rings, or raised spots, with branny scales, do not occur on the scalp from any other cause, so far as I know.

If the scalp have been much irritated, pus may be formed, and scabs cover the diseased patches; but there will generally be some portions which have retained the characteristic appearances of the tinea tonsurans. When pustules do form, so far as I have seen them, they are but small, and not followed by thick scabs.

It is not very often that vesicles can be discovered in cases of tinea, although it was called herpes tonsurans by Cazenave. The microscope comes in to make the diagnosis absolute, by exhibiting the peculiar fungus and the diseased hairs.

TREATMENT. The main indication is to get rid of the parasite, just as in scabies to destroy the acarus. A variety of substances may be used, all of which have this effect. I have tried a large number, such as corrosive sublimate either in ointment or in solution, solution of sulphurous acid, applied on lint under oiled silk, nitrate of silver either solid or in a strong solution, ointment of acetate of copper, blistering applications, and preparations of iodide of sulphur; or a mixture of one ounce of sulphur ointment, to two scruples of ammonio-chloride of mercury, as recommended by Dr. Jenner. I find none which answer so satisfactorily as the compound sulphur ointment of the Hospital for Skin Diseases:—

R Sulph. sublim., lb. ss; hydrarg. ammonio-chloridi, hydrarg. sulph. cum sulph., aa ʒss. Leviga simul, dein adde olivæ olei, ʒiv; adipis recentis, ʒxvj; creasotonis mxx. Misce.

It must not be expected that a cure will be effected in a week or two. If the disease have made much progress it will not be cured under several months. Epilation is recommended by M. Bazin. This is stated by Dr. Jenner to be impracticable; and I have found it to be so, except at the very onset, before the hairs are much attacked, and have become brittle. You may often fancy you have pulled out a hair by the root, when, on closer examination, you will find that you have only broken it off just as it emerged from the follicle. Shaving the head is generally desirable. The internal administration of cod-liver oil and steel is of course indicated in scrofulous and tuberculous children.

Tinea tonsurans is not a very common disease. Out of 7000 cases treated by me at the Hospital for Sick Children, from September 1858 to September 1861, there were only twenty-four cases of tinea tonsurans, of which three are mentioned as having been also affected with herpes circinatus; and five cases of the latter disease uncombined with tinea.

It is probable that there were more cases in which both the scalp and the body were affected with ringworm; because frequently, where two affections coexist,

the major only is indicated in the hospital books, especially when they are so nearly allied as in the present case. The numbers just given do not fairly represent the relative frequency of herpes circinatus, because this is an affection which parents themselves frequently treat by the application of ink, or leave without treatment, as it frequently gets well spontaneously.

The best treatment for herpes circinatus alone is the local use of astringents, such as a strong solution of sulphate of iron, or a drachm of nitrate of silver to the ounce of water.

CONCLUSIONS. Tinea tonsurans is a disease of the scalp, dependent on the growth of a peculiar fungus—trichophyton tonsurans.

Its growth is favoured by a weakly constitution and want of cleanliness; but these are not essential to its development. It is decidedly contagious; its growth is favoured by some atmospheric conditions more than others.

The fungus of tinea tonsurans is often found in the scales of herpes circinatus; but herpes circinatus may exist without it. Some cases of herpes circinatus appear to depend on the contagion of tinea tonsurans.

Pityriasis versicolor is another parasitic affection dependent on a fungus probably distinct from the trichophyton; but a sort of pityriasis may be caused by trichophyton, and other forms of it are non-parasitic.

In sycosis there is also a parasite; but whether it be the same as in tinea, is not established.

The fungi of tinea tonsurans and tinea favosa are quite distinct.

Two different fungi may be found on the same subject, one of them being accidental in its occurrence.

Many skin diseases not essentially parasitic may occasionally the seats of a few sporules of fungi. Alopecia areata is probably one of this class of diseases.

Transactions of Branches.

READING BRANCH.

RETROSPECTIVE ADDRESS OF THE READING PATHOLOGICAL SOCIETY.

By O. C. MAURICE, Esq., House-Surgeon to the Royal Berkshire Hospital.

[Read July 24th.]

[Continued from page 466.]

DISEASES OF THE GENITO-URINARY ORGANS AND THEIR APPENDAGES.

Addison's Disease of the Suprarenal Capsules. I think this will be the most suitable place to mention this case, although, with our present amount of knowledge, we are scarcely justified in classing it in any section. I shall give this case as nearly as possible as read before the Society by Mr. Harrinson, he having kindly lent me his paper.

He was called on December 6, 1860, to M. L., a feeble delicate woman, six months advanced in her second pregnancy. Her first pregnancy had terminated in March a month before the full period. The child was weak, and died the next day. The mother's life was in jeopardy for three days afterwards, in consequence of exhaustion. She had suffered during the whole of the second pregnancy from nausea, vomiting, loss of appetite, and general weakness. For three or four years previously she had had a muddy skin; and since pregnancy its discoloration had been much more marked. On her arriving at home in the autumn from the sea-side, her friends said she was of the colour of mahogany.

When first seen, she was in bed, so weak as to be unable to sit up. The skin was brown. The heart's