Ohmann-Dumesnil (A. H.)

FAVUS.

By A. H. OHMANN-DUMESNIL, M. D., of St. Louis.

[Reprinted from THE TRI-STATE MEDICAL JOURNAL AND PRACTITIONER, St. Louis, July, 1897.]

THIS parasitic disease of the skin is also known as tinea favosa, its more common and generally known name among the laity being "honey-comb ring-worm." The disease is not infrequently seen, and yet it is far from being common in this country. This is probably for the same reason that other parasitic diseases are not encountered as often as abroad. The lower classes are more cleanly about their persons and their clothing and not huddled together to the same degree as in Europe, where this class of diseases seem to have extraordinary facilities to thrive and extend from one individual to another. The frequency of favus varies much in different countries and even in different sections of a country. Whilst more cases are seen in densely populated cities, it is equally true that in certain extra-urban localities an entire district will be encountered in which every inhabitant is affected, the cause being principally negligence and the lack of proper care and cleanliness of clothing and person. Taking the records of dermatologists and their statistical tables we find that the disease is frequently seen in Scotland more so than in England, where it is by no means uncommon. It is certainly far from rare in France, and is often observed in Austria. Strange as it may seem, favus is seen with tolerable frequency in Germany, and yet it is looked upon as a sort of curiosity in Berlin. But a few years ago Max Joseph presented a case to the Berlin Medical Society as a sort of rarity, showing the almost total absence of favus in the German capital. In this country it is by no means a rare trouble, although it is very far from being common in its occurrence. No one who has had any considerable medical experience but has seen several cases, and dermatol-

ogists do not class it among the unusual cases. There was a time when favus was quite an important disease in a certain sense of the term, from the fact that it was looked upon as a serious disease, which was incurable. So serious was it looked upon that it was deemed of sufficient importance to exempt a recruit from military service. It was observed that the prevalence of favus increased to a remarkable degree in consequence of this ruling. When the law was repealed favus diminished in frequency to a marked degree and methods were soon found to cure it. Whilst these latter were somewhat drastic they proved quite efficient in not only curing the cases which existed, but in preventing as well the artificial spread of the disease.

Favus is not a disease of human origin any more than ring-worm. The latter is indubitably of equine origin, and researches made by competent authorities have shown that the former originates in the mouse. The mouse transmits the disease to the cat, this animal being susceptible to the parasite. It can be easily understood how a cat may transmit the disease to human beings directly and by way of mediate contagion. As is well known, the cat is always a great pet with children, and these latter in stroking it and playing with it easily acquire the trouble; adults will then become infected by the children, if they be in the same family, although it may be noted that children are much more prone to become so than their elders. It is for this reason that the disease is more frequently seen in children. It must not be forgotten that favus is highly contagious and easily transmissible from one individual by a number of ways. Among these is the indiscriminate use of toilet articles, such as combs and brushes. Next in order is the exchanging of wearing apparel, but more particularly, hats and caps. This latter is a very common habit with young children, and leads not only to the transmission of favus but of other vegetable and of animal parasites. The ease with which favus may be acquired is well illustrated in the report of a case of favus of the hand which was published some years ago in the *Journal of Cutaneous and Venereal Diseases.* A clerk went to clean a drawer among others in a store. He found a mouse's nest with several young mice in it, and from the appearance they presented they were but two or three days old. He proceeded to take out the pieces of paper of which the nest consisted and scraped up all of this with his hand. He cleaned out the drawer and proceeded to clean out others. In a comparatively few days he noticed an eruption on the volar side of his hand, and a dermatologist pronounced the trouble favus. It was quite a simple matter to trace the origin of the trouble, and it was as is given above. Considering the fact of the thickness of the epidermis of the skin on the affected site, the short period of exposure, and the rapidity with which the eruption developed, it is obvious with what ease favus may be acquired. And, when we consider the fact that young mice with tender skins are bred in infected nests, we can easily explain the fact that favus is an endemic disease in this variety of rodents. Again, it is well known that they herd together and any which might have escaped the contagion very rapidly succumb to it and, in their turn, exhibit the disease upon their skins. But it is our purpose to consider favus in the human, and sufficient has been said in regard to it in its occurrence in animals to give a fair idea of the reason of its prevalence in them, and to account for its easy transmissibility to children and adults.

Favus in its inceptive stage should be easily recognized from the peculiar form of the lesions which it presents. These are yellow "godeys" or cups with raised borders bearing a strong resemblance to a watch-glass in form, the so-called "scutula." They are but a sixteenth of an inch in diameter, or thereabouts, and increase rather rapidly in size.

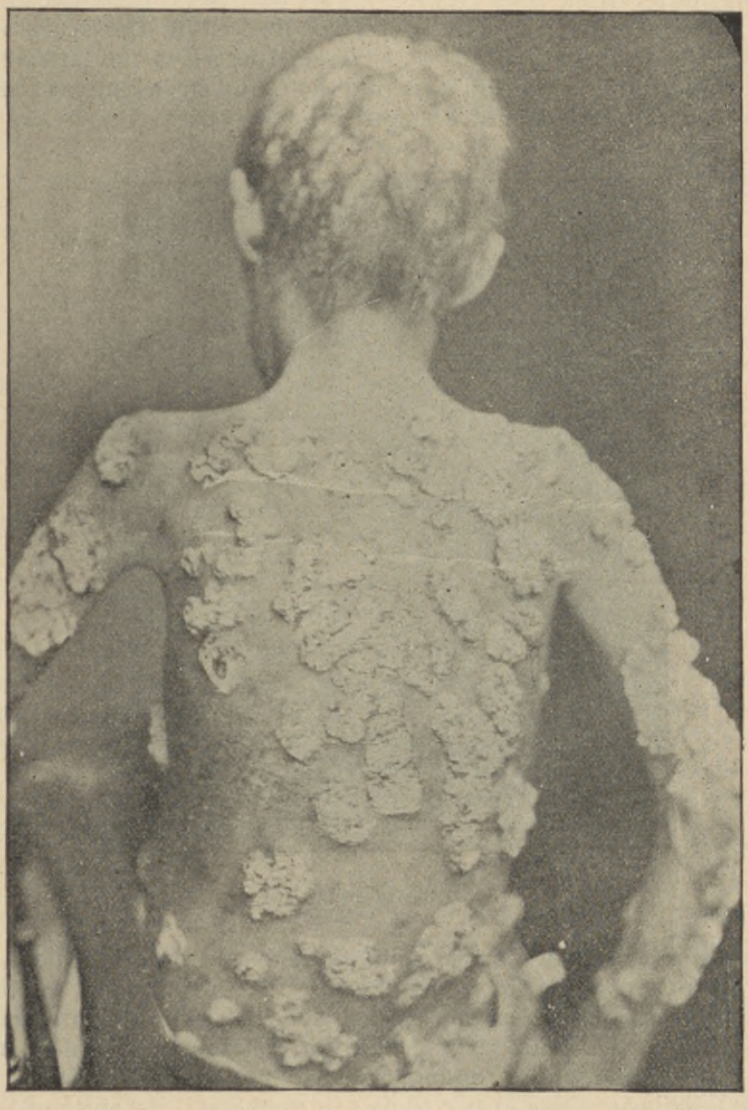

FIG. 1. Favus of the Body.

Before a scutulum appears a reddish macule is observed, and this presents a somewhat fine scaly appearance. It is at this site that a "cup" appears and that a certain amount of itching is experienced. The color of the lesion is a sulphur-yellow at first, but it soon assumes a dirty-yellowish tinge from

the foreign material which adheres to it. It is quite adherent to the skin on account of a certain amount of the horny layer of the skin forming a lap over its edges. When separated it is found to be quite friable, and is, in great part, composed of the vegetable parasite which causes the disease. The distribution of the lesions is discrete at first, but it is not unusual for the scutula to form one mass, simulating a dirty crust and having a tendency to become quite thick and friable. The distribution of the disease is peculiar in one respect. It may be either limited to the scalp or it may occur upon the scalp and body. It is rarely limited to the latter except in special instances. For example, it may be found in infants at the umbilicus alone, but this is rather of exceptional occurrence.

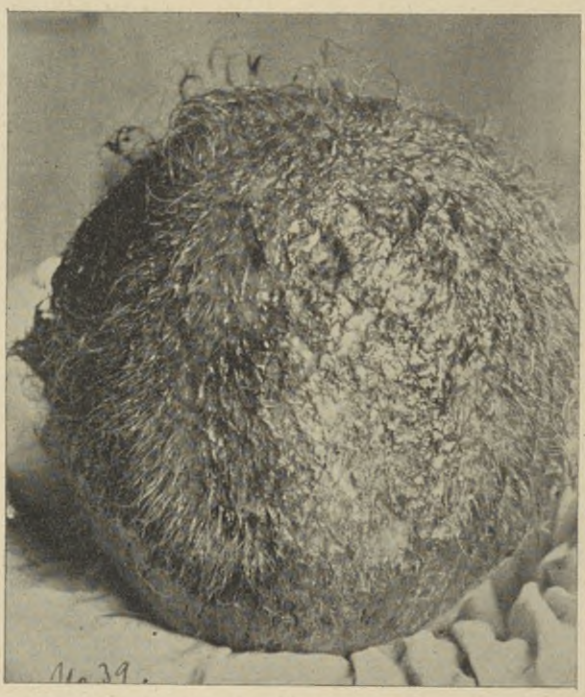

FIG. 2. Favus of the Scalp.

In favus of the body a small area, such as the knee or elbow, may be the only portion involved, or it may attack the entire body, as shown in Figure 1. It will be seen in this figure that the lesions, whilst occurring all over the skin, still retain their discrete distribution. Another peculiarity, and this is one which renders the case more interesting, is that the lesions are very large—one or two inches in diameter. In spite of this large size they remained cup-shaped and, as the figure shows, they were very thick. Of course, cases like this one are rather the exception than the rule, but serve to demonstrate very forcibly how the parasite will flourish ona soil which is favorable to its growth—heat and moisture—as well as not disturbing the lesions contributing largely to this exuberance in formation and increase. It will be further observed that there is no ocular evidence

of the presence of any marked degree of itching, which is usually the rule in favus corporis to a certain degree. Had there been itching the scutula would have been more or less torn off or at least broken up, and this would have shown up distinctly.

When favus occurs upon the scalp or any hairy part, each cup is pierced by one or more hairs at its center. When it is the scalp which is affected the hair becomes dry, lusterless and brittle to a degree. It is this last peculiarity which gives rise to the formation of patches which have a surface more or less brush-like in appearance on account of the broken-off hairs. This breaking-off occurs about one-eighth of an inch above the level of the scalp, and the height of the hair stumps is pretty uniform and level. Nor is this the only thing; for, if the process has been going on for any considerable length of time, it is by no means unusual to find spots here and there totally devoid of hair. All of the characteristics mentioned are well shown in Figure 2. This is caused chiefly by the scratching which is a natural result of the itching of a more or less marked character which is the most prominent symptom and is invariably present in this locality. The scratching not only produces a breaking down of the hair, but it also breaks up the friable crusts. Furthermore, it is very active in transferring the disease to other points. In addition to this it causes the finger-nails to become involved, giving rise to onycho-mycosis favosa. The nails then become yellowish in color, dull in appearance, markedly thickened and brittle. They are also quite friable and are a constant menace as a source of infection, not only to the affected individual but to others who may come in contact with him. A peculiarity to be more especially noted in connection with favus of the scalp is the fact that it possesses a very peculiar odor. This peculiarity is one so marked that it has been looked upon as pathognomonic by many observers, and when perceived it should immediately arouse suspicion and lead to very careful clinical and microscopical examination. The odor is one which must be smelled to be appreciated. It is compared by some to that emitted by stale straw, whereas others compare it to that of a mouse's nest. Others have made different comparisons, such as wet hay, and it is for this diversity of opinion in judging the odor that it is best for each one to acquaint himself with it, as it is undoubtedly one which is, beyond question, *sui generis*.

The diagnosis of favus should be a comparatively simple matter when an unbroken and unaltered scutulum can be found. But, unfortunately, this is not often the case. It is so frequently the case that an affected patch has had all the cups broken that all that is presented is a grumous-looking crust, of a disagreeable, often sour, odor, with here and there suppurating points. Under such circumstances it is frequently the case that one well acquainted with the characteristics of the disease is unable to formulate an absolute diagnosis. A method by which a diagnosis may be arrived at is by means of auto-inoculation. Another method is to make a pure culture upon a suitable nutrient medium. But either one is defective in one result, so far as a practical application can be made: it takes too long a time to obtain a growth characteristic enough to establish a diagnosis; so that it is best to resort to a method which is both rapid and positive, as well as reliable, for this purpose. By this method, which can be carried out in a comparatively simple manner, the presence of the par-

asite causing the disease is disclosed. The parasite is a vegetable fungus, known as the achorion schœnleinii, and is composed of mycelia and spores. The modus operandi of the examination is, in brief, as follows: A small portion of the material to be examined is subjected to the action of official liquor potassæ for a short time. The object of using the liquor potassæ is to render whatever epithelial cells are present and the fungus transparent, bringing out the contours distinctly. After the preparation has become sufficiently translucent it is washed with water, and then dehydrated with alcohol. Clearing with oil of cloves and mounting in balsam makes a permanent preparation. Of course, if it be desired, the growth may be stained; but for purposes of diagnosis this is unnecessary. In fact, for a rapid examination, it is unnecessary to make a permanent mount. Upon examination the mycelia and spores can be easily made out with a one-fifth inch objective and a two-inch eye-piece. The peculiarity

FIG. 3. Achorion Schœnleinii.

of the parasite is that it consists of long mycelia and disseminated spores. A fair idea of the appearance is given in the diagram shown in Figure 3. The mycelia are long, branched and interlaced, as well as quite numerous. The spores, or conidia, are superficial, and are scattered here and there. They may also be found inclosed in mycelia which have the distinctive name of sporo-fores. In the picture given, epithelial cells may be seen, and it is that generally presented by the superficial or epiphytic form of the parasite. The hypophytic is the deeper form, such as occurs in follicles, and more commonly in hairs. In the latter case there exists an infiltration of mycelia in the bulb and for some distance above the level of the scalp. The mycelia lie in the hair in a direction parallel to its axis. It could not by any means be mistaken for ring-worm of the hair, for here there is an infiltration of small spores in chains, and these chains are closely packed to one another, whilst no mycelium can be detected.

The treatment of favus is a matter requiring some considerable care and attention to details. Care is necessary in order to avoid producing a spread of the disease in the efforts which are made to destroy the parasite, and the details of treatment are to be strictly followed in order to prevent the occurrence of relapses which will certainly take place if the smallest portion of the parasite is left to flourish. Difficulty will also be experienced in destroying the hypophytic form, and unless the deepest infiltration be efficiently reached a recurrence is certain to take place, and, in the case of hairy portions, permanent baldness will ultimately result. So that the first thing to be understood is that the treatment, to be successful, should be thorough.

The first thing to do, in any event, is to remove all crusts thoroughly. This affords a better surface for the remedy to act. In case of the epiphytic form of the disease it is much easier to procure a rapid result. A good parasiticide should be employed, and there are many to choose from. Campho-phénique liquid is most efficient, but care is to be taken to see that the surface to which it is applied is dry. This agent is to be applied twice daily. Another parasiticide is corrosive sublimate, which often acts very efficiently. A good method of applying it is in the following form:

℞ Hydrarg. bichloridi.....gr. i
Tinct. benzoin.....ʒ i
M. Ft. sol. Sig—Apply with a brush once a day.

If a large surface is involved, an application which is neither irritating nor toxic is the following, which has served me well on numerous occasions:

℞ Losophan.....ʒ i
Axungiæ perci.....ʒ i
M. Sig.—Apply twice a day.

In applying the ointment an essential point is that it be well rubbed in. It is not necessary to use large quantities, as such a course would not hasten the cure.

In the case of favus of the scalp more thorough measures are to be employed. In the first place, the hair greatly impedes the proper application of remedies. If the favus is in patches it is best to practice epilation. The manner of doing this is somewhat difficult to accomplish successfully unless a proper forceps be employed. The best for this purpose is Piffard's, which is shown in Figure 4. The affected hair is grasped near to the scalp and carefully pulled out, and in this manner, by pulling out a number, a denuded spot is soon made. The healthy hair surrounding an implicated area is also epilated for a distance of about a quarter of an inch and in this manner prevents any further spread of the disease. If the entire scalp be affected, then a method superior to epilation is to shave off all the hair. A preliminary shampoo with sapo viridis, well rubbed in, will be found to be a most excellent detergent. The scalp having been cleared by either method, local measures may be used with some chance of obtaining a success. The best applications are without doubt those in the form of an ointment. A fatty excipient will more readily permit of a remedy penetrating into a hair follicle than an aqueous or alcoholic solution. The method to adopt, however, is to first thoroughly cleanse the affected part with tincture of sapo viridis and then rub in the ointment well and for

quite a time. This should be done twice daily. Among the ointments which may be used is the one given above or one made as follows:

℞ Acid salicylic ..... ℈ i
Hydrarg. bichloridi ..... gr. i
Vaselini ..... ℥ i
M.

Chrysarobin has been used with a measure of success, but it has the disadvantage of staining the skin and frequently brings on an artificial dermatitis of more or less severity. On the other hand, there is an agent which has been highly spoken of, claims being made that three or four applications will effect a cure in cases where the scalp is affected. This is simply formalin in solution of 1 to 1000 to 1 to 500. If used stronger

Fig. 4. Piffard's Epilating Forceps.

than the latter it is apt to prove very painful as well as irritating, although some bear a much stronger solution without apparent inconvenience.

Whilst not really a portion of the treatment the prophylaxis or prevention of the spread of the disease is no less important. The physician should never lose sight of this point. The individual who has favus should be kept from coming into contact with those who are unaffected, and the exchange, even temporary, of toilet articles or portions of clothing, hats and caps, strictly prohibited. Not only this, but these articles should be also subject to such treatment as will effectually kill the parasite. In this way the further spread of the disease and auto-inoculation may be prevented.