THE HAIR
IN
HEALTH AND DISEASE

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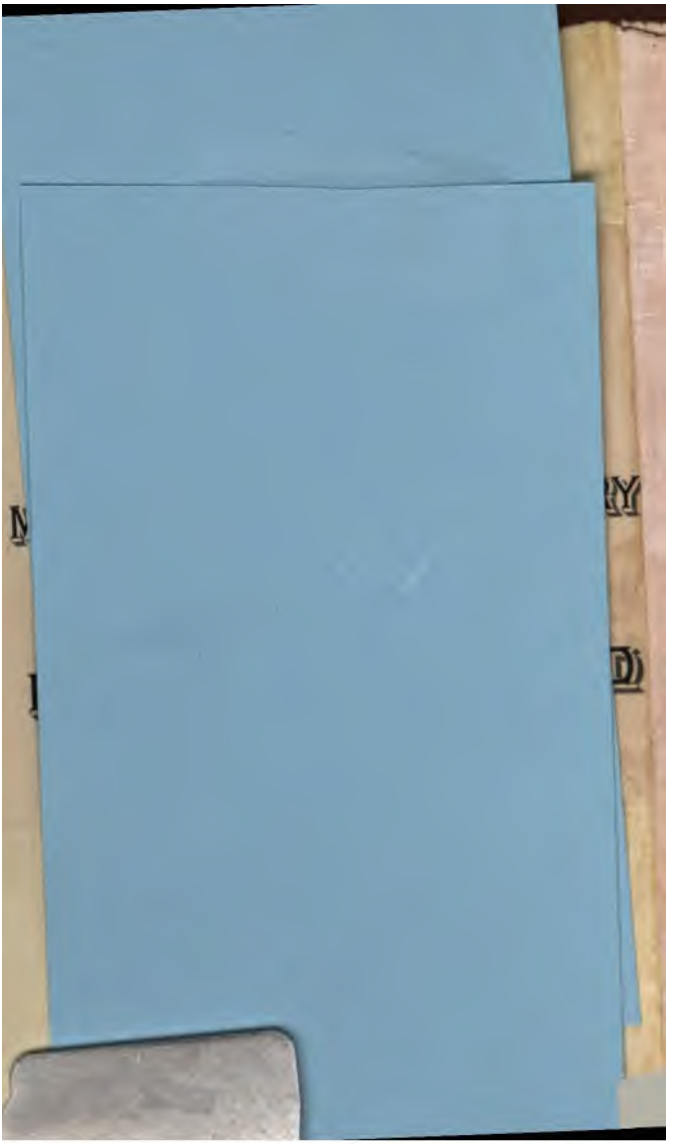

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PREFACE

So little attention has been given in this country to diseases relating exclusively to the hair, that the author feels no apology is needed from him in offering the present volume to the acceptance of the profession and the public. In France, and particularly in Germany, where medical literature is rich in all kinds of laborious and minute research, the want of such a work has been supplied by the labours of Elbe, and, in more recent times, of Pfaff.

My dear friend and teacher, the late Mr George Nayler, had collected much information on this subject, and intended to have produced such a work, had not

an untimely death put an end to his labours. In my association with him, both in his hospital and private practice, during the latter years of his life, it was my fortune to be his fellow-worker in the same field, and now the necessity is imposed upon me of completing alone what we had commenced together. In accordance with Mr Nayler's intention, a large portion of the present volume is adapted from the second edition of his work on 'Diseases of the Skin.' The first portion of the following pages is devoted to the consideration of alopecia or loss of hair, its diversity of origin, and treatment. In the same category are included canities or blanching of the hair, and also hirsuties or excess of hair. The next is more especially concerned with those complaints of a parasitic nature, and as such the greater part is derived from so much of

the above-mentioned work by Mr Nayler as refers entirely to them. Lastly, besides a chapter on Animal Parasites, a chapter is added on Hair Dyes, and their application; the nature, composition, and effects of which cannot, perhaps, be too widely known.

3, Savile Row, W.; *May*, 1877.

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CHAPTER I

ANATOMY AND PHYSIOLOGY

THE hair, which is closely connected with the skin in structure, furnishes a complete investment for the scalp, and in a rudimentary or less perfect form covers the entire surface of the body; the only parts which are destitute of hair being the palms of the hands, the soles of the feet, and the eyelids.

Structure of hair.—Examined with the microscope the hair, except at its ex-

tremities, appears to be of almost unvarying diameter, and either nearly cylindrical, or inclined to be somewhat irregular or kidney-shaped, or even compressed; straight hair being the most cylindrical, while its tendency to curl or to be frizzly is proportioned to its flatness. It may be described as consisting of three portions, a central axis, a cortical cylinder, and an external layer of imbricated and flattened cells.

The central axis.—The central axis is seen as a dark line, generally interrupted at intervals, which represents the internal or medullary portion. It is a tube, containing, besides air, a number of cells arranged in a single or double row, and flattened by mutual contact, but does not always exist, being absent in childhood, and occasionally wanting in the finer hairs of the adult. In many cases the central canal may be observed to deviate from the straight line in different parts of its course, and then re-

sume its original direction. It is capable of partial penetration by fluid, and that no pigment is contained in its interior, as formerly supposed, is proved on viewing it as an opaque object, when the dark centre disappears. This is best done by previously boiling a white hair in turpentine or ether, when the medulla will be seen to be perfectly transparent. The diameter of this portion in relation to that of the hair itself, according to Kölliker, is as 1 to 3 or 5, and is thickest in short or strong hair. The cells, to which reference has already been made, contained in the medulla, are rectangular rather than round, and possess each a nucleus and a few granules.

The cortex.—The cortical structure surrounding the medulla is fibrous in texture, and to it the hair owes its elasticity, strength, and colour. On its surface may be distinguished a number of short longitudinal dark lines. It consists of bundles of

fibrillæ which may be finally resolved into fibres, each pointed at either extremity, and containing a nucleus and nucleolus. The colour resides in pigment-granules arranged in lines. Besides these appearances, with the help of reagents, air lacunæ, as they are termed, may be noticed in white but not in black hairs.

Cuticle.—Outside the cortical structure, to which it closely adheres, is the so-called cuticle of the hair; this is composed of a single layer of transparent four-sided plates, homogeneous in structure and imbricated in their disposition. They are arranged in a zigzag manner, and may be demonstrated by the addition of a drop of liquor potassæ to the hair; if a stronger reagent be applied, as sulphuric acid, they will be seen to become split into fragments, and separated from the subjacent cortical substance.

The component parts of the hair are best studied by a comparison of the ana-
[illegible]ous structures in some of the lower

animals, and one or two instances may be cited which strikingly display the tissues just considered. The outer covering of the hair in the bat, for instance, shows a regular series of scales, jutting out from the shaft like the barbs of an arrow; and in the bristles of the hedgehog, or the quills of the porcupine, which are in reality hairs, the fibrous material attains what may be termed its "maximum of development." The horny part of the quill of the latter is similar in composition to the same element of the hair, and the medullary canal is subdivided into a number of partitions containing fatty granules.

The hair as it enters the skin, which it always does at an angle more or less acute, afterwards increases in circumference, and terminates in a pyriform enlargement or bulb. The depth thus penetrated is determined by the natural strength of the hair, as well as by its situation. In its scattered distribution over the general surface of the trunk and limbs, as well as in

the young subject, the hair scarcely reaches below the cuticle, while in other parts in the adult it will extend through the cutis to the tissue beneath.

Structure of hair-follicles.—As soon as it has pierced the skin, the hair is contained in a follicle or sac, which is commonly regarded as an involution of the integument, divisible into an external or fibrous layer, having its fibres disposed longitudinally; a middle or transverse layer; and an internal structureless membrane. At the lower part is a papilla, rudimentary in man, but of larger size in such animals as the bear or tiger, which ascends for a short distance in the interior of the bulb, conveying nutriment for the cells therein contained, but separated from them by a basement membrane. Henle is very minute in his description of the structure of the hair-follicle. Besides the external or longitudinal layer, the middle one, according to this author, consists of a layer

of circular fibres 0·5 mm. in thickness, and resembles in many respects the muscular and circular coats of the intestines. Like the latter, after being treated with acetic acid it is transformed into a substance composed of several layers of club-shaped longitudinal nuclei, lying at an equal distance from each other, and disposed in concentric lines. It is distinguished from muscular tissue by its indisposition to be torn into single fibre-cells, and by its ultimate substance not being rendered turbid nor its nuclei invisible by boiling. The innermost layer, adds the same writer, is a homogeneous membrane, clear as glass, unaltered by acids or alkalies, of ·005 to ·008 mm. in thickness, and made up of circular fibres, which are either parallel to one another, or anastomose at an acute angle.

The sebaceous glands.—At the upper part of the hair-sac are two apertures, opposite to one another, of the sebaceous glands,

which in their structure present different degrees of complexity; sometimes they resemble little bags or sacs which terminate each in a duct opening on the free surface of the skin; or, what is more common, communicating with the sheath of the hair at an acute angle. The gland-sac is composed of transparent nucleated membrane, bounded externally by a layer of connective tissue in which are situated blood-vessels, while within it is more or less filled with cells containing fatty molecules, and which by their degeneration and disintegration form the excretion of the gland, which on its discharge seems to lubricate the hair and skin.

The wall of the excretory duct is similar to that of the gland-sac. In a more elaborate form they are severally made up of a cluster of lobules, the ducts of which, uniting at various intervals, end in a common tube. The depth at which these glands are situated in the skin is subject to variation. It may be stated generally

that the complexity of their structure is proportional to the thickness thus penetrated, but like the sudoriferous glands they do not pass beyond the subcutaneous tissue. Their largest number is attained in those localities which are thickly covered with hair, as the scalp, armpits, and generative organs, while on the palms and soles and glans penis they are wholly wanting.

Muscles connected with the hair-follicles.—Besides the sebaceous glands there are found on every part of the skin provided with hair certain minute muscles of the involuntary kind, the existence of which was first demonstrated by Kölliker. They are distinct bands of an uniform thickness, and oblique in their direction to the surface as well as to the hair. Superiorly they are generally connected by muscular, but in some cases, according to the interesting investigations of Mr Lister, by tendinous fibres with the deeper layer of cells composing the cuticle; while below they are

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inserted into the longitudinal fibres of the follicle. Sometimes the muscle is divided at its origin into several heads, each having a separate point of attachment. In its course it passes beneath the sebaceous glands, but without touching them as far as can be ascertained. When in action these muscles bring the hair into a perpendicular direction, and so occasion the roughness of surface excited by cold, fear, or other causes, making "the hair to stand on end."

Chemical composition of the hair.—The hair is composed in great part of an albuminous or nitrogenous substance, possessing on an average 5 per cent. of sulphur, more abundant, according to some authors, in red than any other coloured hair. It is soluble in alkalies, giving off ammonia, but insoluble by boiling in acetic acid, which, as Müller remarks, distinguishes it from horn or epidermis. By ultimate analysis it may be reduced to an

ash containing the oxide of iron and manganese, and in white hair the phosphate of magnesia, and the sulphate of alumina. The power of the hair in resisting decay, when the remaining structures of the body have crumbled to dust, is attested in many of the Egyptian and Peruvian mummies, where that of the scalp is still preserved.

CHAPTER II

ALOPECIA OR LOSS OF HAIR

There are few diseases relating to the skin which are so simply alluded to as *alopecia*. It has attracted little attention even from Bayer, extensive and accurate as are his researches on most cutaneous complaints; while an equally incomplete account is given by Devergie, Hardy, and other contemporary writers. This omission is the more remarkable, considering the comparative frequency of this affection, a frequency there is no reason to suppose is greater in this country than abroad.

Alopecia may occur at any period of life, and in one of numerous forms. Thus, in childhood especially, it very commonly appears as circumscribed patches, totally

devoid of hair, or the whole scalp may be thus attacked, and sometimes the eyebrows as well; or at a later age the whole frame may be involved. More usually, and this also applies to adult life, loss of hair is only partial, the hair becoming thinner and more readily falling off. Alopecia may also be caused by the presence of vegetable parasites, as in ringworm, or in other complaints of the tinea class; or, lastly, loss of hair may result from advancing years, and, like the decay of the teeth and similar changes taking place in the structure of the blood-vessels and the bones, be rather an indication of a general decay of nature than an actual disease.

Circumscribed alopecia. — Circumscribed alopecia, as its name would imply, is in general limited at its commencement to a solitary spot, but exhibits great variety in its progress. In some cases, and more often in children, the occurrence of one patch is the precursor of several, scattered over dif-

ferent parts of the head, varying in diameter from a threepenny to a crown piece and upwards; or two or more patches will unite, and so give rise to one of considerable extent, with its circumference showing different segments of circles. In after life it is rare to meet with the complaint in so multiple a form on the scalp, but the development of similar bare places is by no means infrequent in the whiskers or beard. Circumscribed alopecia may be defined to be a non-contagious malady, occurring as patches, white, smooth, frequently shining, and ending abruptly in a circumference of sound unbroken hair, with no premonitory symptom, and unattended by pain, uneasiness, or discoloration of the affected part. Indeed, there is in most cases a want of sensation in the spots, so that redness is not readily excited by scratching or rubbing them, and the disease is therefore commonly unperceived until it exists with all its characteristics complete.

at which it occurs and ratio between sexes.—From a table formed by Mr Nayler from fifty-three cases which occurred at the Hospital for Diseases of the Skin, it appears that the greatest number took place between the ages of 5 and 10 years, and only one before that age, viz. at 3½ years. At this period, too, the female was attacked much more frequently than the male, 13 out of 16 cases being females. Again, between the ages of 10 and 15 the proportion was 2 to 1, the excess being on the female side.

Causes.—Although circumscribed alopecia is apparently of spontaneous origin, it will often be found on inquiry to be connected with the presence of ascarides in the young subject, and at a later period in girls with irregular or imperfect menstruation, or some gastric or enteritic irritation. Sometimes it succeeds to the eruptive diseases of childhood, especially scarlet fever. Another symptom, not infrequently present, is

severe headache, usually periodic, and confined to the forehead.

Microscopical appearances.—If we examine with the microscope the hair thus affected, a marked alteration will appear to have taken place in the bulb. It becomes gradually attenuated, and ultimately reduced to a fine point. This result may be very generally, if not constantly, observed. Sometimes the hair-bulb will appear only stunted, and to have lost much of its globular form, or, more rarely, a number of projections, like the ends of a brush, arise from its wasted or shrunken extremity. In a more advanced period of the complaint the hair itself undergoes a change. It loses its smoothness of surface, and the fibrillæ are readily broken.

On turning our attention to the modifications that ensue in the process of recovery, we discover the opposite condition, and here too the bulb is mainly affected.

It assumes by degrees its normal character and shape, but the hair in this early stage does not nearly attain its natural size, and appears when viewed through a high power of the microscope as a simple diaphonous cylinder without any central canal. For some length of time during its growth, the new hair is readily distinguished from the old by its fineness and its lighter colour. By most foreign writers circumscribed alopecia is considered to be a parasitical complaint—the parasite (vegetable) being named by Gruby, its discoverer, the microsporon Audouini. Among those who have paid particular attention to the subject is Bazin, and he describes the cryptogame as situated chiefly in the scales on the surface at an early period of the disease. Whatever may be the result in France, Mr Nayler was never able to detect the parasite, nor have I been more successful; and even assuming for the moment the correctness of the above theory, its occurrence must be extremely rare when we consider

how seldom more than one member of the same family suffers from this complaint, and the absence of all proof of contagion, circumstances quite at variance with the character of any affection of truly cryptogamic origin, though I may mention as a curious circumstance that the wife of a patient under my care at the present time, who within the last year has lost every hair on his body, has been attacked with circumscribed alopecia, which has denuded the greater part of her scalp.

Partial alopecia.—The form of alopecia which I am now about to describe differs from the preceding in the absence of any smooth patch, and in its appearing for the most part at an adult age. It generally occupies the crown of the head with its adjacent parietal and occasionally occipital regions. Its special characters are at once determined by the loss of hair, which follows the least attempt at friction or traction, whether with the brush or comb.

Causes.—There are many causes which contribute to partial loss of hair, particularly in women. Among the most frequent is parturition, which, as is well known, is often followed by great loss in this respect; or again, certain fevers, as continued, or typhoid, or intermittent; or there may be, and this will be constantly noticed in practice, a derangement of the general health, especially of that kind which is associated with headache, or an almost icy coldness of the hands or feet, or else some uterine disturbance. Sometimes, and more often in men, partial alopecia accompanies acute rheumatism or gout, or is connected with that condition commonly known as dyspepsia, and seems frequently to occur in those who consume large quantities of food, and in both sexes is not seldom a consequence of hæmorrhoids and ascarides. Other influences may also be named which now and then powerfully tend to occasion loss of hair, as neuralgia, or especially mental worry, or any severe nervous

[illegible] temples to the crown, and in these places the scalp was entirely bare. In six months, with the subsidence of the neuralgia, the hair under treatment rapidly grew again, and though at first perfectly white, its natural colour was soon restored.

Mode of life also has an influence on the development of hair. It is a matter of common observation that those whose occupation is of a sedentary character, as well as the numerous class of artisans who live in densely populated cities, lose the hair much sooner, or at any rate have not the same abundant growth of hair

which is met with in those whose life is chiefly spent in the open air. The exposed life of a sailor, little protected from the weather as regards his scalp, to which he usually pays the smallest amount of attention, illustrates this point, for as a class they are seldom prematurely bald.

Among the diseases of the skin which are apt to be followed by loss of hair may be ranked eczema impetigo of the scalp. In some of the severer cases, where the roots of the hair are matted together in the crusts and the surface is inflamed, so extensive is the loss that scarcely any hair remains; and in the milder forms of the eruption a like result, but less in degree, is produced.

In porrigo (the disease so named by the late Mr Startin), which chiefly occurs on the scalp in childhood, the hair is often found wanting on the spots recently occupied by the prominent scabs. The bulb loses its natural shape altogether, becoming flattened and expanded into a broad

and thin plane, which terminates in an even edge. The lower portion of the shaft also as it approaches the bulb displays a series of irregular rings on its surface.

Again, in pityriasis and in psoriasis, which are characterised by a quantity of scurf or dandriff, or by the presence of large thick and dry scales respectively, some degree of alopecia coexists, and in the last-named affection the hair often ceases to grow beneath the crusts as long as they continue.

Lastly, alopecia will sometimes follow in the wake of syphilis, congenital or acquired. In early life, as in infancy, this is sometimes met with, and it occasionally accompanies secondary syphilis in adults; in either case, however, it is never in my experience observed alone, but always in conjunction with other symptoms indicating a syphilitic taint.

Microscopical appearances. — Now, if with a moderately high power such hair

be examined, we shall observe in the great majority of instances, and most of all in that class in which the loss of hair is due to some prior affection or acute complaint, no evidence of disease beyond that afforded by its being thinner and the bulb diminished in size, which is often not larger in diameter than the shaft, and in any case is unable to retain its hold in the skin. Sometimes we may discover an excess of epithelium deposited on the bulb, derived from the lining membrane of the follicle, as well as on the lower portion of the shaft. This deposit is irregular in thickness, containing fine granular or pigmentary matter, and in places a considerable number of minute oil-globules, which are but little affected by the action of such agents as liquor potassæ or chloroform. Indeed, frequently the naked eye can note a similar enlargement of the bulb which reveals under the microscope the above characters, or we may notice a tendency in this part to degenerate similar

to that in circumscribed alopecia. The same pointed condition also exists in the severer cases of alopecia, in which the disease has advanced with rapidity and involved, with little or no attempt at restoration, the greater portion of the scalp, whiskers, or more distant regions.

Besides an actual loss in quantity, partial alopecia is sometimes combined with a certain brittleness in texture of the hair. The patient remarks that "it is not so strong as before and readily breaks;" moreover, and this is one of its properties, the hair soon becomes entangled after brushing. It is very unequal in length and disposed to be dry, and in many cases much scurf is found at the same time on the scalp.

Occasionally the loss is great, and would be more so were it not that new hair is soon regenerated. On examination we perceive that several of the hairs are split or divided into two or three branches at their free extremities, and on placing

these under the microscope it will be further seen that the fibrillæ are separate and stand out like the ends of a brush. Sometimes, and especially in the slighter examples, this will be the only change observable, but in others a marked alteration has taken place in the bulb itself, which is ill shaped, and from its extremity and sides long delicate bands, irregular in their distribution and direction, are derived; similar offsets are also given off from the shaft at various parts in its course.

As a general rule partial alopecia is not preceded or attended by any other symptom than the falling off of the hair. Occasionally, however, the patient experiences much irritation of the scalp, or a creeping sensation, as it is termed, in the skin of this region.

Congenital alopecia. — Alopecia is also sometimes congenital, no hair existing at birth, and none being afterwards pro-

duced. A remarkable instance has lately come under my notice. In a family of four sons and five daughters, who were in other respects well developed, one of the daughters, the fourth child, was born and remained completely hairless, two of the sons and two of the daughters having a plentiful development of extremely fine, short, woolly hair: in one daughter, the ninth, it had the same characters, but was very scanty in quantity, while in the remaining two sons and daughter, the eldest of the family, the eighth, and the sixth child respectively, the growth was natural and exceptionally fine:

1st, boy Hair normal and abundant.
2nd, boy Woolly hair.
3rd, boy Woolly hair.
4th, girl Completely hairless.
5th, girl Woolly hair.
6th, girl Hair normal and exceptionally well developed.
7th, girl Woolly hair.

8th, boy. Hair natural in quantity and quality.

9th, girl. Scanty, woolly hair.

The hair of both their parents was normal in quality and abundant in quantity. They have all reached middle age, but these peculiarities have remained unchanged, though they have not shown themselves in the children of those of them who have had families.

Complete alopecia.—Complete alopecia is rare in men, and still more so in women. Its advance is in some instances rapid, and in the course of a few weeks the body is denuded of any hair whatever.

Causes.—The causes of this complaint are in general obscure, and often the patient is otherwise in excellent health. As examples of this kind, in the case of a lady, under the care of Mr Nayler, it seemed to follow parturition, and in a patient of mine, a man aged twenty-five years, it followed secondary syphilis. It

is also to be noted that general alopecia mostly occurs in the young adult. Some singular instances of this complaint are related, resulting from cerebral injury. One is recorded by Surgeon-Major Cooper Todd, in which the patient was thrown out of an Irish car and sustained concussion of the brain; this was followed by hemiplegic convulsions, but the fits were of short duration, and in the intervals the patient was collected. There was, however, present at times a peculiar kind of delirium like that common in low fevers. In less than six weeks from the receipt of the injury he quite recovered, but in course of time suffered from occasional headaches, for which he sought advice in Scotland. "For this he underwent a course of mercury, and subsequently took daily thirty grains of potassium iodide for twelve months. He found one morning, on proceeding to shave, that he had no beard to cut, and afterwards all his hair fell off, not only from his head and face,

out from his chest and body, although up to that period he had always been a very hirsute man."

A like loss of hair had been known to be occasioned by flashes of lightning, as in the undermentioned case, which is mentioned by M. Boudin. "The frigate was struck by lightning on the night of February 21st, 1812, and the captain, M. Rihouet, received several severe wounds on the head. 'The next day,' says that officer, 'when I went to shave myself I discovered that the beard, instead of being cut, was torn out by the action of the razor, and since that day it has totally disappeared. The hair of the scalp, eyelashes, eyebrows, and surface of the body, fell off successively; since then I have remained entirely hairless. During the year 1813 the nails of my fingers scaled away, those of the toes experienced no visible change.'"

Prognosis.—As regards the restoration of

the hair, it may be answered that where its loss is manifestly a sequel of parturition, or follows some acute form of disease, as pneumonia or fever, its renewal with some rare exceptions may be accepted as certain; and in no form of alopecia is recovery more rapid or complete than in examples of this kind. A similar rule will apply to circumscribed alopecia in early life, or even in the young adult, nor is it easy thus to define the period when recovery is doubtful, and the less so should the health be unimpaired. The time that will elapse before the new growth attains or even approaches its natural length will necessarily vary with the duration of the complaint, its extent, and the patient's age. Some signs of growth may be found in the course of a few weeks or they may be delayed for several months, and in circumscribed alopecia it is no unusual occurrence for hair to be regenerated in some of the older patches while fresh spots are being developed quite destitute of hair.

Sometimes in children, and now and then in after life, circumscribed alopecia will have spread so far as to involve the entire scalp, leaving it perfectly bare; in such the process of recovery is frequently much retarded, the earliest sign of any down, as it may be called, being observed on the sides rather than on the top of the head.

Again, in those cases of partial alopecia characterised by a splitting of the hairs at their free ends, and also as a consequence of syphilis, a favourable issue may be looked for. On the other hand, no small section pertains to that class which admits of a less hopeful result. In the first place it may be remarked that in a considerable number of the male sex there exists a natural predisposition to baldness, which is first declared between the ages of twenty-five and thirty years, and generally shows itself on or near the crown. This tendency is often of an hereditary nature, and transmitted through several genera-

tions in succession. A similar occurrence is observed as life advances, and in either of these forms the loss of hair leaves the skin perfectly smooth and extremely white in colour. In these no new growth of hair is be anticipated by any treatment, though the reverse is the case in women and eunuchs, who are seldom prematurely bald except from disease. Again, no prospect of recovery can be held out where destruction of the hair-follicle has ensued, however it may have been brought about, as in a cicatrix the product of a burn or wound, or in erythematous lupus, although without ulceration, or as sometimes happens in favus and sycosis when those diseases have reached an extreme degree.

Treatment.—As in other diseases which involve the skin, so also in alopecia it is of importance to direct inquiry to the causes or complications which influence the disorder. In circumscribed alopecia, as I have previously remarked, it is not unusual to

find the loss of hair coexisting with, if not depending upon, severe headache, or on ascarides, or some disturbance of the general health which demands attention. In the great majority of cases, whether of circumscribed or of partial alopecia, one of the preparations of iron or quinine will be found very serviceable, or these may be combined with small doses of arsenic, omitting its use for a while and then resuming it.

Nor should certain rules with respect to diet be neglected. This should be essentially nourishing, though of the simplest kind, and limited chiefly to plain roast or boiled meats with farinaceous foods, and as regards stimulants the patient may have a moderate quantity of alcohol.

Local treatment plays also an important part in all forms of alopecia. In the circumscribed variety the bare places should be painted with a stimulant sufficiently strong to cause a sharp stinging sensation in the affected spots, as the acetic acid,

which, when used with a camel's hair brush, occasions a white discoloration of the skin. As soon as this effect is produced, or the patient complains of pain, a small piece of sponge, wet with cold water, should be applied for a few seconds to the part, when all irritation will soon cease. A renewal of the application may be made every third or fourth day, while in the intervals a stimulating pomade should be resorted to once in the day. For such a purpose an ointment containing two to three drachms of balsam of Peru, or from ten to twenty grains of the red oxide of mercury to each ounce of benzoated lard, should be tried, with the addition, if required, of a few drops of oil of bergamot or cloves.

In partial alopecia unaccompanied by any clearly defined patches, but in which the loss of hair is nevertheless considerable, the application of a stimulating wash will often arrest any further advance of the complaint, besides promoting the

growth of new hair. With this view a lotion in one of the following forms will generally prove of great benefit; acetic acid half an ounce, powdered borax a drachm, glycerine three drachms, spirits of wine half an ounce, and rose water to eight ounces; or an alkaline wash composed of two ounces of liquor ammoniæ acetatis, half a drachm of carbonate of ammonia, with glycerine and some elder-flower water as before; or, in place of the ammonia, tannic acid may be substituted in the proportion of from twenty grains to a drachm. Should the hair be dry or rank an ointment is recommended as in circumscribed alopecia, rubbed into the roots of the hair and applied at bedtime. The objection to the use of ointments containing fat, from the tendency which they all possess of becoming rancid, especially in hot weather, may be met by employing theobroma or cocao butter, as it is called. This substance mixed with olive oil in the proportion of one to three will be found

well adapted as a basis for pomades, since it will keep any length of time and is readily miscible with whatever stimulating application may be added to it. Its odour is by no means disagreeable, and resembles that of chocolate. Another agent of a like character has lately been introduced from America, where it is largely employed, termed vaseline. It is a non-volatile residuum left after the distillation of crude petroleum, purified by filtration through animal charcoal. In common with theobroma, it combines with the precipitate of mercury, and is a bland, non-irritating substance devoid of any smell.

Among the most powerful means at our disposal in the treatment of alopecia, when this arises from defective nerve power, or in cases of general alopecia where the loss of hair has been rapid and complete, as sometimes happens in the young adult from no apparent cause, is electricity, which agent may often be employed with advantage.

In bringing these remarks to a close concerning loss of hair, I would observe that when its free extremity is split, the hair should be frequently cut or pointed, as it is called, and this step repeated at intervals of two or three weeks. In the great majority of such instances, if not in all, the disorganization commences from the point, while the rest of the shaft has escaped; it is a result of defective nutrition in the hairs themselves, which are, moreover, harsh and dry to the touch. It is most common in young women, but I have known a similar condition of the hair to occur in children, whose general health and condition was in other respects excellent.

As the growth of the hair proceeds, and the same applies to those cases in which there is no alopecia, the patient is advised to employ for daily use a brush, the bristles of which are long rather than short. As a general rule the finer the hair, the softer should be the brush, or

otherwise the hair is apt to be torn from its roots, and this is of constant occurrence when brushing takes place by "machine," as it is termed; indeed, the practice of this mode of brushing so often leads to partial loss of hair, especially on the crown of the head, that it should be at once abandoned. With regard to the use of pomatum or washes for the hair, the former may be had recourse to more or less frequently according to the condition of the hair, but it should always be applied to the roots, and any excess afterwards wiped off. In some instances the hair shows by nature little disposition to dryness, and then a lotion only is to be preferred. Again, in washing the head, no kind of soap is equal to the simple expedient of the yolk of an egg mixed with a teaspoonful of water, and rubbed through the hair with a fold of flannel, and finally rinsed with hot water. In the summer months the head may be thus treated once a week or ten days, particularly if much dust abounds,

but in cold weather this is less often needed. It is scarcely necessary to add that all violent pulling or twisting of the hair is to be avoided.

CHAPTER III

CANITIES

Canities or blanching of the hair is due to a great variety of causes. The most frequent is that which, under the name of canities senilis, is so well known as a common attendant upon old age. With advancing years the hair, particularly where it covers the temples, becomes more or less grey, and this change is succeeded by a similar condition on the crown and other parts of the scalp. As regards the face, the beard turns grey sooner than the whiskers or moustache. The last to participate in the loss of colour of the hair are the regions of the axillæ and genitals. Departures from the above rule are of frequent occurrence in so far as relates to the order of change, and while the whis-

kers and beard in some cases are almost white, the hair of the head still retains its natural hue.

Albinos.—Canities may exist at birth. In a complete form it is met with in albinos, who are also distinguished by a similar want of pigment or colouring matter in the iris and choroid membrane, and, according to some observers, in the structure of the skin itself. In these cases the hair of the head has a pearly white colour, unlike that of old age, while the short hairs observed in other parts are exceedingly fine and soft. Albinos are generally said to be the offspring of intermarriages or marriages of consanguinity, and occasionally below the average standard of intellect. In a little girl, aged nine years, a patient of Mr Nayler, the hair on the scalp, eyebrows, and eyelashes was wholly white. She had two sisters, one of whom in this respect resembled her, while the other was free from any such peculiarity. Her

parents were both healthy, and each had an ordinary supply of brown hair. No hereditary tendency to the defect could be traced, nor did it show itself in any other member of the family. Albinos are not limited to European races. They are met with in South Africa and in Ceylon. The late Dr Davy in his elaborate account of that island makes the following remarks on one of them:—"The young albino, twelve years of age, in England, and certainly in Norway, would not be considered peculiar; for her eyes were light blue, and not particularly weak; her hair of the colour that usually accompanies such eyes, and her complexion fresh and rather rosy. She had considerable pretensions to beauty, and was not without admirers among her countrymen. It is easy to conceive that an accidental variety of this kind might propagate, and that the white race is sprung from such an accidental variety."

Congenital canities.—Congenital canities

is sometimes limited to one or two tufts of hair, which may occupy any part of the head. Mr Nayler met with an example of this kind in a boy about ten years of age. A patch of nearly white hair existed on the eyebrow, and also a band or streak of the same colour on the scalp near the forehead, three inches in length and about one in width. His mother and one of his brothers were reported to be marked in a similar manner. A gentleman also came under my observation in whose long black beard there was one silvery lock, which had existed from the first growth of his beard, there being no grey hair elsewhere: and I had under my care a young man, with brown hair, in whom a narrow crescentic band of white hair about half an inch in width, which had existed from birth, extended from behind one ear to behind the other, round the occiput, about an inch above the border of the scalp.

Premature canities.—In contradistinction to canities senilis, premature canities may take place in early life or in the adult. Children, as I have elsewhere stated, are not unfrequently subject to a form of alopecia, resulting in complete loss of hair from one or more spots on the scalp, or it may be its entire extent. In its progress towards recovery, the new growth is often perfectly white, and should the greater portion of the head be thus involved, a strange contrast is seen between the colour of the hair and the otherwise youthful appearance of the patient.

Causes.—Premature canities is sometimes due to some hereditary predisposition, and then it is prone to show itself in several generations in succession. In early manhood or even prior to this period a few grey hairs may generally be discovered on the head, even when no such congenital tendency prevails; and, as in canities senilis, the first sign of a change will be some-

times perceived on the beard rather than on the scalp. A common cause of premature canities is a protracted stay in a tropical climate, particularly if much exposure be superadded, and the more intense the heat the sooner is the loss of colour observed. In these and similar instances the large amount of perspiration, which the skin of the head undergoes, is not without its effect in inducing the above change; the same effect is produced by severe intermittent fever and by the so-called dengue fever. Among other influences conducing to the same end may be mentioned excessive mental depression or anxiety, and neuralgia affecting one or more of the nerves distributed to the scalp, and, in our damp climate, rheumatism; I have also seen the hair completely blanched after severe eczema impetigo of the scalp, and such a result is not unusual from any cause that tends to impede or diminish the nutrition of the hair. A distinctly white colour is sometimes imparted to the

beard also when, after many years of close shaving, it is allowed again to grow. It may be stated generally that hair is prone to lose its colour in proportion to the darkness of its tint, "jet" black hair, especially of the coarse wiry variety, being pre-eminently liable to this change, though some of the shades of brown offer exceptions to this rule.

Many notable instances are related in which the hair has suddenly become white, and the change accomplished most rapidly through the agency of some powerful mental impression. It is not my purpose to report what has been often recorded, but I may mention one or two examples probably less known, and which are of more recent date.

The first case, of which he happened to be an eye-witness, is that related by Surgeon D. P. Parry, who made the following memoranda shortly after the event:—

"On the 19th of February, 1858, the column under General Franks, in the south

)ude, was engaged with a rebel force, several prisoners were taken; one of ı, a Sepoy of the Bengal army, was ght before the authorities for exami- ɔn, and I being present had an oppor- ty of watching from the commencement fact I am about to state. Divested of ıniform and stripped completely naked, was surrounded by the soldiers, and . first apparently became alive to the ɣers of his position; he trembled vio- ly, intense horror and despair were cted in his countenance, and although nswered the questions put to him he ıed almost stupefied with fear. While ally under observation, within the e of half an hour, his hair became on every portion of his head, it ng been when first seen by us the sy jet black of the Bengalee, aged ıt twenty-four. The attention of the anders was first attracted by the ser- ıt, whose prisoner he was, exclaiming) is turning grey!' and I with several

others watched its progress; gradually but decidedly the change went on and a uniform greyness completed within the period above named."

The second is that of the Abbé Lefevr who, in the course of the notorious Tic borne trial, deposed that on hearing the death of his father he dreamed t following night of having been a specta of the actual event with all its deta In the morning he awoke greatly agitat and discovered that his beard had turn grey in the course of the night. A m remarkable case in some respects than preceding is one which was brought bef the notice of the Clinical Society, in 18 by Mr Wilson, who exhibited two locks hair, one grey, the other brown, from t head of a lady who had consulted him t previous year. She stated that duri pregnancy she received a severe shoc which was followed by complete loss hair from one spot of the scalp, and so remained for twelve months. At the e

piration of that time new hair began to grow on the patch hitherto denuded, and continued perfectly white for three years, when the natural colour was regained, and afterwards acquired even a darker hue than the original.

Prognosis.—When grey hair succeeds to alopecia in early life a favorable opinion may be given that the natural colour will be restored. In these cases it is only the first growth of hair which suffers from the change, and with its renewal the original tint returns. The same may, and indeed often does, take place at a later age, but this result is not so sure as in childhood or at puberty. In after life, whatever the nature of the exciting cause, an arrest of the discoloration is little likely to ensue except on the removal of that cause, and this is by no means unfrequent in those instances where it has supervened upon anxiety, neuralgia, or illness. A case is mentioned by the

late Dr Graves, of Dublin, in which the well-known pink eyes and white hair of an albino assumed respectively a blue and a light brown colour, and others are recorded where the canities of old age has been replaced by the hair of youth, but these are altogether exceptional in their very nature. The canities resulting from fright or severe mental emotion is commonly regarded as incurable, but the example mentioned by Mr Wilson may suggest a doubt on this point, or at any rate leaves it undetermined. It should be remembered that only after a space of three years had elapsed did the hair resume its normal colour. Instances of this kind are rare indeed, and still more rarely is their final history obtained.

CHAPTER IV

HIRSUTIES OR EXCESS OF HAIR

By hirsuties is meant an excess or unusual development of hair, which may take place on those parts naturally most covered, as the scalp, axillæ, or genitals; or it may be more or less general throughout, when, besides the above regions, it is chiefly abundant on the limbs and front of the chest. This exuberance of hair is common to many, particularly to those who, besides possessing great muscular development, are of a dark rather than a fair complexion.

Hirsuties of partial extent may exist at or shortly after birth, or appear in the early years of life, or it may be deferred to adult age. In these cases it is always restricted to those parts where hair is

naturally more abundant. Sometimes i is accidental, or the result of constitutional causes or disease.

General hirsuties.—Instances of genera hirsuties, in which the growth of hair i so excessive as to amount to a deformity are very rare. One of the most remarkable is that which Mr Crawfurd mention as having been witnessed at the Court o Ava, and his description is as follows:

"His name was Shve-Maong, and h stated himself to be thirty years of age His height was five feet three inches an a half, which is about the ordinary statur of the Burmese. In his complexion ther was nothing remarkable, although upo the whole he was perhaps rather faire than the ordinary run of Burmese. The colour of his eyes was a dark brown, no so intense as that of the ordinary Burmese The same thing may be said of the hair o his head, which was also a little finer i texture and less copious. The whole fore

head, the cheeks, the eyelids, the nose including a portion of the inside, the chin, in short the whole face with the exception of the red portions of the lips, were covered with a fine hair. On the forehead and cheeks this was about eight inches long, and on the nose and chin about four inches. In colour it was of a silvery grey; its texture silky, lank, and straight. The front and back of the ears with the inside of the external ear were completely covered with hair of the same description as that of the face, and about eight inches long; it was this chiefly which contributed to give his whole appearance at first sight an unnatural and almost inhuman aspect. He may be strictly said to have had neither eyelashes, eyebrows, nor beard, or at least they were supplanted by the same silky hair, which enveloped the whole face. He states that when a child the whole of this singular covering was much fairer than at present. The whole body, with the exception of the hands and feet, was covered with hair of

the same texture and colour as that now described, but generally less abundant; it was most plentiful over the spine and shoulders, where it was five inches long; over the breast it was four inches long; it was most scanty on the forearms, the legs, thighs, and abdomen. We thought it not improbable that this singular integument might be periodically or occasionally shed, and inquired, but there was no ground for the surmise; it was quite permanent. Although but thirty years of age, Shve-Maong had, in some respects, the appearance of a man of fifty-five or sixty; this was owing to a singularity connected with the formation of the teeth and the consequent falling-in of the cheeks. On inspecting the mouth it was discovered that he had in the lower jaw but five teeth, being the four incisors and the left canine; and in the upper but four, the outer ones of which partook of the canine form. The molars or grinders were, of course, totally wanting. The gums, where they should

have been, were a hard fleshy ridge, and, judging from appearances, there was no alveolar process. The few teeth he had were sound, but rather small, and he had never lost any from disease.

"He gave the following account of the manner in which the hairy covering made its appearance. At his birth his ears alone were covered with hair, about two inches long, and of a flaxen colour. At six years of age hair began to grow on the body generally, and first on the forehead. He distinctly stated that he did not attain the age of puberty until he was twenty years old. Shve-Maong was married when about twenty-two years of age. By his wife he had had four children, all girls, the two elder of whom died when young. The third, about five years of age, had nothing to distinguish her from an ordinary healthy child. The youngest was about two and a half years old, a very stout fine infant. She was born with hair within the anterior por-

tions of the ears. At six months old it began to appear all over the ears, and at one year old on different parts of the body. This hair was of a light flaxen colour and of a light silky texture. When two years of age, and not until then, she got a couple of incisor teeth in each jaw, but had as yet neither canine nor molar. Shve-Maong assured us that none of his parents and relations, and, as far as he knew, none of his countrymen, were marked like himself."

Partial hirsuties. — Instances of this affection commencing at birth are sufficiently illustrated in the occurrence of small tufts of hair developed on a mole, which may take place on any portion of the skin. Sometimes the hair thus produced is short and strong, while at others long and delicate, especially on those parts which are protected by the clothes. In most cases the mole or discoloured skin is somewhat elevated above

the surrounding level, and examples are not rare in which a considerable extent of surface is affected in this manner. When situated on the trunk or limbs it may be a matter of not much import, but its occurrence on the face, where it will sometimes occupy the greater part of the cheek, encroaching it may be on the lips, nose, or forehead, excites a marked degree of deformity, and the more so as the hair on such a patch is often varied in its colour and length. A case came under Mr Nayler's notice in which there was partial paralysis of the left leg. The skin throughout the limb was of a mottled brown colour and clothed with long and fine hair. A somewhat similar instance is also recorded by Sir James Paget of a child one year old whose left arm and shoulder was covered with a thick fringe of hair.

An unusual development of hair in early life is sometimes associated with malignant disease, as in the following instance. A child three years old, a female, was brought

to St George's Hospital, and died the following day. She was exceptionally large and stout for her age, and was remarkably hairy, the genital organs being as thickly covered as could be expected at any period of life; the skin was darker than usual. At the post-mortem examination all the organs were found to be natural, excepting the liver, which contained small nodules of encephaloid, and the left supra-renal capsule, which was replaced by a mass of encephaloid cancers weighing 2 lbs. and 2 oz.

Non-congenital partial hirsuties. — As a non-congenital complaint, local hirsuties is not unfrequently met with upon the upper and lower lips or the chin in women, and even in girls who have passed the period of puberty. At this period the new growth seldom exceeds a few downy hairs developed on the first of these localities, especially towards the angles of the mouth. In after life, how-

ever, it is sometimes excessive, the surface being covered with well-formed hair, causing great annoyance on account of the personal disfigurement it gives rise to. In many cases the excess of hair is connected with derangement of the general health, and more frequently still with some irregularity or disease of the uterine organs. So also it is more common after a certain age in the unmarried or in those who have not borne children than in others, and its tendency is to increase with advancing years.

Accidental hirsuties.—Local productions of hair will sometimes arise from the site of a blister, or some stimulant applied to the skin. This is often noticed when the blister has been allowed to "remain open" for some considerable time. As the raw surface heals, a new growth of hair is seen to spring from the sides and part which it lately occupied. Rayer mentions a case of a medical student who had several patches

of hair developed it would seem from the heat of the sun on the skin, which had just been acted upon by salt water. The patient was in the habit of bathing in the sea, and then drying himself in the sun. He soon discovered a number of patches, especially on the trunk, of a sallow or coppery colour, on which hair had been suddenly formed. An instance in some respect similar was afforded by a young lady who consulted me about eighteen months ago. She was about twenty-five years of age, of fair complexion and with light brown hair. She told me she had been for some years resident in South America, whence she had lately returned. On the part of the body exposed to the sun, namely, the lower portions of the face, the forearms, and the backs of the hands, was a strong growth of light-coloured hairs, some of which exceeded an inch in length, most marked on the lips and cheeks. No such growth had existed prior to her residence in the

tropics, and her general health was excellent.

A development of hair, though in a less degree, is also often noticed on parts of the body that have been effectually protected from friction, as when a limb is kept in splints for a length of time, the growth being also favoured by warmth. Increased supply of blood to a part is often an important factor in the production of abnormal developments of hair, as is exemplified in the familiar instances of aneurismal varix, &c.

CHAPTER V

TINEA TONDENS OR RINGWORM

The class of complaints which I am now about to consider are characterised by the presence of a vegetable parasite or cryptogame, an analogous formation to which takes place in the vine disease so called, or is more familiarly supplied in the case of the "mould" which collects around the cork of an ink bottle, when the latter has been opened, and set aside for a considerable time in a damp and dark locality. However different in their effects, the several parasites are distinguished by mycelium or tube-like structures from whence are derived the spores or sporules, on which greatly depend the extent and severity of the disease.

The Tinea group comprises tinea ton-

dens or ringworm, tinea favosa or favus, and tinea mentagra or sycosis.

Identity of Herpes circinatus and Tinea tondens.—Whatever opinion might have been entertained as to the identity or otherwise of herpes circinatus and tinea tondens, there can be no longer any question that these eruptions are essentially the same; and the following instances, recorded by Mr Nayler, will illustrate what not unfrequently happens in practice. One was that of a boy, seven years of age, with "herpes circinatus" on the metacarpal space of the right hand, and with a patch of "tinea tondens" on the occiput; in the other, also an out-patient at the Hospital for Diseases of the Skin, a woman, aged thirty years, was admitted with the usual ring of "herpes circinatus" on the middle of the right forearm. She was the mother of three boys, each of whom afterwards became affected with "tinea tondens" of the scalp. There

could be no doubt that these were examples of one and the same complaint, which had obviously spread by contagion, nor can they be regarded as exceptional. So common, indeed, is the coexistence of these affections that about one in every five affords an example of the above complications.

Tinea tondens of the scalp.—Among its early signs there is generally noticed a patch seemingly bare, but which on closer inspection is found to exhibit a number of short or broken-off hairs, growing irregularly from its surface. This surface, although sometimes of its natural colour, is more frequently rough and grey, like goose-skin, and often covered with a kind of scurf very adherent to the scalp, and difficult of removal. It is the occurrence of such a spot, which in many instances first attracts the attention of whoever has charge of the patient, particularly if the complaint be situated near

the forehead, or along the parting of the hair, where it is readily observed.

Its early symptoms.—On continuing our research, we may sometimes discover, in addition to the above appearances, one or more smaller patches, dotted with white or whitish-yellow crusts, the remains of vesicles, and traversed in the ordinary way by hair, which is yet unchanged; the bulb may be irregular, but the shaft offers no sign of disease, and the same resistance to its extraction remains as in a healthy state; or still smaller spots, only of a reddish hue, may be perceived, and in either case the affected part seldom exceeds in diameter that of a split pea. These may be regarded as the primary stages of the disease, soon to assume, if let alone, the condition first described, in which the stunted hair gives the eruption its peculiar character. When this has taken place, the patch will vary in extent from a sixpence to a crown piece, or larger, more

or less circular in form, and in most examples several similar places may be met with on different portions of the scalp. Examining the hair thus affected with or even without the aid of a lens, it is seen to be broken off at a short distance from its root, and in some degree twisted; so brittle in texture as often to snap when extraction is attempted. Under the microscope the hair is seen to be loaded within and without with spores; these are arranged longitudinally to its axis, but in an irregular manner. They are circular, less often oval, and contain a granular or imperfect nucleolus. In size, according to Malmsten, they vary from 0·003 to 0·007 mm. Similar results are also obtainable in the crusts on the surface.

Its various forms.—Besides the above appearances of the hair, as recognised by its shortened growth, there are other conditions no less diagnostic of tinea tondens, which offer to the naked eye

symptoms widely different from those already described. They are the consequence either of a relapse or of a chronic state of the complaint. In many cases the eruption, although partially yielding to treatment, after a time acquires a character not unlike chronic eczema in the size and colour of the scales; they are detached from the scalp with much less difficulty than usually happens in tinea tondens, but with them are included one or more hairs, which are often enveloped in a kind of scaly sheath. Viewed with the microscope, the hair is surrounded with a growth composed largely of spores, although they seldom appear to enter into its structure.

Should the complaint be left to itself, or become yet more chronic, other changes ensue. Among the most evident may be named the density and whiteness of the covering, which overlays the affected part, and gives to the surface an appearance much resembling psoriasis. It is more

readily separated than might be expected, but not so the hair, the greater part of which is stunted and imbedded in the new tissue. When, however, a few hairs are removed, and placed under the microscope, the disintegration is observed to be almost complete. At this advanced stage it will be found to have lost its smooth exterior, which is split into fragments; the natural outline of the bulb has vanished, and what remains is scarcely distinguishable from the rest of the shaft, except that at this part the spores are more numerous than elsewhere. Not only do they encircle the hair and pass between its fibrillæ, but some may even be observed at its broken-off extremity.

Closely allied to the condition just described, and differing from it only in degree, is that sequence of the complaint, which shows an essentially confirmed stage. In these cases the crust is so adherent to the surface as to be scarcely separable. It is penetrated by short hair, some-

times intermingled with long, but the former is greatly in excess. Little or no irritation attends the disease, and the scales are less easily shed than in other examples, but if removed by force are quickly renewed. The hair is entangled in the crust, and when extracted exhibits a mass of spores inside and outside; the shaft is so brittle that the line of fracture, where the forceps has been applied, is readily distinguished.

Although the preceding may be taken to denote the more ordinary forms of tinea tondens, varying with the stage and progress of the disease, departures from them are nevertheless of occasional occurrence. Thus an apparent recovery may be succeeded by an eruption of small scales or laminæ, sufficiently thick to conceal the surface of the skin, and occupying the greater portion of the scalp. The hair is unaffected, and whether in lustre or quantity cannot be distinguished from that or any surrounding part which has

hitherto escaped. No evidence of disease is afforded by the hair when subjected to microscopical inquiry, and the scales are likewise devoid of any vegetable parasite. The rapidity with which this change may be effected is remarkable, and in the course of a single month the whole scalp may exhibit the above signs, when a few weeks before no vestige of tinea tondens could be traced. Again, a relapse is sometimes indicated by a white powder or scurf, only more abundant towards the centre than the circumference of the patch, and most troublesome to remove. Here the microscope shows a degree of destruction as regards the hair not much inferior to that severe kind previously referred to, and which otherwise might scarcely be suspected.

Tinea tondens is also occasionally accompanied or followed by a pustular eruption on the scalp; the pustules being either scattered singly over the scalp or congregated together so as to form con-

siderable patches thickly covered with pustules, and beneath which the deeper layer of the dermis may become infiltrated with pus, but as I have never seen this condition developed prior to the application of remedies, I am inclined to suspect that the treatment adopted may have a considerable share in its production.

A consequence by no means uncommon, when powerful local applications have been resorted to, is the occurrence of large abscesses on the parts, as denoted by great redness, and pain on the least pressure. They often last a considerable time, and are attended by baldness of the surface, which although tedious is only temporary, and they frequently accompany or follow the pustular condition above referred to, which in like manner also may give rise to a similar transitory loss of hair.

Permanent baldness is said sometimes to follow tinea tondens. This must be very rare indeed, and more frequently a result of the remedy, as when strong

caustic agents have been used, than of the actual disease.

The new hair, as soon as it has commenced to grow, is strong and not easily pulled out; it is as yet scanty, and generally of a lighter colour than the old. Under the microscope the bulb is more or less fusiform, and the lower part of the shaft very irregular, but it is neither broken nor does it display any fungoid characters.

Causes.—No doubt remains that the complaint is caused by contagion, which is mostly received by direct contact. Circumstances also render it highly probable that the sporules may be transmitted by the air, and it has been shown by experiment that these same bodies are capable of disseminating the disease by inoculation. When a number of children are collected together, as, for example, in a school, the eruption often spreads rapidly; among the elder members, although they are exposed to the same risk, its influence is less observed.

In the event, however, of its occurrence in the latter, the restriction of the complaint to the body and limbs, rather than to the scalp, its chief seat of selection in early life, is a singular feature of its history, and one hitherto unexplained. The affection is uninfluenced by the seasons, and although more usually attributed to boys than girls, a sufficient explanation is afforded by the increased risk of communication among them, and not to any real exemption in the female. Of the most frequent modes of transmission by contact, may be instanced the use of a cap or comb of the patient by a second person; while still more direct evidence is afforded by the disease when it is conveyed by the back of the hand to the head in the same individual. Besides these sources of contagion, "ringworm" is occasionally propagated to the human species from one of the lower animals, and particularly those in domestic use, as the dog or cat. Mr Nayler reports the case of a patient who

came under his care with an obstinate patch of this disease on his wrist, evidently contracted from a calf, which was extensively affected in the same manner. A like eruption is not uncommon in horses, and most of all in colts, when they are what is termed "out of condition;" and in these examples it is the young which chiefly suffer, and the complaint is mainly seen about the face, neck, and ears. The property of contagion is supposed to lurk in the garments belonging to the attendants of such animals, and those who have had much experience of the kind are careful to prevent their sleeves from coming into close contact with a diseased surface. As a proximate cause among the working population of Paris, Hardy cites the want of ablution, which, by permitting the perspiration and dust to collect, favours the development and growth of the parasite. But something more than this is required to explain its origin, since tinea tondens is by no means restricted to one or any class

of society, for "ringworm" is observed to be a far more frequent complaint among the higher or middle than the lower ranks of life. It cannot be said, like favus, to be an accompaniment of poverty and dirt. The spread of the disease is in no degree confined to the sickly or destitute, although in certain cases these would seem to be severely affected, and the complaint to advance in these with far greater rapidity than in others.

Diagnosis.—Alopecia is to be diagnosed from tinea tondens by the smooth appearance which it exhibits, as well as by the absence of all broken hair and in its being non-contagious, and by the differences distinguishable on microscopical examination; from the squamous diseases of the scalp tinea tondens differs in the circumscribed character of the implicated part, and in the larger and thicker scales, which are presented by psoriasis. The same limited extent of surface will also distinguish it

from pityriasis or dandriff, which, like the last-named eruption, is unaccompanied by any change in the structure of the hair involved.

In connection with the diagnosis there is one point to which I would refer, viz. the chance of its being overlooked, and this is more likely to happen in those who are no longer children. Not long ago I was consulted in the case of a boy, with ringworm on various parts of the body, and which at the time of his visit to me was nearly cured, as to the propriety of his returning to school, and I remember an almost similar instance which occurred in Mr Nayler's practice. A negative reply was at once given to the inquiry whether any eruption was known to exist on the scalp, and yet on examination I found a large patch of tinea tondens with the characteristic stunted hair fully developed on the surface. I feel sure that there had been no suspicion of the occurrence of the complaint on the head, where

it had escaped notice from the absence of any irritation or itching in the affected part.

Prognosis.—Having thus far passed in review the various phases of tinea tondens, as they occur, modified by time and treatment, the influence they exert on the question of more or less prolonged recovery now remains for inquiry. It may be assumed, as a very general proposition, that this point is greatly determined by noticing the adherent character of the scales, rather than their size, distribution, or extent. For so long as they are allowed to accumulate or continue, the prospect of improvement will be indefinitely postponed. Another unfavorable symptom is when the hair, already short or broken off, is firmly encased in scurf, and only separated with difficulty; and these signs, apart from any microscopical investigation, will enable us to arrive at a conclusion opposed to an early amendment of the complaint. In

those instances of a relapse which have proceeded with little let or hindrance, and which often resemble chronic eczema or psoriasis, it may be observed that in either case, where the crusts admit of easy separation, and the hairs, no longer shortened, are extracted entire, a more favorable opinion may be expressed; and should any doubt exist, the microscope will furnish proof of the freedom of the hair from disease, or, at least, of the restriction of the cryptogame outside the shaft rather than within it.

Such are the considerations and circumstances which are likely to hasten or retard recovery, and there is no one point more eagerly canvassed by the parent than the prospect of cure. In a very large percentage of cases an improvement is soon indicated, which continues to increase till the new growth of hair is no longer distinguishable from the old, or from that which has never been attacked; at this stage the cure may be pronounced com-

plete. The period when this will occur will be dependent upon the previous duration of the disease, and on the freedom from scurf or scales to which I have especially directed inquiry.

Treatment.—As regards local remedies, there are few applications which succeed so well as the compound sulphur ointment of the pharmacopœia, to which a few drops of oil of bergamot or rose geranium may be added to disguise its odour; or instead of lard as a basis for the ointment theobroma with olive oil or vaseline may be used as before explained. Sometimes in the place of sulphur a mercurial preparation as the citrine ointment, or one containing the red oxide of mercury, is to be preferred, especially if there be much tenderness about the scalp. Whatever the form of the ointment, it should be employed once or twice a day to the patch, and for some slight distance around it. In many cases it will be advisable to blister the diseased

surface. This is best done by applying acetic acid with a camel's hair brush, and allowing it to remain on the part until the latter begins to smart and burn, when a fold of blotting paper should be pressed upon it, or a sponge wet with cold water.

Another remedy which answers well in many cases is Goa powder, well known throughout India for the treatment of ringworm and other kindred complaints. It is of a snuff colour with hardly any odour, and before use should be mixed with a little lemon juice or vinegar until it becomes of the consistence of cream, or may more conveniently be made into an ointment by being mixed with melted lard. When applied it produces little irritation of the surface, and the discoloration soon disappears. Although its exact composition is unknown, it is sold in large quantities in Bombay. It is supposed by Mr Kemp to be almost identical with orchella weed, great quanti-

ties of which are exported from the coast of Africa.

Although of utility singly in certain cases, I have found a combination of tar and iodine preferable to either of these substances alone. Mr Nayler used it in the following form, in which it is easily painted over the affected part with a piece of sponge or lint attached to a piece of wood, and then allowed to dry:— ℞ Iodinii pur. ʒij, Ol. Picis (sp. gr. 853) ℥j. Misce. The oil of tar and iodine should be gradually and carefully mixed, otherwise much heat is generated, and the iodine dissipated. They appear to combine chemically, and produce a dense greenish-black fluid, which has the advantage of retaining its efficacy for several days after being applied.

Carbolic acid is sometimes of service, and may be employed as an ointment in the proportion of ten to fifteen grains to an ounce of lard.

Iodoform, also, a substance which, as

far as I know, has not before been applied to this purpose, I find most serviceable as a local remedy in obstinate cases of tinea tondens, and I have seen many instances, in which every other means having failed, rapidly get well under its use. I employ it as an ointment. Its powerful penetrating and to most persons most disagreeable odour is I fear an almost insuperable objection to its employment in private, though this can in some measure be disguised by combining with it the more powerful essential oils, as Ol. Verbenæ, Ol. Cedrat., or Ol. Santil.

The internal treatment should be regulated by the general health of the patient, and in those cases in which there is an evident tendency to struma, cod-liver oil will prove a valuable adjunct. It may be given in doses from one to two teaspoonfuls according to age, and continued as long as it does not create nausea or otherwise disagree, and is nearly always better borne if taken after meals. In the

winter months its use may be continued for a lengthened period with little intermission, but not so in summer, when there is less call for its use. In other cases one of the varied forms of steel, as the perchloride, which should always be combined with a purgative, may be recommended, and in milder instances the citrate of iron and quinine will be an excellent tonic; or from five to ten drops of the liquid extract of cinchona in water with from one to two minims of the liquor arsenicalis; very serviceable also and not unpalatable is the syrup of the phosphate of iron, quinine, and strychnia in doses from ten to thirty drops with a little tincture of orange peel in water.

From the susceptibility of ringworm to spread to other patients, and particularly to the younger members of a family, it is advisable, in the event of a child becoming affected with it, to keep him apart from his playmates for some days, or, at any rate, until the disease has ceased to extend,

but to insure perfect safety the period of separation would have to be prolonged till all signs of activity on the part of the complaint had disappeared, for it is surprising for how lengthened a time it may retain its contagious properties, even when it has been subjected to the most approved treatment. In the case of a boy I always urge the necessity of having the hair cut close—an inch in length all over the head, as by this means not only are the remedies more readily applied, but any fresh spot is at once detected. In addition to this measure, while under treatment or until approaching recovery, the patient should wear in the daytime a light skull cap—one of Persian silk of the colour of the hair answers every purpose, and so lessen the risk of communicating the complaint. It need hardly be observed that a patient's comb and brush should not be used for others, and in lieu of soap to the head for the purpose of occasional cleanliness, a substitute should be sought in the yolk of egg and warm water.

CHAPTER VI

TINEA FAVOSA OR FAVUS

When we consider the character of *favus*, how entirely it stands alone among the affections, whether of the skin or hair, in all that concerns its symptoms, progress, and pathology, our surprise will cease at the interest which Schonlien awakened by demonstrating its cryptogamic structure; or the elaborate investigations of which it was soon to become the object. There is probably no disease that has undergone the test of microscopical inquiry in so great a degree as favus, and the names of Gruby, Robin, Lebert, and Remak, among a host of continental writers, who have devoted to it a large share of attention, need only be recounted. In our own country at a time when Gruby

was still pursuing his researches, Hughes Bennett of Edinburgh followed closely in the same path; and in a paper which he communicated to the Royal Society of Edinburgh, was the first to give us a clear and accurate account of its peculiar method of development.

General characters.— As soon as it is capable of being recognised by the eye, favus is seen to consist of a light yellow or brimstone-coloured crust, not exceeding in size a millet seed, and oval or circular at its periphery. Sometimes it is pierced by one or more hairs, which are generally oblique in this direction. Though partially embedded in the skin, its upper surface quickly rises to a level with the epidermis, with which at its circumference it is closely connected; it is at first flat, and soon becomes slightly concave. As it increases in diameter, its concavity deepens, and acquires a lighter colour in the centr[illegible] further distinguished

by a series of concentric rings. Should the crust be detached at this stage, its under surface is found smooth, convex, and covered with moistened cuticle; a drop or more of blood may follow its removal, but otherwise, and if the separation be carefully effected, the cutis is only somewhat reddened and depressed, and in a few hours regains its natural elevation. In some cases after the crust has been thus detached, a small button-like projection will be observed on the surface. A thin crust soon takes the place of the old; but should the original concretion be undisturbed, in the course of a few days it will have arrived at maturity, and then further changes ensue. It loses its characteristic cupped appearance, and becomes convex; the circles grouped round a common centre fade and finally disappear; and then a raised and rough mass results, dry, friable, and fissured. By degrees its attachment to the skin is less firm, and its base less round than

before. At length the crust drops off, leaving only a dark red stain. These successive changes are best studied in those crusts that have remained distinct. Where several have coalesced they give rise to irregular formations.

Appearances of the hair.—When favus attacks the hair, the condition of the latter becomes greatly changed; it appears dead and dull, and its elasticity is destroyed. If we examine a marked specimen the external surface may be observed to be dotted with circular spores, which although separate mostly present a linear arrangement. They tend to split the hair longitudinally in several places, and at length totally disintegrate it. In a less advanced stage these characters are not so apparent, and only a few scattered spores are seen on the exterior. Not only is the shaft affected in this manner in its whole length, but the bulb suffers in the same or even in greater degree. It in-

creases in size, spreads, and numerous spores are deposited between its projecting fibrillæ. If the complaint be very chronic, and the hairs are allowed to fall out, as they will do, the follicle becomes destroyed, and permanent alopecia results. In such patches, which remain bold, the skin is thickened, hard, and dry.

Appearances of the crusts. — A favus crust, in its early stage, is light and highly porous in its interior, breaks like a piece of pumice-stone, and crumbles to a yellow powder. Externally it is more compact, so as to constitute at this part a thin and tough layer or *stroma*. It is in its central part that the mycelium and spores abound. The stroma, according to Bennett, is the source from whence are derived the spore tubes. They emanate from every point of its interior, or rather from the granular mass which lines it, and divide dichotomously as they approach the centre, where they break up into

a number of spores. The tubes are cylindrical, but assume every variety of shape.

Numerous experiments have been made to propagate the disease by inoculation; they have generally failed, but the skin has become red, or slightly inflamed, or only pustular. Remak is stated to have inoculated successfully, after removing the cuticle and attaching the favus crust by means of strips of plaster for thirty-six or more hours. There can be no question that favus is contagious, but it is not so clear under what circumstances the contagion is received. It is during the growth, when the crusts are first formed, that favus appears most communicable, as at that period the sporules are abundant. After a time the crust loses its distinctive characters in this respect, and the hair becomes destitute of spores. At a still later stage the scalp, supposing the hair to be cut close, and recovery is proceeding, bears no small resemblance to

hronic eczema, as far as external appear-
nces are concerned.

Situation.—Favus is not confined to the
ad, but may occupy the extremities or
nk; the former is, however, the most
equent locality, even when other regions
e affected. In infancy favus is rare, a
int which has not escaped the notice of
ligan, who states that he never met
th it below the age of three years; it is
so seldom witnessed in old age. Al-
ough it may attack the nails, it rarely
cludes the hands or feet.

Causes.—Favus has no necessary con-
ection with struma, though it cannot be
nied that it is frequently found in
thisical subjects. Perhaps there may be
mething in the cutaneous secretion in
ese cases that favours the growth of the
orules, but there is no sure evidence on
is point; certain it is that the com-
aint is rarely seen in the well-to-do

classes, and generally is confined to those who are ill-nourished, weakly, and undersized. Dirt is a powerful predisposing agent; hence the frequent association of favus with pediculi or scabies, or both. Moreover patients who have already suffered from this disease are, more than others, liable to be attacked. Whether this be due to the complaint not being wholly cured, the germ of it still persisting, is doubtful; but the fact remains, that in a severe case after apparent recovery the patient is very subject to experience a relapse, which may be repeated at intervals for years. The loss of hair will depend upon the state of the hair follicles; when the latter are obliterated, which takes place after successive attacks, no regeneration of hair ensues; the skin is hard, inelastic, showing a few hairs here and there, and is often of a yellowish colour, but in the less severe forms of this eruption no permanent baldness follows.

Rarity of favus.—There are good unds for the belief that favus is oming, at least in this country, more e. At the Hospital for Diseases of the in it is far less frequent than formerly; 'ertheless examples of it are to be met h in some of the worst and densely wded districts of London and in our ge prisons. In Paris, and at St. Louis, disease would seem to be far from nmon among the in- or out-patients. leed, in any case it is only the lowest ss, among the children of the very or and wretched, that the complaint urs at all.

The Seat of the Disease.—The actual seat favus is still unsettled. According to ne observers, the disease commences in hair follicles, and various are the anges that it is supposed to undergo fore it reaches the surface in the form a cup-shaped crust. By others, among om may be mentioned Gruby and

Bennett, the mycelium is received between the layers of the epidermis, while a furfuraceous desquamation of the cuticle precedes the crusts, from the walls of which the sporules are derived. What lends weight to this theory, and renders its acceptance the more trustworthy, is the fact, that the attached surface of the crust is coated with a layer of epidermic scales, which separate the granular mass from the cutis, and consequently from the hair follicle. The follicle itself is probably affected secondarily; and when the hair is finally destroyed, the change is caused by the pressure acting on the follicle, rather than by any primary defect in the condition of the follicle itself. Some authors, as Rayer, speak of favus as if the disease were originally pustular. This is no doubt an error; pustules may coexist with favus, but they are quite independent of it.

Odour.—Favus is often stated to emit

a offensive odour. This may and does appen in a very advanced stage of the mplaint, when it has been allowed to in its course to the complete exclusion of l cleanliness, but occasionally it is not sy to subdue, as I found in the case of little girl, an in-patient at the Hospital r Diseases of the Skin, lately under my are, when the odour was perceptible in e ward for some days in spite of the ee use of such antiseptics as carbolic acid nd the liquor carbonis; at the same ime, favus, even involving the greater art of the face, trunk, and extremities, ay be unattended by any disagreeable mell. When it occurs unchecked the disease is often complicated with vermin, which find refuge in the fissures of the crusts, particularly on the scalp; and is further aggravated by severe itching, which the patient tries to alleviate by violently scratching the part.

Treatment.—The common remedy in

France is epilation, as practised at St. Louis. This mode of treatment is generally entrusted to an experienced attendant, who is furnished with a pair of forceps having broad and closely fitting edges. Simple as the operation may appear to be, it needs some degree of skill to perform it properly. The hairs should be extracted in the direction in which they grow, and as the complaint renders them very brittle, they are very apt to break off at their roots. The extent to which the treatment should be carried at a single sitting will depend partly on the feeling of the patient, and still more on the dexterity of the operator, but, as a rule, the procedure is more painful at first than afterwards. The time that it may altogether occupy before the diseased hairs are thus eradicated will be proportional to the extent to which the complaint has spread. It is scarcely necessary to say that, before epilation can be undertaken, the surface of the scalp should be thoroughly cleansed, and the

hair itself cut quite short. If after some days no signs of crusts appear, the patient may be pronounced convalescent, but it will be as well not to lose sight of him, for the spores will sometimes lie dormant for a while. A return of the disease is shown by a slight redness and a furfuraceous condition of the scalp. In the intervals between the extraction of the hairs, the surface should have applied to it an ointment of sulphur and mercury. Other plans of treatment are also in vogue abroad. Thus, after clearing the head of all crusts, it is washed with soap and water, and this step repeated day by day until it is perfectly clean. An ointment is then applied every alternate evening for two or three weeks or more according to the severity of the case, composed of one or two drachms of bicarbonate of potash to an ounce of lard. In England epilation is seldom had recourse to. After the usual preparatory process in the way of cleansing, tar or creasote ointment is used.

In most cases this seems to answer every purpose. Neligan, who had considerable experience of this disease in Ireland, prefers the iodide of lead ointment, in the proportion of half a drachm to an ounce of lard, and states that it had succeeded so well in his hands that he has had no occasion to try any other remedy.

CHAPTER VII

TINEA MENTAGRA OR SYCOSIS

THE origin of the word *sycosis* is from the Greek *συκον*, a fig, the pulp of which it was thought to resemble. No such similarity as that implied from its derivation is in any way offered by the disease; but it is, nevertheless, sometimes expedient to retain a name which has come down to us from ages, although possessing no other claim than that of antiquity for its support. Sycosis was known as far back as the time of the younger Pliny, who mentions the complaint as an epidemic in different parts of the Empire, and very severe among the higher ranks of the Roman nobility, among whom it produced the most extensive

ulcerations and disfigurement. The treatment, if we may credit the same authority, that the patients received was of a kind little likely to improve their personal appearance, or arrest the rapid progress of this malady.

Sycosis is classed by English writers with the pustular diseases of the skin. It is nearly related to acne, and should be regarded as a disease of the hair follicle. In France sycosis is deemed a parasitical affection, dependent on a cryptogame which is described as similar to that pertaining to tinea tondens. In support of this theory it is alleged that cases occur in which sycosis and tinea tondens have been found in the same family, or even in the same person. But the inference thus sought to be deduced is hardly warranted, from the rarity of the coexistence of these complaints; and is moreover opposed by the difference of locality which each variety of fungus presents. Its contagious character would appear to rest on a solitary

example recorded by Foville, which is frequently quoted.

Microscopical appearance of the fungus.—The parasitical growth is remarkable in being limited to the sheath of the hair, which, as well as the root, it surrounds, but it never appears above the skin. The spores are abundant, and circular in shape. Gruby first discovered this growth, and in his memoir he mentions the filaments connecting the sporules as extremely thin, and granulated internally; the filaments are also seen to divide at various angles. The fungus is chiefly situated between the root of the hair and its follicular wall.

Situation.—The hairy portion of the face is the usual locality of sycosis. It does not commence before puberty, and is almost peculiar to the male sex, in whom it occupies part or the whole of the upper lip, or the exposed mucous membrane of

the nasal septum; or the chin, whence the name of *mentagra*, by which it is best known abroad. Sometimes the sides of the face which are covered by the whiskers are the seat of the eruption. Rarely does it affect the eyebrows, and more rarely still does it occur on the back of the neck, where there is also a growth of short hair, Mr. Nayler having met with but a single example, in which case it coexisted with sycosis of the lips and chin. A species is referred to by Bateman under the name of "sycosis capillati," and by Alibert as "pian ruboide;" and some authors speak of sycosis in the female, but these must be regarded as most unusual occurrences.

Symptoms.—Sycosis exists in two distinct forms, one of which, and the least common, consists in the development of thin white scales, difficult to detach, and seated on a reddish ground, which is often evident at the margin of the patch. Considerable

itching is experienced in the affected part, which is slow to extend, and may remain for many months with little visible change. When occurring on the chin or beard, the scales are thicker than on the upper lip, and consequently apt to involve the hair to a greater degree. It is in this variety at an early stage that the parasite is observed, but if a period of some months, or even weeks, be allowed to elapse, no trace of the cryptogame remains.

In the other variety of sycosis a feeling of heat and tension, rather than pain, is experienced in the part before the eruption appears. The surface is at first red, and a few pimples or tubercles are commonly developed upon it, which increase the irritation. Some of the pimples are penetrated at their centre by a hair, and at this spot a speck of pus is often perceived, which extends until the greater part of the pimple becomes converted into a pustule. The swellings are usually indolent, and slow to suppurate; and when the latter stage is

reached the scabs are mostly dark yellow, and agglutinate the hair together at the roots.

The crusts are also very adherent, separable with difficulty, particularly those that are traversed by hairs. After their removal, tubercles of good size frequently remain, showing the apertures from which the hair bulbs have been extracted, and which are in consequence generally smeared with blood. Toward the border of the patch the crusts more resemble those of impetigo, and are smaller and less firmly attached.

Tendency to relapse. — Sycosis fully merits a place in the list of relapsing complaints; but great uncertainty prevails as to locality and time in the return. Sometimes the patient will affirm that he has not been wholly free from it for several years; more frequently it recurs after a few months, or in the autumn, and among the earliest symptoms we may

detect a whitish scurf enveloping the roots of the hair.

Variety of character.—Great diversity of character is exhibited by sycosis, according as the disease is acute or not. Sometimes the tubercular condition is that which is most evident; the surface appears to consist of a large cluster of tubercles, which, although unequal in size, are seldom any of them larger than a split pea. They cause much irritation, and often give rise to a considerable discharge. In other examples the tubercular element is less manifest, or absent even from the commencement. Many instances in which this is the case are met with where the disease is confined to a space not exceeding a sixpence in diameter, especially on the upper lip near the middle line. The part affected is of a reddish colour, slightly raised or swollen, and partially covered with small thin and yellowish crusts. A few pustules may be

occasionally observed, each containing one or more hairs. An oozing of moisture takes place rather than an actual discharge, which is most perceived after a night's rest. Small as is the extent of surface involved, the disease sometimes becomes a source of great mental annoyance to the patient. It shows little inclination to spread, and will continue stationary for many months or even years.

In chronic sycosis it is not uncommon for collections of pus to form, which produce a partial but permanent loss of hair.

In these cases smooth and bare patches are seen, varying in size from a threepenny piece to the palm of the hand. Sometimes a single spot of this kind occurs, at others there are several, and they may be situated on either side of the face, on the lips, or chin. Whatever their extent, the intervals between them are occupied by apparently sound and healthy hair. In less advanced instances a few straggling hairs are frequently

found on the patch. Another result of confirmed sycosis, and one equally characteristic of the complaint, is an induration or thickening of the affected part. This is at once manifest to the touch, and in colour it partakes of a dark red or violet.

Sycosis may run a rapid course, as in the following case narrated by Mr. Nayler; it was that of a man of twenty years of age, employed in the London Docks, who came to the hospital with sycosis of the lower part of the face, which was one mass of crusts and ulcers. When some of the scabs were detached unhealthy granulations were exposed, discharging a thick and offensive secretion. He was in great pain, and could only open his mouth with difficulty. This was the first outbreak of the complaint, which had only existed three weeks.

Diagnosis.—The diseases of the skin that are most likely to be mistaken for sycosis are—1st. Acne rosacea. This, although

it may appear on the chin, is seldom confined to it, and more generally occupies the cheeks and nose. The same redness is manifested in either eruption, but the pimples of acne rosacea are less disposed to suppurate, or to be succeeded by thick crusts; and, again, while the one complaint is unknown in women, the other is not so frequently observed in men. 2ndly. Impetigo, to which it bears a close resemblance in many cases, and with which it is often confounded. Both select the same locality, but sycosis is rather a tubercular complaint; the crusts are more raised and of a darker colour, and that hypertrophy of the cellular tissue beneath, which commonly attends sycosis in its later stage, is seldom seen in impetigo. Or again, it is characterised by white scales, which serves at once to distinguish it from a pustular eruption. 3rdly. Syphilitic rupia, when it attacks the exposed mucous surface of the nose, or occurs on the chin or lips, may be mis-

aken for the swellings of sycosis; and in he latter situation the diagnosis is some- imes obscured by these parts being overed with hair. It may be of service o remember that the scabs of rupia mostly conceal unhealthy ulcers, and the secretion is dark, offensive, and often mixed with blood. In other cases we find a group of closely set, smooth, shin- ing tubercles of a pale red colour, which are truly syphilitic.

Treatment.—We must not judge from the apparent severity of the attack of its pro- bable duration under treatment, for while some cases are confessedly obstinate, a large proportion are benefited, and that speedily, by appropriate means; indeed, the narrower the circle of the disease the more difficult is it oftentimes to over- come. In all instances which implicate the lips and chin, the hair of these regions should be clipped as closely as possible with short scissors, and the razor dis-

carded until complete recovery. Cleanliness is very important, and simple warm water or thin gruel is required to soften and so assist in clearing away the crusts and their secretion. The local treatment should be modified by the acuteness and extent of the eruption. Thus, if the latter be painful, widely spread, and, as in the case above quoted of the dock labourer, accompanied by offensive ulcerations, a large bran or linseed-meal poultice, containing a small quantity of powdered sulphur, should be constantly applied. The violence of the attack will thus be greatly lessened in a few days, and when this point is gained, it will be enough to substitute for the poultice an ointment of sulphur containing half a scruple each of the precipitate and iodide to an ounce of cerate. This will prove of advantage in a large number of cases, and a marked improvement is soon observed. In some cases, as when the skin is very tender, a less irritating ointment, as one containing mer-

cury, is preferable to the sulphur. Any hairs that are seen to arise from the pimples or pustules should be extracted from time to time, or the patient may be instructed to do this himself. The internal treatment should be regulated by the state of the general health. Great strictness in diet is to be enforced, for while nourishing food is necessary on the one hand, a relapse is often occasional on the other by alcoholic stimulants, which are rarely required. In hospital practice the sufferers from sycosis mostly belong to one of three classes:—first, waiters, who from their calling are liable to sudden alternations of heat and cold; secondly, bricklayers, and those in whom, besides the irritation of lime acting on the surface of the skin, habits of intemperance are confirmed; and, thirdly, those who are exempt from these influences, and abstemious to a degree.

Another mode of treating sycosis is by epilation. This is most useful where the

complaint has not spread far, or is limited to a patch of small size. In adopting it we should be careful to remove not only all the hairs from the affected part, but also any that are apparently diseased within its margin. The attendant pain is less than might be expected, and this is explained by the fact that in the pustular stage the hairs are easily extracted; their removal is scarcely felt by the patient. After this procedure is completed, an interval of two or three days should elapse to allow any irritation of the skin to subside, or the part may be anointed with glycerine. The next step is to apply, night and morning, an ointment such as has been described, and in this way sycosis is frequently relieved in the course of three or four weeks; nor does lasting baldness ensue if the hairs are thus treated, instead of being allowed to fall out. It has been said that while under treatment the use of the razor should be given up, as being a source of irritation to the part.

If during recovery this be impracticable the patient should be advised to employ, instead of the ordinary soap to shave with, that which is manufactured under the name of juniper tar or honey soap.

CHAPTER VIII

PEDICULI

The pediculi which occasionally infest the human skin are of three kinds:—the pediculus pubis or crab louse, the pediculus capitis or head louse, and the pediculus corporis or body louse.

Pediculus pubis is generally found in the hair about the generative organs, but may occur in the eyebrows, eyelashes, or whiskers. It exhibits the following symptoms: —A number of small red spots or specks, caused by the bite of the creature, may be observed around the roots of the hair and the adjacent skin. Interspersed among the hair is a quantity of minute red granules, the products of excrementation from the insect. Many of the hairs are covered

with a slight viscid or glairy secretion, and are often stuck together. Lastly, the little animals are not always recognised unless in motion, owing to the transparency of their bodies; but no sooner do they begin to crawl, or move their feet, than their discovery is easy. It is generally a difficult matter to remove the insect alone and without injuring it. If we wish to preserve one of them the best plan is to cut off the hair with it close to the root. Unless the pediculi are speedily destroyed the irritation caused by their presence soon becomes very great, especially at night. When in numbers they exist also among the patient's clothes, which are more or less soiled in consequence.

Anatomical Characters.—The female is the larger of the two, and distinguished by the greater width of its body. No actual line of demarcation separates the thorax from the abdomen; to the former are attached three pairs of legs, remarkable for their

strength, of which the anterior is the smallest. Each consists of three segments, the distal one ending in a large claw, inclined inwards and intended to grasp the hair. On either side of the abdomen, most apparent on the ventral aspect, are four eminences surrounded by small and pointed hairs; and on the summit of each elevation is situated the aperture of a respiratory tube; for a hollow canal, united inferiorly by a cross branch, can be traced running along the whole length of the creature on both sides. From the inner side of the parent or larger tubes, which may be seen to extend as far as the head, are numerous small branches penetrating the entire body. The vaginal orifice is placed near the last segment of the abdomen, and leading into it are two oviducts, each arising from a single ovary. The head is distinct from the trunk, and furnished with two prominent eyes, immediately in front of which is a pair of antennæ. The latter are com-

posed of four small pieces of nearly equal size, and each at its base is provided with two short hairs, and these antennæ are capable of motion in any direction.

Pediculus capitis.—The conclusive symptom of the existence of *pediculus capitis* is the presence of the pediculi scattered throughout the hair, which they traverse with great rapidity. They are in general most abundant about the crown of the head; and are easily perceived by their light colour and slender form, especially among dark hair. We may often detect numerous small ovoid and semi-transparent bodies, which are the ova, and popularly termed "nits," attached to the hair at various points. These on examination will be found somewhat peculiar in shape, and surmounted by a small cup-shaped depression at their free extremity; and tapering toward the opposite end, they are attached to a pedicle or stalk, which is glutinous, and prolonged for a variable dis-

tance on the hair itself. The degree of irritation occasioned by the pediculi is proportional to their abundance; if, for instance, the number is small, the patient may suffer so little inconvenience that their presence is then usually an accidental discovery. On the other hand, when existing in large quantity, the irritation and itching will generally be such as to draw the attention of the patient to the complaint.

There are many diseases of the scalp which favour pediculi. In favus that has long remained neglected lice may be frequently seen in the crevices of the crusts which afford a convenient place for the reception and development of the ova. Sometimes in porrigo or in eczema the same thing occurs, but in any case the complaint of the skin is not the cause of the parasite, but merely furnishes it with a suitable nidus. The spontaneous generation of these creatures is a point on which there exists a difference of opinion.

Great difficulty is involved in an investigation of this nature; but if it be possible for pediculi to be developed spontaneously, it would occur in long hair which has been allowed to remain uncombed and unwashed for a considerable period, and in many such cases they certainly abound, but under such conditions of uncleanliness the ease with which they might be transferred or acquired is obvious, and judging from analogy it seems scarcely possible that an insect so high in the scale of development as the pediculus can be spontaneously produced.

Description of Head Louse.—The head louse has a long and narrow body, and is much quicker in its movements than the crab louse. It possesses the same number of legs, but the anterior pair are the strongest, and each presents in addition to a terminal claw another of smaller size at the base, no doubt for the purpose

of furnishing the gelatinous secretion with which the ova are attached to the hairs. The abdomen of the female shows six distinct segments on either side, and an opening in the centre of each, corresponding to the stigma. At the posterior extremity are two angular projections of equal size, separated above by the oval orifice of the vagina. In the male this part of the body is round, and above it is seen the penis.

Treatment.—No treatment is more simple than that which has for its object the destruction of pediculi. When they are found in the vicinity of the pubes the patient should be directed to sponge the affected parts several times in the course of the day with a lotion containing two grains of the perchloride of mercury to an ounce of equal parts of spirits of wine and water. At the end of twenty-four hours or less he will generally be rid of any further annoyance in this respect;

the alcohol is not only hurtful to the insect, but destroys the vitality of the ova. Previous to the application in the first instance the patient should wash the part thoroughly with soap and hot water; and afterwards avoid the contact of any garments which are not clean or purified, the easiest and most efficacious method of accomplishing this, being the employment of dry heat, which need not exceed 220° Fahrenheit, and if carefully carried out this process does not injure the clothes. In the case of a patient who is not likely to obey these instructions, we may order the mercurial ointment to be applied at once. This should be well rubbed over the whole affected surface and its neighbourhood. One application will usually suffice, and it should be allowed to remain on two or three days before it is washed off. Another ointment which has been used with great success, and is well known abroad, is that made from stavesacre seeds; one ounce

of the powdered seeds are macerated for twelve hours in benzoated lard, and then strained through linen, after which it is fit for use. The ointment should be applied to the surface wherever affected, and after twenty-four hours repeated if necessary. In Germany, where these "louse seeds," as they are termed, are common, an infusion is made of them with vinegar, or they are simply boiled in water, in the proportion of one ounce to two pints. The kernels of the cocculus indicus, added to five times their weight of lard, are employed for the same purpose. To this ingredient the Capuchin powder is said to owe much of its repute as an insect destroyer.

When pediculi infest the scalp, a lotion of spirits of wine and water with the perchloride of mercury as above described, or one of carbolic acid in the proportion of about one to twenty-five parts of water and spirits of wine with some glycerine to ensure its solution, or an ointment of

twenty to thirty grains of the ammoniated mercury to an ounce of lard, will be found both convenient and efficacious.

CHAPTER IX

HAIR DYES

WHATEVER may be the prevailing fashion of the day as regards the variety or shade of colour to be given to the hair, the practice of dyeing this structure has existed from the earliest times and among the most celebrated and eminent nations. It was sanctioned and practised alike by the Greek and Roman, and quickly spread to the inhabitants of Gaul and its bordering countries. Over the greater part of the Asiatic Continent the same custom may be said to date from an equally remote period, and is still observed, especially among the Mussulmans, with whom to dye the hair and

beard either black or red, or rather salmon colour, is almost a religious observance.

In no civilised society perhaps was altering the colour of the hair carried to the length it was in mediæval Venice, where to have portions of the hair dyed different colours was extremely fashionable; and the same admiration for golden tresses which had existed among the Romans obtained also with them, so that it was no unusual circumstance to see a Venetian beauty sitting on her balcony with her hair spread over the brim of a crownless hat, undergoing a gradual process for completing this bleaching in the sun's rays. Nor are the inhabitants of less civilised regions a whit behind others of a more favoured race in the care and pains bestowed in this respect upon the hair.

Among the chief agents for the above purpose which analytical chemistry has placed at our disposal may be enumerated

the following :—gold, silver, lead, copper, sulphur, iron, and manganese ; to which may be added others of less note—arsenic, cadmium, and uranium.

To dye hair black.—A solution of nitrate of silver was formerly much in vogue as a remedy to darken or render black the natural colour of the hair, and is even now occasionally resorted to. For this object all that is required is to dissolve some lunar caustic, viz. from five to ten grains in an ounce of distilled water, and with this solution the hair should be well wetted, and afterwards allowed to dry, if possible, by evaporation in the open air, and especially in the sunlight, the chemical change by which the darkening is produced being then much more rapidly effected. Should it not be practicable to dry the hair in this manner as when time is a matter of importance, the same result may be immediately attained by moistening the hair a few minutes after the

application of the silver solution with a weak solution of hydrosulphuret of ammonia or sulphuret of potassium. In some cases a single application is sufficient, as for example in black hair streaked with grey; in others, and more particularly in hair of a lighter colour, its more frequent use is necessary.

Besides imparting a bluish rather than a bright jet black hue to the hair, the use of the nitrate of silver is open to the objection that it stains the skin wherever it is brought in contact with it. Therefore the precaution should be enjoined before adopting this agent of putting on kid or leather gloves, and of using a brush rather than a sponge, and so saving the hands as far as possible from being stained.

In many respects superior to the last, inasmuch as it leaves no deposit whatever on the skin, and especially if it is wished merely to darken the hair, which for example has become grey or nearly white,

is a dye which was accidentally discovered some years since by Dr Anderson, when prescribing for a patient suffering from eczema—I mean a solution of the perchloride of mercury followed by one of the hyposulphite of soda. The strength of the former should be about four grains to an ounce of water; to this may be added with advantage a little ammonium chloride to render it more soluble; and of the hyposulphite from two to three drachms to the same aqueous proportion. With the first solution the hair should be thoroughly moistened, and when dry the second solution may be used in a similar manner; or the one may be applied at night and the other in the morning. This treatment should be repeated day by day until the proper shade is produced.

This dye, it should be observed, is not rapid in its action, and from five to seven or eight days will often elapse before any decided change is perceived; its effect also varies with the colour of the hair.

If, for instance, the latter be grey or nearly so, the restored tint becomes brown rather than black, while if the original colour is red or nearly so, a darker hue will follow the application of the dye.

One of the most commonly used, and at the same time a fairly satisfactory method of effecting the same object, is the following :—A solution of about ten to twenty grains of lead acetate in an ounce of water is applied to the hair, and as soon as this has in some measure dried, the hair is wetted with a solution of ammonium sulphide, the darkness of the tint that is immediately produced being proportional to the strength of the solutions employed, and in this way an excellent black or only a brown colour can be given to the hair, without any accompanying staining of the skin, but an objection to this plan is the unpleasant odour of the ammonium sulphide.

Another preparation which also has the effect of rendering the hair dark rather

than black is one containing sulphur and the acetate of lead. This may be used as an ointment or a lotion. The latter is preferable, unless the hair be very thick indeed, when it is difficult to penetrate to its roots. As a wash it may be employed in the proportion of a drachm of each of the above in powder to eight ounces of distilled water. For the first few days it may be resorted to night and morning, and as the colour improves it will be enough to use it once daily, or on alternate days only, and even less often than this after a time. As regards the original colour of the hair, this dye acts best on red, from its containing a large proportion of sulphur in its composition. It soon changes this kind of hair to a light brown; it also acts fairly well on white or grey hair. Before use the bottle containing it should be well shaken or the sediment otherwise remains, but this application has the disadvantage that it leaves a deposit on the skin, which,

however, is soon removed with the aid of a soft brush.

I may take this opportunity of remarking that, whatever the dye selected, the hair should be rendered, prior to its use, perfectly free from all greasy or oily compounds. To accomplish this when necessary, equal parts of spirits of wine or Eau de Cologne and water may be tried, or even the yolk of egg rubbed with a fold of flannel into the roots of the hair, and afterwards rinsed with hot water, will generally suffice.

To dye hair brown.—A very good brown colour is attained from a solution of the sulphate of copper (four grains to an ounce of water) applied alternately with one of the potassium ferrocyanide of a like strength. In the course of a few days white hair becomes light brown, and subsequently darker from repeated use of the same means. When such a colour is desired this rather than any other agent

is generally to be preferred; it is easy of application, leaves no stain on the surface, and the acquired tint is scarcely if at all distinguishable from that of the natural colour.

An excellent light brown hue may also be given to the hair by moistening it with a solution of calcium permanganate of the strength of about ten grains to an ounce of water. A darker shade can be obtained by repeating the process. No discoloration of the skin follows the application. A strong solution of potassium permanganate produces also a very similar effect, and I have found that the light brown shade given to the hair by the permanganate can be darkened to a very deep brown or black by afterwards treating the hair with a solution of pyrogallic acid.

A solution of ammonio-nitrate of silver (about sixteen grains to an ounce of distilled water) used alternately with one of pyrogallic acid (about thirty grains to an ounce of distilled water) imparts to the

hair a very natural and unfading tint, a black or brown being produced according to the strength of the solutions used. If skilfully applied, so as to avoid staining the skin, the results are, perhaps, as satisfactory as those obtained by any other method.

Bleaching hair.—If it is desired to render dark hair light, it is first necessary to remove some of its colour, and this can be effected by the use of almost any bleaching agent. Those most generally employed are solutions of some alkali, as soda, potash, or ammonia, or of chlorine or sulphurous acid, or nitric acid in conjunction with heat, or the peroxide of hydrogen.

If dark hair is washed a few times with solutions of Liquor Potassæ or Sodæ or Ammoniæ, or even common washing soda, it rapidly loses its colour, passing through all the successive shades till, if the process is repeated often and long enough, or at once if the solution is sufficiently strong,

it finally becomes a dirty white. These strong alkaline applications disintegrate the external epithelial covering of the hair, though they effectually remove its colour, rendering it brittle and inclined to split, and the older portions of the hair, from repeated exposure to the treatment, become almost flax coloured, and rough, and lustreless. For these reasons alone their use is to be deprecated.

Solutions of chlorine and sulphurous acid rapidly abstract the colour from hair, nor do they injure its substance to the same extent as alkalies, but their odour is an objection.

Nitric acid possesses the property of acting on the pigment of hair without destroying its structure in any great measure, and this change is aided by heat. By this agent dark hair of various tints may be reduced to the same light hue, the different coloured locks, moistened with solutions of the nitric acid, being placed in plates on a stove, and the process con-

tinued for varying times until all the locks are of an uniform tint. The same plan may be adopted for the hair while still on the head, the heat being supplied by the employment of hot irons.

The agent, however, in most general use is a solution of hydrogen peroxide. This substance has the extraordinary quality of not only removing the colour of dark hair, but also of imparting to it an almost metallic golden lustre, nor does it injure the hair itself in the same degree as some of the substances previously named.

Having now reviewed most of the different agents which are of service in changing the colour of the hair, the question naturally arises how far and to what extent they may be resorted to with impunity. Moderately and carefully used in the proportions of the various substances already detailed, I have not known an instance of the least injurious effect resulting from their application, even in extreme age, and it is hardly within the limits of

probability that such an event should occur, unless they were most freely used to the skin itself, or there existed some abrasion of the cuticle. Although having a vitality of its own, the exact nature of which is but little determined or understood, the hair is often daily subjected to usage which no other portion of our organism could tolerate. And however much such treatment may injure the hair itself, there is no evidence that the effect extends to any other tissue, or exerts any deleterious influence on the general health. As regards their local action, most dyes, if used for long periods, certainly do not promote the growth of the hair, while the bleaching agents, in greater or less degree, soon injure the existing hair, rendering it brittle and prone to split, but they do not prevent, unless most severely applied, its reproduction in its natural condition when their use is discontinued.

In conclusion, as examples of the recuperative power possessed by hair, and

of its intimate relation to and dependence on the tissue from which it grows, and of the extent of the influence of the supply and quality of the nutriment afforded it, I may mention the two following cases which have occurred lately in my practice. The first is that of a young woman, whose dark hair had become rapidly grey during an attack of pityriasis of the scalp, the loss of colour being most marked in the hair growing from the parts of the skin most severely affected. She had suffered from the same complaint twice previously, with a similar resulting blanching of the hair, the natural colour being restored on each occasion on the removal of the disease. In the other case, that of the wife of a physician, the hair had become very quickly grey, more especially on the left side of the head, and was very brittle and dry. The greyness increased much during each catamenial period, the colour partially returning during the intervals, any slight ailment or over-fatigue affecting the hair

in a few hours. The reports of the recent arctic expedition also tell us that privation and exposure blanched the hair of the seamen who accomplished the severe sledge journeys, the hair regaining its natural hue with the cessation of their hardships. Captain Markham, R.N., narrates the circumstance in the following words :—"It is a curious fact connected with those who were for a long period absent from their ship, that the hair on their faces was bleached nearly white. The loss of colour was gradual, and although noticed was never alluded to, each one imagining that his companion's hair was turning grey from the effects of hardship and anxiety. It was only after their return to the ship that those possessing beards and moustaches discovered the change of hue in their own hair. The colour gradually returned in about three or four weeks."

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