TROPICAL TRICHOPHYTOSIS.

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OUR knowledge of tropical dermatomycoses is far from being complete, and some confusion prevails in the description and classification of such affections even in quite modern standard works of dermatology. This is due to the scant opportunity there is of observing such diseases in temperate climates, and to the fact that as soon as patients move from a tropical into a cold climate the clinical features of these eruptions change greatly.

Having been interested in the subject during the last five years, I venture to give you the results of my investigation on the principal tropical dermatomycoses which I have had an opportunity to observe.

The dermatomycoses which can be classified under the heading of Tropical Trichophytosis are the following :—

1. *Tinea cruris* or "Dhobie itch."
2. *T. albigena* (Nieuwenhuis).
3. *Tinea of Sabouraud*.
4. *T. imbricata* (Manson).
5. *T. intersecta* (Castellani).
6. *T. nigro-circinata* (Castellani).

In addition to these affections, which may be considered as "Tropical" in a strict sense, several other forms of trichophytic affections occur in the Tropics which clinically are identical with the trichophytic affections met with in temperate zones, viz., *Tinea circinata*, *T. capitis*,

T. barbae, etc. These later affections are outside the scope of this paper, as their clinical features are identical with what one finds in temperate zones, though it is quite probable that the fungi are different species.

TINEA CRURIS.

(*Dhobie itch*, *Tinea inguinalis*).

As you well know, the term "Dhobie itch" is applied very loosely in the Tropics by the lay public to practically any form of pruritic eruption. The term, however, is specially used to denote a form of severe pruriginous affection which mostly affects the inner surface of the thighs, occasionally the axillæ, and, in stout women, the regions under the breasts. It is in this stricter meaning that the term is used by medical men practising in the Tropics.

The clinical feature of the affection corresponds to Hebra's "eczema marginatum." In a well-marked case, the perineum, scrotum, and the inner surface of the thighs present large festooned patches with an abrupt elevated margin. The whole of the patches are bright red, or in a later period the margin only is red, while the rest of the patch is fawnish, or even normal in colour. The pruritis is unbearable. Owing to the scratching, secondary pyogenic infection, or an eczematous-like dermatitis, may develop. The complaint, if not properly treated, is extremely chronic; the condition gets better during the cold season, but recommences during the hot months. Patients who suffer very severely from dhobie itch may get almost well in a few days without any treatment on going to the hills; in coming back to the plains the pruritis and all the other symptoms reappear. The affection has been known to last for many years. It is to be noted that after a time the eruption may spread to other parts of the body—the abdomen, the trunk, legs, etc.—and may develop in rings or

may form solid elevated dark red patches. In such situations the disease may be clinically indistinguishable from ordinary *T. circinata*. It is to be noted, however, that the rings have generally a thicker edge and the patches are coarser and larger than in ordinary *Tinea circinata*. It is to be noted also that in my experience mixed infections of dhobie itch and ordinary *T. circinata* do occur presenting the two fungi growing on the same patient, though on different regions of the body. Several such cases I described some years ago (see *British Medical Journal*, November, 1905).

Etiology.—For many years it has been known that dhobie itch is a trichophytic affection. In 1905, as the result of an investigation of numerous cases, I came to the conclusion that *Tinea cruris*, or dhobie itch, should be separated from the ordinary forms of *Tinea corporis*.

The Fungus.—In my experience there is more than one species of trichophyton which may give rise to dhobie itch: at least two species can be distinguished, and there are probably several varieties of each:—

1. *Trichophyton cruris* (Castellani, 1905).
2. *Trichophyton perneti*.

Trichophyton Cruris.—This is the commonest species. In Ceylon about 98 per cent. of the cases are due to it. Sabouraud has created a new genus for this fungus—the genus *epidermophyton*. Notwithstanding Sabouraud's great authority, it seems to me that there is no necessity to create a new genus, as the fungus presents all the principal characters of the other trichophytions of the megalosporon type. Sabouraud lays stress on the rapid degeneration which takes place in the forms found in the cultures, and other secondary characteristics which seem to me to be of insufficient importance to necessitate the creation of a new genus.

The fungus is abundant in recent cases ; it is extremely scarce in cases of old standing. The mycelial tubes in fresh cases are generally straight, have often a double contour, and the segments are rectangular, their breadth being $3\frac{1}{2}$ to $4\frac{1}{2}$ microns ; branching is not infrequent ; the spores are rather large, roundish, and present a double contour ; they never collect in clusters. In chronic cases degeneration forms of the fungus are met with : the mycelium may be banana-shaped, presenting several constrictions ; or long strings of ovoid elements may be seen.

The fungus is best grown by using maltose media. In cases of old standing, owing to its scarcity in the lesions, it is grown only with great difficulty. The material to be inoculated must be taken from the edges of the lesion. The growth begins to be visible after five to nine days ; the rate of growing being very slow. After three to four weeks the colonies are about one half inch and even more in diameter. The colonies are orbicular - shaped, hard, with a pulverulent surface. The colour at first is greyish-yellow, with occasionally a greenish tinge ; later it becomes a greenish white.

I have tried inoculation experiments on man with pure cultures of the fungus, but without any success. Sabouraud has also failed to reproduce the disease.

Trichophyton Perneti.—The fungus is microscopically indistinguishable from *Trichophyton cruris* : the cultural characters, however, are quite different, the fungus growing much more rapidly and the cultures presenting a delicate pinkish colour, which is generally lost in sub-cultures. This variety is found very rarely : clinically the lesions caused by it are identical with those caused by *Trichophyton cruris*. I proposed for the fungus the name *T. perneti*, as Pernet was the first to grow this species from a case of tropical trichophytosis. It was found, however, in only 2 per cent. of my cases.

Communicability.—*Tinea cruris* is known in the East as dhobie itch, from the popular belief that it is contracted from linen which has been contaminated while being washed by the dhobie. As to how far this belief is correct, I am not in a position to say. I have never succeeded in finding the fungus in clothes just received from the dhobie, either microscopically, or by inoculating small portions, of the linen itself in sugar media. I am, however, inclined to think that the popular belief may be to a certain extent correct, as a very few spores would be sufficient to set up the disease. I have been told by old sufferers, who had frequently been reinfected, that on their discontinuing to give their clothes to the dhobie, and having them washed in the house instead, the disease did not appear again. In Colombo dhobies are in the habit of washing the clothes in the lake or in small pools of water that are more or less stagnant; and it is certain that clothes belonging to infected persons are washed together with other clothes. Dhobie itch is very contagious: true epidemics occur in schools and among soldiers in barracks. I have several times observed that husbands infect their wives.

Diagnosis.—The diagnosis is easy in recent cases, the festooned appearance of the eruption limited by a sharp elevated bright red edge being quite typical. In old cases, especially when secondary lesions, due to scratching are present, the diagnosis may be very difficult, the affection being often mistaken for eczema. A case sent to me had been previously treated as eczema for three months by Lassar's paste, calamine lotion, etc.

In doubtful cases, the microscopical examination will be of great help. It must, however, be noted that in old cases the fungus may be extremely scarce, the mycelium being practically absent, and only a few spores being found. It is well to take the scrapings for microscopical examination from the *edge* of the eruption.

Differential Diagnosis.—*Erythrasma*.—In erythrasma the patches have a fawn or dark reddish colour, with a fine desquamation; the eruption is not limited by a raised red edge, the fungus (*Microsporoides minutissimum*) is quite different from the fungi found in dhobie itch.

Intertrigo.—Intertrigo is very common in the Tropics, especially in corpulent persons. The lesions are very superficial, have not a festooned contour, and the margin is not sensibly elevated; no fungus is found.

Eczema.—Primary eczema of the scrotum and the skin of the thighs in contact with it, is as frequent in the Tropics as it is in temperate zones. The eczema is generally of the moist variety—the moist surface, the absence of the festooned elevated margin, etc., easily distinguishing it from *Tinea cruris*. As already stated, however, an eczematous-like dermatitis due to scratching often develops after a time on old dhobie itch lesions.

Prognosis.—The affection, if not energetically treated, has a tendency to become very chronic, and to last for years. Occasionally the eruption spreads to the whole body, forming rings or solid patches: at other times a distressing dermatitis develops on old dhobie itch patches, due to scratching. *Tinea cruris* may disappear during the cold season or when the patient goes to the hills, to reappear as soon as the hot season commences. During the period of quiescence the skin of the affected regions often shows a brownish discoloration, furfuraceous, somewhat similar to erythrasma.

Treatment.—In tropical practice the usual treatment is a chrysarobin or Goa powder ointment. All the so-called dhobie itch ointments sold as patent medicines contain Goa powder. The result is generally fairly successful. The patient should be informed that the medicine stains the linen, and gives also a dark stain to the skin, and that

unless carefully used unpleasant absorption may take place.

My usual line of treatment is as follows :—

Very Mild Cases.—A resorcin salicylic ointment applied twice daily.

Cases of Medium Gravity.—In such instances I use a chrysarobin ointment. In more obstinate cases I use local applications of turpentine oil in the morning, and at night a resorcin salicylic ointment. If the parts are much inflamed, at night simply a boric ointment or pack. This treatment gives good results. Turpentine is generally well borne, but patients often complain of a smarting and burning sensation, a quarter or half an hour after the application. Exceptionally one meets with patients who cannot stand turpentine.

Severe Chronic Cases.—In such cases I have found out, after many experiments, that the best treatment is that which I have introduced for *Tinea imbricata*, viz., resorcin dissolved in Tr. benzoin Co, to be applied once daily for several days. After some days the skin peels off and the eruption is generally healed. The only drawback to this treatment is that the medicine is very sticky, but it does not smart, and is generally well borne.

Cases Complicated with Eczematous Dermatitis and Fissures.—In such cases one is apt to use a soothing treatment by pastes, lead lotions, etc., with the idea to heal first the eczematous lesions. In my experience, however, when the microscopical examination has shown the presence of the fungus, it is best, as a rule, to start an energetic anti-trichophytic treatment at once. To the fissures which so often develop in the inguinal regions, I apply a solution of nitrate of silver. I touch with this solution the fissures and all the moist parts; this application is somewhat painful, but the pain soon disappears, and the itching is relieved almost immediately. At night I apply a resorcin and sali-

cylic ointment or paste all over the eruption. As soon as the parts have become less moist, I start the turpentine or the resorcin-benzoin treatment. A precaution which must be observed during and after treatment, in order to prevent re-infection, is to dust all the under-garments with antiseptic powder, such as acid boric and zinc oxide, acid salicyl. and talc, menthol powder, or dermatol.

TINEA ALBIGENA.

This trichophytosis was first described by Nieuwenhuis in Java, and his researches were subsequently confirmed by Jeanselme in Indo-China and in Siam (in the latter country the disease is known as *Khi*). The disease is fairly common in the Malay Archipelago, and is occasionally met with in Ceylon. It generally affects the soles of the feet and the palms of the hands, but may extend to the forearm and legs; it may affect the nails. The eruption begins with the appearance of small pruriginous spots on the palms and soles, the epidermis becomes raised and large vesicles develop containing at first clear serum; the bullæ burst, and the skin remains dry and peels off; the parts remain tender and there is desquamation and pruritis. A process of diffuse keratosis develops, the palms and soles becoming double their usual thickness; deep fissures may be formed at the natural folds. Several horny, semi-detached discs can often be seen at the dilated orifices of the sweat glands. The affection is very chronic, and it may begin in youth or adult life. After some time a process of apigmentation of the skin sets in—white patches, leucoderma-like, developing and extending often to the legs and arms.

As regards treatment, Tr. iodine and chrysarobin ointment (1 to 5 per cent.) answer fairly well.

The Fungus.—*Tinea albicans* (Nieuwenhuis, 1907) is a trichophyton of the megalosporon type; the spores in fresh

preparations from scrapings are almost always absent. The mycelium tubes are straight, occasionally showing a double contour; they are often dichotomous. Nieuwenhuis has grown the fungus, using Sabouraud's sugar media; the growth is very slow, the colonies are whitish and show a powdery surface.

The third tropical trichophytosis is the so-called

SABOURAUD'S TINEA,

which was first described by Sabouraud in patients returning from Indo-China, Japan, and Tonkin. I have seen a few cases in Ceylon. The eruption generally commences on the uncovered parts of the body, ordinarily on the legs. The patients often state that they think the disease is due to prolonged immersion in stagnant water. The affection begins with erythematous patches, the surfaces of which are covered with minute pityriasis-like scales. Reaching, after a time, a diameter of one or one and a half inches, these patches become circinate. The circination, however, is incomplete; it is only segmentary. In dependent positions large polycyclic patches may be seen, but each forms only a half or a third of a circle, the rest of the arc being badly defined. The base of the patches, at this stage, is of a very dark bistre-brown colour. The border shows polymorphic lesions, mostly fine scales or minute vesicles and papules. The pruritis is very marked, and excoriations due to scratching are constantly present.

In chronic cases a thickening of the skin with lichenification takes place, especially at the circinate borders. The disease is difficult of cure in the Tropics, though it may disappear spontaneously on the patient proceeding to Europe. Chrysarobin ointment (1 to 4 per cent.) is the best treatment.

The Fungus.—*Trichophyton Sabouraudi* (Castellani,

1905).—The fungus cannot be grown on Sabouraud's medium or any other media I have tried. The mycelial tubes do not show a double contour, are not very straight; they are often banana shaped. The segments of the mycelium are all separated; the mycelial spores are roundish and are shed without forming a filament by their union. They are of various sizes.

TINEA IMBRICATA (Manson).

Historical-Geographical Distribution.—The first reference to this disease is found in Alibert's Atlas, 1832. Fox in 1844 described it under the name of "Gune." He observed it in the Gilbert Islands, and "Gune" was the term used by the natives to indicate it (Gune = skin.) It is to Manson that we owe the first scientific description of the disease and the discovery of its fungus: he introduced the term *Tinea imbricata*, under which the disease is now generally known. Manson's researches have remained classical. Further researches were made by Turner, Königer, MacGregor, and more recently by Tribondeau, Nieuwenhuis, and others. The disease is extremely common in Fiji and many other of the Pacific Islands: it is found in the Philippine Islands, in Southern China, Tonkin, Malay Peninsula, and Java. Lately the distribution of the disease has much extended: several cases have been seen by me in Ceylon and Southern India, in which countries the affection was believed to be non-existent. Cases have also been reported from Brazil and other parts of tropical America.

Clinical Signs.—In a well-marked case the skin of practically the whole body is covered with round patches, each of which presents several concentric scaly rings. The scales are flaky, resembling tissue-paper, dry, of a dirty greyish colour, and slightly curled. If the scales are removed, rings of concentric circular dark lines remain visible. The number of rings forming the patch varies.

Tribondeau states that they are not more than four; I have, however, frequently counted as many as eight and ten in the same patch. The eruption may spread to any part of the body except, in my experience, the scalp. Though several authors state that the eruption never affects the face and axilla, and rarely the palms and soles, I have often observed it in such situations. It is also stated that the nails are not affected, though Manson, who first completely described the disease, said that the nails being affected was of frequent occurrence. My experience tallies with that of Manson. The nails when affected are much thickened, have a rough surface and deep cracks; scrapings examined in Liq. potass. show the fungus. The fungus does not invade the hair follicles.

The general health is not affected, but the patients complain of the disfigurement and of the pruritis. In the hot season the pruritis is much more marked. The disease is very chronic and very difficult to cure.

As regards the development of the disease, I can confirm Manson's description, having made several inoculations. The period of incubation varies between seven and ten days. After this time a slightly elevated brown patch is seen at the place of inoculation; the epidermis in the centre of the patch gives way and a ring of scaling epidermis is formed; this ring expands eccentrically and in the centre again a dark patch appears, which later breaks and another ring is formed inside the first, and so on.

The Blood.—The blood shows a certain degree of eosinophilia, the eosinophiles varying between 6 and 16 per cent. In some cases this eosinophilia was probably partly due to the presence of intestinal worms; the eosinophilia, however, was observed in some cases in which the microscopical examination of the fæces did not show any ova of worms. In very old cases the eosinophilia is more marked than in recent ones; in old cases signs of anæmia may be present.

Prognosis.—The general health is not affected. The patient chiefly complains of the disfigurement, which is very great, and of the pruritis, which in the hot season may be unbearable. The disease has no tendency to spontaneous recovery. Treatment is difficult, and cases apparently cured often show a return of the eruption after a few months.

Diagnosis.—*T. imbricata*, once seen, cannot be confused with any other dermatomycosis: the development in concentric rings fringed with tissue-paper like scales is absolutely characteristic.

Etiology.—The affection is caused by a trichophyton first discovered and described by Manson.

Trichophyton concentricum (Blanchard, 1901): syn. *Trichophyton mansonii* (Castellani, 1905).

Description of the Fungus.—In all the cases observed by me, the morphological characters corresponded with those given by Manson, rather than with the description of later observers. The fungus is very abundant, and it grows between the epidermis and the rete Malpighi. Fresh preparations of scales in Liq. potassæ show a diffuse mass of interlacing mycelium. The segments of the mycelium vary greatly in length; their breadth is between 3 and 4 microns. They are generally straight and of regular outline, without swellings or constrictions; the spores are rather large (4 to 5 microns), oval or somewhat rectangular. Aspergillar fructifications have never been observed by me, and I have never succeeded in growing the fungus. Strong very recently informed me that he also had been unable to grow the fungus in the Philippine Islands. According to Nieuwenhuis, however, the fungus may be grown on various sugar media. The latter observer states that the growth is slow and that the colonies are thick, crateriform, of a darkish colour. By inoculating the cultures in a European he reproduced the disease.

According to Tribondeau, the fungus is not a trichophyton: he calls it *lepidophyton*, from the aspergillar-like fructifications, but he has not succeeded in growing it. Although Wehmer has confirmed Tribondeau's observation, I repeat that in my experience the fungus never shows aspergillar fructifications. In old scales kept in the laboratory for several weeks I have seen aspergillar-like fungi, but I believed them to be contaminations, as they are frequently found in old blood films, in old psoriasis scales, etc. It is not rare in the Tropics to find similar fungi in the skin of normal persons, especially when they do not bathe frequently.

Treatment.—All medical men practising in the Tropics know how difficult is the treatment of *Tinea imbricata*: it is easy to obtain temporary improvement—even disappearance—but as soon as treatment is discontinued, the eruption starts afresh.

In the Colombo clinic I made experiments to test the efficacy of various medicaments by simultaneously applying different liniments, ointments, etc., to symmetrical parts of the body and then comparing the result. The drugs employed by me were numerous—sulphur, white precipitate, turpentine, etc. These are my results:—

Sulphur has no effect whatever on the fungus.

Turpentine generally is slightly beneficial, some scales disappearing, and the skin becoming smoother; the improvement, however, is not permanent, and as soon as the turpentine application is discontinued the typical scales reappear.

Calomel, *white precipitate*, and other ointments of mercurial salts preparations do not induce any improvement in the eruption.

Thymol and *naphthol* ointments may cause a slight improvement.

Carbolic acid ointments have no effect whatever

Cyllin ointment (25 to 50 per cent.) may induce a temporary improvement.

Formalin is very effective for localised patches. The usual 40 per cent. solution is carefully applied to a small portion of the eruption. Formalin, however, often causes severe pain, and a certain degree of inflammation which is best relieved by applications of iced water. Soon after the application of formalin the patches turn dark brown, the colour lasting for a few days, and ultimately becoming clear. Care must be taken not to apply the formalin too freely or to repeat the application too often, otherwise a peculiar form of apigmentation, similar to leucoderma patches, may appear later on—a disfigurement to which coloured patients strongly object.

Tr. Iodine.—Tr. iodine freely applied induces a very marked improvement, which, however, is not permanent. Strong liniment of iodine, as recommended by Manson, is most efficacious.

Chrysarobin.—The repeated application of chrysarobin ointment (gr. 30 to one ounce) may induce a strikingly rapid improvement in cases which are not of long standing; in my experience, however, the eruption recommences a few days or weeks after its apparent disappearance.

Chrysarobin is a toxic medicament; the patient must be watched and the urine regularly examined. In one of my cases symptoms of absorption appeared after a single application.

Salicylic acid and *methylsalicylate* have very little, if any, action on the fungus.

Resorcin.—Resorcin, alone or mixed with salicylic acid in alcoholic solution and ointments, has very little efficacy. If, however, resorcin be dissolved in Tr. Benzoin Co. (grs. 30 to 80 of resorcin to one ounce of the Tr. benzoin), very good results are obtained, and this is now my routine treatment for *Tinea imbricata*. It is to be noted that

Tr. benzoin without resorcin has very little action on the eruption. I generally apply resorcin dissolved in Tr. benzoin once or twice daily to the affected parts. If the whole body be affected, one half is painted on one day; next day the other half is treated, and so on alternately. This treatment must be continued for several weeks, and once or twice a week the patient is given a very hot bath and is scrubbed all over with sand soap. In this way I have treated five cases, all of whom left the clinic apparently cured. After four months I had an opportunity of seeing three of them again. Two remained well; in one, two small patches had reappeared on the right shoulder. So far, I have not observed symptoms of absorption; in fact, the patient who showed signs of absorption after chrysa-robin stood the resorcin treatment well. It is always prudent, however, to proceed with care at first, as it is well known that individuals may be met with—though rarely—showing idiosyncrasy for resorcin.

In conclusion, it would appear from these researches that the best treatment for *Tinea imbricata* is Linimentum iodi, as suggested by Manson, or resorcin dissolved in Tr. benzoin, as suggested by myself.

TINEA INTERSECTA.

I first described this affection at the International Congress of Dermatology held in New York, September, 1907, when I based my description of the disease on two cases. Later, I have come across several more instances among natives of Ceylon—Singhalese and Tamil.

The eruption begins with small oval, or roundish, slightly elevated itching patches, generally situated on the arms, legs, chest and back. The margins of these dark spots are slightly elevated and dotted with minute dark papules. At first the patches are dark brown in colour—darker than

the surrounding skin—and present a smooth tense surface; they increase slowly in size and some of them coalesce. After a certain time the surface of the patches becomes somewhat wrinkled; superficial cracks appear as white lines intersecting the brown surface of the patches; later, they become deeper; the epidermis splits, and flaky curled-up scales, whitish inside and dark on the outer surface, are often seen: these scales are removed by friction, when whitish round patches remain.

The eruption never develops in concentric rings like *Tinea imbricata*, the patches remaining isolated or fusing together to form irregular large areas. After a time, a few of them may disappear spontaneously. The general health of the patient does not seem to be affected. In some instances there is a slight degree of eosinophilia, which, however, may be due to intestinal worms.

Transmission of the Disease.—I caused one of the patients to scratch with his nails some of his patches and then to scratch a healthy Tamil coolie (who volunteered for the experiment) on the arms and upper part of the chest. On the arms nothing developed; on the chest at the inoculated place there was—on the second or third day—much itching; and on the fourth day two tiny dark, very slightly elevated, roundish spots appeared. These enlarged slowly, and a few days later their surface showed several whitish cracks. Unfortunately, at this stage, the coolie, who complained of great itching, scrubbed himself thoroughly with sand soap, and the eruption disappeared.

The Fungus.—If a portion of one of the brown patches or a scale be removed and examined in Liq. potassæ, the fungus is easily detected. It grows between the superficial and the deep strata of the epidermis, and is present on the inner surface, but not on the external aspect of the scales.

The organism presents the general characters of a trichophyton; but what is very remarkable is the extreme

rarity of free spores; in fact, in several cases I did not succeed in finding any spores at all.

The mycelium is fairly abundant, though far from being as plentiful as in *Tinea imbricata*. It is composed of long straight articulated threads, which are sometimes dichotomous, the breadth being between 3 and $3\frac{1}{2}$ microns. No aspergillar fructifications nor clusters of spores can be seen, and so far I have not succeeded in growing the fungus.

Differential Diagnosis.—*Pityriasis Versicolor*.—When the eruption is in the very first stage it might be mistaken for a form of tropical pityriasis versicolor. In pityriasis, however, the epidermis does not split; moreover, in *Tinea intersecta* the fungus is not found on the surface, it grows between the superficial and deep layers of the epidermis.

TINEA IMBRICATA.

This affection begins somewhat similarly to *Tinea intersecta*, with dark brown patches, and the fungus in both eruptions growing between the superficial and deep layers of the epidermis. In contrast to *Tinea imbricata*, however, the eruption of *Tinea intersecta* never develops in concentric rings; it is far less severe, as patches often heal spontaneously, and it is cured without much difficulty. I have had at the same time, in the clinic, cases of *Tinea imbricata* and *Tinea intersecta*: the two eruptions could not possibly be confounded.

Treatment.—Tr. iodine and the usual antiseptic ointments answer well.

TINEA NIGRO-CIRCINATA.

I have recently come across two cases of a peculiar trichophytosis which has not yet, to my knowledge, been described. Both patients were Singhalese. The disease in

one of them affected the scrotum and the neck; in the other the scrotum only. The patients complained of pruritis at the seat of the eruption, but the general health was not impaired. In both cases the features of the eruption were identical: there were a few rings with thick elevated margins, the encircled skin being black—much darker than the healthy skin surrounding it, but not thickened or presenting papules or vesicles; the edge, as already stated, was thick, much elevated, of a dark colour, with the upper portion pinkish or occasionally covered by a dark crust.

As regards the course of the disease, in one of the patients it healed without any treatment, leaving dark patches at the previous seat of the lesions. In the other case, Tr. iodine was used.

The Fungus.—On examining in Liq. potassæ scrapings from the edge of the patches, a fungus with the characters of a trichophyton was found in both cases. The spores, which were extremely rare, were roundish, rather large (4 m.) with a double contour. The mycelial tubes were straight, also with a double contour; occasionally they appeared to be dichotomous. I did not succeed in growing the fungus, either by Sabouraud's or any other media.

I suggest for this fungus the name *Trichophyton ceylonense*, and for the affection the term *Tinea nigro-circinata*.

TINEA ROSEA.

I may also describe here a new dermatomycosis which has been called *T. rosea*, although it is not due to a trichophyton, but is caused by a fungus of the genus *Malassezia*.

Tinea Rosea.—This dermatomycosis is fairly common among Europeans. It generally appears on the chest, axillary regions and back, and never involves the face,

The eruption consists of roundish or oval patches, not elevated or only very slightly so, several of them occasionally coalescing to form large patches of irregular outline. The colour is pinkish, or reddish-pink, occasionally coppery with a fawnish tinge; there are no scales, the surface is smooth and tense, rather shiny, or very finely wrinkled. As a rule, there is no desquamation; there is also no pruritis, or, if any, it is very slight. The superficial lymphatic glands are not enlarged. The blood does not show—at least in the cases I have examined—any abnormality. The general health is in no way impaired.

The Fungus.—If one of the reddish patches is scraped and a preparation examined in Liq. potassæ, the fungus can be easily detected. It consists of mycelium and spores, the general characters being those of a *Malassezia*. The mycelium closely resembles that found in Pityriasis flava and in the pityriasis of temperate zones; but the spores have more resemblance to the spores of *Tinea mansoni*. The mycelial threads are rather thick and often show swellings, constrictions, and other irregularities of shape. The free spores are globular, of rather large dimensions, 4 to 6 microns. They are often collected in clusters. I have not, so far, succeeded in growing the fungus.

Diagnosis.—The condition with which the disease is most easily confounded is a form of Seborrhœa corporis, localised on the chest, very frequent in hot climates. In fact, two of the patients sent to me were thought to be suffering from Seborrhœa corporis, and without the help of the microscope I should have made the same diagnosis. The microscopical examination will also distinguish the disease from the Pityriasis rosea of Gilbert.

Ringworm.—In contrast to ringworm, *T. rosea* is practically non-pruriginous; it does not develop in circles, and the margins of the patches are not sensibly elevated.

Syphilis.—On superficial examination the eruption,

especially when it presents a coppery colour, might be confounded with a syphilide, and several patients thought they were suffering from syphilis. The absence of other signs and the microscopical examination will clear the diagnosis. Of course, *Tinea rosea* may be seen in syphilitic subjects, and in such cases microscopical examination alone can render the diagnosis exact.

Treatment.—The eruption is easily cured: a salicylic-alcohol lotion (2 to 4 per cent.), followed by a resorcin and salicylic ointment (10 per cent. resorcin and 2 per cent. salicylic acid), generally gives good results. Tr. iodine also answers well.

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DISCUSSION.

Dr. PERNET said with regard to the variety of trichophyton, with which the author had been good enough to identify his (Dr. Pernet's) name, that some years ago when examining in this country dhobie itch cases which had come from India, China, and South Africa, he had twice obtained cultures of a rosy pink growth. He had been able to obtain several specimens of *Tinea imbricata*, but although he had tried a good many media he had utterly failed to get a satisfactory cultivation of that variety. It was obvious that in tropical ring-