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SKIN AFFECTIONS CAUSED BY ACHORION GYPSEUM (BODIN).

PROF. C. RASCH,
Director of the Dermatological Clinic at the Rigshospital, Copenhagen.

[*Translated from the Danish by* W. JENKINS OLIVER.]

DURING the last few months in the University's Dermatological Clinic at the Rigshospital, Copenhagen, we have come across four cases of skin disease in which Bodin's Achorion gypseum could be demonstrated. Since skin affections due to this fungus, as far as I know, have not previously been described in Denmark, and as these cases showed certain features which have not previously been observed I will briefly report them in this article.

CASE 1.—Boy, aged 9 years, attended on January 25th, 1921, with an affection of the scalp of fourteen days' duration. At the commencement there was noticed a kerion lesion rather larger than a shilling piece on the right side of the back of the neck, and later there developed twenty-five larger and smaller raised lesions spread chiefly about the neck, with also some single lesions about the hair margin of the forehead. Microscopical examination showed a close covering of spores outside, with long chains of cubical and oval spores inside the hairs. Cured in the course of two months under fomentations and painting with iodine.

CASE 2.—Boy, aged 5 years, attended on January 26th, 1921, with an affection of the scalp of three or four weeks' duration. This had commenced as a small flat lesion, which later under treatment with

ointment had increased both in size and thickness to appear as a kerion rather larger than a shilling piece. Treated with chrysarobin paste this completely disappeared in the course of two months without any fresh lesions developing. By March 26th there was already a good growth of new hair over the site of the kerion. The microscopical picture was the same as in Case 1.

Case 3.—Girl, aged 11 years, attended January 29th, 1921, with a small (about size of a threepenny piece) erythemato-squamous spot on the right cheek. Microscopical examination showed some single, not characteristic mycelial threads without spores. Under treatment by zinc paste with ½ per cent. chrysarobin the lesion completely vanished in the course of fourteen days. The patient said that she had a cat which was losing its hair all over, but that it had no localised skin disease.

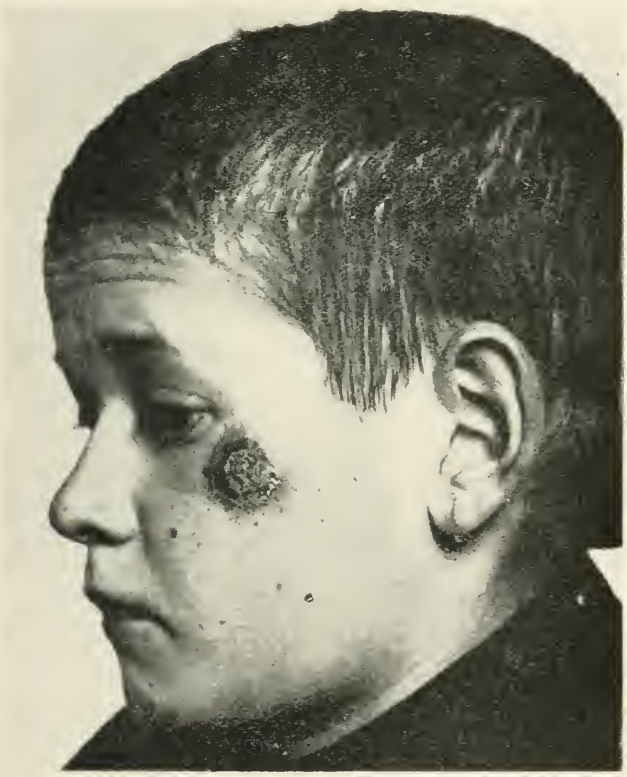
Case 4.—Boy, aged 11 years, attended March 10th, 1921, with a patch about the size of a shilling piece in the left cheek (see illustration), consisting of a flat, yellowish, damp central area surrounded by an erythemato-squamous border. Microscopical examination of a scraping showed a fungus, several short threads with and without spores varying considerably in size, some of which were quite large. No scutula. Sulphur vaseline was prescribed. On March 30th the lesion was uniformly red all over, slightly raised, the surface somewhat irregular, without scutula. This had not increased in size since the last note was made. April 28th: the affection was healed and had left a brownish pigmented lesion without any infiltration.

The four cases had occurred in different parts of the town, and no definite information could be obtained with regard to the source of infection.

From all four cases the Achorion gypseum with the typical appearance and colour described by Bodin (*Ann. de Derm.*, 1907, p. 585) was cultivated on Sabouraud's medium. Drop cultures also revealed the mycological features described by Bodin which so closely resembled those of the animal microsporons. More particularly there were present in extraordinary large numbers the very characteristic multilocular spindle-shaped bodies. By direct microscopical examination of the fungus in the hairs and scales one noticed especially the many unusually large spores, which varied in size from 4 to 12 μ;

some oval forms were even 8 by 12 μ, and the suggestion of a perithecium, which also was noticed by Bodin.

The case described by Bodin, which occurred in a woman, aged 30 years, showed itself as a single erythemato-squamous lesion on the right cheek about 3 cm. in diameter. On this lesion were four small favus scutula 2 to 3 mm. in diameter.



Case 4.—Achorion gypseum.

In *Les Teignes* (1910) Sabouraud describes the fungus after the same manner as Bodin, and reports that he knew of the following cases of this condition. The first case, which had its origin from a dog, he saw in 1894 in a child; he had noted it as a "folliculite trichophytique suppurée à petits éléments," and called it "Trichophyton du chien." The second case was that described by Sabrazes (*Actes de la Soc. Linneenne de Bordeaux*, tome 53), and occurred as a large kerion of the beard in a man, aged 50 years. This patient went

to a surgeon, who considered the kerion to be an epithelioma and he removed the "tumour." Inoculation into men and animals produced small favus-like scutula. Mewborn's case (*Journ. of Cut Dis.*, 1903, p. 11) is doubtful. In 1908, Suis (Toulouse) found one case in a foal, the skin eruption of which very closely resembled a trichophyton lesion without scutula. Finally Sabouraud himself has seen a case in a baby at the breast, aged 20 days, when there appeared an erythemato-vesicular lesion (about size of a florin) without scutula, and he mentions briefly a case of kerion of the beard, from cultivation of which there grew an Achorion gypseum, and which Lefèvre in Brussels reported to him in 1908.

In the more recent literature I have been able to find only one single case reported, in which the condition appeared as favus scutula on the lower eyelid of a boy, aged 14 years, who had been infected from a cock with a similar lesion on its comb (Truffi *Giorn. Ital. d. Mal. Ven. e Della Pelle*, 1914, p. 330).

Thus there are reported in all only six cases of skin disease in man produced by the Achorion gypseum, while the affection was seen three times in animals (dog, horse, cock).

Of the six cases two occurred as a kerion of the beard and the remainder as red scaly or vesicular lesions on other parts of the skin. Two of our cases are therefore the first in which the disease was localised to the scalp. This showed itself as a kerion, which in its appearance was in no manner different from the kerion lesions due to other forms of fungus. In none of our cases was the skin condition accompanied by the growth of scutula, nor was it in four of the previously reported cases. By experimental inoculation into animals scutula have been developed only in one of three cases. In our case (No. 4) the disease had an appearance which I cannot remember to have seen with other mycoses, consisting of a damp yellowish flat centre surrounded by a red, raised border.

This "enigmatical" parasite, as Sabouraud calls it, which in its cultural appearance resembles a trichophyton of the gypseum type, in its botanical features a microsporon, and which lastly can give rise to scutula like an achorion, quite certainly demands further study. Probably it should be classed in another part of the schema than that in which it is at present placed, or possibly it should be described as a new genus.

FURTHER REMARKS ON EARLY EPITHELIOMA OF THE SKIN.

LOUIS SAVATARD,
Manchester.

The modern classification of tumours of the skin of epiblastic origin as epitheliomata (1) is doubtless ætiologically correct, but the necessary prefix should always be added, for otherwise confusion is apt to arise. In a journal (2) recently, under "Epithelioma and Radium," two if not three varieties of epithelioma are mentioned, and one only is differentiated as a "pearly" epithelioma, which, one supposes, signifies the basal-celled variety or rodent ulcer, though the early prickle-celled epithelioma in many instances presents a "pearly" appearance, so that this description is hardly a true differentiation.

Sometimes, however, the prefix is not definite enough, for not infrequently the term *tricho*-epithelioma is used in describing a variety of epithelial tumours; and again, under the title of benign cystic epithelioma, two or more varieties of tumours of congenital origin may be indicated which present both clinically and histologically widely different pictures.

Epithelioma, without prefix or other qualification, should always signify a prickle-celled epithelioma, and as such I refer to it in this communication.

Not only should we be exact in our terminology, but we should exercise equal care in our statements with regard to ætiology. We are too prone to take for granted statements of fact frequently made on little or no authority, and these are repeated in paper after paper and book after book. I have drawn attention elsewhere (3) to the oft-repeated assertion that epithelioma supervenes on "moles," and I find that Broders (4), in an interesting and valuable thesis, states—"The site of the cancer was preceded by a mole, wart, pimple, scab, ulcer, leucoplakia, crack, wen, blister, or lump." On whose diagnosis of the pre-cancerous condition is he relying? On the patient's, the general practitioner's, or the expert's? An early epithelioma may convey to the patient or to the general practitioner only the suspicion of a benign growth—a wart, a mole, a lump, a pimple, a wen, or a simple ulcer—and yet were we to examine it histologically at this

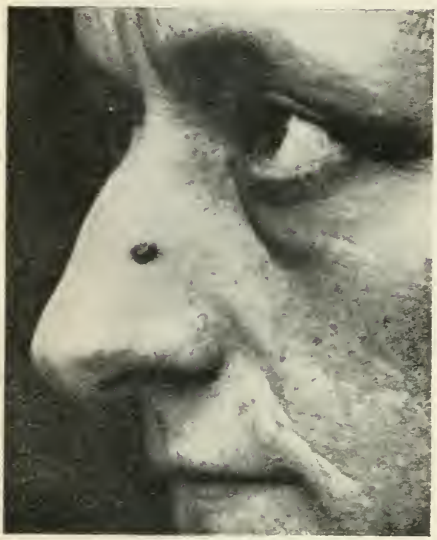


FIG. 1.—Epithelioma on active Lupus erythematosus. Two weeks' duration.

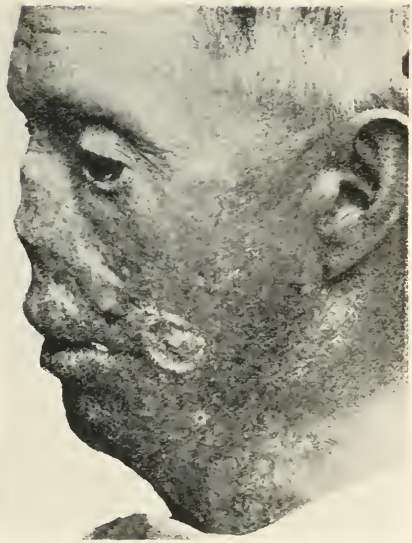


FIG. 2.—Epithelioma simulating rodent ulcer on lupus scar.

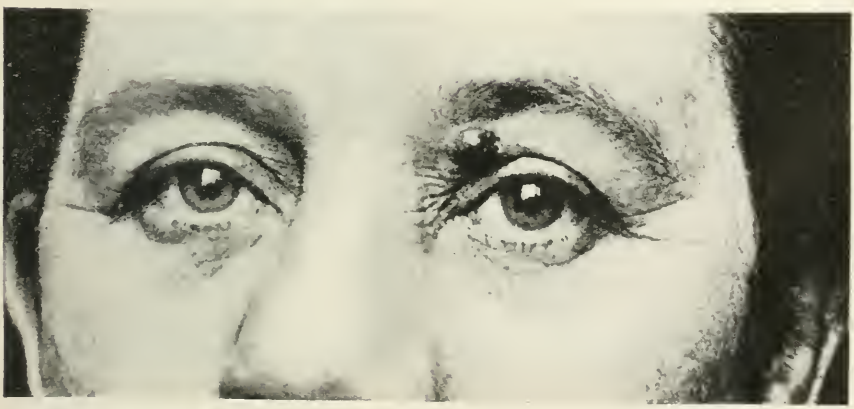


FIG. 3.—Epithelioma left upper lid associated with cystic nævi of lower lids.

TO ILLUSTRATE DR. SAVATARD'S FURTHER REMARKS ON EARLY EPITHELIOMA OF THE SKIN.

FIG. 4.—Rodent ulcer on bridge of nose associated with cystic nævi of lower lids.

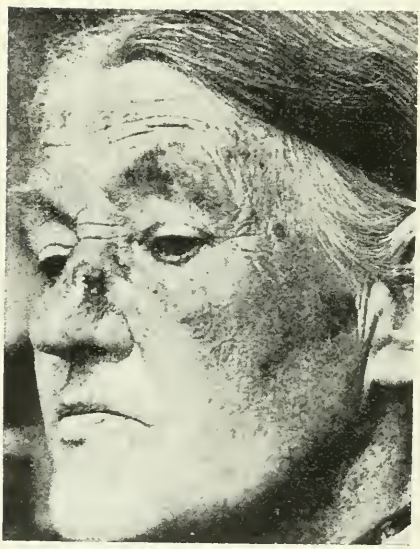


FIG. 5.—Epithelioma on side of nose secondary to senile keratosis.

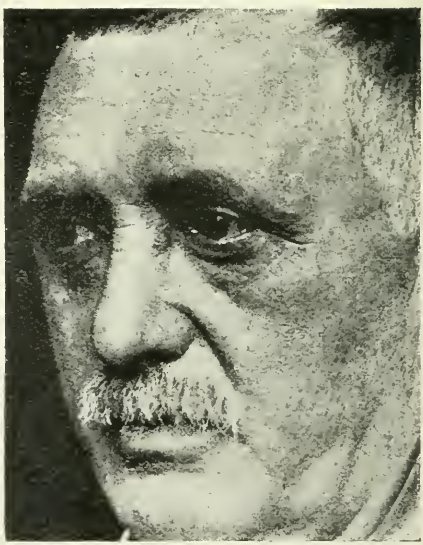


FIG. 6.—Epithelioma, left internal canthus, eight days' duration, simulating a keratotic papule.

TO ILLUSTRATE DR. SAVATARD'S FURTHER REMARKS ON EARLY EPITHELIOMA OF THE SKIN.

early period we should find already evidence of malignancy. These apparently benign lesions, then, are not necessarily the precursors of the epithelioma, but may be the initial stages of the new growth. I have frequently found such cases previously diagnosed and treated as of no consequence, when there has been no clinical doubt as to their malignancy. Fig. 1 shows such an instance: The patient, a woman suffering from lupus erythematosus of the flush patch area of the face, developed a small nodule on the active patch of lupus erythematosus on the bridge of the nose. Her own doctor assured her that it was only a "matter spot," and another medical man explained that it was a horny plug associated with the condition of her skin, but when I saw it a few days later I had no hesitation in recognising its true pathology, which was confirmed histologically. This, however, is the only case of an epithelioma complicating lupus erythematosus which I have seen, and such a rare occurrence is, I think, worthy of recording. I have, however, seen a case of epithelioma on the scar-tissue of lupus erythematosus.(5) Pringle (6) and others have also reported a few cases.

The early lesion of epithelioma on the scar-tissue of lupus vulgaris is multiform. It may appear as a keratotic or warty nodule, as a simple papule or as a small ulcer, and as such is frequently overlooked. If the ulcer is small, shallow, and without any tumour formation, it is frequently mistaken for ulcerated lupus and treated as such, or else diagnosed as a simple ulcer or as a rodent ulcer.

I do not know of a single authentic case of a rodent ulcer developing on lupus scar-tissue, where epithelioma is exceedingly common, and this fact strengthens the contention of those who ascribe its origin to the basal cells of the hair-follicle.

Fig. 2 illustrates a case of epithelioma (simulating a rodent ulcer) arising on the scar-tissue of lupus of long standing.

In differentiating early epithelioma from rodent ulcer, why is not the *time* element more emphasised by writers and teachers? It is, I think, of the utmost importance. The age of the patient, the absence or presence of glandular involvement, so frequently paraded in text-books, are of little, if any, use; nor will the site of the tumour be of much help in arriving at a correct diagnosis. Either growth may appear on any part of the face, and though I have never seen a rodent ulcer originating on the upper lid proper, I have seen some few

epitheliomata in this situation. Fig. 3 shows an early epithelioma just above the left upper lid in conjunction with benign epitheliomata (so called) of the lower lids, and Fig. 4 illustrates the same cystic tumours of the lower lids, with an early rodent ulcer on the bridge of the nose just beneath the brows. I do not wish to convey any ætiological association between the malignant and benign growths. Their presence together is, I believe, a pure coincidence.

These benign tumours of the lids (tricho-epithelioma, syringo-adenoma of various authors) are by no means uncommon, in spite of assertions to the contrary. It is true that patients are seldom referred to us on their account, but I have seen a fair number (chiefly in women) who have consulted me for some other affection. When the growths are well marked they are often mistaken for xanthelasma palpebrarum, but should be easily differentiated from the latter by their colour. They are of the colour of the skin and somewhat translucent. They are not confined to the lower lids, but may be found on the upper lids and between the brows. They should not be confused with the other so-called benign epithelioma (epithelioma adenoides cysticum of Brooke), from which they can be easily differentiated both clinically and histologically. McDonagh (7) refers to a well-marked instance of this condition, illustrated in Morgan Dockrell's Atlas, under the title of "Hyaline Degeneration of the Skin." Unfortunately the artist has coloured the tumours a decided yellow, though the text correctly describes them as of skin colour, hence confusion arises. McDonagh is of opinion that these little lid tumours are reversions to the face glands of deer, and traces their origin from the surface epithelium.

If these tumours are not uncommon, as my experience leads me to believe, why are they not more frequently noticed? Is not the explanation that we have eyes and see not? I demonstrated the epithelioma in Fig. 3 to a post-graduate class, and then asked what other skin-lesions of the face were apparent. Rosacea and hypertrichosis were suggested, but no mention was made of the lid tumours, though they were as evident, as the photograph shows. More thorough clinical teaching is indicated.

In elderly folk we often find patches of keratosis on the face and backs of the hands. The condition is known as senile keratosis. Unna describes it as "sailor's skin." We have its counterpart in

the congenital xeroderma pigmentosum, and a similar artificial product in chronic X-rays dermatitis. These keratotic lesions frequently develop into epitheliomata and are the fruitful source of multiple epitheliomata. Some few years ago I saw as many as half a dozen on the face of a lady of ninety summers.

Occasionally, too, they are responsible for multiple rodent ulcers, though I believe if malignancy supervenes the tumour is more likely to be an epithelioma. It may be somewhat insidious in its onset, and its apparent rate of growth may appear rather prolonged for an epithelioma. I have found also that many of these keratotic lesions, though clinically benign, show histologically evidence of early malignancy. Once, however, the epithelioma has become firmly established, it may grow rapidly, infiltrating the true skin and the subcutaneous tissues. Fig. 5 shows a patient presenting several keratotic foci, one of which, on the nose, has become malignant.

Now the early primary epithelioma may present the appearance of a keratotic papule, and such a one I saw lately which had been diagnosed as a warty pustule. The pigmented central plug simulated a scale, but it was not detachable, and there was no pus. The true skin was infiltrated. The tumour was of eight days' duration, and the clinical diagnosis was confirmed histologically (Fig. 6).

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ON TWO CASES OF EXUDATIVE ERYTHEMA ASSOCIATED WITH MALIGNANT DISEASE OF THE UTERUS.

HALDIN DAVIS, M.B., F.R.C.S., M.R.C.P.,
Dermatologist, Royal Free Hospital.

The toxic eruption known as hydroa gestationis has long been known as associated with, although by no means common in pregnancy. But as far as I know uterine neoplasms have not previously been noticed to cause eruptions of a similar character, although in certain instances some of the symptoms usually associated with pregnancy have also been observed in connection with such growths; in fact, to a very limited extent they may be said to imitate pregnancy.

Recently, however, two cases have come to my notice in which there has been this coincidence of uterine neoplasm with toxic eruption.

The first was a case which I was asked to see at the Cancer Hospital. The patient was a woman, aged 52 years, who had been ill for over two years when I saw her in July, 1920. She had been operated upon at St. Thomas's Hospital in August, 1919, but on opening the abdomen the bladder had been found to be adherent to the uterus and removal of the growth was impracticable. A small portion, however, had been submitted to microscopic examination, and had been reported as a spindle-celled sarcoma with much degeneration. She was admitted to the Cancer Hospital on May 29th, 1920, and on June 14th an urticarial rash began to appear on the forearms. It gradually spread over the abdomen, back and legs. When at its height it consisted of circular or circinate patches of erythema, smooth in the centre but with the edges raised, and in places crowned by small blisters. The patient complained of a good deal of irritation. As the patient's condition had remained practically stationary for a year it was decided to attempt once more an operation in the hope that something could be done. Accordingly on August 8th Mr. Joll opened the abdomen, but, unfortunately, removal of the growth was impossible. Subsequently the course of the disease progressed to the inevitable end, which came on January 26th, 1921. The eruption persisted until very shortly before death.

The second case was, as it were, the converse of the former. A woman, aged 52 years, came to the Out-Patient Department of the Royal Free Hospital complaining of itching all over the body. On examination she presented a widely-spread eruption consisting of circular and circinate figures, perhaps most thickly crowded on the extensor aspect of the legs and thighs, but affecting more or less every part except the face, scalp, palms of the hands and soles of the feet. The patches were raised at the edges by exudation, and, especially on the limbs, there were a good many small bullæ formed at the margins of the lesions. She was admitted to the ward for treatment as she was much distressed by the eruption, which had been scratched a good deal, and near the ankles had given rise to some ulceration. The House-Surgeon, Miss Denton, on questioning her as to her menstrual history elicited the fact that she had "menstruated" continuously for nearly two years. The uterus was therefore curetted under an anæsthetic, and material was removed for microscopic examination. An adeno-carcinoma was found to be present, which was removed by Mrs. Vaughan Sawyer. The patient made a good recovery, and the eruption disappeared. There is an interesting contrast between the two cases. In the first the eruption came on late and persisted till death. In the second the new growth was discovered almost by accident, and its removal cured the skin-condition.

These two rather remarkable cases led me to look up the whole question of the relation between pathological conditions of the contents of the female pelvis and their reflection on the skin. Not very much work has been done on the subject.

That there is an association between morbid conditions of the uterus and ovaries, etc., and certain dermatoses does not admit of doubt, but the circumstances which determine the association have never been formulated. In searching for references to this subject I have not been successful in discovering much literature bearing on it. The whole may be divided into three parts: (1) The influence of menstruation on diseases of the skin; (2) the influence of pregnancy (3) the influence of certain morbid conditions of the pelvic organs.

As regards the influence of menstruation, it is well known that women who suffer from acne vulgaris very commonly experience an exacerbation at each menstrual period. Another eruption which is

modified by menstruation is urticaria, but the effect of the period is irregular; in most cases, it is true, the urticarial wheals become more numerous, but I have notes of two cases in which there was a monthly remission of the cutaneous disturbance, leading the patient to hope that she was cured—a hope only to be shattered on the cessation of the menstrual flow. I can only find one author who has written much on this subject, namely, L. D. Bulkeley.

He published a book on it in 1906, in which he collected most of the previous literature thereon. His bibliography comprises 126 references. He finds that the two dermatoses most intimately connected with menstruation are acne and eczema. In so many instances were these diseases influenced by menstruation that he ceased to make any particular note of the fact. Only in twenty-seven cases were the phenomena so interesting that he noted them particularly, and among these the most striking were five cases in which the eruption improved during the period.

Another eruption which is often associated with menstruation is herpes. A considerable number of cases have been recorded, many of genital herpes; but herpes in other situations, notably on the lips, is a not very rare concomitant of the menstrual period. I, myself, have a patient who has a definite herpetic eruption on the lips and cheek every time she is unwell.

Certain cases have also been recorded and described as manifestations of angio-neurotic œdema, but some of these certainly would appear to be better described as herpetic. One of these is a case published by de Keyser, in which there was a swelling with vesicles about the face, which appeared every month, lasted a few days and disappeared spontaneously.

Much rarer accompaniments of the menstrual period are ecchymoses and purpuric eruptions, of which a few cases can be found in the literature. On the other hand Bulkeley himself reports a case of psoriasis which always was aggravated every menstrual period.

Bulkeley devotes a considerable portion of his book to a consideration of the theories accounting for these phenomena. He gives three:

(1) That of "cyclic" changes taking place in the general system.

(2) Auto-intoxication of genital origin.

(3) Nervous reflex irritation from the congested condition of the uterus and ovaries.

But as practically nothing is known of the bio-chemistry or physiology of menstruation speculation on these lines is almost a waste of time, and for the moment we must be content to record the facts.

Of the dermatoses complicating pregnancy the most interesting and characteristic is hydroa gestationis. This is by no means common, but a good many cases have been described, some of them under somewhat different names, *e. g.* Bryan publishes in the *Lancet*, 1904, a case which he designates "hydroa of pregnancy." The eruption consists of circinate patches of exudative erythema surmounted by vesicles and small blisters. The patients complain very much of irritation.

Other more commonplace dermatoses which are frequently influenced by pregnancy are urticaria, eczema and rosacea. I believe that urticarial rashes are not uncommon in pregnancy, but they rarely come under the notice of the dermatologist. I had a case of rosacea which always got much better during successive pregnancies, of which there were several.

Of rashes occurring in the puerperium there is not much which is remarkable. Sir J. Byers opened a discussion on this subject at the annual meeting of the British Medical Association in 1912, but his paper mostly consisted in the consideration of rashes due to quite extraneous influences, such as lysol, iodoform and other drugs, which may be used at that time for surgical purposes. He mentions that there are two types of scarlatiniform rashes which may occur during the puerperium—(1) mild, (2) severe, apart from true scarlet fever, which he was not disposed to regard as the bugbear it was formerly supposed to be.

There appear to be very few cases recorded of skin-eruptions associated with uterine or ovarian tumours. It is this circumstance which makes the two cases I have recorded above so interesting. They are examples of uterine neoplasms giving rise to toxic eruptions of the same type as are usually associated with pregnancy. The only other actual cases I can find of association between uterine tumours and skin-diseases are three, recorded by Gastou, of alopecia areata associated with fibroids. But he does not believe that the alopecia areata was caused by the fibroids, although possibly influenced by them.

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THE BRITISH ASSOCIATION OF DERMATOLOGY AND SYPHILOLOGY.

Many of our readers will be aware that this Journal has for many years past been conducted by a number of British dermatologists, mostly attached to teaching hospitals, who appoint annually an editorial council to direct the publication of the Journal. It was thought that it might be of great advantage if these guarantors could meet together once a year and discuss among themselves problems of interest in dermatology and syphilology. It was further felt that men working in London had few opportunities of coming into contact with the work of their colleagues in the larger extra-metropolitan cities.

As a result of many conferences, it has been decided to form an association on the lines of the Association of Physicians, which will hold an annual congress every third year in London and in the two intermediate years in selected cities outside London. The name selected for the Association is the British Association of Dermatology and Syphilology, and all present guarantors of the Journal are eligible for membership. Thereafter admission to the Association will be by the invitation of the Executive Committee, subject to confirmation at

the annual meeting, as has been the custom in the past in the case of guarantors.

The Journal henceforth becomes the property and the official organ of the Association.

The first meeting of the Association was held under the Presidency of Sir Malcolm Morris on Friday, November 18th, 1921, at the Royal Society of Medicine, when discussions took place on "Focal Infection in the Ætiology of Skin-Diseases," and on "The Wassermann Reaction as a Guide to Treatment." The former was opened by Dr. Leslie Roberts of Liverpool and Dr. H. W. Barber, and the latter by Dr. J. H. Sequeira and Col. L. W. Harrison. A demonstration of cases was also held.

At the First Annual Business Meeting it was decided that the next meeting should be held in Edinburgh on Monday and Tuesday, July 24th and 25th, 1922. As these are the two days immediately preceding the meeting of the British Medical Association in Glasgow, it will give those members of the Association who wish to do so the opportunity of proceeding direct to that meeting.

The following were elected the Executive Committee for 1922: *President*, Dr. Norman Walker (Edinburgh), *Treasurer*: Dr. J. J. Pringle; *Secretary*, Dr. Arthur Whitfield; *Editor*, Dr. A. M. H. Gray. *Other members:* Dr. H. G. Adamson, Dr. H. W. Barber, Dr. R. A. Bolam (Newcastle-on-Tyne), Col. L. W. Harrison, Dr. A. Douglas Heath (Birmingham), Mr. J. E. R. McDonagh, Sir Malcolm Morris, Dr. Leslie Roberts (Liverpool), Dr. Kenneth Wills (Bristol). *Local Secretary* for the Edinburgh meeting, Dr. Cranston Low.

In future the President of the Association will be chosen from the city where the annual meeting is to be held. This necessitates the retirement from the Chairmanship of the Journal of Sir Malcolm Morris, the first Editor of the Journal, who has held the post of Chairman for over twenty years. We cannot allow this opportunity to pass without expressing our gratitude to him for all that he has done to make the Journal a success. It is largely due to him that it has been possible to carry on so successfully through the last very difficult years. We are glad, however, to be able to record that he is not severing completely his connection with the Journal, but still remains a member of the Executive Committee.

A. M. H. G.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Meeting held on October 20th, 1921, Dr. H. G. Adamson, President of the Section, in the Chair.

Dr. Arthur Whitfield showed a *case for diagnosis*. The patient was shown by Dr. Little about a year ago.* She then had an erythematous condition on the arms and legs, and very much round the neck. There was a maddening irritation, and the tentative diagnosis made was mycosis fungoides, with which, at that date, he did not agree. She later came under his care, and he found that this attack began on a damaged patch on the right leg. He thought if he could get that right he might cure the whole thing. He painted the patch with 2 per cent. silver nitrate, and from that moment she began to improve, and now he thought she was practically cured He had brought her because in these cases, shown as possible pre-fungoid stages of mycosis fungoides, they often did not get an ultimate history. He did not regard this case as mycosis fungoides; it was what the Americans called infectious eczematoid dermatitis.

With the idea of de-sensitising her he gave her several injections of thiosulphite of soda intravenously. It seemed a safe remedy, but it did make the patient feel somewhat ill and very thirsty. The malaise passed off in an hour or two. He did not think that the injections modified the disease; it was the silver nitrate that did it, because when they left it off too soon the eruption began to come back again.

Dr. H. C. Semon showed some cases of *psoriasis treated by Danysz's method*. The first case was a single woman, aged 72 years. There was a seven years' history of this condition, and the lesions were apparent on the right forearm, left knee and buttocks. She had been under treatment in more than one London hospital, but every effort even to alleviate the condition failed. Psoriasis was a skin condition which had very few subjective sensations, but this had been so irritating to the patient that it had prevented her sleeping. Since 1916 she had had every kind of treatment, from X-rays to chrysarobin. Having seen Dr. Barber's two cases which were treated by

* *Brit. Journ. Derm.*, 1921, xxxiii, p. 112.

Danysz's method Dr. Semon thought this was a suitable case for it, and he asked Dr. Knott to give him some of the same vaccine. She had had twelve injections of this in all, and there was no local or constitutional disturbance. From the time of the third injection the whole condition began to clear up. One or two small lesions remained, which even now confirmed the diagnosis. The interest lay in the fact that this was the only successful response in seven cases, and that seemed to be the general kind of experience; therefore it was for them to find out in which type of cases the Danysz's treatment was likely to be successful. He had another case to show them there to-day, with deeply infiltrated lesions, as opposed to the superficial type of psoriasis, which had not responded in his cases so far. Both the patients were suffering from rheumatic manifestations, and both had very irritable infiltrated lesions, and it was possible this might be the responsive type. He would show them a case of psoriasis which, objectively, failed completely, though subjectively there was some improvement. It was that of a man, aged 32 years, who had had an eruption round the anus for some years. He had three brothers with a similar complaint. He also had psoriasis of the nails, and under observation developed lesions on the penis and head. X-ray exposure had been the only thing which had relieved him.

Dr. Barber said he had used Danysz's method for psoriasis a good deal, and his experience coincided with Dr. Semon's. He had had some cases in which the method had completely failed, although given a very thorough trial. He was unable to foretell whether the treatment would be successful or not; in some cases it was of distinct value.

Dr. Haldin Davis said that Danysz's treatment seemed to him to be going the way of all previously vaunted specifics for psoriasis. It was their usual experience with each new method that the first cases invariably did well, so much so that a somewhat cynical physician had said, "Use your new remedy while it still cures," but that subsequently the proportion of failures grew larger and larger, until the method either passed into the limbo of forgotten remedies or at least was employed only occasionally as a last resort.

Dr. H. C. Semon showed a *case for diagnosis*. The patient was a young man, aged 19 years. He came to him first in July, 1920, with impetigo, and the treatment for it was successful. But in January he returned with the same condition—vesicles on both legs. He did not ascertain whether streptococci were present in them, but he was cured by February of this year. He came again with a relapse in

July, and by August 3rd he was once more cured. On August 31st he returned with a different appearance on his legs—definite ulceration with nodular infiltration, suggesting, to some extent, a granuloma. The Wassermann reaction was negative. He thought the ætiology of the condition might turn out to be tuberculous.

Dr. WHITFIELD did not regard the case as tuberculosis, but as chronic pyodermia. The eruption was very irritable, which was rarely the case with tubercle. Moreover, in healing, tubercle seldom left marked pigmentation, but streptococcic lesions did, if they were chronic. The patient seemed to have had a severe streptococcal infection; he said it began with a football back. When he got hot and chafed the skin he seemed to set the condition going again.

Dr. GEORGE PERNET showed a case of *band scleroderma of leg in a young woman (showing result of treatment)*. He showed this patient in 1919, and he brought her again now, so that they might see the results of persevering treatment by massage and ionisation. She had extensive band scleroderma from the buttocks to the ankle and on the foot. It had now practically all cleared up. She had had massage twice a week since last shown, also ionisation (zinc and chloride of sodium from Mr. McDougal). He put her on small doses of thyroid from the beginning, but he did not think much of the good result could be attributed to that treatment.

Dr. GEORGE PERNET showed a case of *epithelioma on lupus vulgaris in a man*. This man had an epitheliomatous condition of the face, which developed on an old lupus vulgaris lesion. He was aged 45 years, and the lupus had existed from his fifth year. At the age of 25 the lupus was excised, and this was followed by grafting. About a year ago horny growths appeared, and they were treated at another hospital for twelve months, apparently with acids. In December, 1920, when the lesion was the size of a florin he was treated by radium, and had since then become much worse. He had only quite recently come under his observation.

Dr. BARBER suggested the employment of diathermy; he had seen good results from this method in cases of rodent ulcer.

Dr. GRAY thought it might be possible to treat the case with arsenic paste, but he considered diathermy would be preferable.

The PRESIDENT said he thought diathermy a treatment which might in future be employed for rodent ulcer and epitheliomata of the skin, especially perhaps for large growths, such as in the present case. He understood that it was now used

very successfully in Australia, where rodent ulcers and epitheliomata of the face were of very frequent occurrence, but he did not think that in this country dermatologists had given much attention to diathermy, possibly because in the earlier cases which most often came under the care of a dermatologist there were already other methods which were quite efficacious. Dr. Cumberbatch, who was a pioneer in regard to diathermy in this country, and who had written a very instructive book on this subject, had expressed a very hopeful but guarded opinion as to the value of this treatment for rodent ulcer. He thought that if anything could be done for Dr. Pernet's case the choice lay between diathermy and the arsenic paste method, of which Dr. Gray had lately shown some successful results.

Dr. PERNET (in reply) said he had not thought the application of arsenic paste was adapted to such lesions as these. Another method was surgery "plus" fulguration (as carried out by Dr. Keating-Hart, of Marseilles).

Dr. A. M. H. GRAY showed a *case for diagnosis*. The patient, a male, aged 35 years, had had recurrent attacks of stomatitis for the last three years. They began with what looked like an aphthous ulcer, which in a week spread over the mucous membrane, sometimes involving the pharynx. Each attack took two or three weeks to subside, and then recurred again in another two or three weeks. Many bacteriological examinations of the mouth had been made by Dr. McNee, under whose care the patient was, and the results had been uniform: the only two organisms found in any quantity had been *Streptococcus pyogenes longus* and a rod-shaped organism, both normal inhabitants of the mouth. The Wassermann reaction was negative and the blood-count normal. He had had much local and also internal treatment without any effect. In November, 1920, at the height of an attack he was given 0·3 grm. of novarsenobillon, after which the attack subsided; a month passed without his having another. In January, 1921, he came up just as an attack was commencing and had another dose of 0·3 grm. This aborted the attack, and he had had no further one till the present attack, which commenced a few days ago, this being an interval of ten months.

Another case had recently come under the notice of Dr. McNee and the exhibitor; it was almost identical in character, and it had improved under N.A.B.

Dr. WILFRID FOX said he had a case resembling this which he looked upon as ordinary septic stomatitis, the starting-point of which was probably pyorrhœa; the patient had reacted favourably to collosol manganese.

Mr. H. C. SAMUEL asked whether it might not be erythema iris, confined to mucous membrane.

Dr. W. J. O'Donovan showed a *photograph and sections of a case of plasma-cell tumour*. The patient was a woman, aged 52 years, who had had a sore at the corner of her mouth for two and a half years. In 1919 she was in London Hospital with a history of hæmatemesis, but as there were no physical signs she was discharged in a week. Recently she attended the skin-clinic, complaining of this sore, $1\frac{1}{2}$ cm. in diameter. He thought it was a rodent ulcer, and it was excised, but microscopically it was found to be almost a solid collection of plasma-cells. If the Wassermann reaction had not been negative it might have been regarded as a late syphilide.

Dr. Whitfield regarded the tumour as an endothelioma, and said that it was quite right to have had it removed. Many years ago he had had a case of small growth on the inside of the ala nasi; the patient was shown at the West London Hospital, and the case diagnosed by someone there as lupus. His own view had been that it was rodent ulcer. Dr. Ball, under whose care the case was, excised the growth and sent Dr. Whitfield the tissue to cut. It looked exactly like this present section. Sir Lenthal Cheatle also considered it was endothelioma. Mr. Shattock agreed with the diagnosis, but he did not draw such a sharp line between connective-tissue tumours and infective granulomata as others did. He (Dr. Whitfield) thought this was an endothelioma made of plasma-cells, forming a tumour which ulcerated, but did not relapse on removal.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

POROKERATOSIS; REPORT OF A CASE. Carroll S. Wright. (*Arch. of Derm. and Syph.*, 1921, iv, p. 469.)

A case is here reported which occurred in a Greek, aged 40 years, and in which the lesions were present about the head, neck, hands and feet. These consisted of verrucous ringed lesions, which were typical of the disease. The microscopical appearances were similar to those which had been found in other cases.

Similar lesions occurred on the hands and feet of the father of the patient, and there was a history of it in the grandmother.

The literature of the subject is reviewed, and the writer concludes that porokeratosis is a distinct clinical entity with a familial tendency; that histologically it is characterised by acanthosis and by inflammatory changes in the corium, which are rapidly followed by hyperkeratosis, and plugging of the sweat-ducts and follicles; and that it is best classified under the group of the verrucous nævi. J. M. H. M.

A CLINICAL HISTOLOGIC AND BACTERIOLOGIC STUDY OF A CASE OF MULTIPLE BENIGN SARCOID OF BOECK-DARIER-ROUSSY. Clark W. Finnerud. (*Arch. of Derm. and Syph.*, 1921, iv, p. 343.)

The case on which this report is based is that of an Italian woman, aged 25 years, who presented a bluish-red, sharply defined nodular patch on the right cheek about 2 mm. in elevation and 3·5 cm. in its greatest transverse diameter. There were patches also of a similar type on the nose and right cheek, while pinhead-sized, red, soft lesions were present on the chin and upper lip. Deep-seated blue-red nodular patches extended down each upper extremity; these were attached to the skin above but were freely moveable over the deeper subcutaneous tissue. The hands were swollen and deformed and presented deep moveable firm nodules about the wrists and fingers. Globular swellings also occurred in the vicinity of the left ankle and other situations in the leg. There were no definite concomitant tuberculous findings in the case, except that there was involvement of the bones of the fingers. Both the von Pirquet and tuberculin reactions were negative and inoculations in guinea-pigs were also negative. The histology was that of a non-caseating tuberculous process, and showed a plasma cell infiltrate with groups of giant-cells. The case belonged to the so-called mixed type of sarcoid of Boeck and Darier-Roussy. J. M. H. M.

THE DERMATOLOGIC SYMPTOMS OF ENDOCRINE DYSFUNCTION. Paul E. Bechet. (*Arch. of Derm. and Syph.*, 1921, iv, p. 660.)

This is a brief review of the present state of our knowledge with regard to the dermatological symptoms dependent on, or associated with, errors in the functioning of the pituitary, pineal, parathyroid, thyroid and thymus glands, the suprarenals and the gonads. J. M. H. M.

ERYTHEMA NODOSUM AND TUBERCULOSIS. H. J. Vetlesen. (*Norsk Mag. f. Lægev.*, October, 1921, s. 689.)

Following a general review of the literature, the author puts forward his own material, based on the notes and sick histories of 1800 cases from the medical side of an hospital over a period of 21 years, of Erythema nodosum and of varying forms of Tuberculosis.

Erythema nodosum.—Of 45 cases (females 42, males 3) 24 gave a negative family history of tuberculosis; 3 cases were definitely tuberculous at the same time or showed signs immediately after their stay in hospital, while later records obtained from the statistics of the health authorities gave 3 further cases of tuberculosis among these patients 2½ to 8 years later—equal to 13·3 per cent. In addition there were 6 suspect cases, giving a further 13·3 per cent., or total (if latter are included) of 26·6 per cent.

Pleurisy.—Of 350 cases 18 had previously had or were accompanied by Erythema nodosum, equal to 5·1 per cent.

Tuberculosis in one form or another.—Of 1317 cases 12 had previously Erythema nodosum, equal to 0·9 per cent.

With regard to the pleurisy cases giving an history of Erythema nodosum, the majority had had this affection previous to the appearance of the pleurisy from periods varying in duration from 8 days to some years with an average

intervening period of 2 to 3½ months; 1 case apparently had developed both conditions at the same time, while in 2 cases the pleurisy had preceded the Erythema nodosum by 1 and 6 weeks respectively. The cases among the other forms of tuberculosis showed a less regular time-relationship between the appearance of the two conditions.

Vetlesen concludes that there is a connection between this affection and tuberculosis but that how intimate and general this is must be left to future investigation. He would look upon Erythema nodosum as a danger-signal.

W. J. O.

A CASE OF ORIENTAL BOIL IN SARDINIA. C. Lombardo. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. i, p. 5.)

A typical case of Oriental sore is described. The question as to where the patient was infected was doubtful. He had returned to Sardinia from military service in the Trentino and on the Carso. Within two months of his return the lesion appeared. Lombardo is inclined to think that he was infected in Sardinia. Biopsies were made and the usual granuloma demonstrated.

R. C. L.

ANIMAL PARASITES.

A CLINICAL NOTE ON GRAIN ITCH WHICH OCCURRED IN EPIDEMIC FORM IN ROMAGNA AND OTHER PROVINCES. D. Majocchi. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. vi. p. 709.)

Numerous cases of grain itch were seen in September and October of 1920. As many as forty-five cases were seen in a few days. These cases were all in persons who were in contact with grain or flour. The patients all came from the provinces—Ravenna, Forli, Ferrara, Montara, Modena and Bologna. The causative insect, *Pediculoides ventricosus*, was easily demonstrated. The eruption, which was very itchy, affected the back of neck and upper part of trunk in the slight cases, and the whole trunk, genitals, upper and lower extremities and face, with the exception of the hands and feet. The commonest type of eruption was a papulo-vesicular one, but in some cases there were larger blebs and haemorrhages. As in scabies there were also impetiginous, furunculoid and ecthymatous lesions in some of the cases. There were no burrows as in scabies. The eruption spread rapidly, and appeared over an extensive area in three or four days, and if left alone died out spontaneously in about three weeks. The condition was easily cured by sulphur ointment. Most of the cases originated by direct contact with grain or flour, but in a few the disease was contracted from other affected persons. The author blames the requisitioning of grain by the Government, and states that the grain was not kept in suitable places and became infected very greatly with the parasites.

R. C. L.

A HUGE EPIDEMIC OF GRAIN ITCH IN ROMAGNA. Pantaleoni Pio. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. vi. p. 717.)

In this article the same epidemic as is described by Majocchi is described. Similar clinical cases were seen, and in addition to a description of the clinical appearances the author refers to other previous epidemics in Italy and elsewhere. There are four good photographs of the skin-eruption and drawings of the *Pediculoides ventricosus*.

R. C. L.

A PRURIGINOUS DERMATITIS PRODUCED BY THE ACARUS. PEDICULOIDES VENTRICOSUS. B. Salvatore. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. vi, p. 725.)

The author reports cases of itch due to *Pediculoides ventricosus* from contact with dried beans. He succeeded in getting the parasite to breed in Petri dishes, and by infecting individuals reproduced a typical clinical picture. R. C. L.

NEW GROWTHS.

A CASE OF CUTANEOUS TUBERCULOSIS AND EPITHELIOMA. G. Stura. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. i, p. 15.)

This case was peculiar in that it occurred in a man of 76. Five months previously it began as a crusted lesion on the left auricle. It rapidly spread so as to involve nearly the whole auricle, and ulcerated deeply. The Wassermann reaction was positive, but four injections of neojacol only produced slight temporary improvement. From the discharge the tubercle bacillus was demonstrated in large numbers. Microscopically an epithelioma was found with tuberculous granulation-tissue in which the tubercle bacillus was demonstrated. The patient was healthy otherwise, and Stura thought that the infection was an accidental internal one, with tuberculosis and an epithelioma implanted on the top. The case was peculiar in that the tuberculous lesion was of the acute ulcerative type, and also in that an epithelioma devoloped within a few months of the lesion starting. R. C. L.

DARIER'S DISEASE IN THE INFANT. John A. Borghoff. (*Arch. of Derm. and Syph.*, 1921, iv, p. 609.)

In this paper a case of Darier's disease is described, in which the eruption began, at the age of four months, on the upper portion of the back of a male infant, and three months later had involved the greater part of the back, chest, abdomen and scalp. The lesions were typical of Darier's disease, both clinically and histologically. Lesions were present also in the mouth, on the hard palate, where they consisted of pink to white papules, which were firm on pressure and about the size of a wheat seed, or were ulcerated and covered with a grey membrane. Papular efflorescences in the form of a ring were also present at the muco-cutaneous border of the anus. These were yellowish-red in colour, here and there vegetating and ulcerated, and caused much pain on defaecation. Small, rather firm papules were present also along the external auditory canal, and the membranæ tympani were perforated and discharged pus freely.

J. M. H. M.

PATHOLOGY.

A COMPARISON OF INGREDIENTS OF RINGWORM CULTURE-MEDIUMS, WITH SPECIAL REFERENCE TO AMERICAN AND FRENCH CRUDE MALTOSE. Fred D. Weidman and Thomas M. McMillan. (*Arch. of Derm. and Syph.*, 1921, iv, p. 451.)

This is a technical paper which will be of great interest to those who are cultivating the ringworm fungi. According to the writers, only certain species

of moulds require crude French maltose and French peptone for identification, and glucose agar may be substituted. It is necessary, however, to have imported French peptone (Chassaing).

The writers add that what is needed is a new medium composed of definitely pure chemical ingredients, of a reasonable cost, and adjusted to a standard acid figure. J. M. H. M.

RESEARCHES INTO ANOMALIES AND ALTERNATIONS OF THE PROCESS OF CORNIFICATION IN THE PRINCIPAL MORBID CONDITIONS OF THE HUMAN SKIN. L. Martinotti. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. vi, p. 746.)

In this paper the author discusses the changes which take place in the diseases where parakeratosis, or, as he prefers to call it, paracleidosis, is found. He states that paraeleidosis occurs normally in the eponychium and the transition between skin and mucous surfaces. In psoriasis, he maintains, the change is not in the horny layer, but in the stratum lucidum. He also mentions a similar change in pityriasis rosea, psoriatiform syphilides and parapsoriasis. In scaly parasitic diseases, *e.g.* tinea, favus, pityriasis versicolor, there is rarely any paraeleidosis, but a hypereleidosis. Scaly eczema shows a typical paraeleidosis and seborrhœic eczema a similar change, together with a true hyperkeratosis. In these diseases the author claims that the change is chiefly in the eleidin production, and not in the keratin. In chronic inflammatory conditions there is a hyper-production of eleidin or a production of altered eleidin. The article is illustrated by eight coloured drawings of sections of the skin from various chronic skin-diseases. R. C. L.

TREATMENT.

RÖNTGEN THERAPY OF SKIN CARCINOMA. Karel Gawalowski. (*Česká Dermatologie*, 1920, i, No. 10.)

The theoretical part of the paper discusses the effect of X-rays on the neoplasm cells. According to Schwartz, their sensitiveness to rays seems to depend on their large content of lecithin (5·5–8 per cent. against 2·3 per cent. in muscle-fibre). The rays decompose lecithin, and its decomposition products, especially cholin, destroy the cells. Some authors believe in primary irritation of the connective-tissue cells, with resulting hyperplasia of connective tissue and strangulation of cancer nests. The irritation theory would explain the rapid filling in of the defects from disintegrated tumours and the rapid healing. In discussing the quality of X-rays used in skin-cancer the author prefers the hard filtered rays. The question of cancer dose differs with different authors. The author describes the X-ray instruments used in the work in Prague. The clinical part of the paper deals with the effect of rays on different forms of skin-cancer. There is usually an increase in the size of the tumour after a certain latency—ten to twelve days. With unfiltered rays or with 1 mm. aluminium the reaction is mainly superficial. In cases of crater-form epithelioma the floor seems to come up, the borders flatten out; healing takes place in three to four weeks; pigmentation follows, and later disappearance with desquamation. In ulcus rodens secretion diminishes, crusts dry up and adhere for a long time; after separation a smooth scar remains. In cases of extensive tumours, after the

initial exposure a rapid disintegration takes place as a rule. In two cases a pseudo-reaction—light erythema—appeared the same day, and lasted two to four days. After hard rays the reaction is similar, but pigmentation more marked; pseudo-reactions are more common. The real reaction comes on in ten to twelve days. The author believes that no harm can ever result from röntgenotherapy in cases of cancer if care is taken not to give "the irritant dose."

Spinka (St. Louis).

THE RÖNTGEN-RAY TREATMENT OF ACNE VULGARIS. H. H. Hazen and F. J. Eichenlaub. (*Arch. of Derm. and Syph.*, 1921, iv, p. 671.)

According to the writers, the employment of X-rays in acne vulgaris gives good results. At the beginning the patients are treated every two weeks with the following technique: Spark-gap, 7½ in.; milliamperage, 4; time, 35 secs.; focal skin distance, 9 in.; no filter; doses given at intervals of two weeks.

The results by this method were quicker and more permanent than those by the usual methods of treatment. Great care must be taken to avoid giving an erythema dose. J. M. H. M.

NON-BACTERIAL PROTEIN THERAPY IN SOME DISEASES OF THE SKIN. G. A. Ambrosoli. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. ii, p. 128.)

Ambrosoli used intravenous and intramuscular injections of Armour's peptone and deutero-albumose, and intramuscular injections of sterilised cow's milk. Thirty-one cases in all were treated and over 200 injections given. In twenty cases good results were obtained, in three improvement, and in eight no result. The good results were only obtained by the injections of milk. Neither the peptone nor the deutero-albumose had any effect. Favourable results were obtained in dermatitis herpetiformis (one case), lichen planus (one case), dry eczemas, and in the majority of itchy moist eczemas of adults and children (several cases). Psoriasis (four cases), eczema psoriasiforme (one case) and parakeratosis lichenoides chronica (two cases) were not benefited. R. C. L.

HUMAGSOLAN AS AN EXCITANT OF GROWTH OF THE HAIR. G. Stura. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. ii, p. 151.)

Humagsolan is an albumen preparation rich in cystine treated by hydrolysis so as to make it easily digestible. Stura experimented with two rabbits, using one as control. An area of skin was shaved on each animal, and to one of them humagsolan was given, three doses daily (1·20 grm.). Twenty-one days later this animal showed a growth of hair 6 mm. long on the shaved area. The control animal's skin still showed no sign of growth of hair.

Three cases of alopecia areata were also treated with humagsolan internally in daily doses of 80 cgrm., increasing to 2·4 grm. Locally the areas were massaged and exposed to ultra-violet rays. In one and a half, two months and twenty days respectively the hair began to grow on the bald areas. Stura states that humagsolan is only suitable for cases where the condition which inhibits the growth of hair has ceased to exist, and cannot be expected to give results in all kinds of alopecia. R. C. L

SYPHILIS.

MAIN POINTS IN THE MORE RECENT YEARS' INVESTIGATIONS CONCERNING THE ORIGIN AND ANCIENT HISTORY OF SYPHILIS. Fr. Grön. (*Tidsskrift for Den Norske Lægeforening*, Nos. 6 and 7, 1920.)

An interesting *résumé*, especially of the Scandinavian literature, on this question, from which Grön concludes that the so-called "American" theory holds the day. W. J. O.

PRIMARY SORE ON THE BACK. M. Truffi. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. iii, p. 241.)

This case of primary sore on the lower part of the back to the right of the middle line is only recorded on account of its unusual situation. The lesion was in every way typical, and the *Spirochæta pallida* was found. The mode of infection was unknown. R. C. L.

LATE SECONDARY SYPHILIDES AND REINFECTION. J. Capelli. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. ii, p. 77.)

Capelli, in addition to reporting fully six cases of Fournier's, gives an account of six other cases who showed secondary syphilitic lesions years after infection. He discusses the question of whether these cases are a late development of a single infection or whether they are reinfections. He comes to the conclusion that in rare cases, long periods after infection, typical secondary lesions and even isolated lesions of the primary type may occur. These simulate a reinfection, but should be regarded as cases of anto-superinfection. R. C. L.

SYPHILIDES AND TRAUMA. A. Pasini. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. ii, p. 102.)

Pasini records five cases of syphilitic lesions arising on the site of a previous injury. In one case gummata arose at the site of each injection of morphia in a morphomaniac, in two cases at the seats of injections of calomel-oil and salicylate of mercury and in two cases in bone after a local injury. In all cases the lesions were tertiary. Pasini thinks that the traumatism so alters the normal anatomical structure and physiological function of the organ that the local immunity to the spirochæte is lessened, and therefore is in a favourable condition for infection either from spirochætes present previously at the seat of the lesion, or circulating in the blood. R. C. L.

PIGMENTARY SYPHILIDE IN LARGE PATCHES IN AN UNCOMMON SITUATION. Gravagna. (*Giorn. Ital. d. Mal. Ven. e della Pella*, 1921, fasc. ii, p. 118.)

The case described was in a man, aged 24 years, who was treated for a primary sore and roseolar syphilide with thirty daily injections of biniodide of mercury and all the lesions disappeared. About four months later a dark brownish-black area of pigmentation appeared on the backs of the hands. The right hand was affected on the back of the thumb, index and middle finger, extending upwards

with a sharp straight edge from the fold between the middle and ring fingers over the outer half of the back of the hand to the wrist, where it terminated abruptly. The left hand showed a similar pigmentation of the inner half of the back of the hand, including the backs of the little, ring and middle fingers. The edge of the lesion was straight in both cases, and there was nothing to be seen or felt except a deep pigmentation. The Wassermann reaction was positive. The whole of the pigmentation disappeared absolutely after three weeks' mercurial treatment. R. C. L.

STAINING OF SPIROCHÆTA PALLIDA BY THE FONTANA-TRIBONDEAU METHOD; ELIMINATION OF HEAT. (Cesar Fuentes. (*Arch. of Derm. and Syph.*, 1921, iv, p. 448)

This method is one by which the spirochæte can be demonstrated in the transudate of a chancre as easily as the tubercle bacillus in the sputum. In it the following are needed:

(1) A substance to dissolve the hæmoglobin in the blood-serum from the chancre.

(2) Deep fixation.

(3) A mordant.

(4) Impregnation with silver nitrate without any reducing mixture.

The technique employed is as follows:

The slides are fixed in the usual way; they are then immersed in a solution containing glacial acetic acid 1 c.c., formaldehyde 2 c.c., and distilled water 100 c.c.; this dissolves the hæmoglobin and acts as a fixation agent. They are next washed in distilled water, then placed in a 5 per cent. tannin solution, which has been heated until it steams, and which acts as a mordant. They are again washed in distilled water, and placed for two minutes in a solution containing silver nitrate 100 c.c., and pure ammonia 10 c.c.; then mounted in glycerine and examined.

By this method, which can be done in five minutes, the spirochætes assume a light purple to dark brown colour. J. M. H. M.

A STUDY OF THE NEWER METHODS OF ATTACKING SYPHILIS. Mario Copelli. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. i, p. 24.)

The author comes to the conclusion that besides mercury, iodides and arsenic, other substances are useful in syphilis, viz. vanadium, phosphorus and antimony. He found that arsenic alone was better than the others, but a combination of these substances gave the best results. Arsenic, vanadium, phosphorus and antimony, when combined with a complex organic molecule (nucleic acid), produce a mixture which has a parasitotropic and selective action on the spirochæte without having any toxic action on the individual. R. C. L.

THE TREATMENT OF SYPHILIS WITH SUBLIMATE-NEOSAL-VARSAN. L. Nardelli. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. i, p. 38.)

The two solutions of neo-salvarsan and corrosive sublimate are mixed in the syringe and injected intravenously. The author claims for it that it is perfectly

tolerated, and the most convenient method of giving a combined course of salvarsan and mercury. It is painless, and specially suitable for the treatment of very early cases of syphilis. R. C. L.

ON THE EFFICACY OF NON-SPECIFIC PROTEIN THERAPY IN THE TREATMENT OF VENEREAL BUBOES. L. Morini. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. i, p. 43.)

Morini used intramuscular injections of sterilised cow's milk in the treatment of buboes associated with soft sores and other ulcers of genitals. The milk was used as a non-specific protein to desensitise the patient. Injections were given intramuscularly into the buttock every two or three days, and were followed by a slight rise of temperature, which increased after each injection irrespective of whether the dose was increased or not. As a rule Morini began with a dose of 1 c.c., and gradually increased up to 6 c.c. From one to four injections were given according to results. Even after the first injection a beneficial effect was seen in the periadenitis, inflammatory phenomena subsiding and the pain disappearing. Morini found the treatment beneficial both in early cases and in the advanced stages where suppuration had commenced. The duration of the treatment was from four to twelve days. The injections had no effect on the original soft sores from which the buboes had arisen. R. C. L.

NON-SPECIFIC PROTEIN THERAPY IN VENEREAL DISEASES. L. Cattaneo. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. ii, p. 123.)

Cattaneo treated sixteen cases of venereal ulcer, complicated with inguinal adenitis, with injections of sterilised cow's milk. The injections were given intramuscularly into the buttock in doses of from 5 to 10 c.c. every three or four days. This was usually followed by a rise of temperature with its maximum from five to six hours after the injection, falling after about eight or ten hours, and followed by sweating. In one case only were any signs of anaphylaxis observed. About twenty-four hours after the second injection a profuse urticaria appeared on the trunk and lasted about twenty-four hours. In nearly all cases a tolerance to the treatment was noted. Even after the second injection the reaction, both local and general, was not usually so severe as after the first. In some cases there was no reaction at all after the second injection. The blood was examined in some of the cases and immediately after the injections a leucopenia was present, but about six hours later there was a lymphocytosis.

The injections had no influence at all on the venereal ulcers, but its beneficial effect on the adenitis was quite marked. Whether the glands were in the early stages of inflammation, fluctuating or suppurating, the results were equally good, and especially as regards the disappearance of pain. Cattaneo does not think that the results are due to the artificial temperature produced by the injections, because cases which had little or no rise of temperature did very well. He attributes the results to the leucocytosis induced by the injections. R. C. L.

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HYPODERMIASIS (OX-WARBLE DISEASE).

NOXON TOOMEY, B.A., M.D.,

Assistant in Dermatology, St. Louis University; Assistant Dermatologist, St. Mary's Infirmary, St. Louis, Mo.

That the linear or creeping eruptions described under the name of larva migrans are not all of the same nature is now clear. From the group of diseases that continues in dermatological literature under Crocker's name of larva migrans, there have been separated two linear or creeping eruptions of definite ætiology and pathology. The linear eruption first to be placed upon a sound ætiological basis is the one caused by larval flies of the genus *Gastrophilus*. It is to Samson, Sokolov, Wosstrikow and Bogrow, Ruddell, Dohi, Cates and Knowles that we owe our knowledge of the ætiology and pathology of this form of creeping eruption. The second form of linear eruption to be separated from the group is the skin-lesion caused by nematode worms of the families *Anguillulidæ* and *Angiostomidæ*. It is to Looss that we are indebted for separating out the latter group. Harukichi Tamura (*British Journal of Dermatology and Syphilis*, xxxiii, 81–102, 138–151, March-April, 1921) has recently described a creeping eruption of the second form, but varying somewhat in its clinical appearance, and caused by a different type of worm, namely, *Gnathostoma siamense*, a nematode worm of the family *Gnathostomidæ*.

The purpose of this paper is to separate out and describe, as a separate disease, a creeping eruption that continues to be confused with other creeping diseases, even by so late a writer as Tamura. The disease here described is caused by a larval fly of the genus *Hypoderma*, and differs greatly in pathology and clinical course from the lesion produced by *Gastrophilus* larvæ. It has been known, though imperfectly, from the earliest ages, usually being confused with bot infestation of the skin. In dermatological literature it has received no special consideration, but continues to be confused with either myiasis, or the lesion first described by Lee in 1875 (creeping eruption—gastrophiliasis).

Though there are passages in the *Leach Book of Bald* and in the writings of Arabian authors that seem to describe hypodermiasis, the earliest undoubted description was given by Howship in 1835. Since then twenty-eight case-reports have been published. The disease is said by Osborn (1896) to be not uncommon in Norway. It has, however, been recorded in the literature less frequently than infestation by *Gastrophilus* larvæ.

Ætiology.

The localities, besides Norway, in which hypodermiasis seems more prevalent are Ireland, Scotland, the northern half of England, and the United States, more particularly the cattle region of the south-western states.

Hypodermiasis has been reported in England by Howship (1835), Duncan (1854), Walker (1870), Murray (1882), Swayne (1887), Hector (1902), and Austen (1912); in Scotland by Spence (1858), McCalman (1879), and the Scotland Zoological Board (1903); in Ireland by Smith (1881), and Carpenter and Hewett (1915); in Norway by Winge (1872), Boeck (1872), and Borthen (1878); in Belgium by Spring (1861); in France by Topsent (1901); in Germany by Voelkel (1883), Joseph (1887), Peiper (1900), and Glaeser (1912–1913); in Italy by Calandruccio (1884), Porta Antonio (1915), and Palazzolo (1916); in Canada by Hadwen and Bruce (1915–1916–1917); and in the United States by Allen (1872), Cooper (1890), Kane (1890), Hamilton (1893), Gilbert (1908), Miller (1910), and McNerthney (1921).

Hypodermiasis probably occurs in all cattle-raising countries with a temperate or sub-tropical climate. The disease occurs only in persons who live near herds of cattle. Persons are infested regardless of sex or age, but children seem to be infested in a disproportionately large number.

The immediate cause of the disease is the entrance into the subcutaneous tissue and skin of a larva (in its second stage) of one of the species of the genus *Hypoderma*. Of the latter there are three species known to attack man: *Hypoderma bovis* (De Geer, 1776), Latreille, 1825, the species that is common in western Europe, Canada, New England and the northern fourth of the United States; *Hypoderma lineata* (de Villiers, 1789), Latreille, 1825, ranges over the southern three-fourths of the United States; *Hypoderma diana*, Brauer, 1858, is the deer warble; it ranges over south-east Europe. The adults are properly called heel-flies, but are often improperly called bot-flies. In most instances infestation is effected by the fly while it is in the first or earliest larval stage. The larva enters the body either by directly burrowing through the skin, or by being taken into the mouth. The latter method is not infrequent in cattle as a result of the animals licking their hides, but in man is probably the less frequent mode of infestation. The larva is given access to the human skin by the heel-fly directly ovipositing on the skin or on undergarments. After the larva is hatched it penetrates the skin without delay. Likewise, if taken into the mouth, it penetrates the buccal or pharyngeal mucosa. It does not remain in the skin, but burrows through it into the subcutaneous tissue. Through the latter and through fascial planes, it migrates to the cephalic end of the œsophagus. After a stage of maturation in the œsophagus it again enters fascial planes, through which it burrows to reach the subcutaneous tissue under the back, neck or shoulders. After wandering about in the subcutis it finally enters the skin, in which it undergoes its final larval moult (warble stage). It is while in the late larval and warble stages that it gives rise to the subcutaneous and dermal lesions.

Parasitology.

Life-History of the Parasite.—The following paragraph is quoted from a paper by Dr. Seymour Hadwen (1917):

"*Hypoderma lineatum* lays its eggs as early as April 15th, but the usual laying period is during the month of May. At Agassiz (British Columbia) they have never been captured later than May 30th. *Hypoderma bovis* begins in the early part of June, and continues up to the beginning of August. Between the last appearance of *H. lineatum* and the first of *H. bovis* there is usually a period of ten days, when the cattle are immune from attack of either species. *H. bovis*

frightens cattle much more than *H. lineatum*. The eggs take about a week to hatch; the larvæ bore through the skin in the coarser porous parts, taking several hours in the process; at this stage they are rather less than 1 mm. long. The lesions resulting from this penetration are caused partly by bacterial invasion and partly by anaphylactic reactions, those produced by *H. lineatum* being more severe. For the skin-lesions I have proposed the name of hypodermal rash. At this point there is a hiatus in the life-history, as it is not positively known how the larvæ reach the œsophagus, where they are subsequently found—most likely in the loose connective tissues under the skin up to the region of the throat and into the œsophagus, where the muscles bifurcate. Passing down the œsophagus they follow the submucosa, and are almost always found lying along the long axis of the canal. Whilst in the œsophagus small œdematous swellings are found surrounding the grubs; these are sterile, and are anaphylactic in character; the exudate contains large numbers of eosinophilic leucocytes, but no pus-cells. The earliest record made at Agassiz was on August 15th, when a larva 3·4 mm. was found and several slightly larger. According to Carpenter, Continental observers have found them smaller than this. *H. lineatum* makes its appearance in the backs of cattle about December 15th, and *H. bovis* about a month later. The larvæ at this time have grown to about 1·5 cm., and are of the same size in the neural canal and under the skin, which they have just reached. At this age it is difficult to separate the larvæ of the two species, but Mr. F. C. Bishopp has, I believe, discovered good distinguishing marks between the species. The life-histories overlap at this period, making it difficult to follow the migration, but in the latter part of the season (the middle of March) the last larvæ to leave the gullet are at the paunch end. They pass out under the pleura and go to the neural canal, either up the crura of the diaphragm or up the posterior border of the ribs, entering the canal under the dura mater, emerge again through the foramen and reach the back, forming the characteristic swellings commonly called 'warbles.' The larvæ follow connective tissue exclusively, and no larvæ have been discovered in muscular tissue. The mature larvæ leave the animals' backs from the early part of the year up to the first days of July. The periods for the two species have not been fully worked out, but, judging from what records we have of the pupal period and the time of year the flies are about, *H. lineatum* begins to emerge in February and finishes about May 1st. *H. bovis* begins about May 1st and ends approximately on July 1st. The average pupal period for *H. bovis* is 32·5 days and for *H. lineatum* a little less. The duration of the life of the flies is short seeing that they cannot feed. This life-history applies to Agassiz, British Columbia; doubtless in other countries variations will be noticed, but the period spent by the larvæ within the host must be of the same duration, seeing that animals' temperatures are the same the world over."

Description of the Parasites.—The family *Estridæ* to which the genus *Hypoderma* belongs is characterised by the presence of a hairy body, a prominent, large hemispheric head, provided with two facetted, widely separated eyes, and three ocelli, thus resembling the head of a bee. The antennæ are short, and are inserted into a round pit; the third article is armed with a style; the antennal groove has a small angular dividing wall. The proboscis is not retractile, but is straight and rudimentary; palpi are absent. The wing has a posterior transverse vein; the media at its end is bent towards the radius; the first posterior cell of the wing is not widely open. The tibiæ are thickened in the middle.

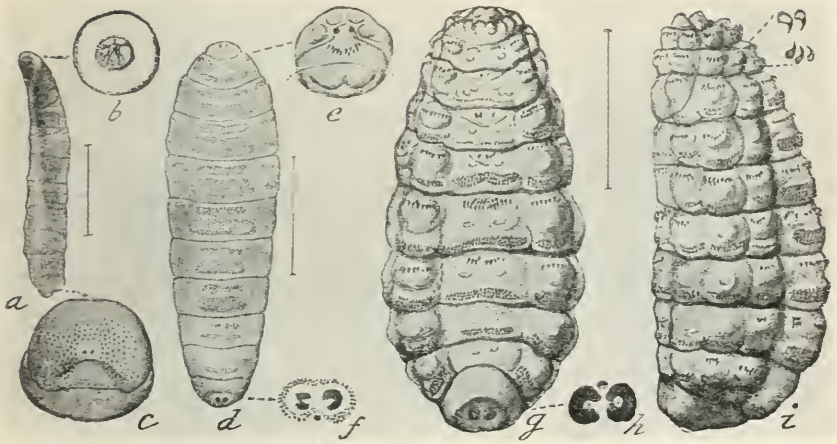

FIG. 1.—Larva of *H. lineata*: *a*, second larval stage—from subcutaneous tissue; *b*, *c*, extremities more enlarged; *d*, third larval stage—earliest warble stage; *e*, *f*, extremities more enlarged; *g*, *i*, mature (fourth larval) form—final warble stage, from above and from side; *h*, mouth parts.

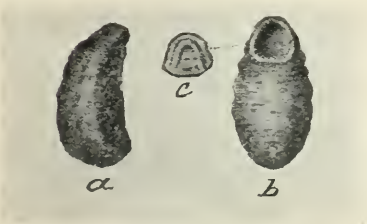

FIG. 2.—Puparium of *H. bovis*: *a*, closed; *b*, open; *c*, lid.

FIG. 3.—Female of *H. lineata*.

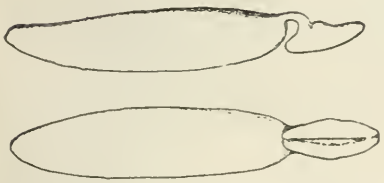

FIG. 4 *b*.

FIG. 4 *a*.

FIG. 4.—Eggs of *H. lineata*: *a*, attached to a hair, × 25; *b*, much enlarged, to show attaching end.

(Figs. 1 to 4 inclusive from Curtice, *Insect Life*, 1890.)

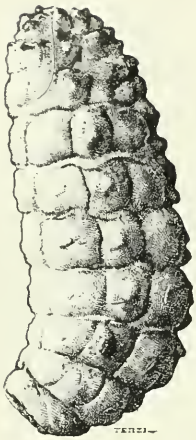

FIG. 5.—Larva of *H. boris*. ×2·25. (From Castellani and Chalmers, *Tropical Medicine*, Baillière, Tindall and Cox.)

FIG. 6.—Egg of *Hypoderma* cut longitudinally to show a larva with cuticular spines. (From Brumpt after Brauer.)

FIG. 7.—*H. lineata*, lateral aspect. (From Doane, *Insects and Disease*.)

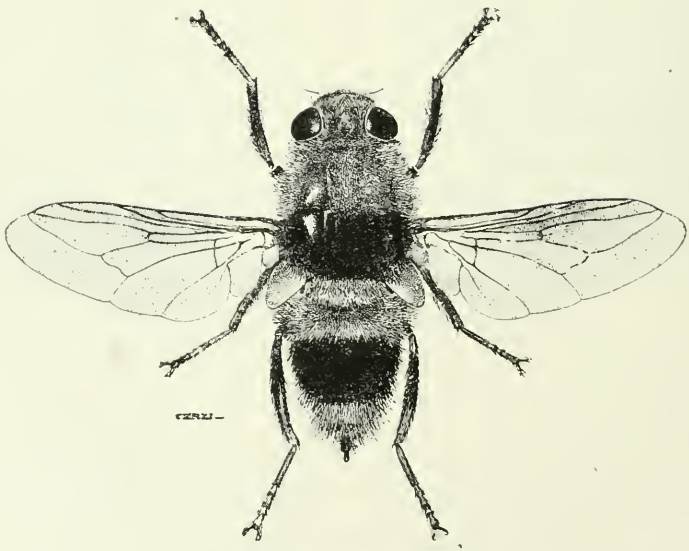

FIG. 8.—*H. bovis*, dorsal aspect, × 2·5. (From Castellani and Chalmers, *Tropical Medicine*, Baillière, Tindall and Cox.)

The larvæ of the *Estridæ* are difficult to distinguish, and are difficult to raise. The larval body is divided into twelve rings, but in *Hypoderma* the first and second rings are fused into one cephalic ring. The eleventh and twelfth rings are never fused, as in the *Cuterebrinæ* (*Dermatobia*). The anterior end of the body is narrower than the posterior (the reverse is true for *Dermatobia* and *Cephenomyia*). The dorsal face is less convex than the ventral in *Hypoderma* (the opposite in *Dermatobia*). In *Hypoderma* the stigmatæ are posterior only, whereas in the other *Estridæ* they are at both extremities. In a general way one may distinguish *Hypoderma* larvæ from the larvæ of *Tabinidæ*, *Sarcophagidæ*, and *Muscidæ* by their greater thickness or "plumpness." Larvæ of the three families named may occur in the human skin, but in general they are thinner, smoother, straighter, and often taper to a narrower end; usually more than one larva occurs in the lesion when the infestation is by one of the latter-named families.

Adult flies: Hypoderma bovis.—The body is black and covered with very close-set hairs. The dorsum of the thorax is traversed by three or four longitudinal dark bands. The abdomen is covered with close-set hairs, greyish-white over the base, blackish over the middle third and yellowish-orange over the distal third. The ovipositor is short, cylindrical and black. The legs are black, but the tips of the hind tibiæ and tarsi are yellowish brown. The wings are irregularly brown (smoky), but without spots. Length of body (excluding ovipositor) is 13 to 15 mm.

Hypoderma lineata.—The body is black and covered with very close-set hairs. Dorsal aspect of thorax is traversed by longitudinal black bands, that commence and terminate among yellowish-grey hairs. Abdomen is covered with yellowish or whitish hairs over base, black hairs over middle third, and reddish-orange hairs over caudal third. Femora black, tibiæ and tarsi yellow. Wings clear, slightly brownish, but not smoky. Length of body (without ovipositor) 12 to 13 mm.

Hypoderma diana.—Body is greyish black. Dorsal aspect of thorax is traversed by several dark longitudinal bands. The abdomen is black, silvered in the male; entirely brilliant black except for the caudal end in female. Legs including femora are yellowish brown. Wings relatively small, transparent, and blackish. Length of body (without ovipositor) 11 to 12 mm.

Larvæ.—*First stage* (from embryo to first moult, which occurs in the œsophagus): Possesses a pair of very minute, crescent-shaped mouth parts. The larva is armed with sixteen short, transverse bands of very minute prickles, arranged in alternate broad and narrow stripes. *Second stage* (during course down the œsophagus and through subcutaneous tissues to skin): After the first moult the larva becomes quite smooth, except for a few prickles at either extremity; the mouth parts become more conspicuous. *Third stage* (in corium): After finally penetrating the corium the larva moults and loses its worm-like appearance. It becomes spindle-shaped, with an extensive armature of prickles on the ventral surface, and a pair of short, horny, blunt, projecting tubes or spiracles at the caudal end. *Fourth stage* (air-breathing, in corium and epidermis): During this stage, its period of rapid growth, the larva becomes oval, compressed and warty. Its skin is much thickened, and it develops a powerful coat of subcutaneous muscles. The armature of prickles becomes more formidable than ever, and the hard tips of the spiracles at the caudal end of the body are replaced by kidney-shaped structures sunk in oval depressions.

As to the differentiation of the larvæ of the two principal species, Herms writes as follows: "The life-history of the two species is very similar. The larvæ are different enough to distinguish them readily. The fully grown larva of *H. bovis* is longer, 27 to 28 mm., *H. lineata* about 25 mm. The two species are distinguished on the basis of their spiny armature. In *H. lineata* each segment of the larva is provided with spines except the last, the ring upon which the stigmata are located, while in *H. boris* all except the last two are armoured."

Clinical Pathology.

The skin-lesions produced by the larva of *Hypoderma* are of two kinds: the areas of subacute cellulitis along the course of the larva in the subcutaneous tissues, and the warble stage or the lesion of the skin at the site of exit of the mature larva from the body. The first-mentioned lesions are caused almost invariably, but may not be present when the patient is seen by the physician. They consist in slightly raised, scarcely indurated, indefinitely circumscribed, reddened areas 1 to 5 cm. in diameter, painful to pressure and usually the site of pricking sensations, less frequently itching or burning sensations. They may be situated on any part of the body, but are more commonly found on the upper part of the trunk or limbs, or upon the neck or face. These subcutaneous lesions first appear in the winter months from November to March, usually in December or January. They are apt to be first noticed on the chest or neck. The individual lesion is the site of a heel-fly larva and remains erythematous for several hours or for several days, after which it subsides, leaving a yellow pigmented patch. The subsidence of the lesion is coincident upon the wandering of the larva to another place in the subcutaneous tissue. The migration takes place *in the subcutaneous tissue and not in the skin.* The tract of the larva to its new resting-place can often be made out: if, however, the larva moves rapidly during a period when the patient is not under the eye of the physician, the tract may not be discernible when the patient is later seen by the physician. The wandering of the larva is irregular both as to rate of movement and as to direction. The course is generally much straighter and less bizarre than in gastrophiliasis. The tract is scarcely ever more than a faint, irregular, diffuse line connecting the old area of cellulitis with the newer inflamed area. The rate of progression of the larva is very variable. Allen closely observed the movements of the larva, marking with silver nitrate the spot where

the larva was last seen. On one occasion it had moved only one inch in twenty-four hours, whereas at another time it crawled from the wrist to the elbow in the same length of time.

The warble commences as a small, slightly tender nodule situated wholly below the epidermis and in the corium only, as can be made out by moving the skin on the subcutaneous tissue. The skin over and about the early warble is œdematous and moderately erythematous. The œdema (probably anaphylactic), augmented by the growth of the larva, early raises the epidermis into a small dome over the parasite. Tenderness to pressure may increase and itching may supervene, but throbbing and spontaneous pain are usually absent in this stage of the warble. About ten days or two weeks later, the warble in the meantime having continued to grow slowly, one will first notice a very small (0·4 mm.) black point on the apex of the warble. The epidermis over this point breaks down in the course of a few days, and there is then noted a thin sero-sanguineous discharge coming from the little round hole in the epidermis. Through this hole the larva, now entered upon the fourth or spiracle-bearing stage, projects its air-breathing apparatus. From thence on is the period of rapid growth, both of the larva and of the surrounding inflamed tissue. The discharge becomes purulent, and is seemingly thereby a richer pabulum for the nourishment of the larva. Lest there be a diminution in the supply of nutriment, the prickles of the larva are, from time to time, raised and dug into the abscess walls. The irritation which this entails ensures a copious supply of pus. During its late stage the warble is indistinguishable from an indolent pyogenic furuncle, except for the central canal and the sensation of *ballottement* felt on palpation.

When the larva in its fourth or final stage has completed its growth it is nearly 3 cm. in length and of a yellowish-white colour. It then emerges from the warble, usually in the early morning, and falls to the ground, which it may or may not enter. In either event, it contracts and becomes nearly black in colour as it changes into a pupa, whence, in from three to six weeks, the fly emerges.

Treatment.

If the larva has penetrated the corium, or in other words become fixed, the tissue (the early warble) surrounding it should be excised.

If the mature larva has punctured the epidermis it will be sufficient to incise the aperture of the warble and extract the larva with dressing forceps. The after-care of the swollen, indurated skin—the warble—should be carried out according to general surgical principles.

A heel-fly larva that is still wandering in the subcutis should probably in all cases be cut down upon. The larva is, however, elusive, and may lead to a more protracted search than the surgeon had anticipated.

Hot applications over the larva do not seem to relax its muscular contractions and resulting burrowing movements, as is the case with nematodes under the skin. Rather it seems that cool applications tend to induce its propensity of fixing itself into the corium.

Prophylaxis.

Heel-flies probably do not oviposit on a person whose body and clothing are free from animal odours. Thus personal cleanliness is likely the most practical single measure for preventing hypodermiasis in man. The systematic destruction of the larvæ and flies is, of course, important. The latter tasks are best accomplished by a systematic examination and treatment of the herds of cattle.

Treatment of cattle is best carried out in the months of January and February—the time when the grubs have become sufficiently developed that the nodules in which they are lodged may be felt by running the hand along the back of the animal. The application, at this time, of a little kerosene or mercurial ointment to the apex of the tumour will destroy the warble. By March the tumours may be seen as prominent lumps in the skin of the back. The opening at the apex of the tumour is now large enough to permit of the forcing out of the larva by careful pressure. Grubs thus removed should at once be destroyed to prevent the possibility of their finding suitable conditions for development into the adult fly.

Economic Loss caused by Hypoderma.

Cattle are much annoyed by the attacks of these flies in depositing their eggs, and in the endeavour to escape will often enter mire-holes or injure themselves in other ways. Probably the most important damage from the insect is that to hides, these being

discounted from 25 to 50 per cent., according to the number of punctures by the grubs. According to Ealand (1915):

"The loss in damaged hides alone, in Manchester, Newcastle and Nottingham in a single year was estimated at £33,715 sterling; add to this the loss to the butcher on meat that is rendered unfit for human consumption, or, at any rate, much depreciated in value, and to the dairy farmer in the reduced milk yield of afflicted animals, and we obtain, in England alone, an aggregate loss caused by warble flies, that has been variously estimated at from two million to seven million pounds sterling per annum."

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THE *RATIONALE* OF THE WASSERMANN REACTION.*

J. E. R. McDONAGH, F.R.C.S.

Introduction.

The Wassermann reaction has been extensively employed since 1907, but little gain in knowledge regarding its *modus operandi* has been acquired. Though a few still maintain that it is a true antigen-antibody reaction, the general consensus of opinion holds that it is a non-specific complement-fixation test. Some attempts have been made to show it is a colloidal reaction, and in 1915 ([1, 2]) I brought forward the evidence I then had in favour of the Wassermann reaction being an adsorption and precipitation of the antigen and complement, brought about by the increased number and size of the protein particles in a syphilitic serum. I suggested at the time that complement was a state and not a substance, and that it was merely the balance or equilibrium which keeps the colloidal protein particles in true emulsion. Clinical experience alone has shown me that the reaction can be used neither as a regulator of treatment nor as a test of cure, and the results of my recent experimental work, stimulated by the wonderful advances made by English physicists ([3, 4]) in the realm of electricity, have only served to confirm the opinion so often expressed. Further, both clinical and experimental study have clearly proved that no significance can be attached to a negative reaction, and that a positive reaction by no means affirms that the disease is necessarily active or that the patient requires treatment. The negative reaction occurring after treatment is simply due to the destruction of the protein particles in the serum by the drugs used; in other words, as a result of several injections of a complex organic compound like arseno-benzene the protein particles are so dispersed as to become converted from the colloidal state into true solution (molecular-dispersoid state). Naturally, in such a state there are not sufficient particles to adsorb and precipitate the antigen and complement, but we are not justified in assuming therefrom that the drugs have had the same action on the particles constituting the syphilitic

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organisms. If this assumption is made, then it must likewise be inferred that the host's cells have suffered in the same way, which we know is not the case (metallic intoxication excepted). Moreover, clinical experience definitely proves that the organisms are not annihilated when the reaction becomes negative, because recurrences occur in spite thereof nine times as frequently as was the case prior to the advent of arseno-benzene (5). Finally, cases which relapse serologically are less likely to relapse clinically, or, put in another way, when cases relapse clinically they usually do so when the C.F.T. is negative. Evidence will be adduced in this paper in support of the views just expressed, though my main object will be to detail as far as possible the changes the protein particles in syphilis undergo, and to throw some light on certain problems which have always been a puzzle. An attempt will be made to explain, why a large percentage of syphilitic sera give a negative reaction, why the same serum may undergo diurnal variation, why the ingestion of alcohol before the blood is taken may cause a positive serum to give negative reaction, why the serum of a non-syphilitic pregnant woman may give a positive reaction, why the simplest manœuvres will make a normal serum give a positive reaction, and last, but not least, why the intravenous administration into rabbits of certain metallic and non-metallic colloids render a previously negative serum positive. Before doing this it will be necessary to consider the hæmolytic system the foundation of all complement-fixation tests, and to point out the relationship it bears to the first part of the Wassermann reaction.

For the benefit of those unaccustomed to visualise the protein in the serum in any other state than the one of true solution, I would re-iterate that the protein is in the form of equal-sized separate colloidal particles visible under the ultra-microscope and possessing vigorous Brownian movement (Fig. 1). The particles have numerous salts called electrolytes or ions on their surface, and they are suspended in a medium containing the same salts or ions in solution. The colloidal system is a liquid-in-liquid system, which accounts for the fact that the protein particles by repeated sub-division (dispersion) go into true solution (compare Figs. 2 and 4). These protein particles form the host's antibody, or, as it is best called, protective substance. These particles are responsible for all immunity reactions, and it is upon and through them that treatment exerts its action. The so-called

antibody and complement reside in the same particle, and it is the interchange of ions between the internal phase on the one hand and the external phase on the other hand, which maintains the equilibrium between the particles (internal phase) and the liquid medium (external phase), and which gives rise to a state known as complement, though in other parlance it is referred to as the normal hydrogen ion concentration. Nothing is more important than to remember that complement represents the normal electrification of the surface of the protein particles in the serum, that state of electricity which normally prevents uniform particles from increasing in size, becoming agglomerated, and finally precipitated—changes invariably accompanied by a slowing of the Brownian movement. For further information regarding the colloidal state, the reader should study the books mentioned in the bibliography ([6, 7, 8]).

Hæmolytic System.

If a rabbit is immunised with the blood of a sheep, the serum collected from the former, when used fresh, will cause the washed red blood-corpuscles of the latter to give up their hæmoglobin. If the rabbit's serum is heated beforehand, hæmolysis will not result till the fresh serum of a rabbit or of any other animal is added. The sheep's red blood-corpuscles receive the name of antigen, while the thermostabile and thermolabile portions of the immunised rabbit's serum are called amboceptor and complement respectively. As C.F.Ts. require a standardised complement, experience has found it advisable to employ the fresh serum of a guinea-pig for the purpose, and to destroy that in the serum to be tested by inactivation—*i. e.* exposure for half an hour to a temperature of 57° C. When a serum is inactivated some of the particles increase in size and some coalesce. This results in a diminution of their Brownian movement, and may lead in the case of some sera to actual precipitation. These alterations are increased in the presence of a specific antigen, with the result that precipitation is immediate. When a fresh immunised serum or a heated immunised serum with complement is added to the antigen, precipitation occurs much more slowly, and in the process alterations of surface tension and viscosity occur, which so react on the red blood-corpuscles as to cause them to give up their hæmoglobin. Immunisation increases a surface attachment, or, as it is called,

adsorption between the antigen and the particles of the serum immunised therewith, just as Eberth's bacilli are agglutinated by a serum from a patient suffering from typhoid. Adsorption results in changes which diminish the surface tension and the viscosity of the liquid medium in which the protein colloidal particles are suspended, and it causes also an alteration in the surface electricity of the particles, which complement attempts to rectify. In the body complement does rectify the change, or, to be more exact, prevents such from occurring, and shock is the result of the failure to so act ([9]). In the test-tube, where the amount of complement available is limited, failure means a positive C.F.T. In other words, strong adsorption leads to destruction of complement with inclusion of the particles forming the same in a rapid precipitation, during which there is not sufficient time for the alteration in surface tension to produce hæmolysis. That this is the probable *modus operandi* of the hæmolytic system is supported by the facts that a colloid carrying either a negative or a positive electric charge is capable of taking the place of an amboceptor. The washed red blood-corpuscles of any animal in the presence of complement and either colloidal silicic acid ([10]) or colloidal aluminium hydroxide will give up their hæmoglobin, but not when the two colloids are added together, nor when one colloid and complement are allowed to interact some time before the red blood-corpuscles are added. Based on the effect colloidal silicic acid has on serum, when an ultra-microscopic examination shows that it produces the same picture as given by the addition of a trace of an acid (Figs. 9 and 13); based also on the electron theory of Thomson and Rutherford ([11, 12]), and on my work in connection with chemo-therapy ([13, 14]), which suggests that non-metals act as reducing agents by forming active hydrogen, I believe that colloidal silicic acid acts as an amboceptor in virtue of the condenser effect it exerts on the protein particles used as the complement. Colloidal silicic acid reduces the negative electricity on the surface of the particles. This leads to an agglomeration of many of the particles and to a precipitation of some of the clumps formed (Fig. 9). While these changes are taking place there is at first an increase and then a rapid diminution in the surface tension of the liquid medium. It is this alteration of surface tension which is responsible for the hæmolysis. Colloidal aluminium hydroxide, on the other hand, gives

FIG. 1.—A normal serum. C.F.T. −.

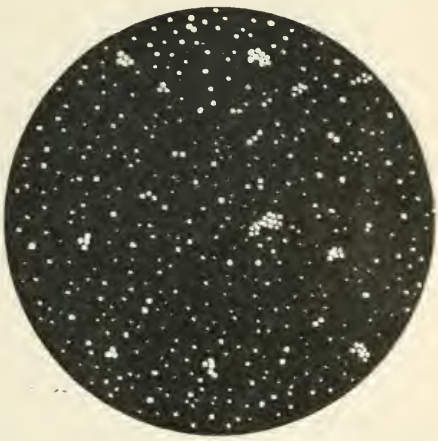


FIG. 2.—An early syphilitic serum. Note the increase in number and size of the protein particles and the clump-formation. C.F.T. + + +.

FIG. 3.—The same serum after the third injection of arseno-benzene. The number of the particles is still further increased but the large particles and clumps have practically vanished and become converted into small particles. C.F.T. + + +.

FIG. 4.—Another early syphilitic serum after the ninth injection of arseno-benzene, showing a great diminution in the number of the particles. C.F.T. −.

The figures are ultra-microscopic pictures of different sera, viewed through an 18 eye-piece and a $\frac{1}{8}$ oil-immersion objective, except Figs. 1, 4, 6, 12, 13, when an 8 eye-piece was used with a $\frac{1}{12}$ oil-immersion objective. All the films were prepared in the same way, and the sera were examined on the second day following the withdrawal.

FIG. 5.—An early syphilitic serum after fifteen injections of arseno-benzene, showing persistence of giant-particles and clumps. Clinically the patient's primary sore was worse than it had ever been and his head and face were covered with frambœsiform lesions. Though the ultramicroscopic picture remained unaltered the C.F.T. varied day to day between ++++ and −.

FIG. 6.—An untreated late syphilitic serum. The patient was suffering from aortitis and myocarditis. Note the large particles and clumps. C.F.T. +++.

FIG. 7.—Serum withdrawn from a rabbit some minutes after an intravenous injection of a 1 per cent. suspension of aluminium hydroxide. The particles are increased in number only. C.F.T. +++.

FIG. 8.—Serum withdrawn from a rabbit immediately after an intravenous injection of a 1 per cent. suspension of silicic acid. Note that the particles are fewer than in Fig. 7. C.F.T. −.

an ultra-microscopic picture not unlike that produced by the addition of a trace of an alkali to a serum (Figs. 7 and 12). According to the electron theory, metals act as conductors of electricity, and in my work on chemo-therapy I suggest that they act as oxidising agents and increase the active oxygen in the form of negatively charged hydroxyl on the surface of the protein particles. Colloidal aluminium hydroxide at first increases the number of the protein particles (Fig. 7); it then diminishes them, increases the size of some, and finally some of the particles become agglomerated and precipitated. At the beginning there is a rise in the surface tension of the liquid medium, but later this gradually becomes diminished, and then hæmolysis results. Colloidal aluminium hydroxide at first increases the negative electricity on the surface of the protein particles. The electrons so formed presumably become dissipated till ultimately the negative electricity is diminished, as it is almost from the start in the case of colloidal silicic acid. I think this is the most probable explanation, because the amboceptor effect produced by aluminium hydroxide is slower and not so pronounced as is that obtained with colloidal silicic acid. There is no hæmolysis when the two colloids are mixed, because they neutralise each other and produce a state of iso-electricity. There is no hæmolysis when one colloid is allowed first to interact upon complement, because the normal surface tension of the liquid medium is restored after the precipitation is complete before the red corpuscles are added. From this it certainly seems admissible to draw the inference that complement merely represents the equilibrium which keeps the protein particles in true emulsion, and to regard it as the standard electrification maintained on the surface of the protein particles in the serum. Further proof in support of this contention is the fact that the complementary action of a serum can be preserved by the addition of solid sodium chloride, and of concentrated solutions of many neutral salts, which prevent any change from taking place on the surfaces of the protein particles. Not every positively and negatively charged colloid will take the place of an amboceptor. My experiments show that only some metals and non-metals in the simple colloidal state will so act. When the element is incorporated in a compound, even should it be colloidal, no amboceptor effect is exerted thereby, due I think to the increased adsorptive capacity of compounds resulting in a too rapid precipitation. Though the two actions cannot be divided by a sharp

line it seems that simple colloids exert a surface action only, while complex colloids exert both a surface and a substantive action, *i. e.* they influence not only the surface of the protein particles but also affect their stereo-chemical molecular orientation. In any case it is important to bear in mind that there is a surface action apart from a mass action, as it forms a point of distinction between a normal and a syphilitic serum.

The First Part of the Wassermann Reaction.

In the first half of the Wassermann reaction we have something very akin to the non-specific hæmolytic system. The patient's serum takes the place of the electrically charged colloid, the antigen that of the red blood-corpuscles, while the complement is the same in both. The patient's serum, not only changed by the disease but also by the inactivation, adsorbs the antigen and tries to regain its normal state of emulsion at the expense of the complement. Failure to do so results in precipitation, with consequent destruction of the complement, hence the specific amboceptor and red blood-corpuscles when they are added become precipitated as well—a positive Wassermann reaction. A multitude of substances will act as antigen, and all capable of so acting have a common property, in that they lower the surface tension of the liquid medium in which the patient's protein particles are in true emulsion, and cause agglomeration and precipitation of the particles themselves. The best antigen is an extract of an organ to which a small quantity of cholesterol has been added. An ideal extract contains a trace of an amino-acid and a maximum quantity of a fatty substance, which usually goes by the name of "lipoid" (2). The fixing property of a colloid or its power to adsorb depend upon two factors, namely, the state and number of the particles concerned in the action. Complex colloidal particles, such as those of protein, have their power to adsorb developed by interference with their surface electricity (up to a point only), with their mass, and by an increase in the number of their particles. Extracting the colloidal protein complex from an organ with alcohol damages the surface electricity of the particles and alters their mass. The slow addition of the alcoholic extract to normal saline increases the number of the particles of the antigen, which enhances its action. The same procedure can be undertaken with formaldehyde, which doubles or

trebles the number of the particles. As the addition of formaldehyde to an early syphilitic serum may so increase the number of the particles as to convert the same into a gel, an effect which can likewise be produced with glacial acetic acid, and occasionally by over-inactivation, we have the first indication that the number of the particles in a syphilitic serum is increased, and that the surface electricity and mass are in some way altered.

Another simple way to prove that the particles in early syphilis are increased is to shake a serum with *a*-naphthol and then filter, when drops flow at very much longer intervals than is the case with a normal serum. *a*-Naphthol increases the number of the particles and raises the surface tension, which, when the number of the particles was increased to begin with, becomes so great that the serum filters with difficulty. The reason why the formol-gel and other reactions which have been suggested from time to time fail, is because many depend upon the number more than upon the size of the particles, and it is only in early syphilis that the former is consistently augmented.

The Production of a Positive C.F.T. *in vivo*.

As the production of a positive C.F.T. in a rabbit throws most light on the subject in hand it will be as well to consider this next.

If a single sub-lethal dose of an unprotected metal in the colloidal state is injected intravenously into a rabbit whose blood beforehand gives a negative C.F.T., the serum collected afterwards will give a positive C.F.T. Such an injection causes the blood to clot quicker; it renders venous blood brighter red than normal, and the ultra-microscopic picture given is much like that met with very early in syphilis, that is to say, there is an increase in the number of the particles and an increase in the size of some (Fig. 7). If a lethal dose is injected the blood usually clots slowly, the serum gives a negative or anti-complementary reaction, and the ultra-microscopic picture of the serum simulates closely that obtained in late syphilis, that is to say, there is a diminution in the number of the particles, a marked increase in size, and clumping with actual precipitation (Fig. 6). The C.F.T. is largely influenced by the particular metal and by the molecular orientation of the compound in which it is incorporated. This forms a large subject, with which I hope to deal separately on

another occasion. If several injections of small doses are prescribed, the serum gives a negative reaction, which usually becomes anti-complementary when too many are made, exactly what may happen in an early case of syphilis over-treated with arseno-benzene. Furthermore, the ultra-microscopic pictures obtained in both are identical, namely, marked diminution in the number of the particles, a few giant particles and clumps, which evince a ready inclination to become precipitated (Fig. 5). If a single sub-lethal dose of a non-metallic colloid (Si. S. Se. Te.) is injected, the serum does not give a positive reaction. If a lethal dose is injected, the serum gives a positive C.F.T. If several small doses are injected, the serum becomes strongly positive with some preparations and anti-complementary with others. Non-metals in the colloidal state first hasten, and then rapidly retard coagulation; they make the blood very dark, and from the start diminish the protein colloidal particles and cause them to clump (Figs. 8 and 9). So accurately does the ultra-microscopic picture correspond with that given by a serum treated with an acid (Fig. 13), and so closely does a shocked serum resemble the happenings at the positive pole when an electric current is passed through a serum film, that additional evidence is at hand in favour of the view already expressed, that the first action of a non-metal is to diminish the negative electricity on the surface of the protein particles. When several injections of a non-metal are prescribed—and for this purpose I found the carbon di-sulphide product of di-ethyl-amine to be the most suitable (as it is readily soluble in normal saline)—the ultra-microscopic picture is the same as that given, not only by a late syphilitic serum (Fig. 6), but also by a serum changed by a metal, by a serum treated with an alkali (Fig. 12), and by a serum at the negative pole during the passage of an electric current. My interpretation of these results, is that metals from the beginning increase the oxidising action of the particles by conduction of electrons, while non-metals have the same action ultimately, though at first they increase the reducing action of the particles by conservation of electrons. The *sequelæ* of injecting a metal in the colloidal state run, I believe, as follows: The particles take electrons from the metal and discharge some of their own in the form of both electricity and heat. Ultimately this tends to increase the positive charge on their surface, a state of affairs which is counteracted by an increase in the

FIG. 9.—Serum withdrawn from the same rabbit as preceding some minutes later, showing the clumps in process of formation. C.F.T. −.

FIG. 10.—The effect produced by mixing in equal quantities sera 7 and 9. The picture given is that obtained with a normal rabbit's serum. C.F.T. −.

FIG. 11.—The serum collected after fatal shock produced by an intravenous injection of colloidal calcium stearate. Note the precipitated agglomerations. C.F.T. anti-complementary.

FIG. 12.—A normal serum treated with an alkali (NH_3). Note the increase in size of some of the particles. C.F.T. A.C.

FIG. 13.—The same normal serum treated with an acid (CH_3 COOH), showing the characteristic clump formation. C.F.T. A.C.

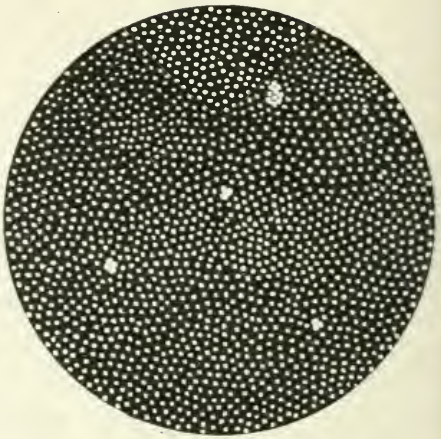


FIG. 14.—A normal serum shaken with *a*-naphthol. Note that when the particles have reached the maximum of increase in number they begin to agglomerate.

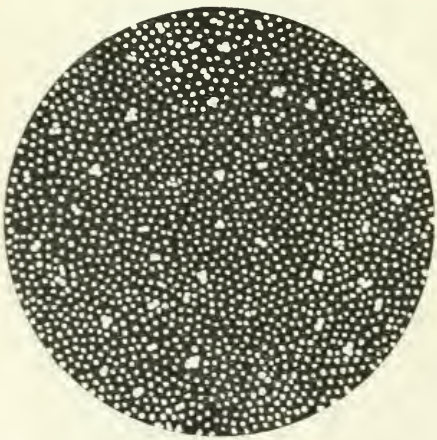


FIG. 15.—An early syphilitic serum shaken with *a*-naphthol, showing that condensation with resulting agglomeration is more readily produced than is the case with a normal serum.

FIG. 16.—A normal serum shaken with *a*-naphthylamine. This shows the marked degree of condensation which occurs when a positively charged body withdraws electrons and possibly negative ions from the surface of the protein particles.

"baseness" of the particles themselves, because not only is an acid state incompatible with life, and especially with the life of rabbits, but also no *manœuvre*—even the injection of an acid itself—renders the particles actually acid. I believe that when we talk of the blood being too acid we should really say that the electronic activity of the protein particles is diminished, or that the particles are acting as condensers. When the particles have their surface electrons diminished they attempt to gain those lost at the expense of the complement. If sufficient electrons in the complement are not available, then the protein particles serving as the complement undergo condensation, which may be of such a degree as to lead to precipitation, and so to a positive C.F.T. A lethal dose of a metal, or the administration of too many injections, may lead to a negative or to an anti-complementary reaction. When the former occurs I believe it is due to loss of power to adsorb, which results when too many electrons are dissipated, while the latter is the half-way house (between a positive and negative reaction), where the complement particles are completely precipitated without the assistance of an antigen.

A non-metal, on the other hand, at first diminishes the electronic activity of the protein particles, no electrons being discharged. As removal from the body causes the protein particles to discharge some electrons, the first effect on a serum under the influence of a non-metal will be to restore its normal state of electrification. Therefore there will be no need for the assistance of complement, and the C.F.T. will be negative. When a lethal dose and several small doses are prescribed the conservation of electrons, with the resulting increase of hydrogen on the surface, cause the particles to increase their "baseness." Such a step leads to an increased avidity for electrons which the complement added cannot satisfy, consequently a positive C.F.T. is obtained. If this is true it certainly suggests that the syphilitic organism causes the protein particles in the serum to discharge electrons, and to undergo molecular changes to prevent such dissipation rendering the particles acid. Furthermore, if my reasoning is correct the injection of a non-metal or condenser should return a positive reaction produced by a metal or conductor to a negative reaction, and cause the serum to give an ultra-microscopic picture indistinguishable from the normal. This happens to be the case, because the injection of a non-metal after a metal causes the

serum then withdrawn to give a negative C.F.T., and because if equal parts of a metallic serum are added to equal parts of a non-metallic serum, the clumps so typical of the latter instantaneously disintegrate into separate particles, and the result is a normal ultra-microscopic picture (Fig. 10).

If a rabbit is made to give a negative reaction by several injections of a metal its serum may give a positive C.F.T. on the administration of one dose of a non-metal. If a rabbit is made to give a positive C.F.T. by several injections of a non-metal the reaction may become negative on the administration of a metal, but the ultra-microscopic picture remains unaltered, as is the case with a late syphilitic serum even after intensive treatment. Instead of a negative or positive reaction respectively being obtained as above described, the reaction in the last two instances may be anti-complementary, for reasons to be explained later.

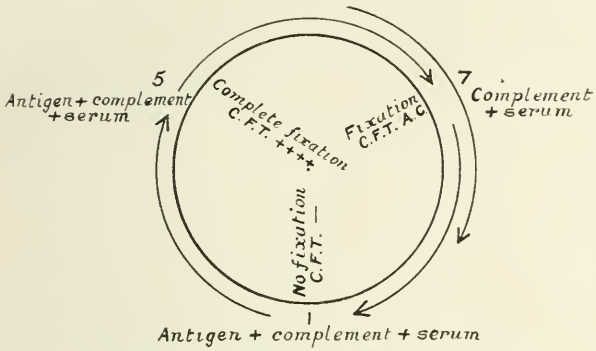
The results can be diagrammatically represented in the form of circles, because the C.F.T., like all colloidal reactions, is cyclical in nature. If circle 2 is placed upon circle 3, and *vice versâ*, the result of the C.F.T. which would be obtained if a non-metal was to be injected after a metal, and the reverse, will immediately be given. Take for example stage 6. With a metal the C.F.T. is negative and with a non-metal ++++. The injection of a non-metal in the former instance converts the C.F.T. into a 4-plus positive, while the injection of a metal in the latter case renders the C.F.T. negative.

Effect of Metals and Non-Metals on Syphilitic Sera.

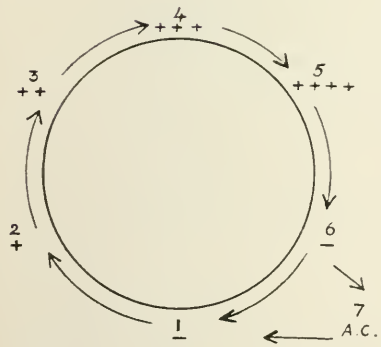
While the action of metals and non-metals is fresh in our minds it would be well to detail their action in syphilis.

In early syphilis metals first increase the positivity of the C.F.T. and then render it negative, or occasionally anti-complementary (a fleeting effect). Examined with the ultra-microscope we find at first an increase in the number of the particles (Fig. 2), then a gradual diminution with a marked decrease in the size of the particles (Fig. 3), till finally the particles are reduced below the normal (Fig. 4) as the result of the continued dispersion. Sometimes, instead of the giant particles and clumps becoming broken up and dispersed, they remain and cause the serum to give a positive or anti-complementary reaction (Fig. 5). As these are practically the only

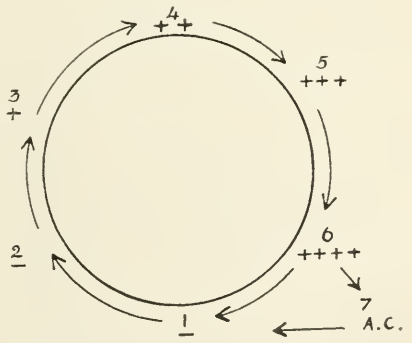
particles remaining we come to the point that it is certain particles which are most concerned in the C.F.T. Such a serum immediately gives a negative reaction on the administration of a non-metal (intramine, di-ortho-di-amino-thio-benzene) without the ultra-microscopic picture being changed. A negative reaction produced by too many injections of a metal will sometimes become converted into a



CIRCLE 1.—Ordinary complement fixation.



CIRCLE 2.—C.F.T. as influenced by a metal.



CIRCLE 3.—C.F.T. as influenced by a non-metal.

positive reaction again by a non-metal. Non-metals alone in early syphilis cause an immediate diminution of the positivity, but their continued administration leads to a degree of positive reaction which can be reduced only by the employment of metals. These changes occur without corresponding alterations in the clinical condition, consequently I feel we are not justified in employing the C.F.T. as a test of cure or as a regulator of treatment.

In late syphilis, if the reaction is negative to start with, a non-metal acts as a better *provocateur* of a positive reaction than a metal. If positive to start with, a non-metal will render the C.F.T. temporarily negative quicker than will a metal. The tendency is in spite of treatment for the reaction to revert permanently to the state in which it was before treatment was prescribed. On the ultra-microscopic picture treatment in late syphilis makes little or no alteration. Both metals and non-metals appear to act as conductors or condensers of electricity, according to the state presented by the protein particles, as this with an unchanging ultra-microscopic picture is what happens in a rabbit when several injections of either a metal or a non-metal are prescribed, and as a late syphilitic serum is liable on keeping, etc., to give an anti-complementary reaction, there seems considerable justification for assuming that the large particles in late syphilis have their "baseness" increased to overcome their loss of electrons and electrolytes. Anyhow, a considerable difference is shown between the particles in early and late syphilis (compare Figs. 2 and 6) to warrant a different interpretation being put upon the results obtained from the C.F.T. Further—and this is perhaps the most important point of all—evidence is adduced to show that when the particles have undergone a certain change no means are at present available to convey them back to the normal. This explains why a positive reaction obtained in a certain stage of the disease (the stage varies in different individuals) tends to remain so throughout life, independent of the amount of treatment prescribed, and running in no way parallel to the clinical course.

(*To be continued.*)

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Meeting held on November 17th, 1921, Dr. H. G. Adamson, President of the Section, in the Chair.

Dr. J. H. Sequeira showed a *case for diagnosis*. Patient, a male, aged 40 years, was living for a long time in British Columbia, and he had suffered from an eruption on the face and groin for a long time. The first lesion appeared in September, 1919, on the right eyelid; a little later one appeared on the left eyelid, and then some on the lips and in the groin. Histologically—and clinically too—the lesion was a granuloma. Some suppuration had been present in the lesions, which were now much less severe than they were six months ago. He had had him under his care in hospital for a considerable time; there was a high temperature and he was very ill with anæmia, just as if septic absorption was present. The case was very thoroughly investigated and sections of the growths were taken, but the Wassermann and other tests were negative. Novarsenobillon administered intravenously produced no change; antimony was also given by the vein without benefit. The only drug remedy which had affected the lesions had been iodide of potassium, pushed to toleration point; but he was very sensitive to this drug, and when the dosage reaches 45 gr. a day he had symptoms which required its intermission. They had searched for fungi, for blastomyces, sporothrix and other organisms, especially tropical organisms, which were known to cause granulomata, and he had been seen by Dr. G. C. Low, who failed to find any lesion associated with a tropical organism. Dr. Sequeira thought the eyelid and lip lesions more closely resembled blastomycetic dermatitis, but the flat lesions in the groin reminded him of granuloma tropicum.

Dr. Graham Little said he believed the climatic distribution of blastomyces was very limited, and the Western Pacific slope of America was said to be a place where it did not exist. An instance of that came under his notice when he was in Chicago with Dr. Ormsby, who mentioned that he had a lady patient suffering from blastomycosis. A body of Christian Scientists took possession of her and sent her to San Francisco. While staying there she lost her blastomycosis, and the cure was attributed to the influence of the Christian Science treat-

ment. But on her return to Chicago later on she came back to Dr. Ormsby with a recurrence of the same disease, and Dr. Ormsby ascribed the improvement which had taken place while she was resident in San Francisco to the climatic condition, which did not favour the growth of blastomyces.

Dr. J. H. Stowers showed a *case for diagnosis*. The patient, a female, aged 41 years, single and of marked neurotic temperament, stated that for twelve years she had suffered from extensive multiple lesions involving the anterior part of each leg. For nine years she had been a teacher in a County Council school. She lived at home with her father (her mother having died of heart disease after a long illness) and had been subject to financial strain. Eleven years ago she underwent an operation or appendicitis and two years later a second operation for the removal of adhesions. Subsequently she had been under treatment for mastoid disease. The lesions, which were roughly symmetrical and of variable size, involved nearly the same area on each leg but were more numerous on the left. The configurations were remarkable owing to their angular shape, the skin being inflamed, thickened, and in parts desquamating. Aching pains were complained of which disturbed sleep at night. The diagnosis appeared to be between trauma, sclerodermia, atrophic lichen planus, lupus erythematosus or tuberculide, but in spite of the difficulty of diagnosis he was inclined to the opinion that the case was one of dermatitis artefacta.

Dr. H. MacCormac showed a *case for diagnosis*. The patient, a female, aged 53 years, presented a condition which resembled in many ways that found in the case shown by Dr. Stowers. Apart from an indefinite family history of tuberculosis and a personal history of epilepsy there was nothing of importance to be obtained from her statements. The eruption commenced on the right leg twenty years ago as a small area similar to those seen on the left leg. Other similar areas appeared and coalesced to form the large plaque now present. This lesion, a pigmented scar, was slightly scaly, atrophic, pigmented, and finely grained by numerous small blood-vessels. The smaller lesions were of the nature of superficial pigmented scars. Recently a small deep lesion had appeared in the right thigh which conveyed to the palpating finger the impression of a hypodermic nodule. If the plaque were seen on the scalp it would probably be diagnosed as lupus erythematosus, and possibly they had here a condition intermediate

between lupus erythematosus and Bazin's disease, a suggestion of which was conveyed by the lesion in the thigh. The Wassermann reaction was negative.

Dr. J. J. Pringle, discussing Dr. MacCormac's case, said he would not venture on a firm diagnosis of such a condition. It was open to many opinions, but he recalled one case of identical nature, which was shown at the Dermatological Society of London by Dr. Cavafy about twenty-five years ago. The lesion in that case was a single oval lesion on the thigh, nearly a foot in its long diameter. At first it was considered to be an erythematous lupus, but a few weeks afterwards a process of atrophy had occurred; in fact, it became a large pale atrophic scar of almost cigarette-paper appearance. He thought Dr. MacCormac's remark very pertinent, that if such a lesion as that shown with its satellites were seen on the scalp, it would be regarded, without hesitation, as erythematous lupus. He did not think the case an artefact, as it had been so carefully watched in hospital.

The President thought that in both these cases the rectangular shape of the lesions and their unnatural and awkward arrangement pointed to their artificial production, and he regarded them both as examples of dermatitis artefacta. These features seemed to him to exclude lupus erythematosus and Schamberg's disease, which were alternative diagnoses which had occurred to him.

Sir James Galloway asked whether it was usual to find, in artefact lesions, such a beautifully fine scar as that in Dr. Stowers' case. Had it not been for the scar being so fine and beautifully formed, and the atrophy so perfect, he would have been inclined to agree with the artefact idea, especially on account of the distribution. Concerning Dr. MacCormac's case, he did not see any reason why lupus erythematosus should not be limited to the extremity. But this patient was an epileptic, and had been treated for a long time with bromide. He thought that probably bromide had something to do with the causation in Dr. MacCormac's case.

Dr. F. Gardiner (Edinburgh) said the first feature he noted in Dr. MacCormac's case was the pigmentation; it looked like the scars after bromide eruption. A number of these cases had been seen in Edinburgh recently, and he noticed not only the deep scarring, but also the weakness of skin left in many parts. With regard to artefact, he did not find in either of these patients evidence of anæsthesia of palate or conjunctiva, but he certainly thought Dr. Stowers' case was one of artefact, because of the base, of the slight superficial scarring, with the small stipules, and glazing.

Dr. Wilfred Fox, referring to the intensity of the scarring, recalled a case he had had in conjunction with the late Mr. Clinton Dent, which was shown before the Dermatological Society of London. In that case the patient, a woman, had one patch on the left knee and one on the chest, in both of which the scarring was more dense than in either of these cases; it was more of the consistency of parchment, and coagulated blood could be seen in the vessels over it. It was proved to be a case of dermatitis artefacta, caused by rubbing in oxalic acid.

Dr. Stowers (in reply) considered that the chances that his case was one of artefact were considerable, but he did not think Dr. MacCormac's case was of the same nature. The distribution was different, and the upper part of one thigh

was involved; the lesions were more circinate and corresponded more with the lesions of an atrophic lichen planus, there being no angular edges visible.

Dr. MacCormac (in reply) said the question of the lesions being due to bromide was considered as soon as the case was first seen and it was known she had been taking bromide. Inquiry showed there had been no nodular eruption, hence he did not think bromide was answerable.

Dr. H. MacCormac showed a case of *epithelioma of cheek*. The patient, a male, aged 42 years, first noticed a "lump" in the left cheek, in front of the ear, four months ago, which gradually increased, assuming its present size—about the dimensions of a shilling. The centre showed a tendency to break down and become ulcerated and crusted. There was no marked induration and no lymphatic gland enlargement could be detected. A small piece was taken from the periphery for sections, which proved the growth to be a squamous-cell carcinoma. This type was unusual in this situation and did not commonly occur primarily on the skin. Excision was the method of treatment suggested.

Dr. Haldin Davis showed a case of *tuberculosis of the skin following a cat bite*. The patient was a male, who was bitten on the back of the hand by a cat nine or ten months ago. The wound never healed properly and in the scar there gradually developed the present lesion, which was red and exhibited a few points of suppuration. On the palmar aspect of the thenar eminence were four little apple-jelly nodules marking the imprint of the animal's teeth. The clinical diagnosis had been confirmed by a microscopical examination of a piece of the lesion. Tuberculosis in cats was somewhat rare, but Petit had found in doing a number of autopsies of stray cats that about 2 per cent. of them were tuberculous. The disease in these animals affected the intestinal tract far more often than the lungs, hence the danger of infection from a bite. Another point which added to the danger of infection was that tuberculous lesions in cats were usually much richer in tubercle bacilli than the corresponding lesion in human subjects. A few years ago Sir Arnold Lawson published three cases in which children had contracted fur infections from cats, one of which was tuberculous.*

Sir James Galloway asked what was the best way of dealing with local infections such as were often received to the hands in doing post-mortem work.

* *Proc. Roy. Soc. Med.*, 1917, x (Sect. Ophth.), p. 29.

He once had such an infection which persisted for eighteen months; on account of the mildness of the lesion he thought it could not have been his first infection with the disease. Dr. Parkes Weber had a similar lesion, but it lasted longer and therefore might have been his first infection. He (Sir James) had used the President's method, the application of acid nitrate of mercury, and in certain cases it was valuable; but perhaps Dr. Adamson did not fully appreciate the pain and discomfort it caused. He cured his own case with salicylic acid.

Dr. J. H. Sequeira said he had seen a number of cases of tuberculosis verrucosa due to local inoculation of the tubercle bacillus, and he had found the majority of them did well with a plaster of 33 per cent. each creosote and salicylic acid. This was kept on forty-eight hours to produce a reaction, and often there was great advantage in a short X-ray exposure, following this by another application of plaster. For a small lesion the best method was excision, and the nearest glands should be carefully examined. In several instances he had had the glands removed, because they were already involved when he first saw the cases.

Dr. Gardiner said acid nitrate of mercury caused great pain, but the results he had found very satisfactory. He acquired a tubercular infection of the knuckle with post-mortem work, and neglected it for six weeks, but it got well with simple scraping and the application of chromic acid, followed by a dose of X-rays.

Dr. F. Parkes Weber said that in his own case the inoculation lesion which Sir James Galloway had referred to was a localised nodule in the deepest layer of the cutis, from a minute punctured wound. The lesion was excised, and at that time no one would have suggested any other method of treatment.

The President said that in his experience these cases of lupus verrucosus of the extremities did well with any form of selective caustic treatment. He had been accustomed to employ a paste containing salicylic acid, resorcin, and pyrogallic acid, which was applied until the lesion was well ulcerated, and then followed by a pastille dose of X-rays.

Dr. Kenneth Wills asked whether members of the Section had lost faith in X-rays as a method of treating skin tuberculosis. Too many doses were required in lupus vulgaris, but he had had good results from X-rays in other tuberculous lesions.

Dr. Haldin Davis replied that he considered excision the best form of treatment when the situation permitted of it. The present lesion was too large to excise without subsequent skin-grafting. He had intended painting it with liquid acid nitrate of mercury. He had had a case of tuberculosis of the nose, inside and out, in a woman, which cleared up entirely under this treatment, combined with some pyrogallic acid ointment to put in the nose afterwards. She had had a good deal of pain in the first few days, but he found patients did not mind that much if they did well.

Dr. E. G. Graham Little showed a *case for diagnosis*. The patient was a middle-aged man. He was doubtful about the nature of his rash. He had a follicular keratosis, which had developed in the last few weeks on the backs of his arms and the back of the trunk, the dorsum of the hands and the back of the proximal phalanges. In

the absence of a history he would have diagnosed pityriasis rubra pilaris; but he had been under his care continuously for two years with a very definite but somewhat scanty dermatitis herpetiformis, for which he had given him arsenic, and by this means he had controlled the eruption. While he had been taking this the keratosis appeared, and he was not sure whether it was a manifestation of arsenical intoxication or a coincident development of pityriasis rubra pilaris. There were no other symptoms of arsenical poisoning. The leucoderma present on the body preceded the other conditions. He was not familiar with any arsenical eruption quite like the one present.

Dr. J. J. PRINGLE said that were it not for the man having taken a considerable amount of arsenic, he did not think anyone would question the diagnosis of pityriasis rubra pilaris: the lesions were typical of that disease in a comparatively early stage, and there was an absence of all other evidences of arsenical intoxication. He was not familiar with a result of arsenic similar to this. A very important point was that dermatitis herpetiformis was evidently one of the types which were subjugated by arsenic. There were certain types of dermatitis herpetiformis which one could recognise, after some experience, as being amenable to arsenical treatment—a fact more widely recognised in France than here: Brocq and Darier often alluded to the subject. He could not be certain, but he thought this patient might have the two co-existent diseases—dermatitis herpetiformis, now apparently in abeyance, and pityriasis rubra pilaris.

Dr. J. H. SEQUEIRA showed a case of *guttate scleroderma*. The patient was a female, aged 37 years. She had always enjoyed good health. She had had six children and never had miscarriages. Nine months ago, she said, an eruption suddenly appeared on her neck, and there was now a necklace-like eruption of white, somewhat atrophic spots. There had been no adenitis or irritation. The Wassermann was negative. The case was one of guttate scleroderma of the neck, and recently the left mammary region had become affected.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

DERMATITIS VENENATA CAUSED BY THE OAK. M. L. Spillmann. (*Bull. de Derm. et de Syph.*, 1921, No. 6, p. 33. Réunion de Strasburg.)

In the month of February a labourer was engaged near Toul in France, in carrying on his right shoulder the wet branches of a recently felled oak sapling (*Quercus robur*). The same evening the right cheek, ear and both hands felt painful and smarted. Next day these parts were red, swollen, and itched intensely. A few hours later the whole of the genital region developed an identical eruption, in which exudation and crusting were prominent symptoms. Under treatment the man was cured in twelve days. The man's grandfather, one of his uncles and some of the villagers are known to have suffered in exactly the same way when manipulating freshly cut oak.

The writer is able to exclude ivy, primula, euphorbia, etc., as possible causes of this dermatosis. Spillmann is uncertain whether the juice of the oak bark or some vegetable growth on the bark was responsible for the condition. He believes this to be the first recorded instance of oak-bark dermatitis.

R. P. W.

CLINICAL AND HISTOLOGIC FEATURES OF CERTAIN TYPES OF CUTANEOUS TUBERCULOSIS. Fred Wise and D. L. Satenstein. (*Arch. of Derm. and Syph.*, 1921, iv, p. 587.)

The types of cutaneous tuberculosis here described consist of lupus miliaris disseminatus faciei and the papulo-necrotic tuberculides.

By lupus miliaris disseminatus faciei the writers mean the condition designated by Tilbury Fox as disseminated follicular lupus—a misnomer, as the lesions are not follicular.

The writers regard this as a true tuberculosis of the skin, and differentiate it from what they call post-exanthematic acute disseminated miliary tuberculosis, which, they say, is a grave and often fatal manifestation, and are evidently confusing post-exanthematic lupus, which is neither grave nor fatal, and miliary tuberculosis, a condition which appears in the last stage of intestinal tuberculosis, which is leading to a fatal issue. They also distinguish it from acnitis, but the excellent photographs of the cases strongly suggest the condition to be the latter.

With regard to the papulo-necrotic tuberculides of the folliclis type, the writers consider that it is justifiable to assume that they are of a tubercular-bacillary nature, and not tuberculides in the true sense of the term. J. M. H. M.

THE INFECTIVE ORIGIN OF ANO-GENITAL PRURITUS. James MacFarlane Winfield. (*Arch. of Derm. and Syph.*, 1921, iv, p. 680.)

According to Winfield, in over 90 per cent. of all cases of true ano-genital pruritus, either the colon bacillus or the *Streptococcus fæcalis* was found on culture.

In these, 90 per cent. of cures or relief was obtained by treating the patients with a vaccine made from these cultures.

Tineal infection can cause a pruritus of these parts that closely resembles true pruritus. J. M. H. M.

FUNGOUS DISEASE.

TWO CASES OF MICROSPORON CAUSED BY MICROSPORON AUDOUINI. B. Rejsek. (*Ceská Dermatologie*, 1921, ii, No. 3.)

The author reports two cases of microsporia caused by *Microsporon Audouini* because of their rarity in Central Europe, and because of the fact that there was no epidemic following their appearance.

One of the cases developed a number of pustules with considerable induration under treatment—an affection corresponding to the description of kerion Celsi. Kerion Celsi, according to most authors, never appears in cases of microsporia. If it does it is usually the result of secondary infection, especially in cases of irritant treatment. In this case the infection started in the area scraped for microscopical specimen, and that the patient did not treat for fear of smarting. Further course of treatment was satisfactory. Spinka (St. Louis).

GENERAL.

THE INFLUENCE OF METEOROLOGICAL CHANGES ON SKIN-DISEASES. K. Hubschmann. (*Ceská Dermatologie*, 1921, ii, No. 1.)

Dr. Bettmann published in *Münch. med. Wochenschr.*, 1920, No. 23, an article dealing with the unquestionable influence of meteorological changes in the spring on the human organism, especially the increase in the growth of hair and nails, and increase in secretory activity of sweat and sebaceous glands, depending probably on the increased activity of glands of internal secretion.

Two cases of dermatitis exfoliativa generalisata observed at the hospital of Prague are described in a preliminary report of the author. They further illustrate Dr. Bettmann's observations, and show the changes in a dermatosis under varying atmospheric conditions. The first patient, a woman, aged 50 years, showed an undeniable aggravation in the skin-condition, with a mental depression, six to twelve hours before a sudden fall of atmospheric pressure. As she showed signs of hypothyroidism she was put on thyroid therapy with wonderful success. She cleared up completely. It is difficult to state if, or to what extent, *spring* influenced this syndrome. Spinka (St. Louis).

FURTHER CONTRIBUTION TO THE KNOWLEDGE OF THE RELATION OF ENDOCRINE GLANDS. J. Jedlicka. (*Ceská Dermatologie*, 1921, ii, Nos. 5–6.)

(1) *Case of geroderma.*—The cases described in the literature under the names of geroderma, senilismus, senium præcox and progeria are not identical in details, each having its own peculiarities. They appear at different ages and from various causes, but clinically they all manifest themselves by premature old age with its senile degenerative cutaneous changes, premature greyness and loss of hair and impaired sexual power. The disease is the outcome of a pluriglandular insufficiency with main changes in the thyroid and sexual glands. The author cites a case of a man, aged 36 years, ageing beyond recognition within twenty months (apparently) without any other cause but war hardships. Besides senile

appearance he showed lowered sexual power, general asthenia, paræsthesias, tremor of extremities, a lowered nitrogen metabolism and increased carbohydrate tolerance. The patient improved remarkably under thyroid therapy.

(2) *Case of myxœdema idiopathicum adultorum.*—A woman suffering for twenty-one years from hypothyroidism showed all the typical consequences; the trophic changes in all ectodermal structures, a lowering of all vital processes and of general metabolism and psychic changes. As a complication she had polyneuritis and anæmia with lymphocytosis. The case illustrates besides the hypothyroidism a co-existing hyperpancreatism, with high carbohydrate tolerance and a lowered adrenalin glyosuric effect. It proves again that the thyroid stimulates the chromaffin system and antagonises the action of the pancreas.

(3) *Morbus Basedowi cum diabete.*—A middle-aged woman suffering for three years developed severe diabetes and died. The case is cited as a contrast to the first two cases. Hyperthyroidism led to hypopancreatism and an increased function of the suprarenals. Hypersuprarenalism increases the sugar concentration in the blood, and the co-existing hypopancreatism still further interferes with the combustion of the sugar. The cause of glycosuria is, therefore, complicated. SPINKA (St. Louis).

TREATMENT.

THE EFFECT OF CARBONIC ACID GAS ON THE SKIN. F. SAMBERGER. (*Česká Dermatologie*, 1921, ii, No. 1.)

BATHING in water containing free carbonic acid gas causes redness and a sensation of warmth in the skin. The author's theory explaining this action is based upon the physiological fact of cutaneous respiration which he demonstrated in his previous works. Under normal conditions the corium takes its oxygen supply from the external air (not from the lungs) by means of capillaries in the papillary region, both ascending and descending loop being arterial. This physiological function can be disturbed by lowering the amount of surrounding oxygen. The skin finds itself in a condition of air-hunger and the circulation in respiratory capillaries accelerates. This acceleration becomes greater the more completely the external supply of oxygen is eliminated. The increased circulation is accompanied by production of heat sensation in the skin without any other changes in the appearance of the skin. (Colour of the skin depends on the deep vascular changes.) If the external oxygen is completely shut off the skin has to take it up from the next available source—viz. the deep vascular plexus situated between the corium and subcutis, carrying oxygen from the lungs. The skin of a patient immersed in a bath charged with free carbonic acid gas soon becomes covered with bubbles of gas, and finds itself therefore in an irrespirable atmosphere. To supply the needed oxygen the deep arterial plexus joins in active dilation, and the skin reddens. This knowledge of the effect of carbonic bath on the skin and capillaries explains its effect on general circulation. SPINKA (St. Louis).

SYPHILIS AND ULCUS MOLLE.

HEREDO-LUETIC DISEASES OF CENTRAL NERVOUS SYSTEM IN CHILDHOOD. O. TEYSCHL. (*Česká Dermatologie*, 1921, ii, No. 8.)

THE author reports several cases of congenital cerebro-spinal lues in children. He advises an examination of blood and spinal fluid in all nervous affections in

children, no matter what the anamnesis is, as in all cases a luetic basis could be determined. He considers the usual dose of salvarsan as recommended by Peritz (0·01 grm. per 1 kgrm. of body-weight) too high, and advises an individual modification. He believes it advisable to put any newborn of syphilitic parents immediately on an antiluetic treatment, whether the child bears signs of lues or not. SPINKA (St. Louis).

SKIN AND VENEREAL DISEASES AMONG CZECHO-SLOVAK ARMY IN SIBERIA. (*Česká Dermatologie*, 1921, ii, No. 4.)

THE army statistics show 3 per cent. of luetic and 12 per cent. of gonorrhœal cases. The clinical source of lues did not differ from that in Europe. Hemiplegia during the first year was not a rare phenomenon, and occurred, without exception, in cases treated with insoluble salts or sublimate. There were scattered cases of iritis, facial paresis and malignant forms of lichenoid exanthemata, mainly in the latter part of the first year. The majority of the cases coming for intermittent treatment were lues latens. In treatment of syphilis the value of mercury rubs was again demonstrated. The variety of skin-diseases was very limited. SPINKA (St. Louis).

BOOKS RECEIVED.

A Treatise on Diseases of the Skin for Advanced Students and Practitioners. By H. W. STELWAGON, M.D., Ph.D., late Professor of Dermatology in the Jefferson Medical College, with the assistance of H. K. GASKILL, M.D. 9th Edition. Pp. 1313. 401 Text Illustrations, 29 Coloured and Half-tone Plates. London: W. B. SAUNDERS & Co. LTD., 1921. Price 50*s.* net.

Diseases of the Skin. By R. L. SUTTON, M.D., Professor of Diseases of the Skin, University of Kansas School of Medicine. 4th Edition. Pp. 1132. 969 Illustrations and 11 Coloured Plates. London: HENRY KIMPTON, 1921. Price 50*s.* net.

An Introduction to Dermatology. By NORMAN WALKER, LL.D., M.D., F.R.C.P., Physician for Diseases of the Skin, Royal Infirmary, Edinburgh. 7th Edition. Pp. 366. 84 Plates and 80 Illustrations in Text. Edinburgh: W. GREEN & SON, Ltd., 1922. Price 21*s.* net.

X-Rays and Radium in the Treatment of Diseases of the Skin. By G. M. MACKEE, M.D. Pp. 602. 250 Illustrations and 22 Charts. London: HENRY KIMPTON, 1922. Price 45*s.* net.

Radiations from Slow Radium. By J. B. KRAMER. With a Note on their Therapeutic Value, by J. HALL-EDWARDS, L.R.C.P.Edin., F.R.S.Edin. Pp. 105. 53 Illustrations. London: BAILLIÈRE, TINDALL & COX, 1921. Price 12*s.* 6*d.* net.

Vorlesungen über Pharmakologie der Haut. By Prof. Dr. FRIEDRICH LUITHLEN. Berlin: JULIUS SPRINGER, 1921. Price M. 18.

Die Impotenz des Mannes. By P. ORLOWSKI. 3rd Edition. Leipzig: CURT KABITZSCH, 1922. Price M. 30.

Dermatologische Vorträge. Heft 7: "Die Ambulante Behandlung der Unterschenkelgeschwüre." By Prof. Dr. JESSNER. 5th Edition. Leipzig: CURT KABITZSCH, 1921. Price M. 16.

THE BRITISH JOURNAL

OF

DERMATOLOGY AND SYPHILIS

MARCH, 1922.

LUPUS TREATED WITH GENERAL CARBON ARC-LIGHT BATHS AS THE ONLY THERAPY: A CLINICAL AND HISTOLOGICAL INVESTIGATION.

A Contribution from the Dermatological Clinic of the Finsen Medical Light Institution, Copenhagen. (Director: Axel Reyn.)

K. A. HEIBERG AND CARL WITH.

Finsen and his pupils have proved that concentrated actinic light as a local treatment can cure lupus (1), and it acts in fact almost as a specific. Jansen in particular, in his well-known work (2), has described the histological changes which take place during treatment with concentrated light. Latterly Reyn has shown that general light baths and more especially carbon arc-light baths have an excellent effect on lupus, the percentage of cures being greatly increased when, in addition to concentrated light as a local treatment, general applications of light were also given. Reyn states (3) that if the collected material from the Finsen Light Institute is arranged so that those lupus patients who were treated with local Finsen treatment only, and those lupus patients who received both local Finsen treatment and light baths, are counted together, the percentage of cures is 80. Before light baths were introduced it was 60. If, however, we take the patients who are treated with both local light applications and light baths from the beginning the percentage of cures is 90. This shows what an enormous influence light baths have. Later experience has only strengthened this contention. As Reyn, as well as Ernst, has proved that carbon arc-light baths without other treatment can cure surgical tuberculosis, and as Strandberg (4) showed the same for lupus of the mucous

membranes, we thought it would be of interest to investigate how far it is possible to heal skin lupus with general light treatment only. At the same time we have attempted to get some knowledge of the histological changes which occur in conjunction with the clinical improvement. With is responsible for the clinical investigations and the biopsies; Heiberg has made the histological examinations.

Heiberg and Strandberg (5) have made similar investigations on lupus of the nasal mucous membrane, and they have shown that the histology of healing lesions, in cases where light baths were the sole treatment, presents a different picture to what is commonly found. These investigations, however, are not as strictly comparable as might at first be thought, because the local anatomical conditions are different, and possibly also because the simultaneous local effect of a general light bath is lacking here, which is not the case in lupus of the skin. In this connection we would draw attention to the fact that lupus of the skin, as will afterwards be seen, is apparently influenced much more quickly.

On account of the excellent effect of local light treatment, we have practically always been obliged to carry out these experiments on selected areas in patients undergoing local treatment for separate lesions of other parts of the skin. In judging the results this inconsistency necessitates our keeping in mind the possibility that toxins (tuberculins) liberated by the local treatment may also have contributed to the cure of the lupus which did not receive any local applications.

Dr. Reyn has informed us that before the introduction of general light baths it was observed now and then at the Finsen Institute that an extensive eruption of lupus not only healed up the site of local treatment, but also in places which had not received any applications of light. If this cure was really due to light treatment of other parts it must undoubtedly be a tuberculin effect.*

* This is made probable by an observation which K. K. K. Lundsgaard (*Hospitalstidende*, No. 52, 1920), and before him Collin made (*Ugeskr. f. Læger*, No. 47, 1918), that occasionally phlyctenules appear, not only in patients who receive general light baths, but also in those who only have local applications of light under conditions which naturally make one attribute them to the light treatment. Although in several of our cases it seems as if such a tuberculin effect has to some extent contributed to the good result, there is no doubt it only plays a subordinate *rôle*, partly because the improvement is so great, partly because some of our patients have only received local treatment a few times and on areas of small extent, but chiefly because the reparatory processes have such an individual character.

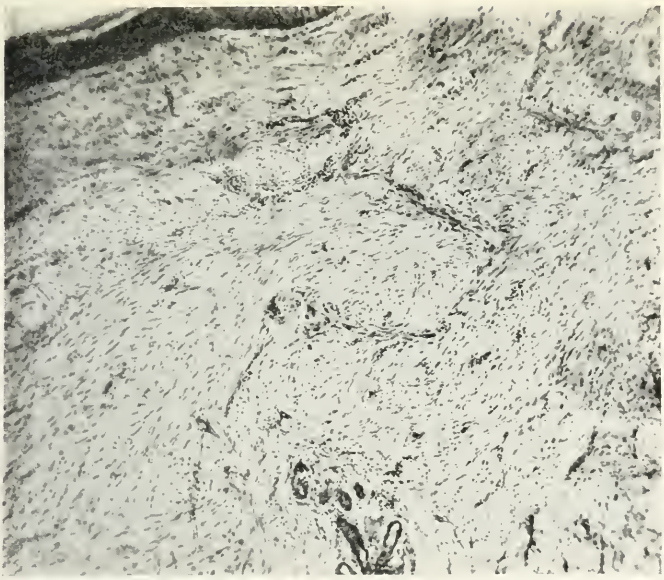


FIG. 1.—Photomicrograph. Conspicuous cicatricial formation in the corium. In the centre a giant-cell is seen. Case No. 1.

FIG. 2.—Staining of elastic tissue. It will be noticed the elastic tissue is absent on the left where the scar-tissue is followed in serial sections. Case No. 1.

FIG. 3.—A few giant-cells (and some round-cells) forming the remains of a tubercle. Case No. 1.

TO ILLUSTRATE DR. K. A. HEIBERG AND DR. CARL WITH'S ARTICLE ON LUPUS.

In giving a more detailed description of some of the characteristic clinical histories and microscopic appearances, we will try to illustrate the clinical progress and histological changes which take place during healing. We have performed altogether 75 biopsies on 30 patients. The number of biopsies varied from 1 to 8 on the same patient.

As regards the clinical picture, a short account of some cases will be given where the clinical and to some extent the histological improvement was so marked that, at all events in two cases, we could speak of a clinical cure and histologically almost a return to normal, although the treatment lasted a relatively short time.

(1) The first patient (Pt. No. 4261), A. O—, was a woman, aged 29 years, who was treated from 3 . ix . '18, for extensive lupus which started 23 years before on both elbows, the back of the left hand and the left nates and thigh. While the main portion of the affected area was treated locally, a group of characteristic papules on the left nates which on pressure with a glass spatula evinced typical nodules and lay along the superior border of the lesion received general light treatment only. Even after 25 light baths* from 14 . ix . '18 to 26 . xi . '18 the disease was considerably better, as some of the earlier characteristic lesions had disappeared while the remainder were diminished in size. On 3 . iv . '19, after a total of about 60 baths, there was no obvious sign of the disease. On microscopic examination the lesions had either disappeared or displayed marked regressive changes in their structure (figs. 1, 2 and 3). Later, new nodular growths appeared on the areas which received general treatment, and also on other parts which had previously had vigorous local light treatment.

(2) The second patient was a woman, aged 53 years (Pt. No. 7064), M. A. B—.

* All the light baths referred to in this article were general light baths of 2½ hours' duration given 3 times a week.

who had been treated for lupus on the left side of the neck, left ear and neighbouring parts of the face as well as of a large portion of the upper extremity. The disease began 32 years ago. For this extensive affection she was treated from 2 . viii . '20 with Finsen light and a pyrogallol ointment over the whole lesion with the exception of a small area behind the maxilla on the left side as shown in the photograph. She also had light baths. As shown by the two photographs, Figs. 4 and 5, taken on 30 . vii . '20 and 15 . ix . '20, the disease in this locality had also improved very considerably after 20 light baths, but in contrast to the lesion on the cheek there were still signs of nodules and desquamation on 7 . xii . '20 after a further 29 light baths. *Microscopic* examination (3 . xii . '20) showed marked regressive changes (Fig. 6).

(3) The third patient (Pt. No. 5785), K. P. A—, aged 19 years, was treated at the Light Institute from 17 . ix . '19 for a moderate eruption of lupus vulgaris on the neck, cheeks and nose. An area on the left side of the neck

FIG. 4.—Photograph of a woman, aged 53 years, taken on 30 . vii . '20, before the treatment was started.

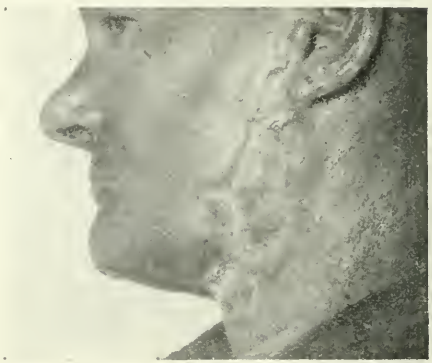


FIG. 5.—Photograph of a woman, aged 53 years, taken on 15 . ix . '20, after a course of 20 light baths. The posterior portion was not treated locally.

consisting of ten uniform papules the size of a lentil with typical lupus structure as is seen in Fig. 7 (17 . ix . '19) was treated exclusively with light baths. On 28 . xi . '19 after 21 light baths the lesions were distinctly flatter. By 26 . i . '20 the disease had almost disappeared (see Fig. 8). When the treatment ceased on 26 . iii . '20 after 70 light baths, apart from isolated patches there was no sign of nodules. When we saw him again on 5 . viii . '20 there was an elevated border but no actual sign of the disease.

On excision giant-cells (Figs. 9, 10 and 11) were demonstrated in typical cicatricial tissue, examined of course in serial sections, only in a few places.

An example of another clinical type was the following:

Patient No. 6244, A. N—, a man, aged 37 years, had suffered from suppurating lymphoma in 13 years. On arrival at the Institute on 21 . i . '20 there was extensive scar-formation on the sides and back of the neck. In the latter situation and on the right side of the neck there were infiltrated ulcers, but

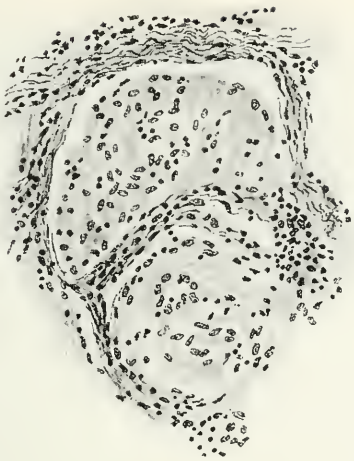


Fig. 6.—Portion of a larger tubercle. Strands of connective tissue are especially conspicuous. (On the whole they were more numerous than the drawing indicates.) Case No. 2, 3 . xii . '20.

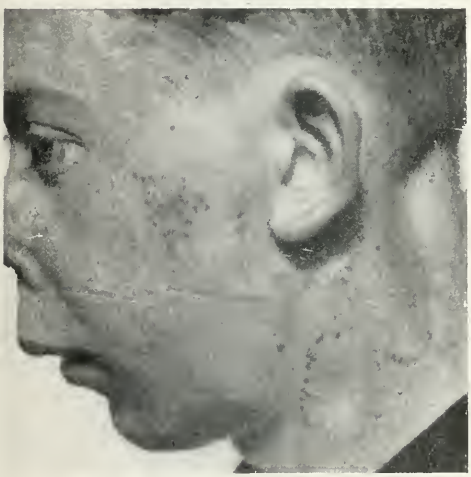


Fig. 7.—Photograph of a youth, aged 19 years, on 17.ix.'19, before treatment was begun.

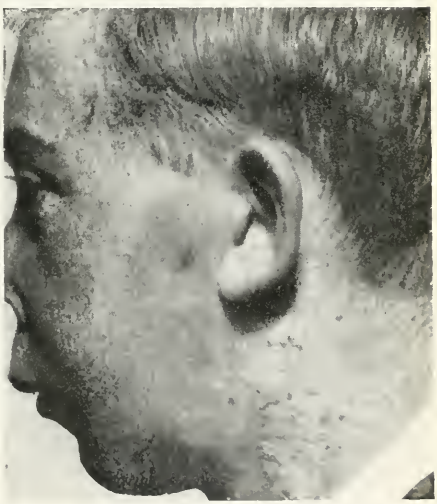


Fig. 8.—Photograph of a youth, aged 19 years, on 26 . i . '20, after 21 light baths. On comparing the two photographs it will be observed that the area of almost similar nodules on the left side of the neck has nearly disappeared, and that the lesion on the left cheek, which also received Finsen light locally applied, has quite gone.

TO ILLUSTRATE DR. K. A. HEIBERG AND DR CARL WITH'S ARTICLE ON LUPUS.

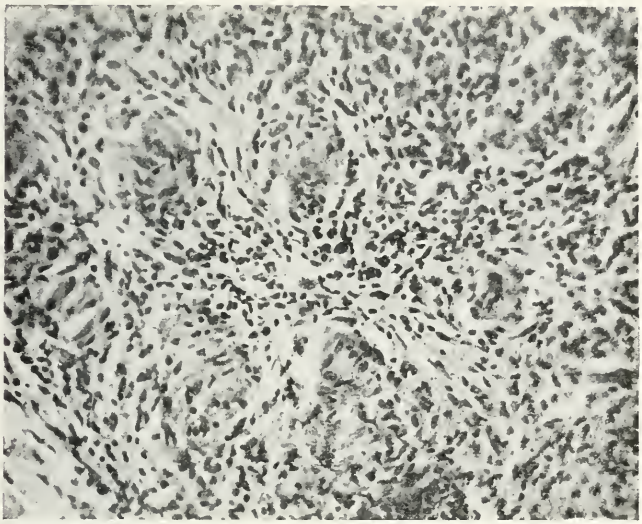


FIG. 9.—Photomicrograph. Strands of connective tissue and cell infiltration in a tubercle. Case No. 3, 28 . i . '20.

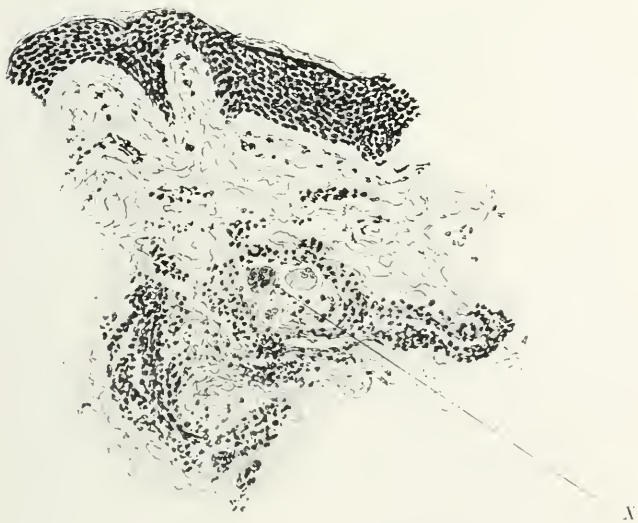


FIG. 10.—By the arrangement of the tissues and by some giant-cells at *X*, the site where a tubercle has been can still be detected. Case No. 3, 6 . viii . '20.

TO ILLUSTRATE DR. K. A. HEIBERG AND DR. CARL WITH'S ARTICLE ON LUPUS.

Fig. 11.—A giant-cell at *X* (and round-cells)—the remains of a tubercle. (Serial section.) Case No. 3.

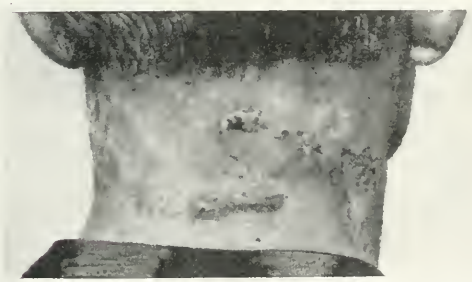


Fig. 12.—Photograph of a man, aged 37 years, with a tuberculous ulcer on the neck, 21 . i . '20, before treatment was begun.

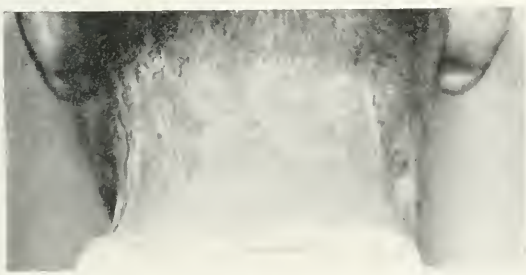


Fig. 13.—Photograph of the same patient as Fig. 12, 2 . xii . '20, after 28 light baths, the last on 24 . iii . '20. Entirely healed.

TO ILLUSTRATE DR. K. A. HEIBERG AND DR. CARL WITH'S ARTICLE ON LUPUS.

at no spot was there distinct lupus (see Fig. 12); the microscope, however, showed a mass of epithelioid cells. The patient was treated from 21 . i . '20 to 4 . ii . '20 with 7 baths, and from 21 . ii . '20 to 24 . iii . '20 with 28 baths. When he was discharged there was considerable improvement. Histologically there was still easily recognisable tuberculous structure. When the patient reported on 2 . xii . '20 all the lesions were apparently healed both on the sides and back of the neck (see Fig. 13). In the nape of the neck there was some rather firm scar-tissue. Microscopic examination showed a small fibrous tubercle in scar-tissue, easily recognised by the presence of a few giant-cells.

This patient showed that light baths alone can undoubtedly improve and probably cure skin tuberculosis.

It should be mentioned that now and then we have had the opportunity of witnessing a surprising improvement in a patient with a bad attack of lupus under general treatment with light in spite of very incomplete local treatment. In a patient, M. P—, a great improvement of lupus of the left cheek was brought about by 73 light baths from 14 . i . '20 to 15 . xii . '20. On the left thigh there was an extensive lesion, the greater part of which disappeared without local treatment.

We have already mentioned the great effect of local light treatment. In the first three cases the clinical improvement of areas treated locally was much more pronounced, but an instance will be given which shows that at any rate with the duration of treatment employed at the time it may be a necessity.

Patient No. 5953, P. P—, a man, aged 34 years, was treated for extensive lupus of nine years' duration on the neck and left cheek. It was completely cured between 24 . x . '19 and 7 . iv . '20, after a course of 53 light baths and local treatment. In the left popliteal space there was a patch which had started twenty years ago. Although local treatment was not resorted to the improvement was also good here. When the patient was seen again on 19 . xii . '20 the lesion on the neck had not relapsed but that in the popliteal space was much worse.

After this short review of clinical results, we will attempt to form a picture of the histological changes which usually take place, and it will be convenient to focus attention first on quite circumscribed lesions without any marked reaction round about, and afterwards to consider the larger lesions with surrounding round-celled infiltration and connective-tissue reaction—its opposite, so to speak, in size.

It may be worth while interposing a few remarks here on the structure of lupus lesions in general. They persist, like other tuberculous lesions, so long as tubercle bacilli are present. The epithelioid

and other cells are absorbed when the bacilli are wanting. It is really only another way of expressing the same thing to say that the tuberculous toxin must first be bound or disappear before variations are observed.

Giant-cells, which indicate that a sort of involution has begun—and there is no inconsistency in the fact that they can appear early—are often the least in evidence.

In view of the extremely small number of bacilli present (and perhaps also the difficulty in staining them) it will not be of much use paying attention to their demonstration, as numerous investigations and also experience at the Finsen Institute show. Thus particular interest attaches to the microscopic examination of the tissues, *sensu strictiori.*

(1) In the first case, with the quite small lesion, it will be seen that the nucleus and protoplasm of the epithelioid cells, the essential feature of the reaction of the tissues against the disease, gradually lose the power of staining and become disintegrated, and little by little they are absorbed. It will be observed that a lymphocytic round-celled infiltration does not always dominate the field, and the surrounding cell-reaction often does not last long. Its protective function has apparently become unnecessary. Its original importance to constitute a barrier is no longer necessary. With the rather more extensive lesions, however, there is perhaps a little greater chance of finding a residue of round-cells.

(2) In the second case with the large lesion, however, the appearance during treatment is somewhat different. On careful investigation it is certainly discovered that the capacity for staining has also diminished here, and that there is a greater and more marked tendency to absorption (and at the same time a rather more obvious phagocytosis may take place). All this is more pronounced than usual. But it will be particularly noticed that many more round-cells are met with in the epithelioid tissue than in other cases of lupus. What has been called "positive lymphocyte-taxis" in other tuberculous tissue is here in evidence, although there may temporarily be small circumscribed islands of epithelioid cells in the midst of others where this does not hold. Rather later in the treatment it will further be seen that the connective-tissue reaction between the groups of epithelioid cells—with a greater abundance of

younger cells—suggests that active proliferation is taking place. Lastly there is the development of connective tissue in the tubercle, which, when it occurs, is variously interpreted. Some assign the greatest importance to an ingrowth of the connective tissue, others favour the idea that the epithelioid cells can be directly transformed into connective-tissue cells. This difference of opinion is of no interest in a case like the present, where it is a matter of demonstrating the actual fact—the destruction of the structure of the tubercle.

Finally, all that is left is young connective tissue, rich in cells, which differs from its surroundings on account of the absence of elastic tissue. In such cicatricial tissue an isolated giant-cell (eventually in a state of disintegration), some round-cells and perhaps a few epithelioid cells (which usually, however, seem to disappear first) at times testify to what has been present in these places, although it was not previously known. But it will be readily understood that in this case the remains of what has once existed can be traced much later than in the quite small lesions first spoken of. The presence of a quantity of pigment in the connective tissue is not specific—in some cases where it was seen it was also in evidence before treatment.

Moreover, in the case of medium-sized tubercles, which have presumably already been affected and have diminished somewhat in extent, we may sometimes see that it is absorption that is the most arresting feature and not round-cells or new connective tissue; but, when the last is absent, we miss the best criterion that a considerable diminution and absorption has taken place. Even if the absorption is not so marked as just described, its relative extent, which exceeds what is usually found and may almost be described as diffuse, indicates that which we see is actually the result of treatment.

Summary.

The following *résumé* seems to us appropriate:

(1) Carbon arc-light baths without any other treatment can cure lupus. But naturally the cure is hastened by the simultaneous local application of Finsen light.

(2) The histological process of repair eventually involves all the lupus tissue, however deep it is. A condition is thus finally produced

which local treatment can also bring about, but only after many repetitions.

The way in which the repair takes place seems to be partly dependent upon the size of the lesion.

(*a*) In the very small lesions the epithelioid cells gradually lose their power of staining as well as becoming disintegrated and slowly absorbed. The round-celled infiltration is only slightly developed.

(*b*) In the larger lesions it will also be found that the epithelioid cells stain badly and gradually break down, but the most conspicuous feature is usually the considerable increase of round cells in the epithelioid tissue itself, not in the surrounding structures, which is far in excess of what is ordinarily met with. In some cases also there is a connective-tissue reaction, with many new cells, which is later on replaced by young connective tissue rich in cells in which isolated giant-cells and some round-cells may be found here and there.

Although the connective-tissue changes as described above can be very striking, we consider them to be of secondary importance in comparison with the dissolution processes in the epithelioid cells.

We wish to take this opportunity of expressing our indebtedness to Dr. Reyn.

Dr. E. Atkins has kindly translated this paper from Danish.

References.

(1) Compare Reyn, *Die Finsenbehandlung*, Berlin, 1913.

(2) *Experim. Studier*, Copenhagen, 1906; and *Ziegler's Beiträge*, Bd. xli, 1907.

(3) *Cf. Ugeskr. f. Læger*, 1918, and *Strahlentherapie*, 1919, Bd. x. p. 317.

(4) *Hospitalstidende*, 1918, No. 7, p. 193; and *Strahlentherapie*, 1919, Bd. x. (*Cf. Ann. Derm. Syph.*, No. 7, 1921, pp. 327–328.)

(5) *Ugeskr. f. Læger*, p. 1281, 1920; *Zeitschr. f. Laryngologie*, Bd. x, 1920; and *Acta Radiologica* (Stockholm), 1921, Bd. i, p. 51.

THE *RATIONALE* OF THE WASSERMANN REACTION.*

J. E. R. McDONAGH, F.R.C.S.

(*Concluded from p.* 58.)

Consideration of the Problems.

(1) *Diurnal variation.*—All sera begin to undergo changes the moment the blood is withdrawn from the body. The mere fact of clotting produces an alteration, and it is more than probable that the earliest picture of the protein particles obtainable *in vitro* is not absolutely identical with that pertaining *in vivo*. Syphilitic sera apparently undergo less change on keeping than normal sera, which in part accounts for the lower susceptibility of the former to bacterial (aërial) contamination. Sera should not be left untested for more than forty-eight hours, as it is from this time on that the changes begin to make themselves felt. The protein particles of a normal serum on keeping increase in size and agglomerate, changes which I believe to be due to loss of surface electrolytes and to dissipation of electrons. Though in this state a normal serum may give a positive C.F.T. it is more usual for it to give an anti-complementary reaction, *i. e.* to fix complement in the absence of antigen. The addition of a normal serum (complement) to such particles stimulates the latter to regain their normal state at the expense of the former, with consequent destruction of complement and precipitation of the particles concerned.

An early syphilitic serum is apt to become more positive on keeping, while a late syphilitic serum tends to become less positive. I think this is due in the former instance to a further condensation of the particles, which is accompanied by an increase in the "baseness" of the mass to counteract the liberation of energy in the form of

* Read at a meeting of the Section of Dermatology of the Royal Society of Medicine on October 20th, 1921.

electrons. A corresponding sequence in the latter case possibly brings the particles to the iso-electric point, at which point there is no adsorption.

(2) *Effect of ingestion of alcohol.*—It has been noticed that after the ingestion of alcohol the addition of sodium citrate to blood may fail to check coagulation. This observation not only throws light on the C.F.T. but also it forms another link in my chain of evidence, that shock is prevented from following a would-be lethal dose if an initial sub-lethal dose is injected. In other words, once the protein particles have undergone their initial change of condensation, which invariably follows even the slightest interference, they are protected in a certain degree from undergoing any further change. From my work on shock which I am in the process of completing, I have arrived at the conclusion that condensation is a spontaneous process opposed to the forced process of dispersion. By this is meant that protein particles undergo condensation to avoid being sent into true solution, a state which would soon result in a fatal issue. The best example of the forced process is the moderate degree of dispersion which results from repeated small doses of arseno-benzene, and it affords the explanation of the negative C.F.T. after treatment, and of the fact that injudicious treatment can actually stimulate the parasites to multiply and produce recurrences (compare Figs. 2 and 4). Condensation is, I believe, accompanied by a dehydration at the surface of the particles and a hydration of the particles themselves. This results in increasing the size of the particles and in causing them to clump together. There is also a discharge of electrons from the surface, as well as a separation of some of the electrolytes. It is highly probable that the discharged electrons form separate particles with the atoms of the electrolytes and of the amino-acids in solution, thereby accounting for the increase in the number of the particles observed in the initial stage of the condensation process. Some of the electrolytes to be discharged are those of calcium. But I doubt whether the liberated calcium has anything to do with coagulation, because continued condensation as occurs in late syphilis leads to an increased liberation of calcium, but to a retardation of coagulation. Further, dispersion is accompanied by such a liberation of calcium as to lead to its precipitation in the walls of blood-vessels and in certain cells, but accompanied by an ever-increasing retardation of coagulation. It would certainly be simpler to regard

coagulation as one of the physical phenomena of condensation. Sodium citrate fails to check coagulation after the ingestion of alcohol, presumably because the alcohol has brought about that degree of condensation which imparts stability to the particles. That this is probably correct is supported by the fact that the addition of sodium citrate to blood will only check clotting when it is added slowly, having no retarding effect when it is added in bulk. The ingestion of alcohol just before the blood is withdrawn may render an early syphilitic serum giving a negative reaction positive, and may cause a late syphilitic serum giving a positive reaction to give a negative. In conjunction with the action of alcohol the effect of anæsthesia on the C.F.T. should be considered. Anæsthetics go a stage further than alcohol, *i. e.* they may cause any positive syphilitic serum to give a negative reaction and a normal serum to give a positive reaction. The anæsthesia requires to be deep, as it is only then that the stability of the protein particles produced when it is first administered is overcome. When this stage is reached the particles show signs of being precipitated, and precipitation results in shock which may be fatal. A rabbit which ordinarily after an injection of a metal or of a non-metal would give a positive C.F.T. may fail to do so if under the influence of an anæsthetic. Anæsthetics naturally differ in their action, and so far as the C.F.T. is concerned chloroform produces the changes described more readily than ether.

(3) *Effect of pregnancy.*—During pregnancy the particles are increased in number, the size of many is augmented and conglomerations are to be met with. Sera from some pregnant non-syphilitic women cannot be distinguished ultra-microscopically from ordinary syphilitic sera. It seems that the *fœtus in utero* causes the protein particles in the mother's serum to undergo much the same changes as are produced by the syphilitic organism. The chief change is an alteration in the normal electrification of the surface of the particles. This so affects the mass as to cause the same to counterbalance the alteration wrought. In the presence of complement such particles attempt to restore the normal electrification at the former's expense, an action which may be exhibited in a positive C.F.T.* Pregnant syphilitic women (except those recently infected) on the other hand

* In my experience at least 10 per cent. of pregnant non-syphilitic women give a positive C.F.T. at some time or another during their pregnancy.

tend to give a negative C.F.T., presumably because the addition of pregnancy augments the condensation, which—especially in late syphilis—reduces the particles to their iso-electric point, *i.e.* brings the particles to the point where the changes undergone by the mass just compensate for the changes which have taken place on the surface. It has been suggested to me that the positive reaction sometimes given by the serum of a pregnant non-syphilitic woman is due to the cholesterolæmia sometimes encountered. That this is not the explanation is proved by the fact that other bloods and fluids rich in cholesterol do not give a positive C.F.T. Craig and Williams ([15]) have recently shown that feeding rabbits on cholesterol does not render the serum positive in spite of the degree of cholesterolæmia produced thereby.

(4) *Effect of age.*—Although it is extremely difficult to make sure that an individual over sixty years of age whose serum gives a positive C.F.T. has never in his youth had syphilis, I am nevertheless of the opinion that age may render a non-syphilitic serum positive. Be that as it may, I feel certain that age is one of the causes of a negative reaction in a syphilitic. As age advances, the water-content of the body diminishes, the loss is felt in the blood as elsewhere, and a condensation of the protein particles therein is an expression of such loss. Under the ultra-microscope it is not uncommon for the serum of a man over sixty to exhibit an increase in size of some of the protein particles and a formation of clumps, a few of which are readily precipitated. Such a change can make a normal serum positive and a positive serum negative, as we have already seen.

(5) *Effect of heat, etc.*—Manœuvres such as heating, alternate freezing and thawing, exposure to alterations of atmospheric pressure and to radio-active bodies, shaking with various non-electrolytic substances, tend to make a normal serum give a positive or anti-complementary reaction. They make a slightly positive syphilitic serum more positive, and a strong positive syphilitic serum either negative or anti-complementary. They cause varying degrees of condensation and precipitation of the protein particles, and destroy the normal relationship between the globulin and albumin by increasing the former and diminishing the latter ([16]). (As severe hæmorrhage causes an increase in the globulin-albumin *ratio,* it would be interesting to see if the serum of such a patient gives a positive

C.F.T.) It seems to me that any action which causes sufficient condensation of the protein particles leads not only to their hydration, but also to the conversion of albumin into globulin. The adsorbing capacity of globulin is greater than that of albumin—a physical action which is in part due to the greater number of electrolytes which may be attached to the former. In early syphilis not only is the globulin increased but the fixed salts are in excess of those found normally. Therefore we have arrived at the point where it seems more than probable that a syphilitic serum gives a positive C.F.T., not only because the protein particles are increased in number but also because they are changed in character.

Summing up as far as we have gone, we are able to state that the natural sequence of any interference with the protein particles is condensation. If the factors causing this condensation act as conductors or condensers, they increase the hydration of the particles and the number of the electrolytes attached thereto, which has the effect of imparting to albumin particles the physical properties of globulin. If the increase of "baseness" of the particles themselves resulting from the discharge of electrons is compensated by the electrolytes attached, the added complement will not be required and the C.F.T. will be negative. If there is not full compensation, then any added complement will be attached to supply the deficit, and the C.F.T. will be positive. If the factor is, so to speak, inert and touches the mass of the particles without increasing the surface electrolytes, then complement will be fixed even in the absence of the antigen, and the C.F.T. will be anti-complementary (Fig. 11). This is most likely to occur to a normal serum where the protein particles may be described as having a thinner surface than those in a syphilitic serum.

The Changes the Serum in Syphilis Undergoes.

The changes the protein particles undergo can be divided into three: (1) increase in number; (2) surface change; (3) mass change.

(1) *Increase in number.*—It is in early syphilis that this change is most noticeable, and it can be observed with the ultra-microscope before the C.F.T. becomes positive (Fig. 7). If such a serum is shaken with barium sulphate, which was always considered to remove what were termed "complementoid" bodies, the C.F.T. becomes positive ([17]). Barium sulphate causes a dissipation of electrons, and

possibly liberates some of the surface electrolytes, because its action, as viewed with the ultra-microscope, is undoubtedly one which leads to condensation, and at the same time it diminishes the viscosity of the liquid medium. When syphilitic sera are tested, heated (inactivated) and not heated, positive reactions will be obtained in the one case and not in the other. Inactivated sera give more positive results in early syphilis than active sera, and the reverse is the case in late syphilis. This supports the view expressed as to the action of barium sulphate, and is another link in the chain of evidence that a positive C.F.T. is due to a condensation of the protein particles, a change undergone by them to make up for the loss of some of their electrons. Barium sulphate has not a specific action, and it is only employed because it is, practically speaking, an inert substance and totally insoluble in water. Insoluble calcium hydroxide, tin oxide, bismuth salts, etc., exert the same influence. Whether the particles are increased because the host forms more on his own account, or because the syphilitic organism on entering the host has the same effect as we observed a colloidal metal to have when first injected into a rabbit, is a point unnecessary to dwell upon here, especially as both views are probably correct. Anyhow, the increase so produced must be distinguished from the increase wrought by dispersion as occurs when treatment is first administered (Fig. 3). The increase in the number of the particles noticed after the first two or three injections of arseno-benzene is in part the reason why a serum becomes more positive before it becomes negative.

In some cases of late syphilis an increase in number of the particles is to be observed. Such cases clinically exhibit marked vascular hypertension, and the serum gives a negative C.F.T. In these cases there is an increase of albumin and a diminution of globulin, exactly the reverse of what pertains in early syphilis. Furthermore, the particles are poor in surface electrolytes and are easily precipitated, and there is usually some degree of hyperglycæmia. Having had the opportunity to study three of these cases over a number of years I have come to the conclusion that this great increase of albumin results from the conversion of globulin and lipoid-globulin, because early in their career the C.F.T. was very strongly positive, and the ultra-microscopic picture showed mainly giant particles and giant-particled clumps. Whether the hyperpiesis is primarily due to the increased

viscosity of the liquid medium, or to the diminished electrical activity of the particles, is a point for further debate. The subject is mentioned here because I believe syphilitic hyperpiesis is caused first by a physical change in the serum, and that the nephritis is secondary thereto.

(2) *Surface change.*—When the syphilitic organism has become settled in its new abode, the host's resisting substance attempts to overcome the invader by an oxidising process, or, in other words, by a robbing of other particles of some of their electrons. This ultimately results in a condensation of the acting particles. It is impossible to say at present how far the condensation process is responsible for the increased electrolytes possessed by the protein particles, or whether the increase is perhaps more dependent upon the mass change which is set going by the host some time before. Anyhow, the main surface alteration noticeable in early syphilis is the increased number of electrolytes attached to the protein particles, a conclusion arrived at by comparing the free and fixed sodium, calcium and chlorine in normal and syphilitic lymphatic glands. The amount of free salts were the same in both, but the amount of fixed salts were increased in the case of syphilis. This accounts for the rapidity with which early syphilitic sera coagulate. The liberation of energy resulting from the spontaneous condensation is not always in the form of electricity, but sometimes in the form of heat, thereby accounting for the rises of temperature frequently met with in the course of the disease. When the condensation has reached a certain point the particles condensed give the chemical and physical tests of globulin, and substantive changes ensue which are, broadly speaking, permanent in nature. This naturally means a positive C.F.T. throughout life, unless, of course, some of the particles become converted into albumin particles, which have the effect of nullifying a positive reaction. This struggle, so to speak, between condensation and conversion into albumin, which is really only a further stage of the former, cannot possibly be held as showing what is happening to the parasite; therefore a positive or a negative reaction, after a certain stage in the disease has been reached, can never more than signify that the patient has had the disease. As the condensation process advances, and before the stage is reached when the converted globulin is reconverted into albumin, a gradual loss of electrolytes

occurs. Under the ultra-microscope this is evidenced by the formation of giant particles and giant-particled clumps, which are very refractile and have lost much of their Brownian movement. It is this loss of electrolytes which accounts for the important observation made by Andrewes ([18]), namely, that there is a diminution of calcium salts in syphilitic aortitis. Moreover the C.F.T. becomes more positive, and, as this happens when there are fewest parasites in the body, a positive C.F.T. cannot be looked upon as a sign of activity. Still less can a positive reaction be a sign for treatment, because when this stage is reached treatment either has no influence on the particles condensed or it carries the same a stage further—converts them into albumin. Metals are particularly useless and frequently injurious, and even non-metals have to be used with some discretion. From this we can see that a negative reaction after treatment in late syphilis is due to a preponderance of albumin. As this does not signify a cure, but frequently a state of affairs which is far from desirable, we are now able to understand why late syphilitics are often made worse and suffer from vascular troubles when metals are inadvisedly administered.

(3) *Mass change.*—To bear the increase of electrolytes the protein itself undergoes changes. The first appears to be an increase of amino-groups, and the second—characteristic of certain particles in late syphilis—an increase of lipoid material. The amount of amino-nitrogen, as estimated by Van Slyke's method, is much less in early syphilitic than in normal sera ([19]), but is greatly increased by treatment or by any *manœuvre* which de-ionises the particles. As amino-nitrogen is more readily obtained from polypeptides than from albumoses, from albumoses more readily than from albumin, and from albumin more readily than from globulin, it would appear that the decrease met with in early syphilitic sera was due to an increase in the number and complexity of the amino-groups in the protein particles. As treatment increases the amount of amino-nitrogen, the view is supported that de-ionisation and dispersion of the protein particles results in the conversion of globulin into albumin.

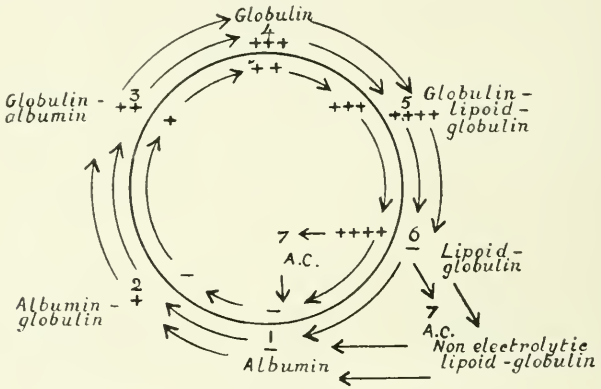
In late syphilis the particles are not only very large but they are very refractile, due to the development of lipoid material. Later the same particles take on a ringed form—a change which can be produced at the negative pole by passing a current through a

syphilitic serum film. This formation of lipoid-globulin seems to result from an increase of "baseness" to compensate for the loss of electrolytes due to electronic activity. When the loss of electrolytes brings the lipoid-globulin particles to the state when they can no longer act as condensers of electricity they become, so to speak, dead protein and are excreted into the urine and into the general peritoneal cavity. The lipoid-globulin collected from a case of what may be best termed syphilitic filtration glomerulitis, and from a case of syphilitic pseudo-chylous ascites, invariably gives a negative C.F.T. I believe this neutral point is the iso-electric point of lipoid-globulin because any further interference with the surface electrolytes—such as may be brought about by keeping the fluid containing the lipoid-globulin particles or by subjecting the same to alterations of atmospheric pressure, or by passing through an electric current, or by exposure to radio-active bodies—causes the same to give an anti-complementary reaction. Therefore a positive Wassermann reaction is due to an electrolytic change which does not damage the protein mass. When the protein mass itself is interfered with, then the reaction becomes anti-complementary. A negative reaction is obtained when any electrolytic change which has occurred can be counterbalanced by a substantive change. This is most usually brought about by an increased production of albumin. In this explanation lies also the *rationale* of the protective action exerted by albumin, gelatin, etc., on colloids which used alone would produce shock. I have little doubt that the changes which take place *in vivo* and cause shock are the same as those which take place *in vitro* and cause a positive or anti-complementary C.F.T.

Summed up, the position is now as follows. When the increase of electrolytes bears the same *ratio* to the amino-groups as normally occurs, the C.F.T. is negative. When the electrolytes become destroyed and the protein mass has to undergo changes to compensate for the loss, the C.F.T. is positive, because the adsorptive capacity of the particles is increased with the hope of being able to take from the particles added the electrolytes necessary to restore the balance. When the electrolytes have become so far destroyed as to seriously damage the protein mass, the C.F.T. is anti-complementary because nothing added can restore the balance; it only furthers the precipitation.

A syphilitic serum can give a negative C.F.T. when the balance between the electrolytes and the protein mass is a normal one; when the loss of electrolytes reduces the particles to the neutral or iso-electric point; and when there is sufficient albumin to counteract any surface or substantive change in particles which have become through the change globulin or lipoid-globulin.

The C.F.T., as can be seen now, is a cyclical reaction in which the extreme degree of positivity is a negative reaction—anti-complementary reactions being more commonly met with in experimental work. The changes serum protein undergo are likewise cyclical. Albumin → globulin → lipoid-globulin → albumin.



CIRCLE 4.

The above diagram (Circle 4) puts the problem into a nutshell, as it not only shows the cyclical nature of the C.F.T., but also it maps out the paths followed by a conductor and condenser in a rabbit, and the influence both have on the C.F.T. in man. Stages 1–4 represent early syphilis, and stages 4–1 late syphilis. The path traversed by a serum in the course of syphilis, which is also the path traversed by a conductor in a rabbit, is depicted outside the circle. The path traversed by a condenser is depicted inside the circle. Take stage 6 as an example: in late syphilis (outside the circle) the reaction is negative, and a single injection of a conductor has passed the extreme positive stage to give a negative C.F.T. In both cases the reaction is negative, because the neutral or iso-electric point has been reached by the protein particles. In both cases a

single injection of a non-metallic body or condenser, such as intramine, will immediately cause a strong positive reaction and reduce the same to stage 5. A non-metal (inside the circle) at this stage gives the maximum degree of positivity obtainable, which immediately becomes negative or anti-complementary on the introduction of a metal. The outermost circle of arrows depicts the transformations of albumin into globulin, and lipoid-globulin into albumin.

Anti-Complementary Reactions.

An anti-complementary reaction, or self-fixation (*Eigenhemmung*) as it is frequently called, requires separate consideration, as it throws much light on the subject in hand. Substances which render a normal serum anti-complementary before having the same action on a syphilitic serum, first reduce a positive to a negative reaction. As substances which render a serum anti-complementary act on the protein mass, substances which merely make a normal serum positive have a surface action only. The fact that a syphilitic serum is with greater difficulty rendered anti-complementary supports the points already adduced—that there are more surface electrolytes attached to syphilitic protein particles, that it is these electrolytes which are responsible for the C.F.T., and that all substantive changes, *i. e.* changes directly affecting the protein mass, can only take place on destruction of the surface electrolytes. If a serum is shaken with a hydrocarbon not only does it give an anti-complementary action, but also the globulin-content* is increased, even lipoid-globulin may be formed, and ringed particles detected with the ultra-microscope. Two sets of experiments are worth recording. If a normal serum and C-s.F. are shaken with a neutral substance such as naphthalene, with an acidic substance such as *a*-naphthol, and with a basic substance such as *a*-naphthylamine, the C.F.T. with all is anti-complementary; there is in the case of the C-s.F. an increase of alkalinity detected with brom-thymol blue ($C_{10}H_7NH_2 > C_{10}H_7OH > C_{10}H_8$), an increase of globulin,* and even a formation of lipoid-globulin with *a*-naphthylamine. Under the ultra-microscope a serum shaken with *a*-naphthol resembles more one treated with an alkali (Figs. 14 and 15), while a serum shaken with *a*-naphthylamine resembles more one treated

* This globulin differs in a few points from that which occurs naturally.

with an acid (Fig. 16). These results show the importance of the amphoteric nature of protein, that any interference with the mass increases the "baseness," and that substances which cause the greatest condensation give albumin the properties of globulin and of lipoid-globulin. If two rabbits are injected intravenously on three or four occasions with the carbon-di-sulphide products of di-ethyl-amine and of di-methyl-amine, the former product makes the serum give a positive C.F.T., while the latter renders it anti-complementary. Under the ultra-microscope the ethyl compound causes no precipitation of the protein particles, while the methyl compound causes considerable precipitation. From this we can infer that the methyl-group shows a greater affinity for the protein mass than the ethyl-group, which amounts to saying that the methyl-group affects the mass as well as the surface, while the ethyl-group affects the surface only. The methyl compound when added to a normal serum *in vitro* converts many of the particles into the ring-shaped form so typical of non-electrolytic lipoid-globulin, while the ethyl compound does not. These observations explain why methyl-alcohol and methyl-ether are more toxic than the corresponding ethyl products. As the molecular orientation of the sulphur is the same in both substances, it shows that when speaking of the action of metals and non-metals we are obliged to take into consideration the chemico-physical action of the vehicle carrying the element.

The ring-formed particles are particularly interesting, as they can be formed at the negative pole when a current is passed through a syphilitic serum film. If the passage of the current is continued, sheaf-shaped, crystalloid forms are encountered, indistinguishable from those met with in colloidal suspensions of the triglycerides. As the negative pole is the basic pole and the colloidal triglycerides are basic, as lipoid-globulin results from an increased "baseness" of the protein mass, there seems considerable evidence in support of the suggestion offered that the C.F.T. is due to an altered surface electrification and to an increased "baseness" of the protein mass. Ringed particles are formed not only by non-metallic preparations, but also by the continued administration of simple colloidal metals having a high atomic weight, which also render a rabbit's serum anti-complementary. These particles are formed most readily when a rabbit's serum made anti-complementary with a preparation like

colloidal bismuth, or better, thorium hydroxide, is mixed in equal quantities with a serum made anti-complementary with the carbon-di-sulphide product of di-methyl-amine. Therefore damage to the surface electrification leads to increased "baseness" of the protein mass, which leads to formation of lipoid-globulin, which leads to formation of the glyceryl-esters of the higher fatty acids.

Other Points Worthy of Consideration.

The surface and mass changes the protein particles in syphilis undergo cause the particles to precipitate quicker and to show more precipitation to the naked eye than those in a normal serum. Precipitated protein, if filtered, undergoes hydrolysis. Both these points explain (1) why a syphilitic serum gives a positive ninhydrin (Abderhalden's test) reaction ([20]) with an extract of almost any organ; (2) why several attempts have been made to supplant the Wassermann reaction by a simple precipitation test. To date the best precipitation test is the Sachs-Georgi ([21, 22]) reaction, which has recently been introduced into this country and modified by Dreyer and Ward ([23]). It is merely a prolongation of the first stage of the Wassermann reaction, time, with larger amounts of the ingredients used, enabling an invisible precipitation to be rendered apparent to the naked eye. This does away with the hæmolytic system as an indicator.

Certain protein particles when they are rendered anti-complementary—that is to say when the loss of electrolytes is carried beyond the iso-electric point—the stage is reached which does not differ from the effect produced by extracting a normal organ with alcohol, acetone, etc. In other words, protein particles when rendered anti-complementary may acquire antigenic properties, a statement which naturally throws considerable light upon the action of antigen and supports the one already expressed. A Wassermann reaction can actually be undertaken with ingredients made from the patient's own blood, with the sole addition of some colloidal silicic acid for use as the amboceptor.

A serum can be rendered anti-complementary by shaking with naphthalene, *a*-naphthol and *a*-naphthylamine. If the serum is filtered, dried and dissolved in saline, only the one treated with

a-naphthylamine will act as antigen, be the serum experimented with normal or syphilitic. *a*-Naphthylamine converts the protein particles into lipoid-globulin, and under the ultra-microscope the picture presented is the same as that given by a late syphilitic serum. I conclude from this that the antigenic property is brought out by a condensation of the protein particles, which at the same time causes a development of lipoid material therein.

"Neutral" organic substances which dissociate hydrogen, such as *a*-naphthol, formaldehyde, etc., and conductors which dissociate hydroxyl, increase enormously the number of particles visible under the ultra-microscope, possibly by bringing the amino-groups which are in true solution into the colloidal state. The surface tension of the serum so treated is increased. Moreover the particles behave more like albumin than globulin, and therefore protect rather than adsorb and precipitate other particles added thereto, such as are contained in antigen and complement. "Neutral" organic substances, which undergo no electrolytic dissociation, such as *a*-naphthylamine, alcohol, etc., and certain condensers, reduce the number of colloidal particles and condense those left behind. The surface tension of the serum so treated is diminished. The particles behave more like globulin and lipoid-globulin than albumin, consequently they adsorb and precipitate other particles added thereto. The essential feature of an antigen, then, is one wherein the particles have been highly condensed. Why condensation should result in an increase of lipoid over amino-material is a problem which is at the moment difficult to unravel. Condensation with development of lipoid material and of adsorbing capacity, which results in a further diminution of the surface tension, forms the basis of the C.F.T.

The Cerebro-spinal Fluid.

It is still a moot point whether the protein particles in the C-s.F. arise in the central nervous system or filter from the blood through the choroid-plexuses. In diseased conditions probably both sources are utilised, because repeated puncture increases the alkalinity of the C-s.F. determined by brom-thymol-blue, and in degenerative encephalitis the cells of the choroid-plexuses appear to be too degenerated to act as a selective filter. There is always a protein increase in cases of

vascular hypertension. The protein particles in the C-s.F. are poorer in surface electrolytes than their homologues in the blood, a point which favours their filtration origin; consequently, even in normal fluids, the balance may not be maintained between the surface and the protein mass, thereby accounting for the fact that a normal C-s.F. may give a positive C.F.T. As this is still more the case in diseased conditions it can be readily understood why most cases of active late syphilis give a positive C.F.T. in their C-s.F., and why treatment exerts so little influence on the C.F.T. If normal C-s.Fs. are examined ultra-microscopically, many of the particles will be found to be agglomerated and precipitated, a sign of condensation. A diminution of surface electrolytes with a corresponding change in the protein mass occur in the C-s.F. as in the serum, but as there is always a diminution of electrolytes to be met with, any *in vitro manœuvre* quickly causes the C-s.F. to give an anti-complementary reaction. For instance, the positivity cannot be reduced gradually by the addition of the carbon-di-sulphide produce of di-ethyl-amine, as can be done with a serum; the reaction becomes anti-complementary instead of negative. In cases of degenerative encephalitis the alkalinity of the C-s.F. is reduced, which at one time I thought accounted for the positive gold-sol reaction. As the acid side of neutrality is never reached, such a state being totally incompatible with life, I have come to the conclusion that the adsorption and precipitation of colloidal gold is due to a condenser effect exerted by the protein particles. The protein particles lacking electrons take away those of the gold particles. This reverses the charge on the gold particles and results in their increasing in size, becoming agglomerated and precipitated. Negatively-charged colloidal gold is not quite on all fours with complement, because shaking a C-s.F. with a hydrocarbon or with kaolin or adding formaldehyde thereto render the same anti-complementary, though they reduce its affinity for colloidal gold. As these manœuvres reduce the amount of surface electrolytes and damage the protein mass, it seems to suggest that Lange's gold-sol test ([24]) is an electrical reaction and is an attempt by those protein particles which retain some electrons to regain the amount required to restore the balance at the expense of the electrons on the gold particles. Still further in support of this is the fact that iso-electric lipoid-globulin has no precipitating effect upon colloidal gold.

I wish to thank all my co-workers for the valuable assistance they have given me; in particular, Dr. R. L. Mackenzie Wallis and Dr. V. Corbett, without whose help much of this paper could not have been written.

Summary.

(1) Complement is the equilibrium which maintains the protein particles in the serum in true and normal emulsion.

(2) In the hæmolytic system hæmolysis is due to the alteration in surface tension produced by the adsorption between the amboceptor and complement.

(3) Adsorption *in vitro* is the half-way house to precipitation. When precipitation is allowed to occur before the red blood-corpuscles are added, the corpuscles are precipitated without giving up their hæmoglobin.

(4) Non-specific hæmolytic systems can be prepared in which a conductor or condenser of electricity takes the place of the amboceptor.

(5) The first part of the Wassermann reaction resembles the non-specific hæmolytic system, except that the stage of adsorption is carried to that of precipitation.

(6) Both adsorption and precipitation are regulated by surface or electrical and substantive changes affecting the protein particles in the serum.

(7) These changes can be set in motion by several manœuvres, the most interesting being those produced in rabbits by the intravenous administration of conductors (metals) and condensers (non-metals), both of which can cause the serum to give a positive C.F.T.

(8) The changes wrought experimentally by metals and non-metals are those which occur naturally in such a disease as syphilis.

(9) The main change, *i.e.* the one most responsible for a positive C.F.T., is a conduction of negative electricity from the surface of the protein particles. This results in a dissipation of electrons, a condensation of the protein mass, with an increase in its "baseness," all of which render the C.F.T. in corresponding degrees more positive.

(10) Negative reactions in syphilis result from many causes, of which the most important are the upset of the albumin-globulin *ratio*, produced by an excess of the former and the arrival at the iso-electric

point by the globulin particles, the particles which are in the main, if not wholly, responsible for the reaction.

(11) A negative reaction after treatment is due to a forced dispersion of the protein particles taking the place of a spontaneous condensation.

(12) There is no parallel between the C.F.T. and the happenings of the parasite in the host.

(13) Precipitation tests are simply a prolongation of the first half of the Wassermann reaction.

(14) Lange's gold-sol reaction is likewise an electrical reaction between the protein and the gold particles.

(15) The protein in the C-s.F. is in a naturally more condensed state than that in the serum; consequently the balance between the surface and the mass may not always be maintained. The alteration in the surface electricity may be sufficient to make a normal C-s.F. give a positive C.F.T.

(16) In short, the Wassermann reaction is due to an altered electrification of the surface of the protein particles. Furthermore, the same altered electrification may impart to albumin the physical properties of globulin and of lipoid-globulin. As lipoid-globulin can become re-converted into albumin, and as the further stage of an extreme positive C.F.T. is a negative reaction, both the Wassermann reaction and the stages through which protein can pass are cyclical in character.

(17) The whole matter can be summed up as a combat on the part of the protein particles, which is one of condensation *versus* dispersion.

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ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Meeting held on December 15th, 1921, Dr. H. G. Adamson, President of the Section, in the Chair.

Dr. H. G. Adamson showed a *case for diagnosis*. The patient, Miss J—, aged 37 years, a cashier, was suffering from ulcerations of the legs of about six months' duration. The lesions consisted of sharply circumscribed patches, slightly raised and only superficially infiltrated and with their surfaces riddled with punched-out holes about $\frac{1}{8}$ in. in diameter, the holes in some parts running together to form superficial ulcers of about $\frac{1}{2}$ in. in diameter. On the right leg there were six patches, on the left leg three, which varied in size from 1 to 3 in. in diameter; one patch (crescentic-shaped from partial healing) was about 5 in. long. There were also a few very small patches which seemed to indicate the manner of origin of the lesions. The earliest lesion was a small soft flat papule with a central crust, beneath which was a small punched-out hole. The next stage was represented by a patch about $\frac{1}{4}$ in. in diameter, on which were four or

five punched-out holes, and the latest stage was that of the larger patches already described, on which there were many punched-out holes, some of them blending to form larger ulcers; the punched-out holes were filled with a clear or turbid serum, the larger ulcers with a yellow slough.

He was unable to make a diagnosis: syphilis and tubercle seem to him excluded by the fact that the lesions did not begin as a deep-seated granuloma; streptococcal infection by the absence of the characteristic phlyctenular lesions; staphylococcal infection and ringworm by the fact that the lesions were not primarily perifollicular. He did not think the lesions were artificially produced. Dr. Gordon, under whose care the patient had been, had had cultural examinations and a blood test made with negative results. He thought the lesions were the result of some unusual infection and further investigations would be made.

Dr. Wilfrid Fox regarded the lesions as chronic septic infection. The granulomata and artefact he thought could be ruled out. Such cases seemed to do well on peroxide fomentation.

Dr. Graham Little referred to a similar case of his own which had caused him much trouble. The man was in a military hospital, before he attended St. Mary's, for three years with an intractable ecthymatous infection of the legs, healing over to form a very thin scar. What had cured him, for the time at any rate, was an autogenous vaccine, made first from the streptococcus derived from the lesion, and then from a staphylococcus subsequently found. With very little other treatment the man had done exceedingly well. He suggested a like procedure in this case.

Dr. MacLeod agreed that the case was probably one of a mixed infection, and the suggestion about an autogenous vaccine was good. During the war he saw a certain number of superficial ulcerated conditions, more ecthymatous than in this case, and he treated them in a routine way with ultra-violet rays, half-hour exposures, which might be worth trying in this case.

Dr. A. M. H. Gray did not feel certain that this was a simple streptococcal infection. Probably many ecthyma lesions were primarily streptococcal in origin, but in ecthyma, he thought, there was a second factor present, namely, trauma. The linear ecthyma cases seen during the war were primarily traumatic, and the infection was secondary. In the present case there was no evidence of trauma, but there was extensive scarring, and he would have thought there was some underlying condition of a granulomatous nature, the most likely of which seemed to be tuberculosis.

The President (in reply) said he could not accept the idea that this case was streptococcal, for in such cases the essential feature was a phlyctenule, which might afterwards become an ecthymatous ulcer, and the early lesions in this case were not phlyctenular. He thought it was some other infection, and not of a simple nature.

Dr. E. G. Graham Little showed a case of *dermatitis herpetiformis*. The patient had been suffering during the last twelve to eighteen months from a very intractable dermatitis herpetiformis, and she was in a very distressing condition two or three months ago. There was no appreciable control by arsenic. Dr. John Matthews and other colleagues investigated her case for possible foci of toxic absorption, and Dr. Matthews isolated an organism from her fæces—the Morgan bacillus. They then stopped the arsenic, and gave her doses of a vaccine made from her organisms of this class. The first dose was followed by a very severe reaction, although only two million of the bacilli were given, therefore they had to stop it, and after an interval resumed it very tentatively. After this, the dosage having been increased by very small amounts, she had undergone remarkable improvement. She had now been out of bed a fortnight, and the condition showed a slight relapse; the treatment was being carried out under disadvantages, as she had to do her work at the same time. This vaccine was a valuable additional means of treatment of a disease very difficult to control. She had now had a good many injections and could tolerate doses of twenty million.

Dr. E. G. Graham Little showed a case of *cheilitis*. The patient, a young woman, had been under his care on account of very severe rosacea, which was better for the moment. The peculiar condition of the lip which they saw had been present for a much longer time than the rosacea. There was a definite atrophic line passing round the whole of the lower lip, and on the upper lip, over the vermilion border, there was much white striation. The only subjective symptom was extreme dryness, which required the lips to be constantly wetted. She had a very seborrhœic face, and the rosacea was a concomitant symptom. Whether the cheilitis was a seborrhœic condition was a question for consideration.

Dr. Haldin Davis showed a resistant case of *secondary syphilis*. The patient, a young man, was exposed to infection last May, and he developed a chancre two months later. A week after that he went to see his doctor, who diagnosed primary chancre, and found that his Wassermann reaction was positive. He gave him six injections of novarsenobillon, 0·6 grm. each time, followed by six injections of mercury into the buttock, 1 gr. of mercury being administered on each

occasion. Since then he had been taking mercury pills. Despite that treatment, he came up with a perfectly definite delayed secondary syphilide. The problem now was as to how he should be treated—by what particular arsenical compound. Dr. Davis inclined to giving him silver salvarsan, being of opinion that it was the most potent form of the drug.

Dr. Wilfrid Fox said he did not think it was material which of the forms mentioned was used; the man required more general treatment, both by arsenical compounds and mercury.

Dr. A. M. H. Gray showed a case of *lichen obtusus corneus*. The patient was a man, aged 46 years. He seemed to have had three very distinct outbreaks of this condition. The first began twenty-five years ago with what was regarded as eczema of the back of the left calf. They would agree it was typical verrucose lichen planus, though it also showed certain nodules of the same nature as those on the shin. The second group appeared ten years ago—small "pimples" on the left shin, about half a dozen in number, which were itchy. They had gradually increased in size but not in number. They now formed dome-shaped tumours, about $\frac{3}{4}$ in. in diameter, with a warty surface and a central saucer-shaped depression. Mr. Foulerton, under whose care he had been, had two lesions excised about a year ago. Some sections were cut and some of the tissue cultured, and a vaccine made from the culture was injected into the patient. Following that the third outbreak occurred, itchy spots appearing on the front of the right leg and right forearm. All except two looked like simple excoriations of the "acne urticata" type, but one particularly had developed into a lesion similar to those on the left shin but only about $\frac{1}{4}$ in. across, and a second one, still smaller, showed similar changes. He had also distinct patches of lichen planus on the inner side of both cheeks.

Dr. Gray thought this case came into the group of lichen obtusus corneus, but there could be no question that he had also true lichen planus, and the combination of the two types of lesions suggested that they were all one disease, though there still appeared to be some doubt on the subject.

Dr. Haldin Davis said he had had two very similar cases under his care. One of them was shown here many years ago by Dr. Dore, but during the last nine months the lesions had been gradually disappearing; they had almost gone

from the arms, but persisted on the calves, in very much the same situation as in this man now shown. In the other case he had watched the lesions develop from severe lichen planus. The original eruption of lichen planus lasted much longer than usual, and the patient, a woman, developed warty growths in the popliteal space and behind the ear, which itched a great deal. He had had sections of them cut. Microscopically they showed a small-celled infiltration round blood-vessels—quite a different picture from the papillomatous growth characteristic of common warts.

Dr. Graham Little regarded the case as a straightforward lichen planus verrucosus; he did not consider the obtusus element entered into it.

The President agreed with Dr. Graham Little's view that this was a case of lichen planus verrucosus. The first case of lichen obtusus corneus shown before the Section was brought by Dr. Sibley; he (the President) had then recognised the condition from a model he saw in Guy's Hospital Museum. The lesions of lichen obtusus corneus were like cones with flat tops, quite unlike the angular margined raised disc-like patches of lichen planus verrucosus.

Dr. A. M. H. Gray showed a case of *multiple nævi*. The patient, an infant, now 5 weeks old, was born without any skin lesion. On the second day of life a little spot came out on the left eyebrow, and since then lesions had been coming out every day, and were still appearing. Almost every part of the body was affected. They were now very numerous, some fifty or sixty in number. Some of them, especially the early ones, appeared to have the more or less typical characters of ordinary stellate nævi, whereas others were more like simple angiomata. He was not sure whether the latter began as single dilated vessels with a spider-like nævus appearance round them or not.

Dr. MacLeod said he had seen congenital spider nævi in association with angiomata. The latter, he considered, started as angioma from the beginning, without the stellate arrangement.

The President agreed that this was a nævus, but he did not regard it as a purely vascular nævus, but as a congenital xanthoma. If the red were pressed out the lesion would be found to be yellow. Nævo-xanthoma would be his diagnosis.

Dr. Wilfrid Fox showed a case of *morphœa guttata*. This woman presented an appearance so much like that in the case shown by Dr. Sequeira at the last meeting* that he wished members to see her. They would note the atrophic necklet arrangement. She had given some suggestions as to the ætiology of her condition. She was badly sunburnt, and the lesions appeared over the sites of the blisters which arose during the sunburning. Some of them seemed

* *Brit. Journ. Derm. and Syph.*, 1922, xxxiv, p. 64.

to be typical morphœa, especially those on the chest, which probably was not a sunburn area. Some looked like lupus erythematosus, which often followed sunburn or other external irritant.

Dr. G. W. Sequeira showed a case of *nævo-xantho-endothelioma (?) with epidermolysis bullosa*. The patient, a female, aged 17 months, presented xanthoma-like lesions on hands and feet. They were first observed soon after birth, and appeared in clusters on the nose and other parts. The mother stated that many of the clusters have disappeared. At the present time the lesions were confined to the hands and feet. From birth also the infant had suffered from epidermolysis bullosa; any damage to the skin from traumatism, such as blows, friction or pressure, was followed by characteristic bullæ. The mother of the child had also suffered from a combination of the two maladies, and still showed some nodules, and blisters formed after damage to her skin, although not so readily as they did when she was younger. The grandmother of the child stated she felt sure she had the same little yellowish nodules when a child, and used to be subject to blisters when she damaged her skin. She remembered, too, that her father suffered in the same way after injuries, as did also her sister and her sister's two sons. The nails of one or two of the fingers showed degenerative changes, probably the result of blebs having formed beneath and around the nail leading to changes in the nail-plate, and thus interfering with its growth.

Dr. Pringle said he thought that the lesions called "xanthoma" were merely desiccated bullæ from the epidermolysis bullosa, with epidermal cysts.

The President agreed that the epidermal cysts were characteristic of epidermolysis bullosa.

Dr. G. W. Sequeira showed a case of *rodent ulcer—superficial cicatrising type*. The patient, a lady, aged 71 years, first noticed something wrong with her nose in the spring of 1915. One morning on awakening from sleep she noticed three little punctures on her left nostril, and thought she had been bitten by a mosquito. The cicatricial area of the ulcer was surrounded in part by the typical rolled edge, whilst ulceration and scabbing were to be observed in the remaining part of the circumference.

Dr. H. MacCormac showed a case of *eczema associated with asthma*. The patient, a man, aged 42 years, joined the Field Artillery in

1902. In the following year he developed an eruption on the hands, arms and slightly on the neck. This recurred from time to time until 1910, when he went into the Reserve, whereupon the skin eruption entirely ceased. In 1914 he rejoined the army and once again the skin disease appeared; he also developed asthma. The skin disease therefore corresponded with the period at which he came into contact with horses. Dr. Izod Bennett kindly tested his cuti-reactions to foreign proteins, and obtained a positive response to dog and horse. In this case it might appear that both the asthma and the dermatitis were due to sensitisation to horse protein, but five injections of horse serum had been given, beginning with $\frac{1}{5}$ minim, and working up to 5 minims, without improving either condition. It might, therefore, possibly be concluded that the two conditions were accidentally associated, and that the dermatitis was not a consequence of "horse sensitiveness."

Dr. F. Parkes Weber said he saw no connection in this case between the treatment and the suggested cause of the asthma and eczema. Sensitiveness to horse serum was different from sensitiveness to horsehair and the cutaneous secretions of horses. Only occasionally was a human being abnormally sensitive to both.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

A CONTRIBUTION TO THE STUDY OF THE SO-CALLED IMPETIGO HERPETIFORMIS. J. Capelli. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. iii, p. 187.)

Capelli describes a case in a multipara in the second half of her tenth pregnancy. She developed a cutaneous syndrome in addition to general symptoms of intermittent rigors, albuminuria, casts in urine, signs of hyperthyroidism, and hypersuprarenal action and slight convulsive attacks. The first attack corresponded to the classical type of Impetigo herpetiformis of Hebra, and the second assumed more a diffuse pustulation with axillary adenitis. Both the cutaneous lesions and general symptoms disappeared rapidly on the premature birth of the child, which died shortly afterwards. Capelli thinks that the eruption, etc., were undoubtedly due to the pregnancy, and were the expression of a toxic-infective state, of which the pregnancy was the determining factor. From an examination of this case and others reported in the literature, he does not think that this disease, either morphologically or ætiologically, should come under the denomination of an impetigo. R. C. L.

EXPERIMENTAL WORK ON BLOOD NITROGEN IN PSORIASIS. Robert C. Jamieson. (*Arch. of Derm. and Syph.*, 1921, iv, p. 622.)

In this contribution the author describes an investigation of forty-five cases of psoriasis for the term of one year, consisting of periodic examinations of the blood to determine whether the nitrogenous constituents varied according to the severity of the disease or were influenced by the seasons. During this period the patients were subjected to neither internal nor external medication. The results of those investigations show that the increase or decrease of the lesions did not correspond with an increase or decrease of either total non-coagulable nitrogen or uric acid. In a few isolated instances there was an apparent increase of blood uric acid coincident with increase of lesions, but there was nothing to show that either was affected by the other. J. M. H. M.

THE TREATMENT OF PSORIASIS. Richard L. Sutton. (*Arch. of Derm. and Syph.*, 1921, iv, p. 633.)

The writer recommends the following treatment for psoriasis: An autogenous mixed colon vaccine is prepared, and this foreign protein is injected every two to five days in suitable doses. At the same time a 20 per cent. chrysarobin ointment is applied to the patches twice daily by means of a stiff tooth-brush, the patients being kept in bed and their eyes bandaged at night. Lesions on the scalp and face are treated with a 5 per cent. ammoniated mercury ointment. Following the discontinuance of the chrysarobin, arsenic in moderate doses is given to prevent relapses. By this treatment the average period of confinement in bed is seven days. J. M. H. M.

OBSERVATIONS ON A NEW METHOD OF RÖNTGEN-RAY THERAPY IN PSORIASIS. O. H. Foerster and H. R. Foerster (*Arch. of Derm. and Syph.*, 1921, iv, p. 639.)

Walter Brock, of Kiel, in 1920 stated that irradiation of the thymus, with careful attention to its surface topography, leads to the disappearance of the lesions of psoriasis in from one-half to two and a half months, without reference to the season of the year, with half epilation doses in adults with 2 or 4 mm. aluminium filter, at a focus skin distance of 20 cm., and in children over four years of age with one-quarter to one-third epilation doses, or slightly larger, with 2 or 3 mm. aluminium filter. Larger doses are followed by aggravation of the disease picture, from which it is concluded that the action is one of stimulation, for paralysis of the gland results in extension of the developing disorder.

The writers of this paper describe their experience of this treatment in twenty-three patients, extending over a period of five months. All these patients were ambulatory, and had no other treatment, either internal or external. In most of the cases which responded to the treatment it was observed that the lesions became elevated and congested within a few days of the exposure. The writers regard the method of treatment as one which produces favourable, though apparently temporary, results in a sufficient percentage of cases to justify its consideration as a practical procedure in the treatment of psoriasis.

The area for exposure recommended by Brock is bounded above by the lower border of the larynx and the upper border of the clavicle, at the side by the parasternal lines, and below by the fifth intercostal space. J. M. H. M.

THE NATURE OF PSORIASIS. F. Samberger. (*Ceská Dermatologie*, 1921, ii, No. 6.)

The author declares that psoriasis is a suppurative inflammation of the skin, caused by some irritant damaging the epidermal cells in an individual with a parakeratotic diathesis. This diathesis is the main reason why typical psoriatic lesions appear instead of trivial suppurative lesions. Usually staphylococci and streptococci furnish the exciting cause, only occasionally other germs or chemical irritants.

Pathologically the changes appear as epidermoidal miliary abscesses under a parakeratotic horny layer. Exfoliation of cells leads to the opening of abscesses and the discharge of the contents. The less the vitality of cells the faster they separate. The scales are then thin and silvery. With increase in the vitality of cells they become more adherent; more pus can accumulate between the layers. The scales become thicker, yellowish, and look like pus-crusts.

Realising that the thymus had something to do with the vitality of the skin the author was led to experiment with thymus hormone, and arrived to the conclusion that parakeratotic dysfunction of the skin yields to thymus therapy. Brock arrived to similar conclusions. He considers thymus hormone as the causal therapy, however, while Samberger takes it only for symptomatic. According to him, thymus insufficiency is only one of the causes of parakeratotic dysfunction. Anything that will increase the vitality of epidermal cells will clear up psoriasis—arsenic, X-rays in stimulating doses, etc.

Spinka (St. Louis).

CAN SPIROCHÆTES CAUSE PSORIASIS? P. Savnik. (*Ceská Dermatologie*, 1921, ii, No. 7.)

The author reviews the literature on the subject, and reports the results of his personal investigations. He does not consider the cocci and spirilla found in psoriatic scales as ætiologically significant; such can be found in other skin-diseases, and even in a normal skin. He has not found the spirochæte "sporogona psoriasis" of other authors in any of his specimens. On several occasions, however, he did notice the presence of small, round, actively motile, shiny bodies, forming chains of 2, 3, 5, 8 individuals and joined by a fine dull filament.

Spinka (St. Louis).

A CONTRIBUTION TO THE STUDY OF PARAPSORIASIS. L. Martinotti. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. iii, p. 205.)

After giving details of six cases Martinotti discusses fully the diseases known as parapsoriasis, pityriasis lichenoides chronica, parakeratosis variegata, and their relations to each other. The article does not lend itself to condensation. The author refers to all the cases hitherto published, and gives a full bibliography, with fourteen photographs, of his cases, and four drawings of sections from the skin.

R. C. L.

FURTHER CONTRIBUTION TO THE STUDY OF ÆTIOLOGY OF EXFOLIATIVE DERMATITIS. K. Hubschmann. (*Ceská Dermatologie*, 1921, ii, Nos. 7–8.)

The author reports two cases of secondary exfoliative dermatitis that showed evidence of hypothyroidism which probably was the main cause of skin-disturbances. The first case showed originally a vesicular-urticarial affection, the second

an eczema. Under too vigorous a treatment the underlying vasoplegia, in all probability, became aggravated, and led to production of universal exfoliative dermatitis. As thyreoidin helps to sustain the tonus of skin-capillaries the patients were put on a thyroid therapy. Both improved remarkably. The third case presented a typical clinical picture of exfoliative dermatitis with the unusual history of short duration and an intense itching and burning—worse at night. A trichophytic basis being suspected, the patient was put on tar treatment (℞ Picis lithanthracis grm. 5·0, benzoli grm. 10·0, acetone grm. 35·0). He left the hospital completely cured in five weeks. SPINKA (St. Louis).

POIKILODERMA ATROPHICANS VASCULARE. JOHN E. LANE. (*Arch. of Derm. and Syph.*, 1921, iv, p. 563.)

JACOBI in 1906 described and named this affection. He believed it to be a disease *sui generis*. It is a peculiar condition of the skin, characterised by redness, caused by dilation of the superficial vessels, reticulated pigmentation, and more or less diffuse atrophy. It begins usually in late youth or in early adult life, is of slow evolution and approximately symmetrical distribution. It is associated with transitory redness and œdema of the eyelids, and with telangiectases and leucoplakia-like lesions of the mucous membrane of the mouth. Its histology shows two stages—an inflammatory and an atrophic. The inflammatory stage is manifested by a peri-vascular round-cell infiltration, dilatation of the superficial vessels and alternate increase and diminution or absence of pigment; the atrophic stage by flattening of the papillæ, degeneration and disappearance of the elastic tissue and atrophy of the collagen bundles.

In this contribution the writer describes a case of this complex dermatosis and gives abstracts of previously reported cases.

Fourteen cases have been described in all: nine were male and five female. The youngest was aged 6 years, two were 41, and the rest were between 20 and 33 years of age.

The article is illustrated with photographs which recall parakeratosis variegata.

The exact nature of the condition is still under discussion. Jacobi regarded it as a new disease, others believe it to be an anomalous form of scleroderma, others place it under lupus erythematosus, while a third view is that it belongs to the group of the idiopathic atrophies. J. M. H. M.

TREATMENT.

COOLING POWDERS AND SALVES. O. RYBAK. (*Česká Dermatologie*, 1921, ii, pp. 201 and 234.)

THE author attempts to ascertain by what mechanism the cooling effect of inert powders and cooling salves is produced. His experiments show that a layer of powder applied to the skin increases the actual evaporating surface by its own volume only two and a half times at the best, and therefore is not sufficient to cause a noticeable effect. Microscopic observations of a perspiring skin show that the droplets of sweat occupy the openings of sweat-ducts and that they spread along the papillary ridges, where the evaporation takes place. The fields between the skin markings are normally dry. A layer of powder applied to the skin attracts the sweat and spreads it over the entire skin surface, over areas where evaporation usually does not take place.

The effectiveness of a cooling powder depends upon the amount of moisture on the skin: the moister the skin, the greater is the cooling effect obtained. The composition of the powder also plays a part. The evaporation from a saturated zinc oxide layer is more rapid than from a saturated talcum or starch surface. Any indifferent powder can act as a cooling agent if applied in a thin layer. Put on heavily a cooling powder becomes a drying application.

The effect of cooling salves (classic formulæ – lanoline 2 parts, vaseline 1 part, water 1 part) is produced by the evaporation of water they contain, and is, therefore, effected even upon a dry skin, provided the surface be uncovered. An addition of some porous, water-conducting substance, as starch, will increase the cooling effect of the ointment considerably. Such substances must be added in sufficient amounts (starch, 16 per cent. minimum). Talc (non-porous) does not increase the rate of evaporation. The addition of talc to cooling salves is useless. (Zinc oxide, also non-porous, is the usual ingredient of cooling salves for its chemico-therapeutic effect on inflammations and as preservative.) Terra silicea 2–3 per cent., which is very porous and does not decompose, constitutes an ideal ingredient of cooling salves. SPINKA (St. Louis).

THE USE OF PEPSIN IN DERMATOLOGY. F. P. SPINKA. (*Ceská Dermatologie*, 1921, ii, No. 4.)

THE use of a digestive mixture of pepsin and hydrochloric acid originated with Unna. His therapy is based on the fact that only the superficial layer of horny cells resists digestion, while the body of the cells consists of poorly digestible keratin B and easily digestible albumoses. In the cutis, the plasma and the connective tissues undergo digestion rapidly. Unna used his digestive mixture most successfully in treatment of keloids as they consist mostly of pathologically changed connective tissue. He also had good results in treatment of hypertrophic scars from burns, lupus ulcers, acne indurata, lymphatic indurations and adenitis. The mixture controlled well exuberant granulations, and cleaned and deodorised necrotic tissues. It makes a painless keratolytic for keratoma.

Unna's original formula is as follows:

Pepsin		10·0
Ac. hydrochl. } Ac. carbol }	āā	1·0
Aq. dest. ad		200·0

Later, for safety's sake, Unna reduced the amount of pepsin to 1 per cent. The digestive mixture is applied in form of wet compresses, strictly limited to treated area, and covered with impervious material. It is advisable to protect the surrounding skin by some bland ointment.

In view of the fact that during the process of digestion the cells become porous, and thus an osmosis takes place, it is possible to make use of this method to introduce into the skin, by means of osmosis, the substances to which the horny layer is otherwise impermeable, such as adrenalin, morphine, cocaine, arsenic, etc.

Wassermann modifies Unna's technique. He advises the admixture of 10 per cent. pyrogallic collodion. Pepsin aids pyrogallol to penetrate while collodion assures a perfectly localised application.

At the clinic in Pragne the original Unna's technique is used with good and indifferent results. It was found most effective in the treatment of keloids and

hypertrophic scars. Keloids flatten out, scars become more pliable, contractures stretch and give considerably. It is a long and drawn-out procedure in many cases, requiring a good deal of patience, but as it is often the only possible treatment at hand it is worth trying. Care must be taken to stop short of irritation. The success depends to a large extent on careful application.

SPINKA (St. Louis).

SYPHILIS AND ULCUS MOLLE.

MULTIPLE CHANCROIDS IN CASE OF SCABIES. J. POHL. (*Česká Dermatologie*, 1921, ii, No. 3.)

THE patient was treated in the hospital for scabies. The second or third day after taking a bath in a tub previously used by the patients from the venereal ward he noticed a small ulcer on the penis; soon two more in the same locality, and several others on the thigh. They developed into chancroids. The secretions and sections from the ulcers contained Ducrey-Unna's streptobacilli. The case illustrates the possibility of extra-genital localisation of chancroids in the course of other generalised dermatoses, especially scabies, with its many lesions of the epidermis. It is a well-known fact that a scabetic skin is very susceptible to pyogenic infections and extensive impetiginous processes. The macroscopical appearance in the given case might lead to difficulty in diagnosis. The chancroids do not respond to treatment as rapidly as a more superficial impetigo.

The patient's story (infected in bath-tub) might have been truthful. Streptobacillus, just like the gonococcus and *Spirochæta pallida*, can keep its vitality for a certain length of time in a moist medium. The case teaches the importance of the observation of strict hygienic precautions in venereal wards.

SPINKA (St. Louis).

QUARTERLY SURVEY OF DERMATOLOGICAL LITERATURE.

INFLAMMATIONS, ETC.

Acnitis Barthelemy, Case of. W. VOIGT. (*Derm. Wochenschr.*, 1921, lxxii, No. 26*a*, p. 529.)

Dermatitis Dysmenorrhoica Symmetrica, Case of. L. BAER. (*Derm. Wochenschr.*, 1921, lxxii, No. 26*a*, p. 535.)

Eczema Papulatum and Verrucosum. P. G. UNNA. (*Derm. Wochenschr.*, 1921, lxxii, No. 18, p. 353.)

Eczema, The Callous and Pruriginous. P. G. UNNA. (*Derm. Wochenschr.*, 1921, lxxii, No. 19, p. 393.)

Erythema Nodosum and Tuberculosis. H. J. VETLESEN. (*Norsk. Mag. f. Læger*, October, 1921, S. 689.)

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Herpes and Varicella. DOURMOUTET. (*Arch. de Méd. des Enf.*, February, 1922, xxv, No. 2, p. 97.)

Herpes Zoster, A Primary Ascending Neuritis. W. Montgomery. (*Arch. of Derm. and Syph.*, December, 1921, iv, No. 6, p. 812.)

Herpes Zoster, Case of. W. K. D. Breton. (*Journ. Roy. Nav. Med. Service*, January, 1922, viii, No. 1, p. 58.)

Leprosy, Treatment by Fatty Acids of Chaulmoogra Oil. H. T. Hollman. (*Arch. of Derm. and Syph.*, January, 1922, v, No. 1, p. 94.)

Lichen. P. G. Unna. (*Derm. Wochenschr.*, 1921, lxxii, No. 22, p. 449.)

Lichen Planus et Acuminatus Atrophicans. S. Feldman. (*Arch. of Derm. and Syph.*, January, 1922, v, No. 1, p. 102.)

Lichen Simplex Circumscriptus. P. Noel. (*Ann. de Derm. et de Syph.*, 1921, No. 12, p. 514.)

Morbilli Bullosi. E. Morton. (*Brit. Journ. of Child. Dis.*, October–December, 1921, xviii, Nos. 214–216, p. 183.)

Oriental Boil in Sardinia, Case of. C. Lombardo. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. i, p. 5.)

Oriental Sore, Histo-pathology of. J. W. Cornwall. (*Ind. Journ. Med. Research*, January, 1922, ix, No. 3, p. 549.)

Oriental Sore Problems. W. S. Patton. (*Ind. Journ. Med. Research*, January, 1922, ix, No. 3, p. 497.)

Parapsoriasis. E. D. Chipman. (*Arch. of Derm. and Syph.*, December, 1921, iv, No. 6, p. 807.)

Perifolliculitis Capitis, Case of. F. Wise and H. J. Parkhurst. (*Arch. of Derm. and Syph.*, iv, No. 6 p. 750.)

Purpura Fulminans after Scarlet Fever, Fatal Case. G. McConnell and H. L. Weaver. (*Journ. Amer. Med. Assoc.*, January 21st, 1922, lxxviii, No. 3, p. 165.)

Sebaceous Glands and Hair Follicles, Acute Infections of. L. M. Hurd. (*Med. Record*, January 21st, 1922, No. 2672, p. 105.)

Sycosis in Site of Old Yperite Lesion. Grunberg. (*Ann. de Derm. et de Syph.*, 1921, No. 11, p. 460.)

Urticaria Symmetrica, Remarks on Paper by C. Kreibich. L. Török. (*Derm. Wochenschr.*, 1921, lxxii, No. 13, p. 265.)

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Scabies in Fowls, Unusual Form. A. B. Wickware. (*Journ. of Parasitology*, December, 1921, viii, No. 2, p. 90.)

NEW GROWTHS.

Bowen Type of Epithelioma. L. B. Mount. (*Arch. of Derm. and Syph.*, December, 1921, iv, No. 6, p. 769.)

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Treatment of Syphilis, Newer Methods. M. Copelli. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1921, fasc. i, p. 24.)

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REVIEW.

Lectures on the Pharmacology of the Skin.*

Under this attractive title the author reprints in a small paper-covered manual a series of twelve lectures dealing with the therapy of the skin, both by external and internal drug administration. The first lecture presents in a readable form the relations of the body to the skin, and of the skin to its environment. Some notes on the difference of reaction to stimuli—bacterial and others—in infancy, adolescence and the aged are interesting, and worthy of memorisation, and the various chemical means by which this susceptibility can be raised or lowered at will are discussed without too much appeal to theoretical considerations.

This lecture is followed by one on the influence of diet on skin diseases, instancing in this connection such metabolic disturbances as gout, acidosis and diabetes. "General Treatment by Drugs" is the title of the next chapter, and includes a discussion of the indications for the administration of arsenic, thyroid, calcium and iodides, quinine and sulphur. A paragraph on the importance of the treatment of *pain* contains some facts that are usually omitted in dermatological text-books, and have an important bearing on cutaneous therapy as a whole.

The lecture (or lectures) on colloidal therapy is complex and highly theoretical, as is to be expected.

The author reckons any stimulus which alters the colloidal state of the organism, *e. g.* injections of colloids from gum to electrargol, and simple venesection itself, as belonging to the therapeutic category under discussion. He defines and discusses them all *seriatim*, and traces their interactions with the living serum from the purely "colloidal," the "protein colloidal," "protein colloidal + specific action" points of view. Later he describes their indications in dermatology, and much that is interesting and some things that are new will be found under this heading. The various "ionic" and electrical theories are not touched upon.

The later chapters are devoted to a detailed description of the modern position of local treatment, and a very good attempt is made to tabulate and classify the various agents in order of their activity.

This book could only be appreciated by the trained dermatologist.

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* *Vorlesungen über Pharmakologie der Haut.* By Prof. Dr. Friedrich Luithlen. Berlin: Julius Springer, 1921. Price M. 18.

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A CONDITION SOMEWHAT RESEMBLING LUPUS PERNIO IN A CHILD. SEQUEL: QUESTION OF ERYTHRŒDEMA (THE "PINK DISEASE") AND ACRODYNIA ("EPIDEMIC ERYTHEMA.")

F. PARKES WEBER, M.A., M.D., F.R.C.P.

The patient, a boy, was aged 2½ years when I demonstrated the case at the Dermatological Section of the Royal Society of Medicine on April 21st, 1921. My full account, with three illustrations, was published in the *British Journal of Dermatology and Syphilis* for June, 1921, xxxiii, pp. 228–233). At that time the condition, in regard to the hands and feet, might almost have been termed "Acrodermatitis chronica mutilans." There was extreme redness of the cheeks and chin, and the skin of the cheeks was slightly scaly. There was a chronic offensive muco-purulent discharge from the nose, the bridge of which was very depressed. The skin of the hands tended usually to be swollen and red or cyanotic. The tips of some of the fingers had been lost by gangrene or ulceration. The feet, like the hands, tended to be turgid and red or livid, and in each sole there was an irregularly-shaped chronic ulcer. Fever was occasionally present, probably in connection with the septic nasal trouble. A blood-count showed nothing special, nor did the microscopical examination of a small piece removed from the edge of the ulcer on one foot. In the bones of the hands there were small areas of imperfect calcification or of decalcification, according to the results of Röntgen-ray examination. The blood-serum of the patient and his mother had previously been found to give a negative Wassermann reaction on two occasions.

For the earlier history of the case I was indebted to Dr. E. A. Cockayne, who had shown the case in January, 1920, at the Section for the Study of Disease in Children, Royal Society of Medicine. The symptoms in the left hand apparently commenced at three weeks of age. The offensive nasal discharge was noticed at the age of ten weeks. The child was breast-fed for the first seven weeks of life, and then brought up on various milk foods. A thorough trial of mercurial treatment had been made by Dr. Cockayne, but with no obvious benefit.

Subsequently attention was specially directed to the nose. Mr. G. J. Jenkins, on May 7th, 1921, kindly examined the patient under chloroform anæsthesia, and reported that the septum nasi had almost entirely disappeared, and that the turbinated bones had also largely disappeared. He could detect no bone-sequestrum. The accessory nasal sinuses were apparently not involved. Mr. Jenkins thought that the nasal disease was probably syphilitic. However, some cerebro-spinal fluid (obtained by lumbar puncture on April 25th, 1921) gave a negative Wassermann reaction; and later on the idea of trying neosalvarsan treatment was finally abandoned, it having been found that the blood-serum gave a negative Wassermann reaction in the patient's father and mother as well as in the patient himself.

A diphtheroid bacillus was cultivated (Lister Institute, through the kindness of Dr. J. C. G. Ledingham) from the nasal discharge, and likewise from the surface of the ulcer on one of the feet, but no true diphtheria bacilli were found. Two guinea-pigs, inoculated with the diphtheroid bacillus grown from the patient's nose, remained perfectly well up to eight days after inoculation.

Pirquet's cuti-reaction for tuberculosis was tried, with a negative result. At the end of July, 1921, temporary slight hæmaturia was observed.

Small doses of aspirin seemed to give some relief when the patient was restless or crying, from pain or cutaneous irritation. A white precipitate ointment (5 per cent.) was used for the hands and feet, apparently with some benefit. Painting the nasal passages once daily with perchloride of mercury solution (1 in 1000) was likewise tried.

On October 24th, 1921, on leaving the hospital, he weighed only

1 st. 5 lbs. 12 oz.—nearly the same as on March 14th, 1921. There was still a chronic ulcer on the sole of the right foot, but that on the left foot had healed up. The condition of the nose remained about the same. The fingers presented a somewhat more mutilated appearance than on admission.

Soon afterwards, owing to family difficulties, the child had to be sent to an infirmary hospital, where he died on January 11th, 1922. Unfortunately no post-mortem examination was made.

Diagnosis.

The diagnosis either of Lupus erythematosus or of Lupus pernio could not be pressed, especially as the patient was so young. Leprosy, beri-beri and pellagra were out of the question. There was no evidence of chronic arsenical poisoning. On the contrary, the patient's general condition seemed slightly to improve whilst under small doses of arsenic in the hospital. Cases of so-called acrocyanosis are not accompanied by the excessive itching or pain noted in this child. Though the sclerodactylia type of sclerodermia sometimes commences with attacks resembling Raynaud's syndrome in the fingers (as I have pointed out in regard to the diagnosis of certain other cases), no sclerodermatous changes developed in this case, and the chronic condition of the extremities did not resemble any variety of Raynaud's syndrome.

Erythromelalgia is a syndrome or symptom-complex, which may be due to various causes. It is characterised by pain and turgid redness or cyanosis in an extremity, nearly always a foot, especially when it is allowed to hang down or rest in a dependent position. I do not know what was the exact nature of the cases, in the description of which Weir Mitchell first coined the term, but it is perhaps best seen in cases of thrombo-angiitis obliterans,* when middle-sized arteries of the affected leg have become occluded. It is likewise occasionally seen in tertiary syphilitic subjects when the same arteries are blocked. In the present case there was, of course, no arterial obstruction of the kind, and syphilis could be absolutely excluded. The term "erythromelalgia" has likewise been applied to redness and

* F. Parkes Weber, "Thrombo-angiitis Obliterans (Non-syphilitic Arteritis Obliterans of Hebrews)," *Quart. Journ. Med.*, Oxford, 1916, ix, pp. 289–300.

pain in the extremities in certain neuritic cases—for instance, during the epidemic of arsenic poisoning amongst beer-drinkers in England, 1900–1901. In the present case there was no suspicion of any possible arsenic poisoning.

When I showed the case in April, 1921, at the Dermatological Section of the Royal Society of Medicine, Dr. J. H. Sequeira suggested that it might be an exaggerated example of the condition in very young children which had in Australia been described as *erythrœdema* by Dr. H. Swift (of Adelaide) and Dr. A. J. Wood (of Melbourne), as the "pink disease" by Dr. C. P. B. Clubbe (of Sydney), and as "raw-beef hands and feet" by Dr. W. Snowball (of Melbourne). I am now convinced that this was the correct diagnosis, whatever the true ætiology of the cases in question may be. The term "erythrœdema" is admitted to be rather unfortunate, because although the hands and feet appear swollen there is no true œdema. Indeed, in an annotation in the *Lancet* (London, 1918, i, p. 849), this question of œdema led to the confusion of erythrœdema with cases of "general œdema following gastro-enteritis in children." Nevertheless the name "erythrœdema" should be retained until more information as to the nature and ætiology of the condition in question is forthcoming. (It should be remembered that doctors retain the name "myxœdema" for a disease in which there is generally no true œdema.)

I have obtained information from the article on "Erythrœdema" by A. J. Wood in the *Medical Journal of Australia* for February 19th, 1921 (i, p. 145), and from the leading article on the subject in the same number of the journal (p. 155).* The term "erythrœdema" was first employed in February, 1914, by Dr. H. Swift, in a paper read before the Section of Diseases in Children at the Tenth Australasian Medical Congress, for a syndrome in very young children, characterised by extreme fretfulness, neuro-muscular disturbance, sleeplessness, and a red rash involving the hands and feet and at times other parts of the body. This syndrome had already been observed by Dr. Swift and some other Australian physicians, but had not previously been described. Dr. Snowball had spoken of the children "with raw-beef hands and feet," and Dr. Clubbe and others had usually referred to it as *the pink disease*. Dr. A. J. Wood

* See also *Lancet*, London, 1918, i, pp. 611, 684, 849; and 1921, i, p. 871.

collected notes of 40 cases and Dr. F. H. Cole contributed records of 51 cases. According to Wood, "the child is carried into the surgery with the head bent down generally into its mother's chest, or frowning with half-closed eyes, as though it dreaded the light, and refusing to look up. . . . Some patients do not seem able to rest, scratching at their feet or pulling at their hair (trichotillomania), or ears, frequently making them bleed. . . . In some cases the red, swollen appearance of the hands is an early symptom, and, if present, is absolutely pathognomonic." The children are worn out by want of sleep and the intolerable irritation of the skin of the body, hands and feet. They sometimes become very vicious, scratching and biting at their mothers' faces. After a week or two the skin may begin to act freely and a profuse, extremely irritable miliarial sweat-rash appears over the front and back of the trunk. It is this pink sweat-rash which led to the affection having been termed "the pink disease" by Clubbe and others. Somewhat later, from two weeks to five months after the onset of the fretfulness, the redness of the hands and feet appears. Wasting is an early symptom and the muscles become soft and weak, "the neck muscles do not appear able to support the head properly, and in older children the power of sitting up or walking is lost early in the disease." Stomatitis is frequently present, and the teeth in severe cases may become loose and even fall out. Photophobia occurs in many cases; it may pass off and return several times. Marked ulceration of the skin may occur from scratching or rubbing. In one case contraction occurred by the healing of a deep ulcer on the palmar surface of two fingers. "The loss of finger-nails and toe-nails is by no means rare; one patient shed his toe-nails five or six times in the course of his 13 months' illness." Constipation is more frequent than diarrhœa.

Of the 88 cases collected by Dr. A. J. Wood and Dr. F. H. Cole 52 were males and 36 were females. The ages of the patients varied from 4 months to 3½ years, but in 57 cases the patients were between the ages of 9 and 18 months. Death occurred in 5 out of 91 cases, in one case from sudden heart failure, in the other four cases from broncho-pneumonia. Post-mortem findings did not throw much light on the nature and causation of the erythrœdema.

There can be no doubt that the cases in young children in America, described during 1920 and 1921 as *acrodynia* or pellagra, or as

resembling acrodynia or pellagra, by W. Weston,* A. H. Byfield,† H. C. Cartin,‡ P. W. Emerson,§ J. Zahorsky,‖ and probably by others, are of the same nature as the Australian "erythrœdema" cases. Dr. Weston's paper was based on eight cases in the practice of Dr. W. F. Patrick. Dr. Byfield's paper was based on seventeen cases. All of his patients were under four years of age, five of them being under one year. Some of the cases were mild, but others ended in death. In one fatal case, complicated with tuberculosis, a post-mortem examination showed "involvement of an occasional anterior horn-cell of the spinal cord, gliosis about the central canal, and œdema of the sensory roots." These findings, however, can hardly be accepted without confirmation as representative of the disease. Byfield points out that the disease is differentiated from pellagra by lack of sharp demarcation in the skin lesions, by the uniformly early age of the patients, etc. He agrees that his cases somewhat resemble the descriptions of acrodynia. He might have added that the uniformly early age of his patients was likewise against the diagnosis of acrodynia. He suggests that the disease with which he is dealing is a post-influenzal radiculitis or sensory polyneuritis; but surely the connection of these cases with influenza cannot as yet be established.¶

In Byfield's cases "a symmetrical involvement of the fingers and toes, recurring at intervals of a fortnight or so, or even tending to be more or less constant, was one of the most striking characteristics of the trouble. Confluent erythema was the rule on the distal phalanges. Desquamation, most marked at the tips of the fingers and toes, growing less toward the region of the wrists and ankles, was often present. The feet were only slightly less involved than the hands. . . . *In two of the cases the cheeks and the tip of the nose were involved.*" Byfield remarks that involvement of the genito-urinary tract was

* W. Weston, "Acrodynia," *Arch. of Pediatrics*, New York, 1920, xxxvii, pp. 513–522.

† A. H. Byfield, "A Polyneuritic Syndrome resembling Pellagra-Acrodynia seen in Very Young Children." *Amer. Journ. of Diseases of Children*, 1920, xx, pp. 347–365.

‡ H. C. Cartin, *Pennsylvania Med. Journ.*, 1921, xxiv, p. 287.

§ P. W. Emerson, *Journ. Amer. Med. Assoc.*, 1921, lxxvii, p. 285.

‖ J. Zahorsky, "Pellagra or Acrodynia in Children," *Journ. Missouri Med. Assoc.*, 1921, xviii, p. 153.

¶ In regard to the suggested relation of "acrodynia" to epidemics of influenza, compare F. G. Crookshank, *Medical Press*, London, 1920, vol. clxi, pp. 495–496.

manifested by the frequent presence of pyelitis, though this was never extreme and usually yielded to treatment. Acetonuria, probably connected with the under-nutrition and anorexia, was not rare. *The Wassermann reaction was always negative.*

Byfield's case 8 is the one that most nearly resembled my case. The patient was a boy, aged 10 months, who was admitted to hospital after four months' illness. The nose and cheeks showed large red patches—much as in my case—according to the coloured plate illustrating Byfield's description. The hands and feet were red and cold. The tendon reflexes were present. As in my case, there was a decided nasal complication present. Diphtheroid bacilli were detected, but no circulating diphtheria toxin was found in the blood. After six weeks of observation and dietary treatment (no gavage) the tonsils and adenoids were removed, and the nasal sinuses, which were found to contain pus, were drained. A rapid cure was not achieved, but the improvement following the operation, as far as the paræsthesia and skin eruption were concerned, seemed more distinct than that corresponding to the dietetic treatment. Finally the child recovered completely.

My case was a much more severe one than Byfield's. The disease apparently commenced in the first month of life and lasted till the patient's death at $3\frac{1}{4}$ years of age. The cheeks, chin, nose and ears (pinnæ) were affected as well as the hands and feet. The soles of the feet were red, slightly desquamating, and deeply ulcerated. The hands were mutilated by the loss not only of nails, but of portions of fingers also.

Incidentally, I should mention here that I am indebted to my friends Dr. Hugh Thursfield and Dr. D. H. Paterson for demonstrating to me (March 11th, 1922) a little girl, aged 1 year, in the Great Ormond Street Children's Hospital (London), with symptoms almost exactly corresponding to (and possibly more striking than) those in Dr. Byfield's case 8.

I cannot conclude without a short reference to *acrodynia*, a term which has been much used in the recent description of erythrœdema cases by American authors. Acrodynia (which means "pain in the extremities") was the name first given by Chardon (1830)* to the

* Chardon fils, "De l'acrodynie, ou épidémie qui a régné a Paris et dans les environs depuis l'année 1828." *Revue Médicale franç. et étrang.*, Paris, 1830, iii pp. 51, 374.

remarkable epidemic disease which, commencing during the winter of 1827–1828 at Paris, had by the end of summer, 1828, attacked about 40,000 persons.* During the following autumn and winter the cases became sporadic, but in the spring of 1829 the disease became again epidemic in Paris and its environs. It died out in the winter of that year. Alibert† called it *epidemic erythema*, regarding it mainly from the dermatological point of view. It is described as a dermatitis affecting particularly the palms of the hands and the soles of the feet, accompanied by formication, anæsthesia or hyperæsthesia, with stinging and smarting pains; the pain might extend over the whole body. Gastro-intestinal disorders were often present. The skin was at first bright red, then deeper tinted and brown, with subsequent pigmentation and desquamation, much cuticle occasionally being shed in one piece. Sometimes small papules, pustules and blisters formed. In some cases paresis or even paralysis of the lower extremities occurred. The disease tended to run a chronic course of several weeks, and in a few instances the same person was attacked more than once.

A little while ago, on looking up the subject of acrodynia, the idea occurred to me that it might be an epidemic of arsenical poisoning, similar to the epidemic of arsenical poisoning which occurred in England during the years 1900 and 1901 amongst beer-drinkers.‡ The suggestion that it was a form of chronic ergotism has been generally rejected. Recently Prof. Karl Petren (Sweden) has written an article in the *Revue Neurologique*,§ pointing out the great proba-

* For general accounts of acrodynia *cf. Dictionnaire Encyclop. des Sciences Médicales*, Paris, 1869, first series, i, pp. 654–664; August Hirsch's *Handbook of Geographical and Historical Pathology*, English translation. New Sydenham Society, 1885, ii, pp. 248–252; Radcliffe Crocker's *Diseases of the Skin*, London, third edition, 1903, i, p. 117. There are also accounts in Quain's "Dictionary," Fagge's "Medicine," etc. A most excellent contemporary account is that by Genest, "Recherches sur l'affection épidémique qui règne maintenant à Paris," *Arch. Gén. de méd.*, Paris, 1828, xviii, pp. 232–251, and 1829, xix, pp. 63 and 357.

† Alibert, *Monographie des dermatoses*, second edition, Paris, 1835, pp. 11–13.

‡ *Cf.* E. S. Reynolds, "Epidemic Outbreak of Arsenical Poisoning occurring in Beer-Drinkers," *Medico-Chirurgical Transactions*, London, 1901, lxxxiv, pp. 409–452; H. G. Brooke and Leslie Roberts, "The Action of Arsenic on the Skin as observed in the Recent Epidemic of Arsenical Beer Poisoning," *Brit. Journ. Derm.*, Lond., 1901, xiii, p. 121; F. H. Barendt, "The Skin Lesions due to the Presence of Arsenic in Beer," *ibid.*, p. 148.

§ Karl Petren, "L'acrodynie: une intoxication arsenicale," *Revue Neurologique*, Paris, 1921, Année xxviii, pp. 812–814.

bility of the famous acrodynia epidemic having been due to arsenical poisoning. In recent years arsenical poisoning is known to have actually occurred in French wine districts in connection with the use of arsenical preparations for destroying parasites by which vines often become infested.* In the English epidemic among beer-drinkers it was subsequently proved that the beers thus contaminated had been brewed from glucose and invert sugar manufactured by a firm that, in its preparation, had used sulphuric acid largely contaminated with arsenic.† It is rather surprising that the occurrence of herpes zoster seems not to have been recorded in the great Paris epidemic of acrodynia, for, it should be remembered, in the English epidemic among beer-drinkers it was the occasional occurrence of herpes zoster in patients that first led E. S. Reynolds to suspect that arsenic was the cause of the symptoms.

Dr. W. Weston,‡ in connection with acrodynia, refers to a report by Dr. Henry Strachn, in 1888, on 510 cases of supposed "malarial multiple neuritis" observed in the Public Hospital of Kingston in Jamaica. I wonder whether the symptoms may have been really due to chronic arsenical poisoning in that epidemic.

Addendum.

In regard to my case I should add that, though the patient could never walk and could never use his hands properly whilst under my observation, there was no sign of definite motor paralysis. The ulceration on his feet and the ulcerated and mutilated condition of his hands would anyhow have greatly hindered the use of his upper and lower extremities.

In regard to pellagra it should also be mentioned that in genuine cases the flexor surfaces of the hands and feet are not so much affected as the extensor surfaces.

Since writing this paper my attention has been directed to the case of a boy, aged 1½ years, described by Dr. M. C. Field, in America, under the heading "Erythrœdema" (*Archives of Pediatrics*, New York, 1922, vol. xxxix, p. 116). Field regards the case as similar to those described in Australia by Swift, Wood and others, and in America by Weston, Byfield and others.

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* *Cf.* Paul Cazeneuve, "Sur plusieurs cas d'intoxication mortelle par l'arsenic dans les milieux viticoles," *Bull. Acad. de Méd.*, Paris, 1921, third series, lxxxv, pp. 660–671.

† J. Dixon Mann, *Forensic Medicine and Toxicology*, fifth edition, London, 1914, p. 488.

‡ W. Weston, *loc. cit.*, p. 519.

BRIEF NOTES ON *EPIDERMOPHYTON RUBRUM*, CASTELLANI, 1909 (*TRICHOPHYTON PURPUREUM*, BANG, 1910) AND *TRICHOPHYTON VIOLACEUM* VAR. *DECALVANS*, CASTELLANI, 1913, WITH REMARKS ON "ECZEMA MARGINATUM" ("TINEA CRURIS SEU INGUINALIS") IN JAPAN AND "LA LI TOU" OR "PARASITIC FOLLICULITIS" ("TINEA DECALVANS" *PRO PARTE*) OF SOUTHERN CHINA.

Prof. M. OTA, M.D.,
Formerly Director of the Dermatological Clinic, Medical School, Manchuria.

I.

In Japan and Manchuria the usual type of "eczema marginatum" (tinea cruris, tinea inguinalis) caused by *Epidermophyton cruris*, Castellani (*Ep. inguinalis*, Sabouraud) is much less frequently met with than the type caused by *Epidermophyton rubrum*, Castellani. *Epidermophyton rubrum* is a fungus very common in Japan and Manchuria, but it has often been confused by some Japanese dermatologists with *Trichophyton acuminatum* and even *Epidermophyton cruris*. It is the commonest organism found not only in eczema marginatum, but also in so-called dysidrotic eczema, interdigital dermatitis and onychomycosis. Dr. R. S. Hodges, University of Alabama, suggested that my three cultures of fungus brought from Japan were the same as his *Trichophyton "A,"* viz. *Epidermophyton rubrum*. I have further studied my strains in the laboratory of Dr. Weidman, University of Pennsylvania, and I have come to the conclusion that my strains were certainly *Epidermophyton rubrum*, Castellani.

The cultures were isolated from cases of eczema marginatum, onychomycosis and dermatitis interdigitalis. The appearance of the cultures was identical with the descriptions given by Castellani, Bang and Hodges. Mycologically this fungus is characterised by the conidiophore hyphæ bearing lateral pyriform spores, which are grouped in bunches, by the presence of multi-septated "fuseaux" (spindle-bodies), and at times rosary-like mycelial filaments composed

of short thick elements. Attempts to infect guinea-pigs with this fungus were not successful; but I could observe that the hair-follicles were attacked by the spores and mycelia, though abortively; neither mycelia nor spores, however, could be seen in the hair itself. A more detailed description of the fungus will be found in other publications of mine in Japanese and American medical journals.

II.

The traveller in Southern China will be surprised to see what a very large number of natives are affected with baldness. The Chinese use the term "la li tou" to indicate baldness in general, but principally the types of parasitic origin.

In the famous Chinese medical book *Bin-yuan-hou-lun* (605–609 A.D.) three varieties of alopecia are distinguished, namely:

The white alopecia.

The red alopecia.

The demon-like alopecia (perhaps alopecia areata).

In modern medical works very little can be found on the parasitic alopecias of the Tropics and the Far East, with the exception of Castellani and Chalmers' *Manual of Tropical Medicine* and Jeffrey and Maxwell's *Diseases of China*. Castellani, some years ago, in various publications, put on record several types of baldness met with in the

tropics, and described a peculiar type of parasitic origin, which he called "tinea decalvans." According to his description the condition is characterised by the scalp presenting at first one or several patches covered with an enormous number of heaped-up white scales (Figs. 1 and 2). The scales and the broken hairs contain an endo-ectothrix fungus which, when cultivated, shows many characteristics of *Trichophyton violaceum*. He considered it to be a variety of this species and called it *T. violaceum* var. *decalvans*. In a later stage of the condition the scales, hairs and fungus disappear and the patches remain permanently bald.

Jeffrey and Maxwell in their book on *Diseases of China* state that the Chinese term "la li tou," so often used in Shanghai, is often used

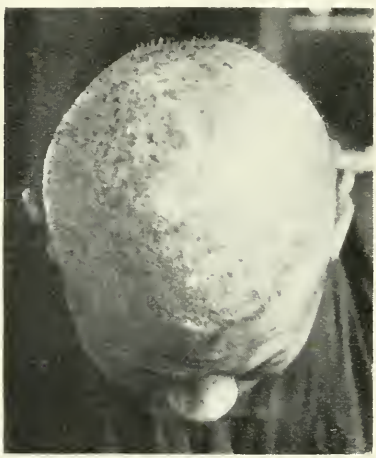

FIG. 1.—Tinea decalvans.

FIG. 2.—Tinea decalvans.

to cover two conditions. The first is favus, which is exceedingly common and destructive. The second, which is also chronic and destructive of the hair-follicles, is characterised by the presence of small silvery scales in large numbers, leaving, in the end, areas of permanent baldness, but not so diffuse and with very much less scarring. They believe that this second condition is also caused by fungus, but they have always failed to find it. I have found this so-called "la-li-tou" or "la-li" very prevalent in the provinces of Hopei, Kiangsi, Anhoe, Chakiang. It may be said in a general way that it is very common south of the Yantse River.

I have mycologically examined six cases of "la li ton"; I succeeded in growing fungi from three of them. From two I isolated *Achorion Schoenleini*. They were therefore cases of favus. From the third patient I isolated *Trichophyton violaceum* var. *decalvans*, Castellani. The original growth on glucose agar was very slow, with humid surface and of a violet colour. The subcultures of Sabouraud's agar were of a greyish colour with a violet spot. Mycologically it shows comparatively thick mycelia with short septation, sometimes with lateral conidia. Chlamidospores are also present, and rosary-like mycelial articles with double contour are seen (Fig. 3). Culturally, therefore, the fungus is practically identical with *Trichophyton violaceum*, Bodin, of temperate zones, but the lesions it gives rise to are

FIG. 3.—*Tinea decalvans* var. *decalvans*, Castellani.
Hanging drop culture.

so totally different that, at least biologically, it must be considered to be a different variety (var. *decalvans*, Castellani).

Conclusions.

(1) According to my researches, the commonest type of eczema marginatum (tinea cruris seu inguinalis) met with in Japan and Manchuria is caused by *Epidermophyton rubrum*, Castellani, 1909.

(2) Of three cases of Chinese "la li tou" in which cultivation was successful, *Achorion Schoenleini*, Lebert, was isolated by me in two and

Trichophyton violaceum var. *decalvans* in one. The term "la li tou," therefore, appears to cover in China at least two conditions—favus and Castellani's "tinea decalvans."

Literature.

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Castellani and Chalmers.—*Manual of Tropical Medicine.*

Sabouraud.—(1911) *Brit. Journ. Derm.* ("Trichophytic Eruption caused by the *Tr. rubrum* of Castellani).

Hodges.—(1921) *Archives of Dermatology and Syphilology.*

CASE OF SCLERODERMIA (SCLERODACTYLY TYPE), WITH ADRENAL INSUFFICIENCY.

J. H. SEQUEIRA, M.D., F.R.C.P., F.R.C.S.,

Physician to the Skin Department, and Lecturer on Dermatology at the London Hospital.

The case is that of a married woman, aged 24 years, who was admitted to the London Hospital on December 15th, 1921. She was shown at the Dermatological Section of the Royal Society of Medicine on January 19th, 1922. The patient is a Polish Jewess, and came to England when she was two years old. She states that

her mother is a "hunchback," otherwise the family is healthy. She has had two children, one aged 4 years, and one born (at the seventh month) on March 16th, 1921. Both the children are alive and well.

In December, 1920, when the patient was three months' pregnant, the hands and feet became swollen and tender. This condition persisted after her confinement and gradually increased in extent. For some months she had been crippled, and sores developed upon the fingers.

On admission to hospital the condition was thus described:

"The face is mask-like, smooth and immobile in expression. The eyelids can be approximated but the palpebral fissures cannot be tightly closed. Smiling is possible. The teeth are easily exposed. The skin is of a dull earthy colour. It is tough on palpation. There is no epiphora and no ectropion.

"The fingers are permanently flexed at the first and second phalangeal joints. The skin is smooth and polished in appearance. Over the extensor surface of the first joints there are septic ulcerations of the stretched skin. The right elbow can be bent from 90° to 60°. The toes can be flexed and extended; they are rather bluish in colour, and feel cold. The skin of the feet, legs and thighs is hard and rigid. There is no œdema. The shins are painful. The knees are permanently flexed at 160°, but can be easily bent to a fixed angle. The ankles are stiff and the arches of the feet are exaggerated. On the front of the chest, and to a less extent over the shoulders, the skin is inelastic, smooth and moist. The movement of the shoulders is not painful and is free, but little used on account of the pain in moving the elbows. The skin of the affected parts everywhere is tough, inelastic and unpinchable. These areas are pigmented, and there are pigment patches independent of the sclerosed skin. There is no alteration in sensation. The thyroid gland is not palpable."

Nothing abnormal could be detected in the chest. The pulse varied from 90 to 100, but did not increase in frequency with the doses of thyroid given.

The liver and spleen could not be felt below the costal margin. There was nothing abnormal on examination of the abdomen.

The temperature was at first subnormal, but under massage and rest in bed it has kept between 98° and 99° F.

Urine—quantity normal, no albumen, no sugar.

The blood was examined by Dr. Panton:

Red cells	5,660,000
Hæmoglobin	85 per cent.
Colour index	·79
Leucocytes	6,400
Differential count:	
Polynuclear neutrophils	61·5 per cent.
Polynuclear eosinophils	1·0 „
Small lymphocytes	23·5 „
Large lymphocytes	6·0 „
Large hyaline cells	7·5 „
Coarsely granular basophilic cells	0·5 „
	100·0

The Wassermann reaction of the blood (Dr. Fildes) was negative. The cerebro-spinal fluid (Dr. Panton):

Fluid clear.	
Cell count	3·5 per c.mm.
Type	Small lymphocytes.
Protein	Slight excess.
Wassermann reaction	Negative.

The bones of the affected limbs were examined radiographically. Dr. Scott reported a general thinning but no other abnormality. The sella tursica was normal.

A portion of the affected skin was excised and examined by Dr. Turnbull, who reported:

"*Macroscopic examination.*—A narrow strip of skin (5 × 0·2 × 0·2 cm.) from which a few hairs protrude. This was said to have been excised from the left elbow longitudinally so as to include the sclerosed skin and normal skin proximal thereto. The specimen was cut into three segments for microscopic examination.

"*Microscopic examination.*—There is no appreciable difference between the three segments. The skin contains hairs, arrectores pilorum, sebaceous glands and sweat-glands. The segments, unfortunately, only include a few fragments of subcutaneous tissue. The most striking abnormality is the heavy pigmentation of the basal cells of the epidermis. Similarly pigmented cells are abundant about the vessels in the outer part of the dermis. The pigment does

not give the Prussian-blue reaction of free iron, and is doubtless melanin.

"The papillæ are as well developed as in controls. The bundles of collagenous fibres of the dermis, both in the papillary and subpapillary zones, appear to be stouter than in six controls. This appearance was confirmed by actual measurements. In most places the bundles are set more closely together than in the controls. The elastic fibrils are normal in number and distribution.

"There is perivascular infiltration which varies in amount, but is never great.

"Mention has already been made of the numerous cells loaded with melanin round the vessels of the papillary and subpapillary zones. The majority of the other cells in the perivascular infiltration here and in the remainder of the dermis are mast-cells; plasma-cells are also present, and in places, especially in the central and deeper portions of the dermis, are numerous. Mast-cells are also present round the hair-follicles; about one or two hair-follicles there is an infiltration comparable to that round the vessels. There appears to be no infiltration about the sweat-ducts and glands, apart from that about the vessels which are associated with them. The vessels are in part collapsed, in part filled with red corpuscles. There is no endarteritis.

"The material examined does not suffice to justify an attempt to interpret the pathological process."

The presence of the melanin in these sections led to an examination of the blood-pressure and its behaviour to adrenalin. My House-Physician, Dr. Habgood, made the observations on February 21st, 1922:

"At 11 a.m. blood-pressure 90 mm.
Injection of 3 minims of adrenalin.
At 11.5 a.m. blood-pressure 100 mm.
At 3 p.m. ,, ,, 175 mm.
At 7 p.m. ,, ,, 160 mm.
The blood-pressure taken on subsequent days was 90 mm."

In 1916 [1] I described four cases of sclerodermia of types differing from the present case associated with affections of the thyroid gland, and gave reference to literature in which abnormalities of other internal secretory organs have been described. Pigmentation is

found in about 30 per cent. of all cases of sclerodermia (Lewin and Heller (2)). The association of Addison's disease has been recorded by Alquier and Touchard (3), and by Winfield (4). In the case here described the reaction of the blood-pressure to adrenalin is incontestable evidence of adrenal inadequacy. My patient has been in hospital continuously for three months and has had daily massage of the affected areas. She has also taken thyroid. Although there has been distinct improvement in her condition, probably due to the massage, and the pressure sores have healed under simple antiseptic dressings, she is still crippled.

The little girl, aged 12 years, I showed before the Section in 1917 (5), who had symptoms identical with the patient now under consideration, got steadily worse in spite of thyroid treatment, and died from pulmonary complications following fixation of the chest.

The prognosis is, therefore, grave.

Dr. Graham Little (6) tried the effect of grafting thyroid tissue in a case of sclerodermia. I propose, however, after consulting with my surgical colleague, Mr. A. J. Walton, to try the effect of grafting adrenal tissue, and hope to report the result at an early date.

I am indebted to Dr. O'Donovan for much assistance in working out details of this case.

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(3) Alquier and Touchard.—*Archiv de Médecine Experimentale*, xix, 1907, p. 691.

(4) Winfield.—*Journ. of Cut. Dis.*, 1904, p. 586.

(5) Sequeira, J. H.—*Brit. Journ. Derm.*, xxix, p. 287.

(6) Little, E. Graham.—*Ibid.*, xxviii, p. 124.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Meeting held on January 19th, 1922, Dr. H. G. Adamson, President of the Section, in the Chair.

Dr. J. H. Sequeira showed a case of *sclerodermia* (*sclerodactyly type*). (The case is published in full on p. 124.)

Dr. Graham Little referred to a case of extensive scleroderma which he exhibited some years ago, in which on two occasions thyroid gland was engrafted into the tibia by Kocher at Berne. After each of those treatments there was material improvement. A year after the second operation there was a further return of the trouble. She was again sent to Kocher, but he refused to do any further operations. She was brought back to London, and after varied treatment had all her teeth extracted, and after that had been done the whole condition improved almost beyond recognition. Previously she had had to be carried about and fed by others, as she could not lift her hands to her mouth. He had seen her again recently, and she had now resumed playing the piano, and she was no longer helpless. Those facts seemed to indicate a toxic cause of the condition.

Dr. H. G. Adamson (President) showed a case of *sporotrichosis* (*with cultures*). The patient was shown at the last meeting as a case for diagnosis. She had ulcers of the leg, which did not heal for six months in spite of treatment. They seemed to be neither streptococcal nor staphylococcal, and were not syphilitic, tubercular or artefact, but probably due to some unusual infection. Since she was last shown, Dr. Joekes, of St. Bartholomew's Hospital, had obtained a sporothrix from a pustule. Apparently sporotrichosis was uncommon in London; they had been on the look-out for it ten years, and very few cases had been recorded. He showed the first case there in 1911. That was remarkable, for the patient had never been out of London. He had since had three other cases of the kind, and all those others had been in either North America or South America. Since that time Dr. Norman Walker, of Edinburgh, had described two or three cases, and so had Dr. Wallace Beatty, of Dublin. Excepting the exhibitor's first patient, all the cases were of the type in which the patient got a lesion on the finger and then a chain of gummata along the arm. His first case was of the generalised type; there were gummatous lesions all over the body, and at one time she had an abscess in the anterior chamber of the eye and sporotrichial rheu-

matism. In addition to those types there was an epidermal type, in which the condition remained in the epidermis, and the present case was of that type. The lesion began as a small papule, which became a pustule. The pustule broke down and left a punched-out ulcer, and a grouping of these produced a bigger ulcer. He pointed out last time that the ulcers were cribriform. At first he thought this was a second London case, but he recently ascertained that she had been previously living in Dublin, and that it started there.

He could only show them the first plate of the culture. At first sight it appeared to be a contaminated plate, but that was not so; only one or two kinds of organism were present on it; no staphylococci nor other skin-organisms. The material was taken, with due precautions, from one of the abscesses, and put on to Sabouraud medium, and the organisms were grown at room temperature. At first there appeared what looked like bacilli, but the organisms had bulges or nodes on them, which was unusual for bacilli. The sporothrix, a black culture, did not appear for ten days, which was the usual time. Since then it had become contaminated by a pleomorphic fungous growth, such as often occurred in the case of ringworm. Dr. Joekes had not yet had time to work out the other bacillus-like growth. During the past five days this patient had been given iodine internally in the form of iodeol, and there was a rapid process of healing. Iodeol was supposed to contain 4 gr. of iodine to the capsule.

Short Description of Culture of Sporothrix by Dr. T. Joekes.

The pus from several of the minute abscesses was collected as aseptically as possible, and sown on different media. The plate shown was a blood-agar plate. After five days' incubation at room temperature small dull white colonies appeared, which after another three days had practically attained the present size. Several of the colonies showed dark pigmentation, which in most colonies started in the centre, and in some at the periphery. Most of the sporothrix colonies on the plate were now quite black, but a few were still white. The dark ones showed the typical convolutions quite well, but this was absent in the white colonies. Both the dark and the white colonies showed the typical finely fringed margins. Nearly all the colonies which had been used for making subcultures produced a

copious growth of aërial hyphæ at the place where they had been touched. Besides these sporothrix colonies there were a number of ivory-white smaller colonies with well-defined margins. Films from these latter colonies showed strongly Gram-positive oval bodies (? saccharomyces).

Dr. A. M. H. Gray showed a *case for diagnosis*. The patient was a woman, aged 67 years, and her illness began with a small pimple on the left leg about eight years ago. That pimple gradually spread until it formed a patch several inches in diameter. A few months afterwards a similar patch on the opposite leg appeared, and that also had become a patch of considerable size. The lesions were confined to the legs until seven months ago, when she developed somewhat similar patches on the scalp, and there was a patch over the right eye at about the same time. The lesions were very much like those described in Dr. Adamson's case. On these red granulomatous patches one saw a large number of pustules, which were the size of a pin's head when they first appeared and increased until they reached the size of a pea; then they burst, leaving a little ulcer. The lesions on the scalp and on the legs were of the same character. There had been smaller isolated lesions on the thighs, but most of these were healed and had left sharply-defined scars behind. Cultures from these pustules had given pure growths of *Staphylococcus aureus*. The Wassermann reaction was negative, but von Pirquet's reaction was strongly positive.

The chief reason for bringing the case was to ask whether such lesions could be produced by ordinary pus organisms. He did not think they could be. He did not doubt that in this case there was some underlying granuloma, and that the pustules were secondary septic contaminations. She had had a very varied treatment—local antiseptics, ensol, flavine, weak mercury, etc.—and yet the pustules had gone on forming in much the same way. The scalp had quieted down more under 25 per cent. ichthyol than under anything else. At one time it was very painful. At one time she was taking potassium iodide internally, but it appeared to have no effect on the lesions. Clearly it was not syphilitic, but whether it was tuberculous or whether it was caused by an organism of the fungus group, as in the President's case, was a question which required further investigation.

The PRESIDENT thought the lesions in this case resembled those in his own case; but non-improvement under potassium iodide was against it being a sporotrichosis.

Dr. ALDO CASTELLANI agreed that sporotrichosis lesions disappeared quickly under iodide of potassium if given in full doses. But the causal fungus in this case might be a different one; for instance there were fungi in the Tropics which caused very similar lesions, and on which iodide of potassium had very little effect. At least 20 to 30 gr. three times a day should be given. He had found it a great advantage, in preventing symptoms of iodism, to mix the medicine with bicarbonate of soda, and adding a little glycerine or syrup prevented a sediment forming.

Dr. GRAY replied that this patient had not been given more than 30 gr. of iodide of potassium daily. That had been continued for about a month.

Dr. A. M. H. GRAY showed a case of *pemphigus foliaceus*. The patient, a woman, aged 50 years, had had the condition since 1905. It began on the chest and back with small blisters, and these blisters gradually spread over the body until the whole of it except the palms and soles was involved. The nails had been affected, had fallen off, and others had grown. She was in University College Hospital under Dr. Crocker in 1905–6 for about a year, and since then was for a time under Dr. Sibley at St. John's Hospital, and the exhibitor had now had her under observation for some time, but the condition had certainly remained stationary since she had been under his care. Her doctor had given her some injections of staphylococcal vaccine made from the contents of the blisters, and he was satisfied there was an improvement. He tried her for two or three months on similar lines, but got no improvement. Among the things she had had were arsenic, including enesol and cacodylate of soda, antimony, salicylates, quinine, various intestinal antiseptics, colon irrigations, as well as dietetic treatment. In spite of the extensive skin eruption her general health was very good. No organisms of importance had been found in her excreta, and her blood-count was normal.

Dr. CASTELLANI said several French authorities had recommended quinine internally and plain sulphur ointment externally for this condition. He saw a very bad case of it in a French soldier in Indo-China, who was treated in this way by some French doctors.

Dr. W. KNOWSLEY SIBLEY showed a case of *lichen obtusus corneus*. The patient, a girl, aged 11 years, had for two years had an eruption of a papular character over the body. The mother said the lesions commenced on the legs, and had gradually spread over the body. At

present the shoulders were extensively affected, she had lesions all down the arms, a few lesions on the front of the chest, and the legs were much involved. She said they did not itch, but she had picked off the heads of a large number of the papules; the mother said the girl scratched herself during sleep. Vesicles had not been seen about her, and she had not had any treatment before she came to him. He had not given her anything internally, but she had had three small applications of X-rays to the shoulders, and there was a considerable subsidence of the lesions in these regions. She had typical lichen planus papules over the elbows and shoulders, and many of the lesions above described were horny in character, especially those on the anterior of the legs and shoulders. He suggested they were allied to those found in lichen obtusus corneus, three cases of which he had shown there, but in this condition it was often difficult to find lichen planus lesions on other parts of the body. Some of the lesions were distinctly annular, with recent small lichen planus papules occurring in the periphery of the lesions. Some of the lesions, especially about the elbows, were in a linear formation.

The PRESIDENT agreed that this was lichen obtusus corneus. This case showed what these cases did not always show, namely, lichen planus papules on elbows and arms, and lichen planus annularis papules on the back. It was an interesting case as demonstrating the connection between lichen planus and lichen obtusus corneus.

Dr. H. W. BARBER showed a case of *lupus erythematosus with rheumatoid arthritis*. The case was one of four cases of lupus erythematosus associated with rheumatoid arthritis that he had recently come across, and the patient was of interest because, apart from these two conditions, she had retrobulbar optic neuritis, of the type which, according to ophthalmic surgeons, was usually associated with some infection, generally of the teeth. She was well until four years ago, when she began to feel "run down" and had neuralgia. The lupus erythematosus began on the nose, later spread to the cheeks, and then appeared on her hands. At the same time she developed arthritis, involving chiefly the metacarpo-phalangeal joints of the hands, the knees, the shoulders and the elbows, and, in addition, the temporo-mandibular joints. When he first saw her, last November, she had quite extensive patches on her cheeks, but these had now disappeared, perhaps because she had been kept at

rest in bed. All the time she had been under observation she had had pyrexia of varying degree. Occasionally she got an acute exacerbation of her arthritis, and then there was an increase of fever. Obviously she was being infected from somewhere, but he was not yet sure from what source. Before he saw her she had had some teeth removed, which he believed were septic, and there followed a temporary improvement in her arthritis. There seemed to be no apical abscesses in her remaining teeth, but pus pockets were found, from which a strongly hæmolytic streptococcus had been isolated, but it was too early to say whether that was the responsible organism. There was no clinical evidence of tubercle. X-rays reveal some opacities in the lungs, but there were no lung symptoms, neither did there seem to be any tuberculous glands. The ulcer on the nose was caused by carbon dioxide snow treatment.

Dr. Sibley said he had at present in St. John's Hospital a remarkable case of lupus erythematosus disseminatus, in the person of a comparatively healthy young woman, who came with an obscure dermatitis on her chest, arms and fingers. After being in a few weeks she developed a typical lupus erythematosus butterfly patch across the nose and contiguous parts of the cheeks, with a well-defined margin. In two or three weeks that completely disappeared, but the body lesions became more pronounced. Recently she suddenly developed a large bulla on her right leg, and her temperature rose to 105·6° F. Two or three days later she had a bulla on the right arm, when she had a rapid pulse and seemed ill. These lesions had now completely subsided, and her temperature was down to normal. A few days later the typical erythematosus area reappeared over her face, in the former butterfly form, and it seemed likely to disappear again without leaving anything behind. He did not know what was the connection between the bullous eruption and lupus erythematosus, and he did not know what was the source of her trouble, unless it were her throat; she had enlarged tonsils, and she had complained of a sore throat. Her feet, especially the soles, were always excoriated and very sore.

Dr. F. Parkes Weber asked whether there was any disease in the pelvic organs, and whether the urine had been examined for the presence of the *Bacillus coli*.

Dr. Gray asked whether Dr. Barber had had the blood cultivated in any of the four cases. He had recently had under care a case which had been under Dr. Sequeira, and was very much improved by him by means of intravenous injections of quinine. The edge of the original patch, however, had never quite quieted down. Dr. Gray had got Dr. Teale to give her streptococcal vaccines and she had a bad reaction after the third injection. When that subsided there was not much improvement in the lesion. A few weeks after this reaction her temperature suddenly shot up to 105° F. in a few hours, and she complained of pain in the back of one ear. In a very few hours a sharply-margined patch began to spread forwards, and in twenty-four hours she had a whole lupus erythematosus area standing out

like erysipelas. In three days this had subsided and the temperature was down to normal, and the swelling gradually subsided. In the acute stage Dr. Goodhart took cultures of the blood. He inoculated four tubes and two of them grew a hæmolytic streptococcus; one was sterile and one grew a *Staphylococcus albus*. That was interesting in view of Dr. Cranston Low's cases, reported in the *British Journal of Dermatology*,* in one of which he isolated hæmolytic streptococcus from the heart blood.

Dr. J. H. Sequeira said that lupus erythematosus was still generally regarded as a skin disease, whereas in the view of most dermatologists it was a manifestation of septicæmia. With regard to the streptococcal hypothesis, some years ago he had under care a 15-year-old girl who had most acute lupus erythematosus. Before her death she developed an enormous abscess in the thigh which was found to be streptococcal. But he did not think it was proved that that organism was the sole cause of the condition. In several of his cases of this acute type great benefit had resulted from the intravenous injection of quinine, and one hæmorrhagic case of lupus erythematosus had cleared up under this treatment, but that patient also had now relapsed. The dose was 5 gr. hydrochlorate of quinine in 10 c.c. normal saline, first injected once a week and then twice a week. In some there was slight shock at the time of the injection; nearly all his patients had had quinine before, and even while the injection was being done complaint was made of a bitter taste in the mouth.

The President said a notable feature in this case was the association of rheumatoid arthritis; he had himself had three or four cases showing the same association.

Dr. Graham Little was able to recall two cases of the kind. The first was taken into St. Mary's Hospital as "acute rheumatism"; the rash was not recognised until later, when he diagnosed extensive lupus erythematosus. The patient died soon after. Recently there had been another case of the kind at St. Mary's; it ran a very acute course, and death occurred three months after admission.

Dr. Barber (in reply) said the patient's urine was sterile; he had not had the pelvis examined, as the patient was unmarried. No abnormal organisms had yet been found in the fæces. In one case of lupus erythematosus which he had observed, septicæmia developed, presumably of streptococcal origin, but blood cultures were sterile. However, it seemed to him that when these cases became acute their condition resembled a streptococcal septicæmia far more than a general tuberculosis, and he did not think there was any evidence that lupus erythematosus bore any direct relationship to tubercle. He thought, on the other hand, that considerable evidence had now been collected to show that in some cases, at least, a streptococcus was the causal organism, as it was in many cases of rheumatoid arthritis.

Dr. H. W. Barber showed a case of *parakeratosis variegata*. The patient, a boy, aged 13 years, came to him a few weeks ago with an eruption which he diagnosed as belonging to the parapsoriasis or parakeratosis variegata group. The eruption first appeared at the end of

* *Brit. Journ. Derm. and Syph.*, 1920, xxxii, p. 253.

last September, first on the arms, then on the shoulders and legs. There were no subjective symptoms, and very little scaliness. On the shoulders particularly there were telangiectatic spots such as he had not seen before in similar cases, but Dr. MacLeod told him that in the case which he first described over here there were definite telangiectases. He was interested to read, in an American paper, of good results in this disease from the use of ultra-violet light, and he proposed to give it a trial.

Dr. MacLeod agreed with Dr. Barber's diagnosis. He did not know of so young a case having been recorded. One point of interest which he had been trying to work out was the idea that it was not a toxic condition. One of the earliest recorded cases, a case of Dr. Colcott Fox, was that of a man whose work was of a confined character, who always said he suffered from the heat. Not long ago the speaker saw a man with a very typical parakeratosis variegata on the arms and legs. He was a very intrepid flying man; he had done some very high flying, and was fond of going in for "stunts." That man said the condition had been present before, but it was made much worse since he had flown to great heights. The whole arrangement of the lesions was extraordinarily like that of erythema *ab igne*, and there might be some physical cause for it.

Dr. Gray said he could not state what was the effect of ultra-violet rays on parakeratosis variegata, but he had two or three cases of parapsoriasis *en plaque* which he had treated with the quartz lamp, and he was at first very much impressed with the result; but when the treatment was stopped the condition recurred. None of them had been any better for it ultimately.

Dr. E. G. Graham Little showed a *case for diagnosis*. The patient, a man, aged 75 years, had suffered three years from the skin condition shown. For two years he had been subject to profuse sweats, especially at night. He gave a history of boils for forty years, and he had a recurrence twelve months ago. Two sisters and one brother died of what was reported to have been cancer. There was much thickening of the skin of the nape of the neck and of the scalp and eyebrows, with consequent loss of hair. He had sheets of large comedones on the chest and on the thighs, and on the legs this had diminished to a more finely follicular eruption, like pityriasis rubra pilaris. Microscopic section of a specimen, which he showed, revealed the lesion as a cystic dilatation in the corium, lined with epithelium and containing a mass of hyperkeratinised tissue occupying the lumen of the cyst. At first he thought it was a case of Darier's disease, but it was not much like it histologically; there were no rounded bodies. The case had puzzled him and he had brought it for diagnosis.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

ECZEMA CAUSED BY ARTIFICIAL LEATHER IN HATS. K. Hubschmann. (*Ceská Dermatologie*, 1921, ii, No. 6.)

The author reports cases of artificial dermatitis of the forehead caused by the bands in hats made out of war leather substitutes, which are usually impregnated with some irritant chemical—phenol, tar and others. The dermatitis in mild cases appears as an itchy erythema, in more severe cases as a papulo-vesicular eruption, often severely oozing. After the removal of the cause the dermatitis promptly responds to usual treatment. Spinka (St. Louis).

THERAPY OF HYDROA ÆSTIVALIS. C. Perina. (*Ceská Dermatologie*, 1921, ii, No. 2.)

The eruption was localised to typical places—nose and cheeks, less on the hands—and appeared in the form of erythema and tubercles. White scars marked the location of previous lesions. The condition recurred in spring and summer for several years. The patient gave the history of profuse menses, lasting seven to ten days. During this period she usually feels better. Physical examination revealed incipient tuberculosis. The menstrual history being striking, ovarian extract was prescribed, with a surprising effect: the eruption disappeared in two weeks in spite of sunny days. It returned when the extract was omitted, and disappeared again under its use. The extract, however, had no effect upon her menses. Spinka (St. Louis).

SYPHILIS.

THE OUTLINE OF THE NEW LAW AGAINST THE SPREAD OF VENEREAL DISEASES. K. Ulrich. (*Ceská Dermatologie*, 1921, ii, No. 1.)

The outline contains the measures taking direct action against venereal diseases and laws against prostitution. It is interesting to note that venereal diseases will not be reportable in the new republic, but the law will compel anybody infected to take treatment at his own or State's expense; the confinement in a hospital will become compulsory if instructions are not carried out; there will be a compulsory medical examination of suspects, and control after treatment. Spinka (St. Louis).

THE TREATMENT OF EARLY SYPHILIS. C. Morton Smith. (*Arch. of Derm. and Syph.*, 1921, iv, p. 723.)

The author first draws attention to the importance of discriminating in the treatment between patients who are physically fit when they acquire syphilis and those who are suffering from damaged organs due to age or disease, and dwells on the danger of the use of arsphenamin in the presence of cardio-vascular or renal trouble. He refers to the prophylactic use of arsphenamin, namely, by injections given immediately after an exposure and before any symptoms have developed, and considers the possibility of prevention by this course. He makes

timely reference to what he calls the "pseudo-syphilographer," who is entirely dependent for his diagnosis on the Wassermann test conducted at some public laboratory, and whose treatment consists of a few injections of arsphenamin to clear up the lesions. He discusses the question of jaundice and acute yellow atrophy of the liver in connection with arsphenamin injections, and finds that the jaundice is more likely to occur after arsphenamin injections have been discontinued and the patient is having injections of mercury.

"He considers that the minimum of treatment for a case of primary or early secondary syphilis should consist of (1) mercurial dressings to initial lesions; (2) intravenous arsphenamin, 0·1 grm. to 40 pounds body-weight, repeated in from three to five days, and then at five-day or weekly intervals until six to ten injections have been given; (3) full doses of mercury, preferably by intramuscular injection; if an insoluble salt, fifteen injections should constitute the first course; and (4) frequent examinations of the urine. Following the mercurial injections, an interval of five or six weeks should elapse before checking up with the Wassermann test. If it is positive the first courses should be repeated. If negative, a vacation of three months is allowed, at the end of which time ten or twelve mercurial injections and from four to six of arsphenamin are given. With a second negative Wassermann reaction, during the following six months from six to eight mercurial injections are given, and during the next year the patient should receive short courses of mercury.

"An examination of the cerebrospinal fluid should be made early in the disease if possible, and certainly before the patient is discharged.

"Patients with organic disease who acquire syphilis are to be treated with the same or greater consideration than patients showing the same sort of damaged organs of syphilitic origin." J. M. H. M.

THE TREATMENT OF ANTE-NATAL AND CONGENITAL SYPHILIS. John A. Fordyce and Isadore Rosen. (*Arch. of Derm. and Syph.*, 1922, v, p. 1.)

In this paper the treatment of ante-natal syphilis is discussed, and the opinions expressed are based on the experience of 140 cases of children who were born of mothers with a strongly positive Wassermann reaction, but whose own reactions were negative clinically and serologically, and of 88 cases of children with clinical and serological evidence of syphilis. The conclusions arrived at were:

(1) Every prospective mother should receive a routine Wassermann examination.

(2) That with proper treatment of a syphilitic mother during pregnancy the infant should be born healthy.

(3) That every infant born of a mother or father with syphilis should have a Wassermann test at birth, two weeks later, then every four weeks up to six months, and after that every three months up to two years. If the reaction is negative with all these tests, and no clinical signs have appeared, the baby has in all probability escaped the infection.

(4) A certain number of infants born of mothers with strongly positive reactions give a positive cord reaction, but subsequently all tests are negative, and they fail to show any clinical manifestations of the infection. They should, however, be kept under observation for at least two years.

(5) Occasionally an infant with active clinical signs of syphilis will give

negative serologic findings, usually only temporarily. The clinical diagnosis should always take the precedence over the laboratory diagnosis, and proper treatment should be instituted.

(6) The treatment recommended for congenital syphilis was systematic intramuscular injections of neo-arsphenamin and mercury. J. M. H. M.

A PRELIMINARY REPORT ON THE THERAPEUTIC ACTION OF SILVER ARSPHENAMIN. John A. Fordyce. (*Arch. of Derm. and Syph.*, 1921, iv. p. 737.)

According to the experience of the writer, the silver arsphenamin has the advantage over the other arsenical preparations in being less liable to cause either immediate reaction or later reactions such as gastro-intestinal symptoms or cutaneous complications. At the same time, he believes it to be as efficacious as the older remedies in causing cutaneous lesions to disappear, and in certain early cases is perhaps more rapid in its action. Until more is known about this drug he is not in favour of making the maximum dose greater than 0·3 grm.

J. M. H. M.

THE EXCRETION OF ARSENIC AFTER SERIAL ADMINISTRATION OF ARSPHENAMIN AND NEO-ARSPHENAMIN. Frank P. Underhill and Stanton H. Davis. (*Arch. of Derm. and Syph.*, 1922, v. p. 40.)

As a result of a series of experiments to determine the excretion of arsenic after the administration of arsphenamin and neo-arsphenamin in series doses, as given in ordinary practice, the following conclusions were arrived at:

Arsenic appears in the urine within a few hours after intravenous injections of these arsenical preparations, the maximum excretion occurring on the day of or the day after the injection, and being higher with each succeeding dose.

Arsenic appears in the fæces more slowly, but within three or four days after intravenous injection, the total percentage of arsenic excreted in the fæces being larger than in the urine, and as high as 53·76 per cent. in one week. There is no relation between the amount of arsenic excreted and the quantity of urine or fæces.

In the early intervals of the serial treatment the arsenic compounds appear to be retained in the body up to a point at which the tissues are saturated with them, and when this point has been reached further additions of arsenic are quickly eliminated.

Consequently the writers consider that it would be logical to modify the serial treatment, and to give smaller doses when the point of saturation has been reached, which would appear to be about the fourth injection. J. M. H. M.

THE ELIMINATION OF ARSPHENAMIN AND NEO-ARSPHENAMIN IN THE URINE. B. Barker Beeson and P. G. Albrecht. (*Arch. of Derm. and Syph.*, 1922, v. p. 52.)

This paper is a chemical and clinical study on the specific colour reaction devised by Abelin for the determination of arsphenamin in the urine. The technique of this highly sensitive reaction of Abelin, slightly modified by the writers, is as follows:

To 5 c.c. of urine, fresh or preserved with chloroform, in test-tube 1, cooled in

running water or the ice-box, are added 0·5 c.c. of the hydrochloric acid solution and 1 c.c. of sodium nitrite solution. The mixture is well shaken and kept cool until the reaction is complete (about ten minutes).

In test-tube 2 a fresh mixture of 4 c.c. resorcin solution with 1 c.c. sodium hydroxide solution is prepared. Following Abelin's method, the contents of test-tube 1 are added to that of test-tube 2 and well shaken, producing a distinct red in the presence of arsphenamin in fairly large amounts, and a brown clear-coloured solution in the absence of this substance, which soon extends throughout the upper stratum. In our investigation we use the ring test. In order to carry it out successfully the urine is transferred by means of a 5 c.c. pipette from test-tube 1 to test-tube 2, which is placed in a slanted position to avoid mixing the two solutions. Two distinct layers are formed with an intervening stratum of pink to red, depending on the amount of arsphenamin present; in the absence of arsphenamin no coloured ring develops between the two layers. By comparing this coloured zone with that produced by solutions of arsphenamin or neo-arsphenamin in known quantities in urine, the approximate amount excreted can be determined.

The sensitiveness of this test is great. It is only positive in the presence of arsphenamin and its derivatives, the quantity being approximately indicated by the colour of the ring. It was found that the elimination of arsphenamin and its derivatives by way of the urinary tract was usually complete within twenty-four hours after injection, and that the elimination was especially prolonged in tertiary syphilis and neuro-syphilis. In cases of apparent non-elimination of the drug, evidenced by a persistently negative Abelin reaction, a careful examination of the patient should be made before continuing with the treatment. J. M. H. M.

THE TREATMENT OF SYPHILIS BY MERCURY INHALATIONS. H. N. Cole, A. J. Gericke and Torald Sollmann. (*Arch. of Derm. and Syph.*, 1922, v, p. 40.)

This treatment, which has been known ever since syphilis was treated by mercury, is here discussed at considerable length, and a number of cases treated by inhalations of calomel and metallic mercury are described. The results in these cases corroborate the general opinion that the administration of mercury compounds by inhalation has no advantage over oral administration, but, on the contrary, it has the serious disadvantage of indefinite dosage, and the consequent difficulty of steering between inefficiency and danger, and of special danger of respiratory irritation. J. M. H. M.

EXPERIENCES WITH "MIRION." H. Gaertner. (*Derm. Wochens.*, January 7th, 1922.)

A new synthetic product of iodine with the above name is the subject of a short article by H. Gaertner, who is unable to support the claims made for it by other writers, such as J. Kyrle (Vienna). The latter has observed Herxheimer effects with small doses, a negative Wassermann reaction become positive, but later enter a prolonged negative phase, and maintains that active iodine is absorbed by the cells of syphilitic infiltrations from injections of the drug in greater proportions (1–26, 1–78) than by healthy cells.

Gaertner, however, from his clinical experiments concludes that a "mirion-

salvarsan" is inferior to a "mercury-salvarsan" course both as regards the symptomatic manifestations of syphilis and the serum reactions.

It has no spirillocidal power (actual cases quoted), but a valuable use for it may be found as a "provocative" agent in cases with a latent negative Wassermann reaction, in which field his results were more definite than with the arsenic derivatives. H. C. S.

EXPERIMENTAL INVESTIGATION ON THE RESISTANCE OF SPIROCHÆTA PALLIDA TO VARIOUS TREATMENTS. Rubin and Szeutkiralyi. (*Derm. Wochenschr.*, January 28th and February 4th, 1922.)

The difficulties of such an investigation are evident at a glance, but the results if confirmed are of considerable value in the therapy of syphilis.

The authors selected for their purpose locally untreated condylomata in women. Dark-ground illumination of the carefully protected spirochætes was used to determine the length of time during which active movements could be observed. According to their results this varied with the treatment undertaken in each case.

Four types of accepted syphilo-therapy were chosen:

(1) Mercury salicylate (intra-gluteal injection).

(2) Two mercury followed by one neo-salvarsan injection.

(3) Neo-salvarsan only.

(4) A mixture of neo-salvarsan and sublimate in solution (Linser).

Cases under (1) lost their clinical symptoms slowly, and the spirochætes disappeared or died *pari passu* with the healing of the lesions.

(2) The preliminary injections of mercury did not seem to influence the results of the succeeding arsenical injection as regards the life-period of the *Spirochæta pallida*, although they seemed to inhibit Herxheimer reactions in cases of profuse exanthemata in which they might have been expected to occur.

(3) and (4). The rapidity of disappearance and short period of survival under a cover-glass (2 to 4 hours only, as opposed to 20, 30 and 50 hours in untreated or mercurialised cases) was very striking. H. C. S.

REVIEWS.

Diathermy.*

Dr. Cumberbatch has given the profession a much-needed survey of the uses of diathermy. The method is now so much employed in such different branches that a general account of the subject cannot but be of great value to a large number of practitioners.

The introductory chapters dealing with the physics and production of diathermy are at the same time lucid and complete. Dr. Cumberbatch has the happy knack of being able to explain the most difficult subjects in the simplest manner possible.

* *Diathermy: Its Production and Use in Medicine and Surgery.* By Elkin P. Cumberbatch, M.A., B.M., M.R.C.P. London: William Heinemann (Medical Books), Ltd., 1921. Pp. 193. Price 21*s.* net.

The second part of the book deals with medical diathermy, and in this the author, while freely quoting from his experience, is cautious in claiming more for the method than he considers can be proved by the material he produces.

The third part deals with surgical diathermy, and it is this portion of the work which will appeal most to the dermatologist. The chapters are freely illustrated with plates showing the experimental work done in producing local destruction of tissue, and comparisons are made with similar effects produced by the red-hot cautery. It is chiefly in the destruction of rodent ulcer that diathermy is likely to prove of value to the dermatologist, and the author is able to quote some very successful cases. With regard to the treatment of nævi of the skin, Dr. Cumberbatch does not consider that the method has many advantages over other recognised methods, but he has found it of considerable value in nævi of the mucous membranes. He has also considered that the treatment of lupus by diathermy deserves an extended trial.

We consider that Dr. Cumberbatch's book should be in the hands of all those who wish to keep abreast with modern methods of treatment.

Genito-Urinary Surgery and Venereal Diseases.*

The demand for this well-known work has required another edition within two years of the previous one: the authors have, nevertheless, been able to add matter bringing the work completely up to date. They have also added several new illustrations. All the chapters are remarkable for the succinct description of the diseases dealt with—there is scarcely a superfluous word and yet scarcely anything of importance is omitted.

The section on syphilis is most complete and evenly balanced, and is profusely illustrated. A few of the illustrations have not reproduced well, but their selection leaves nothing to be desired. The laboratory diagnosis of syphilis is fully dealt with, and the description of the theory and technique of the Wassermann reaction is most lucidly given in an exceptionally short compass.

A perusal of the chapter on "Prophylaxis" is cordially recommended to members of those societies whose conflicting views bid fair to bring medical opinion in this country into disrepute.

The authors give a very complete and detailed account of the treatment of syphilis, but very little is said of the toxic effects of the arsenical compounds—an omission which might well be remedied in future editions.

The description of ulcus molle and its treatment is excellent and more detailed than usual.

Syphilis.†

The author has thoroughly revised and brought this work up to date—no easy task in view of the enormous amount of work which is being done on the subject.

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* *White and Martin's Genito-Urinary Surgery and Venereal Diseases.* By Edward Martin, B. A. Thomas and S. W. Moorhead. Twelfth edition. Pp. 928. 424 engravings and 21 coloured plates. Philadelphia and London: J. B. Lippincott Co., 1920. Price 35*s.* net.

† *Syphilis.* By Loyd Thompson, Ph.B., M.D. Second edition. Pp. 486. 81 engravings and 7 plates. Philadelphia and New York: Lea & Febiger, 1920. Price $7·00.

The book is of handy size, and contains just that information which the busy practitioner and the student should know. No branch of the subject has been neglected, but the author rather stresses the pathological side, and describes in considerable detail—accompanied by appropriate illustrations—the technique for carrying out all the recognised methods of laboratory diagnosis. We have not met with a book of this size in which these methods have been dealt with so completely.

In this edition the author has considerably increased the space allotted to visceral syphilis—a subject which is becoming more and more important.

We can heartily recommend the work to all interested in this branch of medicine.

The Ambulatory Treatment of Ulcus Cruris.*

In England, as on the Continent, the patients with this irksome disability form a very considerable percentage of the chronic cases attending the surgical and dermatological out-patient departments of all our hospitals.

The majority of them are middle-aged married woman in poor circumstances, on whom depend the domestic comfort of their husbands and children, and for whom, by that very fact, the possibility of rest in bed for prolonged periods is usually out of the question.

As the author remarks, the disability therefore assumes the dignity of a social disease, and more than justifies its detailed discussion in a separate monograph.

After touching upon such well-known ætiological and contributory factors as blood stases in varicose veins, childbirth and its complications, syphilis, diabetes, nephritis, trauma, pruritus and the like, he proceeds to discuss firstly the constitutional remedies (*e.g.* the iodides and their derivatives) in general use, and then reviews in detail the methods for the local sterilisation of the ulcer itself. This is a step usually more honoured in the breach than the observance, and one which will repay with interest any extra moments devoted to it.

Complete healing and cicatrisation can be achieved, according to Jessner, in over 90 per cent. of all cases, and is the result not of any special remedy, but of scientific *method*, which must be varied according to the requirements of the individual case. The basic principle of the ambulatory treatment is of course the Unna gelatine bandage, of which he gives a minute and useful description. He urges that it should be applied by the physician himself, and claims that it can be used with elaborations and modifications in almost every case from the commencement. He is strongly in favour of protecting the ulcer itself with a piece of oiled silk, cut a little larger than the necrotic area itself.

An excellent synopsis completes the 50 pages of clear and detailed description, and enables the reader to refresh his memory at a glance, and to select at will the special application most likely to counteract such local tendencies as gangrene, weak or protuberant granulations, callous edges, diphtheritic membranes, fœtor, or excessive pain and irritability.

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* *Dermatologische Vorträge*. Heft 7. *Die Ambulante Behandlung der Unterschenkelgeschwüre*. By Prof. Dr. Jessner. Fifth edition. Leipzig: Curt Kabitzsch, 1921. Price M. 16.

The dermatitis which so frequently accompanies and aggravates the causal ulcer receives a section to itself.

In brief, the whole dreary subject is illuminated anew, and revitalised, by the masterly and scientific style of this prolific writer.

CONGRESS OF FRENCH-SPEAKING DERMATOLOGISTS AND SYPHILOLOGISTS.

We are asked to announce that a Congress of Dermatologists and Syphilologists will be held in Paris on Tuesday, Wednesday and Thursday, June 6th, 7th and 8th, 1922, under the direction of the Société française de Dermatologie et de Syphiligraphie. The meetings, which will be conducted in French, will be held at the St. Louis Hospital at 9 a.m and 2 p.m. daily. The morning sessions will be devoted to private communications, and the afternoon sessions to discussions on the following subjects:

(1) The epidermomycoses (excluding scalp ringworm). Opened by Dr. Petges of Bordeaux.

(2) Subacute inguinal lympho-granulomatosis of venereal origin. Opened by Prof. J. Nicolas and Dr. Favre of Lyons.

(3) The colloidal reactions in nervous syphilis. Reactions to colloidal gold, to gum mastic, to colloidal benzoin. Opened by Dr. Guy Laroche.

A cordial invitation to take part in the Congress has been given to members of the British Association of Dermatology and Syphilology and to other recognised workers in these subjects.

Forms of application may be obtained from the Editor, or direct from the Secretary-General of the Congress, Dr. Hudelo, 8 Rue d'Alger, Paris. The subscription is 60 francs.

BOOKS RECEIVED.

The Venereal Clinic. Edited by E. R. T. Clarkson, M.A., M.R.C.S., L.R.C.P. With Introduction by Sir Squire Sprigge, M.D., F.R.C.S. London: John Bale, Sons & Danielsson, Ltd., 1922. Price 25*s.* net.

A Synopsis of Medicine. By H. L. Tidy, M.A., M.D., F.R.C.P. Second Edition. Bristol: John Wright & Sons, Ltd., 1922. Price 21*s.* net.

Vice and Health. By John Clarence Funk, M.A., LL.B., Director, Bureau of Protective Social Measures, Pennsylvania State Health Department. Philadelphia and London: J. B. Lippincott Company, 1921. Price 6*s.* net.

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DES ÉPITHÉLIOMES PRIMITIFS DE LA PEAU.*

J. DARIER,
Paris.

Dans la question des cancers de la peau l'intérêt de l'heure actuelle se porte principalement sur leur étiologie, sur les conditions de leur malignité relative, et sur la radiosensibilité des diverses espèces. Les acquisitions récentes relatives à la production expérimentale de ces cancers ont rénové le sujet et l'ont particulièrement mis à l'ordre du jour.

Nous avons actuellement trois moyens pour créer du cancer : Les rayons X, avec lesquels on réussit rarement, la méthode n'étant pas réglée ; un parasite animal, le spiroptera neoplastica qui a donné des succès dans près de la moitié des cas chez les rats pies à Fibiger de Copenhagen ; les badigeonnages de goudron, inaugurés par les Japonais, et repris par Fibiger, qu'on expérimente actuellement dans tous les pays, et par lesquels on obtient des cancers de la peau vraiment malins avec une réelle constance sur les souris.

Il ressort de ces expériences que les causes du cancer sont multiples ; qu'une même espèce de cancer peut être produite par des causes diverses et qu'un même agent peut produire des tumeurs différentes. Elles ont aussi mis en lumière le rôle d'une prédisposition diverse de certaines races et certaines familles d'animaux.

* Abstract of a paper read before the Section of Dermatology, Royal Society of Medicine, on March 16th, 1922. The paper was illustrated by numerous photographs of cases and microscopical preparations. A fuller description with the appropriate illustrations will be found in the first fasciculus of the *Atlas du Cancer* to be published shortly by the Association française pour l'étude du Cancer, and in an article by MM. Darier and Ferrand which will appear in the *Annales de Dermatologie et de Syphiligraphie.*

Quant aux conditions de la malignité et à la radiosensibilité des cancers, il reste acquis qu'elles sont en relation avec la structure histologique de chaque tumeur. Moi qui ne suis pas cancérologue, mais simple dermatologiste, je me suis depuis 30 ans attaché à étudier la structure des diverses espèces de cancers de la peau ; c'est sans doute pour cela que j'ai eu l'honneur d'être invité à vous parler de ce sujet.

L'étude de l'ensemble des cancers de la peau, y compris les sarcomes, serait trop vaste. Je me bornerai donc à étudier les 3 espèces les plus communes, auxquelles les autres variétés se rattachent plus ou moins. Les deux premières sont bien connues et je ne m'y arrêterai que pour fournir des points de comparaison ; la troisième est relativement nouvelle et n'a jamais été bien décrite ni figurée.

I. *L'épithéliome spino-cellulaire* (É. pavimenteux lobulé, prickle-cell carcinoma) est l'espèce la plus commune (50%) et la plus maligne. On l'observe surtout à la bouche, mais aussi sur la face, les oreilles, et le reste du corps, sur les cicatrices, les ulcères et le lupus tuberculeux. Il débute pas une verrucosité ou une corne cutanée, et sur les muqueuse par de la leucoplasie verruqueuse. Il se développe soit en surface, sous forme de "macaron," soit en profondeur sous forme de tumeur nodulaire dure ; l'ulcération est précoce, anfractueuse, et parsemée de "vermiottes" caractéristiques. Son évolution est rapide ; bientôt il envahit les ganglions lymphatiques et peut donner lieu à des ulcères cancéreux ganglionnaires et à des métastases viscérales, qui pourtant sont rares. Il conduit fatalement à la mort en 18 mois à 3 ans, par cachexie et hémorrhagies. Il est très radio-résistant.

Au point de vue histologique il est caractérisé par des travées relativement larges et lobulées, composées de cellules grandes et claires de type malpighien, munies de filaments d'union ; elles évoluent en globes épidermiques à centre corné, centre entouré de cellules à kératohyaline et de cellules lamelleuses. Ses éléments conservant la morphologie et l'évolution des cellules du type malpighien, on peut donc donner à cette espèce de cancer le nom *d'Épithéliome pavimenteux typique.*

II. *L'épithéliome baso-cellulaire* (É. pavimenteux tubulé, Basalzellen carcinoma, rodent ulcer) est assez commun également (30 à 40%). Il se développe surtout sur les $\frac{3}{4}$ supérieurs de la face chez les

vieillards, mais aussi sur les membres et sur le tronc, et même sur les lèvres, la langue et les organes génitaux. Souvent il est une conséquence de la kératose sénile, et peut donner lieu à l'Épithéliomatose multiple de Besnier ; quelquefois il commence par une ou plusieurs petites perles, ou par un bourgeon rouge et érosif, ou encore par une érosion plane, en "coup d'ongle," très persistante.

L'aspect clinique de cet épithéliome est très polymorphe ; j'en décris 5 types principaux : 1° *L'É. plan cicatriciel* dans lequel on voit une surface cicatricielle ou ulcérée entourée d'un ourlet de petites perles papuleuses.—2° *L'É. superficiel* que j'ai appelé *Pagétoïde* (en m'excusant de prendre le nom du grand savant qu'était Sir James Paget pour en faire un adjectif), lequel est constitué par une plaque rose jaunâtre, souvent atrophique, parsemée de squames et de croûtelles, ressemblant au Paget's disease of the nipple ; il siège de préférence à la face, mais aussi en taches disséminées et multiples sur le corps.—3° *L'É. bourgeonnant* qui en quelques mois donne lieu à une tumeur saillante et rouge du volume d'une noix.—4° *L'ulcus rodens* qui est un ulcère serpigineux pouvant progresser pendant plus de 20 ou 30 ans.—5° *L'ulcère térébrant* qui se creuse une caverne, envahit les cavités de la face, cause d'horribles mutilations, et tue par hémorrhagies ou méningite.

L'épithéliome baso-cellulaire est caractérisé par la lenteur de son évolution, qui peut durer de 12 à 30 ans, par sa ténacité et sa repullulation après opération ; mais sa *malignité* est *toute locale ;* jamais il n'infecte les ganglions ni ne donne de métastases. Il est très radio-sensible.

Sa structure histologique peut être résumée comme suit : Travées étroites, bosselées, foliolées, souvent ramifiées et en réseaux, qui proviennent soit des bourgeons interpapillaires, soit des follicules pilo-sébacés, soit des glandes sudoripares. Les cellules néoplasiques sont petites, tassées, mal délimitées, vivement colorables. Elles diffèrent nettement des cellules malpighiennes, n'ont pas de filaments d'union, ne subissent pas la kératinisation et ne forment donc pas de globes épidermiques. On les a comparées aux cellules basales de l'épiderme (Krompecher). Comme elles ont perdu le type malpighien on peut appeler les tumeurs qu'elles constituent, des *Épithéliomes atypiques.*

III. À ces deux espèces bien connues et généralement admise il

faut en ajouter une troisième, que j'étudie depuis plusieurs années, qui est une espèce intermédiaire ou combinée des deux précédentes et que j'appelle *Épithéliome métatypique* (carcinoma spino-baso-cellulare). Cet épithéliome n'est pas très rare (10 à 15%). Je l'ai rencontré surtout sur la face et notamment sur le nez, mais aussi au cuir chevelu, au cou, sur le genou, et ailleurs. Il est difficile à distinguer en clinique de l'épithéliome baso-cellulaire, et souvent c'est parce que l'on constate qu'il ne guérit pas par la radiothérapie que l'attention est attirée. Je l'ai vu débuter d'ordinaire sous forme d'une petite tumeur saillante, gris-rosé, demi-molle, translucide; mais quelquefois c'est une érosion, ou un ulcère térébrant et mutilant. Son développement est plus rapide que celui de l'É. baso-cellulaire; il peut rester stationnaire quelques mois ou des années, et prendre ensuite un accroissement brusque avec ulcération profonde. Ce qui est important à connaître c'est que cet épithéliome métatypique peut *envahir les ganglions* et se généraliser, et qu'il est *radio-résistant*.

L'histologie est nécessaire jusqu'ici pour en affirmer le diagnostic. A ce point de vue on en peut distinguer deux types, entre lesquels il y a des combinaisons.

1° *L'épithéliome métatypique mixte* (18 cas) a la configuration et la structure d'un É. baso-cellulaire, mais il renferme des *globes*. Ceux ci sont formés de cellules lamelleuses conglomérées, pâles et acidophiles, munies quelquefois de filaments d'union, mais sans kératohyaline, lesquels entourent un centre colloïde. Il y a donc juxtaposition de tissu baso-cellulaire et de tissu spino-cellulaire, sans kératinisation complète.

2° *L'épithéliome métatypique intermédiaire* (9 cas) est d'ordinaire constitué par un réseau de travées étroites comprenant 2 ou 3 rangées de cellules; celles-ci, plus grandes, plus claires et mieux limitées que les cellules baso-cellulaires, n'ont pourtant ni les dimensions ni toujours les filaments d'union des spino-cellulaires; elles ont donc des caractères franchement intermédiaires. De plus on rencontre dans les travées des globes, qui, comme dans la type mixte sont des globes parakératosiques à centre colloïde.

L'importance qu'il y a à distinguer ces 3 espèces d'épithéliomes est double. Au *point de vue scientifique*: on enseigne que la cellule cancéreuse est anarchique, embryonnaire ou dédifférenciée et en

somme plus ou moins atypique. Or on voit que, parmi les épithéliomes de la peau, ce sont ceux qui sont le plus atypiques qui sont les moins malins, les plus lents et les plus radiosensibles, tandis que les plus typiques (spino-cellulaires) ont des propriétés opposées.

Au *point de vue pratique* : il est essentiel de distinguer ces 3 espèces pour le pronostic et aussi pour le traitement, en raison de leur radio-sensibilité variable. On ne peut plus dire aujourd'hui que l'É. baso-cellulaire guérit toujours par les rayons X et le radium, et que cette thérapeutique ne guérit jamais et aggrave même l'É. spino-cellulaire. La radio-sensibilité des éléments épithéliomateux, comme celle des éléments normaux, présente des degrés et une véritable gamme. De plus, les progrès de la technique ont montré que dans les irradiations la quantité n'est pas tout, qu'il faut tenir compte de la qualité des rayons, lesquels doivent être sélectionnés par des filtres épais, et qu'il convient de faire des applications massives en une période courte.

D'une façon générale j'estime qu'on doit actuellement traiter:

1° Par l'excision chirurgicale totale et précoce : les É. spino-cellulaires opérables et les É. métatypiques limités.

2° Par la radiothérapie ordinaire (rayons X ou radium) : les É. baso-cellulaires non pénétrants.

3° Par la radiothérapie intensive ou par la radio-puncture : les É. spino-cellulaires non opérables mais accessibles en totalité, ainsi que les É. baso-cellulaires et métatypiques térébrants. Cette méthode n'a pourtant pas encore fait ses preuves complètes.

Je termine par le vœu qu'on distingue dorénavant systématiquement des tumeurs aussi différentes par leur aspect clinique, leur évolution, leur pronostic, et leur structure histologique que sont les épithéliomes spino-cellulaires, baso-cellulaires, et métatypiques. En confondant leur description dans un seul et même chapitre "des Épithéliomes de la peau" on aboutit à des notions imprécises et floues, qui déconcertent les étudiants et les praticiens, et ne leur permettent pas de choisir le meilleur traitement qui convient à leurs malades.

HÆMATOGENOUS INFECTION IN TRICHOPHYTIA.

Prof. E. BRUUSGAARD,
Director of the University Dermatological Clinic at the Rikshospital, Kristiania.

Cases of trichophytia profunda (kerion Celsi) with severe symptoms of inflammation are often accompanied by acute exanthemata of varying appearance, all of which, however, are closely connected with the primary focus. This is especially true in children. These exanthemata often spread rapidly over large areas of the surface of the skin and show a pronounced symmetry. The eruptions are accompanied by generalised symptoms, more or less pronounced, such as fever, swelling of the lymph-glands and spleen, and more rarely joint affections. An examination of the blood reveals distinct leucocytosis. In the majority of cases the so-called lichen trichophyticus is found characterised by small perifollicular pale or deep red-coloured papules especially localised to the chest and abdomen. It may easily be mistaken for lichen scrofulosorum. Sometimes eruptions are found which resemble measles and scarlet fever, and have very pronounced generalised symptoms. No less conspicuous are symmetrically arranged papules and nodes that in localisation and appearance bear a strong resemblance to the multiform erythema and erythema nodosum. Various other clinical pictures are seen, but the above cited are the most important ones.*

As a matter of fact these exanthemata have been observed before, but the possibility of their being due to the primary trichophytia has not been considered. This is quite natural. First, they are quite

* In this country, where trichophytia profunda is rather common, especially in the cattle-farming district, there is ample opportunity of studying the exanthemata. In former articles written for the *Tidsskrift for den Norske Lægeforening*, 1919, I have mentioned a couple of cases of lichen trichophyticus. Since then we have had under treatment several different forms of the disease. Several papers on this disease have also been published in Denmark, among others, see Rasch, "Clinical Remarks on Trichophytia Profunda (Kerion Celsi)," *British Journal of Dermatology and Syphilis*, 1920, and M. Brun Pedersen, *Hospitalstidende*, 1916, on the so-called lichenoid trichophytides.

different from the usual known forms of trichophytia which are caused by the inoculation of the fungus from the outside. If only ten to fifteen years ago the suggestion had been put forward that an eruption of nodes resembling erythema nodosum might be due to trichophyton it would have been considered most improbable. Further, until ten years ago trichophytia was believed to consist of local manifestations alone, having no influence on the organism as a whole. This conception has, however, been totally altered by the clinical and experimental observations of later years. Especially Jadassohn (then at Berne), Bloch (Zurich) and their pupils have shown that the form of trichophytia profunda which man catches from animals produces biological changes in the organism which not only put trichophytia in an entirely new light, but also is of great interest in the general pathology and biology. The following examples will make this sufficiently clear. If a patient suffering from trichophytia profunda (kerion Celsi) be given an injection of an extract of trichophyton cultures (trichophytin) the patient develops a local as well as a general reaction. After a few such injections the disease may be seen to disappear quickly. A distinctly pronounced reaction is observed also when it is performed intradermally and after the manner of von Pirquet. By rubbing in a little trichophytin ointment a very distinct reaction may be called forth, and then one may see a lichen trichophyticus, which is fading away, flare up once more. The similarity to the different tuberculin reactions is striking. When the disease is finally cured the ability to show a specific reaction does not disappear. The reaction may be called forth many years afterwards. And this explains the characteristic phenomenon, first pointed out by Jadassohn, that a patient who has once had a trichophytia infection will not catch it again. This may also be proved by experiments on animals.* It appears further that the reaction is always most pronounced in the deep forms of the disease where the most severe inflammatory symptoms are found, whereas in the superficial forms the reaction often fails

* Also experiments on animals show distinctly how the power of reaction against the infection is altered in an organism that has once passed through the infection. Either an absolute immunity is established, so that reinoculation gives a negative result, or what is usually the case, the result of a reinoculation is an acute, evanescent inflammation, where it either is impossible to demonstrate the fungus or where the latter in any case is quickly eliminated.

completely. It is most pronounced when the disease is at its height or when it is subsiding. Further, one sees this striking and important phenomenon—that the secondary eruptions, which have been mentioned above, occur at this stage, that is, when the formation of immune bodies is greatest. In other words, the secondary eruptions are closely connected with the allergy which has taken place in the organism.* The fact that these exanthemata must in most cases be considered of a hæmatogenous origin is indicated, firstly, by the acute form of the eruption, accompanied by more or less pronounced generalised symptoms, and secondly, by the clinical picture. The exanthema is symmetrically distributed and very similar to that in scarlet fever, and will in the course of a few days become universal, and may even be accompanied by joint affections and eruptions on the mucous membrane. An eruption of this character cannot be attributed to the inoculation. The same is true of a sudden eruption of nodes resembling erythema nodosum, which begin in the form of small, hard nodes deep in the subcutaneous tissue. On the other hand, there are also to be found secondary exanthemata, the clinical course of which does not permit me to draw any positive conclusions as to the pathogenesis. One is therefore forced to consider the possibility of its having arisen ectogenously by the propagation of the fungus from the primary focus. *If we take the view that these exanthemata are of a hæmatogenous origin and due to trichophytia, we are still left with the most important task. We have to prove that the trichophyton fungus (mycelium or spore) is spreading through the blood-vessels to the skin and is there causing eruptions of hæmatogenous origin.* Hitherto efforts to cultivate the fungus from the blood or to discover it in sections on extirpated nodes or spots have been

* Not without reason, Bloch draws a parallel between these exanthemata and the tuberculides. The similarity is in many ways very marked. Patients suffering from papulo-necrotic tuberculides or lichen scrofulosorum always exhibit a strong tuberculin hypersusceptibility. The exanthemata often appear in the form of acute eruptions accompanied by fever, and because of their whole development and course can only be regarded as being caused by the bacillus itself or its toxins circulating in the blood, which are quickly destroyed in the hypersusceptible organism. Bloch therefore calls the different secondary exanthemata in trichophytia, trichophytides, in order to emphasise that they are forms of eruption which pathologically, in all probability, must be explained in the same way as tuberculides. See Bloch, "Les Trichophytides," *Annales de Dermatologie et Syphilis*, 1920, Numéro 2.

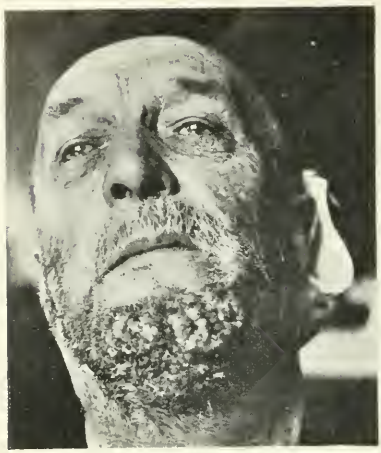


Fig. 1.—Patient on admission to the Clinic.

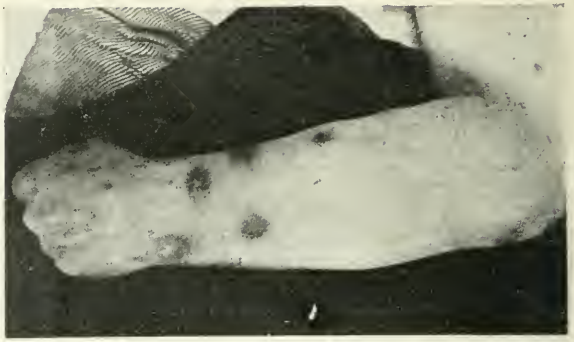


Fig. 2.—Recent eruption of erythematous nodes on the forearm.

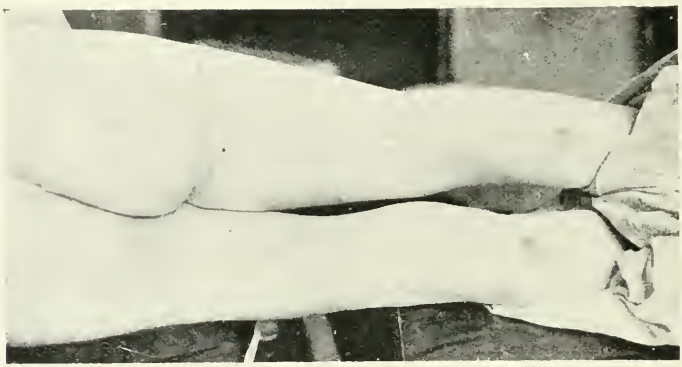


Fig. 3.—Erythema nodosum-like nodes on the posterior parts of the calves and legs.

Fig. 4.—The nodes are disappearing, surrounded by recently developed papulo-pustules.

TO ILLUSTRATE PROF. E. BRUUSGAARD'S ARTICLE ON HÆMATOGENOUS INFECTION IN TRICHOPHYTIA.

unsuccessful. I will here give a contribution to the elucidation of this question :

A man with trichophytia profunda in his beard and aged 68 years was admitted into the Dermatological Clinic of the Rikshospital on March 1st, 1920. As may be seen from Fig. 1, his chin, submental and submaxillary regions were covered with large and sharply defined tumours, giving the characteristic picture of kerion Celsi. The rough surface was thickly studded with pustules and was covered with scabs. On applying pressure pus oozed out. The disease at that time was already over two months old. The fungus was demonstrated by Dr. Haavaldsen, who had also been treating the patient. Two days after the patient's arrival in the Clinic acute eruptions were observed symmetrically on both forearms, consisting of bluish-red prominent and distinctly separated papules having a smooth surface and ranging from a pea to a nut in size. The nodes were surrounded by a vivid red border several millimetres wide (see Fig. 2). Several similar lesions were observed on the crown of his head. They increased rapidly in size and the inflammation grew worse simultaneously. Within twelve hours minute miliary pus foci were seen on the surface. At a later stage the epidermis was lifted up by a pus-containing blood-stained exudate. The two biggest infiltrations were larger than a two-shilling piece, and occurred below the left elbow-joint. A blister containing purulent matter was present at their centre, and was framed by an infiltrated brownish red-coloured border.

The patient's general condition had been bad for some days previous to his admission into the hospital. He looked in pain, and was very pale and felt so weak that he was unable to stand up of his own accord. He complained of pains in the joints and muscles, and his temperature was 38° C. No information was gathered from an examination of his internal organs, but the examination of a blood film revealed leucocytosis. Trichophytin reactions (by Pirquet's and the intradermic methods) were in evidence but not strongly positive. Shortly afterwards a similar rash appeared on his back and abdomen, especially in the gluteal region. The lesions, however, were on the whole smaller and not so inflamed as on the arms. Eruptions of a somewhat different character appeared on both legs. There were observed several hard infiltrated subcutaneous nodes, larger than a shilling in size and bluish red in colour, with a few miliary pus foci on the surface (see Fig. 3). These nodes were very similar to erythema nodosum and began far down in the subcutaneous tissue, hard and as large as peas, which gradually grew in size and finally infiltrated the overlying skin. One such node, standing by itself, was observed on the back of the thigh. During its further development the polymorphous exanthema on the whole showed several interesting peculiarities. It is especially worth noticing that round the older lesions fresh papulo-pustules shot out in corymbiform order (see Fig. 4). Further, for a considerable time after the big nodes had been absorbed papulo-pustules kept on appearing singly.

Taking into consideration that these skin eruptions must most probably be caused by a hæmatogenous infection, it is clear that it was of the greatest interest in this case to find out whether or not there was a real trichophytia caused by the fungus.

A fresh node, scarcely twenty-four hours old, was excised from the right forearm, and the following results were obtained by histological examination. In frozen sections stained with polychrome methylene-blue glycerol-ether and hæmatoxylin, a severe inflammation with abundant polynuclear leucocytes was seen in the pars reticularis and especially in its upper layers. The inflammation was localised around the blood-vessels. Moreover, proliferation was taking place among the cells of the connective tissue, and the connective-tissue fibres were swollen with œdema. There was an abundant exudate of red blood-corpuscles in the swollen and broad œdematous papillæ; the papillary blood-vessels were likewise full of red blood-corpuscles. Leucocytes were not so abundant here (see Fig. 5). In the more central parts of the lesions sharply defined perifollicular pustules appeared and could be traced up to the epidermis, being only covered by a narrow stratum corneum, between the layers of which only a few leucocytes were observed. Otherwise the epidermis on the whole was normal. There was a distinct proliferation among the cells of the rete mucosum.

With an immersion lens one saw in sections stained with polychrome methylene-blue, both in the pars recticularis and in the papillary body, deeply stained dark-blue corpuscles, round or oval in shape and surrounded by a distinct but feebly stained yellowish border. The largest of these corpusles corresponded in size to a red blood-corpuscle (see Fig. 6). They lay partly scattered singly between the cells and partly grouped together in small numbers, but always distinctly separated from each other. The blue-stained protoplasm in some of them was shaped like a crescent. With Giemsa and Pappenheim the corpuscles were metachromatically stained very beautifully. In strongly decolourised preparations they contrasted sharply with the other cells. They were Gram-positive, and in sections treated with caustic potash (KOH) appeared as shining bodies. They were to be seen not only in the larger foci of inflammation, but also in the smaller veins and papillary vessels, especially in the papillæ. From their staining and morphological appearance we must consider them micro-organisms. Morphologically they are identical with spores of fungi. And this theory was proved correct by the cultivation of the fungus. Both from the lesions on the forearm and from those on the scalp a fungus was cultivated which proved to be

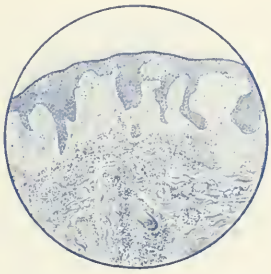


FIG. 5.—General view.

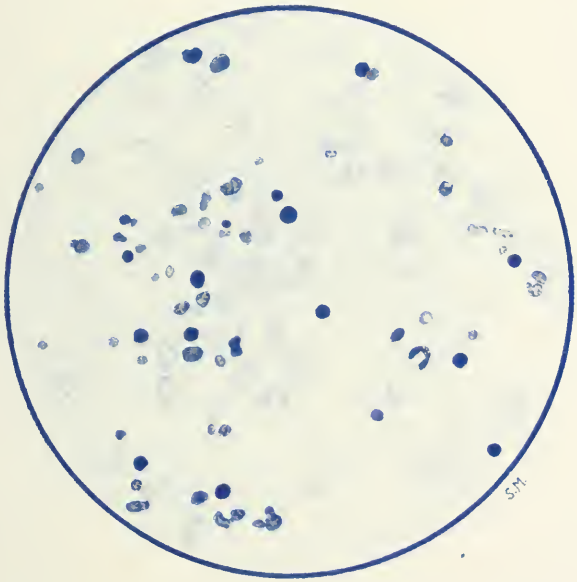


FIG. 6.—Section from the reticular part of the skin, showing spores of fungi. Stain: Polychromatic methylene-blue glycerol-ether.

TO ILLUSTRATE PROF. E. BRUUSGAARD'S ARTICLE ON HÆMATOGENOUS INFECTION IN TRICHOPHYTIA.

identical to that in the primary focus on the skin. From every one of these infiltrations a trichophyton gypseum which most nearly corresponded to the asteroid group was cultivated on maltose and glucose agar.

To put it shortly, we were dealing with a case of trichophytia profunda with skin eruptions which, according to their development and clinical course, must be considered as being due to a hæmatogenous dissemination of the fungus. This theory is fully supported by the finding of spores in the vessels, directly showing the distribution of fungi through the vessels to the skin.* And thus the supposition that at least a few of the so-called trichophytides (Bloch) are really genuine hematogenous infections of trichophytia is for the first time confirmed. Why the demonstration of the fungus in this case was performed without any great difficulty is not easily explained. The early excision of the node while still in its development was certainly important. Further we notice the great age of the patient. We may suppose that in spite of the marked symptoms of inflammation the organism was unable to produce immune bodies enough to kill and eliminate quickly the fungus. The comparatively weak trichophytin reaction may also support this supposition. Though I shall not discuss it further, we may ask ourselves whether these and similar exanthemata may not also be due to a pure toxic effect. It is difficult to prove, but the experiments carried out by Bloch would seem to corroborate this view. Some of his patients had already suffered from trichophytia profunda with secondary eruptions. By treating them with intravenous injections of trichophytin he observed eruptions on the skin accompanied by severe general symptoms, in absolute conformity with some of the forms of eruption described above.

It is certainly rare that one meets a case which is so easy to explain as the one described above. And only further investigations will show the degree of importance which is to be attributed to it. In view of the experience gained by myself and others, I believe that the demonstration of the fungus in most of these exanthemata will be

* Almost simultaneously Sutter proved that the fungus can spread through the lymphatics to the lymph-glands ("Zur Kenntnis der Pathogenese der Trichophytide," *Archiv für Derm. und Syph.*, 1920). In view of these cases the experimental observations by Dr. Saeves on hæmatogenous trichophytia on guinea-pigs receive a renewed interest.

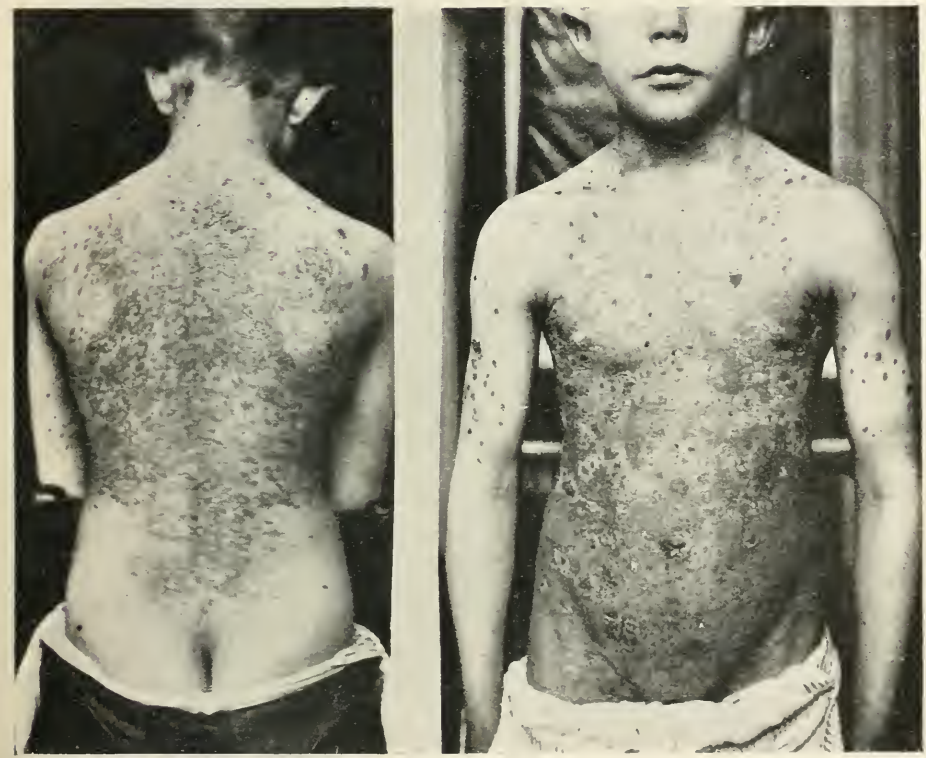
just as difficult as is that of the tubercle bacillus in the tuberculides. On the other hand, in most of the cases there cannot be any doubt of their hæmatogenous origin. From the clinical picture the pathogenesis cannot be satisfactorily explained in any other way. But here also, as I have mentioned before, one may now and then come across a case where the possibility cannot be excluded that exanthema have arisen ectogenously by the spreading of the fungus from the primary focus. I shall briefly mention such a case:

A boy, aged 10 years, recently came into the clinic from Notodden with kerion Celsi on the scalp (the front part of the occipital region). The disease was then distinctly on the wane. Further, his throat, chest and abdomen were covered with exanthemata consisting of erythematous, slightly infiltrated spots ranging in size from a hemp-seed to patches larger than a shilling. They were covered with scales and crusts. On taking away the crust the underlying surface was found to be covered partly with shining and newly formed epidermis and partly with patches exuding a slight discharge. *On the abdomen, and especially on the back, these spots coalesced into larger desquamating areas, which on the back reminded me of a dermatitis exfoliativa or acute psoriasis with severe inflammation and desquamation* (see Figs. 7 and 8). The exanthemata on the neck spread upwards into the scalp and reached the primary kerion focus.

Also on the arms and legs (as will be seen on Figs. 7 and 8) some smaller lesions were found. Further, a universal swelling of the lymph-glands was present. There was no fever and the patient felt well. The eruption had arisen acutely during some days, but did not occur until the primary kerion had begun to heal. The intradermic reaction was strongly positive.

Neither microscopically nor by cultivation could fungus be demonstrated in the primary focus. On the other hand, cultivation of the fluid discharged from a lesion on the abdomen produced a pure culture of trichophyton gypseum.

It is thus proved that the case is one of a secondary trichophytic eruption. The acute development of the exanthema, the symmetrical dissemination, which is especially distinct on the upper arms, and likewise the general swelling of the lymph-glands, strongly point in the direction to a hæmatogenous origin. To these facts one may add that the exanthema breaks out in a period when the allergy of the body is distinctly pronounced. This is evident from the strongly pronounced trichophytin reaction, and from the fact that the demonstration of the fungus in the primary lesion no longer was possible. The second possibility—the exanthema being of an ectogenous origin, propagated from the primary lesion—cannot be denied, but is considerably less probable than the first possibility. A minute micro-



Figs. 7 and 8.—Disseminated secondary trichophytic rash in kerion Celsi.

TO ILLUSTRATE PROF. E. BRUUSGAARD'S ARTICLE ON HÆMATOGENOUS INFECTION IN TRICHOPHYTIA.

scopical examination of the lesions, which could not be done in this case, might in similar cases perhaps clear up the pathogenesis. A trichophytic exanthema showing this clinical picture—may its origin be the one or the other—still belongs to the rare exanthemata. It would hardly have been diagnosed if the deep trichophytic process in the scalp had been healed.

Finally, a few words as to the treatment of trichophytia profunda. In cases of this disease one has a very distinct example showing how the inflammation is an expression of the protective mechanism of the organism. The hairs loosen and fall out, any epilation being superfluous. The stronger the reaction, the more powerful becomes the formation of immune bodies and the fungus drowns in its own pus. The treatment, therefore, is as simple as possible. It is confined to the application of dressings of weak solutions of boric acid, Goulard's extract, or boiled water only. If desired, disinfection of the adjacent parts of the skin with a 10 per cent. alcoholic solution of iodine may also be undertaken. All treatments with ointments or X ray are superfluous and may act harmfully.

PSEUDO-ALOPECIA AREATA.

HALDIN DAVIS, F.R.C.S.,
Dermatologist to Royal Free Hospital.

In 1914* I described in this journal, under the name "epidemic alopecia areata," an outbreak in a female orphanage containing 300 girls all under the age of fourteen. So wide-spread was the disease that there were no less than 174 cases in all, including two adult foster mothers and one servant maid. This outbreak disappeared under antiseptic measures in about five months, but was succeeded by a second a year afterwards and it was about this time that I was consulted. At the time I advocated painting with iodine and daily washing of the scalp, measures which were entirely successful, on the assumption that the condition was due to some infection, but now I am by no means so certain that infectivity was the true explanation of this interesting little epidemic.

Since I described the above outbreak my attention has been drawn several times to a class of case which I do not remember previously to have seen described—cases in which children have exhibited patches on the scalp, to superficial examination greatly resembling ringworm patches, but which fail to yield any stumps containing fungus. The affected patches are of small size as a rule and are covered with stumps, which characteristically are broken off very close to the surface, so that it is difficult to seize them with forceps in order to extract them for examination. Even when effectually seized they do not come out easily like the stumps that occur in alopecia areata, but require considerable force for their extraction. Sometimes they break, not easily like ringworm stumps, but only with a sharp tug, often necessary because the free end of the very abbreviated stump gives very little purchase to the forceps. On microscopical examination of the extracted stumps the chief point of interest is that the distal end of the stump is frayed out and the hair is apparently split up into a number of bundles. Otherwise the structure of the hair remains

* *Brit. Journ. Derm.*, 1914, xxvi, pp. 207–210.

perfectly normal, and the roots are not atrophied. In no case has there been more than one such patch on the head. The patch has always been situated on the anterior part of the crown, or at the side, above and in front of the ear. During the last few months I have seen four cases answering to the above description. One was a case sent to me by a public authority, with the diagnosis of ringworm already made, to be X-rayed; another was a private patient, a small boy who had had one patch of ringworm near the occiput which I had treated with X-rays directed to the patch alone, without epilating the remainder of his scalp. He returned to school apparently cured, and I was much disturbed to hear a few weeks afterwards that he was again the subject of ringworm. On examination, however, the suspicious patch was found to be of the nature that I have just described. It was situated on the top of his head, almost in the middle line. The other two cases were school children whom I saw in the ordinary course of my work at the Willesden school clinic. Now in every case there was a story that the child had been seen scratching or rubbing the spot affected, and that it was this that had drawn the attention of parents or school authorities to the scalp. In the case of the boy whom I had sent back to school as cured of ringworm (which he was), it was definitely stated that he had had an itching pimple there which made him scratch it. The mother of one of my cases among the Willesden school children also said the same thing about her child. The inference, therefore, that I draw from these observations is, that it is the scratching or rubbing of the spot by the children which causes the breakage of the hair close to the scalp and thus produces the lesions I have already described. They are really artefacts, not intentionally or even consciously produced, and I submit that this explanation is consistent with the nature of the stumps, with the fact that the patches are invariably single, and that they appear always, or at least by far the most frequently, to be situated on a portion of the scalp very easily accessible to the fingers. In my opinion the best descriptive term for the condition, which is probably not a very rare one, if indeed it is advisable to give it a name at all, is *pseudo-alopecia areata*. It should be remembered when dealing with suspicious cases of ringworm.

To return to the epidemic at the orphanage of 1914. There is no doubt that the patches were of the same character as the patches in

the isolated cases just described. The only point in which there was any real difference was that in the two most severe cases there were in each three patches affected of varying size, the largest being about the size of a five-shilling piece. All the others had single patches only, and as far as I remember at the present time, exactly eight years since, all the patches were in the same sort of position, easily accessible to the tip and nail of the finger. The real explanation, which I therefore venture to put forward of all these cases, 174 in the first outbreak and 42 in the second, is, in my opinion, that they were examples of mass suggestion. The first case that arose may quite possibly have been a case of true alopecia areata. No doubt special attention was given to the child, which thus became drawn to some extent out of the somewhat monotonous routine of institutional life, and also became an object of unusual interest to its companions. Their attention was consequently turned to their scalps, and they began in rapidly increasing numbers to rub and scratch some spot on their heads, probably without any conscious intention of producing an artefact, and it must also be remembered that in many cases the lesions were extremely small, only quite a few hairs being affected. This points to an absence of intention to produce the lesions, which, if desired, could easily have been made of much larger size. But on the other hand the attention of the attendants was also directed to a far greater degree than usual to the children's scalps, and consequently they detected these small lesions, which at ordinary times would have remained unnoticed. I am inclined to think that the reason why the second outbreak was so much smaller than the first was that after I had visited the institution all the affected cases were isolated. This had a double effect. In the first place it removed from the healthy children the suggestion directing their attention to their own scalps, derived from seeing the patients being summoned from time to time to receive treatment, and in the second place if the healthy children thought about the others at all they reflected that they were isolated, and therefore excluded from many of the amenities of the institutional life. This in itself constituted a powerful suggestion to them not to have anything wrong with their own heads. The enormously rapid spread at the start of the second outbreak, thirty cases occurring in eight days—a much more rapid spread than in the first outbreak, which took three months to reach its maximum—is to be explained by

the supposition that the children had been, as it were, "sensitised" to the suggestion by the first outbreak and were much more receptive to it. Formerly I thought that the large number so quickly affected (thirty cases in one week) was due to the high degree of infectivity of the complaint, but it appears to me now to be much *too rapid* a spread to be due to infection from one child to another, and that the explanation of this "epidemic," if the term may now be used, as one of pseudo-alopecia areata spread by suggestion is really the true solution of the problem. And it may be that some of the other epidemics of alopecia areata which have been described as occurring in institutions have been in truth of a similar nature.

CLINICAL NOTE.

A NOTE ON THE USE OF FLAVINE-STARCH POULTICES IN ECZEMA.

J. FERGUSON SMITH, M.A., M.B., Ch.B.,
Physician for Diseases of the Skin, Royal Infirmary, Glasgow.

The continuous application of cold starch poultices has been long known as a valuable treatment for an acute dermatitis, though its vogue seems to be much greater in Scotland than elsewhere. The addition of antiseptics, other than the extremely mild and inefficient boric acid, has never hitherto been suggested, so far as I am aware, mainly because all the older antiseptics to be efficient have to be present in strengths which the inflamed skin will not tolerate. Thanks, however, to the work of Browning and his associates, we now possess, in the flavines, bodies which are comparatively non-irritating even in efficient concentration, and whose activity is enhanced rather than diminished in the presence of a serous discharge.

I have recently treated a number of cases of severely infected "seborrhœic" eczema of the head and groin by the following method, with results which I consider encouraging. In recording such results one can only state one's impression, as they do not lend themselves to tabulation.

Four tablespoonsful of rice starch and 10 grains (0·6 grm.) of acriflavine are mixed with a little cold water, one pint of boiling water is added, and the mixture is boiled with constant stirring till it thickens. When nearly cold it is poured on to dressing cloth so as to form a layer half-an-inch thick. When quite cold and set it is covered with a single layer of gauze or butter muslin, and applied to the part. It is changed three or four times a day, and at each change the part is bathed with acriflavine 1 in 1000 in 0·85 per cent. NaCl. These applications should be continued until it is considered more stimulating remedies may safely be applied. I have only seen two or three cases so far which did not respond rapidly to this method, and have succeeded with it in several cases which had resisted other methods for weeks.

Proflavine is less irritating, though rather less efficient, and could probably be employed up to 1 in 500 with benefit, but so far I have only used acriflavine.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

A CASE OF EPIDERMOLYSIS BULLOSA. D. Schwank. (*Ceská Dermatologie*, 1921, ii, No. 2.)

The patient was a man, aged 28 years, with a tuberculous and neuropathic family history, tuberculous and neuropathic himself. He showed symptoms of vasomotor disturbances, dermatographism, acro-asphyxia, hyperidrosis, etc. According to the patient's story, his mother, one aunt, one sister and two brothers suffered from the same skin-trouble he had, the main symptom of which was weeping, recurring in the autumn, lasting two to three months, and disappearing spontaneously. The patient has had recurrences since he was three years old. The present attack was the most severe, localised however to the left lower extremity. Vesicles first appeared in places bitten by a mosquito. New crops followed on the skin, irritated by scratching and pressure of clothing. Vesicles came on without prodromal symptoms, usually at night. Lesions healed without trace. It was possible to produce new vesicles experimentally by prolonged rubbing or pressure. Sudden trauma, no matter how intense, failed to produce them.

The author reviews the pathogenesis and ætiology of epidermolysis bullosa. The patient in this case was tuberculous. His suprarenals also might have shown tuberculous changes with consequently altered secretion, possible irritation of capillaries, and increased lymph-secretion. Weeping goes on indefinitely under an intensive irritation of vaso-dilation. The rapid response to treatment in this case would uphold the correctness of the theory. After the third injection of adrenalin (½ c.c. of 1 : 1000) the weeping stopped completely. After five injections the lesions dried up and healed. Even the general condition improved, the patient losing his sensation of fatigue and depression. Once during the observation there was a marked improvement following a sexual excess. Cases of this type are probably the result of a combined disturbance of glands of internal secretions. Spinka (St. Louis).

NOTE ON DR. SCHWANK'S CASE OF EPIDERMOLYSIS BULLOSA. F. Bamberger. (*Ceská Dermatologie*, 1921, ii, No. 4.)

Dr. Schwank's case shows how little is yet known about the diseases caused by the changes in the secretion or circulation of lymph. Few authors realise that the lymph is secreted by the endothelium of blood-capillaries, and that it has an independent circulation in the skin. A damage to a lymph-vessel will lead to outpour of lymph as damage to a blood-vessel results in bleeding. A hypersecretion of lymph will cause accumulation of lymph in the affected area. Both conditions, the hypersecretion and the outpouring, may cause a vesicle. When the vesicle resulting from the outpouring of lymph from an injured vessel ruptures healing will soon take place. When the vesicle caused by the hypersecretion of lymph ruptures it leaves a weeping erosion. Weeping lasts as long as the hypersecretion. In the production of vesicles the degree of coherence of epidermoidal cells plays an important part. The coherence of cells may be disturbed. The person can be born with decreased coherence of cells. The cells with normal coherence may be torn apart by various local or general con-

ditions—as, for instance, in the case of dysidrotic vesicles—the coherence is reduced by the saturation of epidermis by sweat, or by lymph in case of pemphigus. In both cases a mechanical irritation furnishes the exciting cause of vesicle formation.

Prof. Samberger does not consider Dr. Schwank's case as one of epidermolysis bullosa. He reserves that term for cases characterised by formation of vesicles resulting from outpouring of lymph into an epidermis with congenitally decreased intercellular coherence. In Dr. Schwank's case the vesicles resulted from the hypersecretion of lymph, and the case is therefore one of pemphigus factitius. SPINKA (St. Louis).

EPIDERMOLYSIS BULLOSA HÆMORRHAGICA. Y. VYSOKY. (*Ceská Dermatologie*, 1922, iii, No. 1, p. 16.)

THE reported case belongs to the dystrophic form of the disease. Besides showing hæmorrhagic vesicles, appearing sometimes on a traumatic basis, sometimes spontaneously, the patient presented gingivitis, ecchymosis of the buccal mucosa and lips, and nails that were brownish, thick, ridged and brittle. There was no hereditary history in the case. Blood examinations excluded the possibility of hæmophilia or other hæmorrhagic diathesis. The boy showed some improvement under internal administration of adrenalin (5 : 100, a teaspoon *t.i.d.*). SPINKA (St. Louis).

BROMODERMA AND CALCIUM THERAPY. K. HUBSCHMANN. (*Ceská Dermatologie*, 1921, ii, No. 4.)

THE author advocates the use of calcium salts in the treatment of bromoderma. The good results are based on the anti-inflammatory properties of calcium; it increases the impermeability of cells, and thus directly antagonises the action of bromine. This clinical observation is well in accord with the results of pharmacological experiments, and with the present knowledge of colloids and physical chemistry of cells and tissues.

The author cites a severe case of bromoderma in an epileptic girl. She left the hospital completely cured in four weeks. Treatment:

℞ Calcii chlorati . . . . . 50·0
Aq. dest. ad . . . . . 250·0

The patient was given one tablespoonful of the solution one hour before meals three times daily. When well tolerated the dose was increased to six tablespoonfuls daily. Locally the same solution was used in form of compresses on the excoriated lesions. SPINKA (St. Louis).

HYPERKERATOSIS EXCENTRICA. J. BUKOVSKY. (*Ceská Dermatologie*, 1921, ii, No. 3.)

THE author reports a case of hyperkeratosis excentrica that showed all the typical symptoms of the affection, as described by Mibelli under the term of "porokeratosis." The article contains a histological study of the skin-findings, especially the early changes. The author arrives at the following conclusions: From an unknown cause, areas of porokeratosis appear early in life in different localities. These centres of porokeratosis become more numerous with each attack. Each centre first appears as a tubercle, enlarging peripherally. After a varying length of time the oldest part of the affection begins to desquamate and

the lesions assume a new form—a deepened scaling centre with a porokeratotic hard border, without desquamation. If the scaling does reach the periphery, the entire lesion flattens out and becomes barely noticeable; a recurrence may, however, take place. The course of the disease may last for years; even changes in individual lesions take place very slowly. The treatment is ineffective, amelioration being only temporary.

The author believes that the term "porokeratosis" is ill-fitting, and prefers Respighi's name "hyperkeratosis excentrica," or Respighi and Dyerea's term, "hyperkeratosis figurata centrifuga atrophicans." SPINKA (St. Louis).

HERPES ZOSTER AS A PRIMARY ASCENDING NEURITIS. DOUGLASS W. MONTGOMERY. (*Arch. of Derm. and Syph.*, 1921, iv, p. 812.)

THE general opinion is herewith supported that herpes zoster is a specific microbic disease, and that one attack appears to grant immunity. The writer regards the eruption as due to a trophic disturbance following inflammation of a posterior root ganglion, and that this ganglionitis is due to a specific virus, possibly one of the streptococci, which attains the ganglion by way of the skin and the peripheral nerves. The view that the virus enters by a wound in the skin is supported by eruptions of zoster having been known to follow cutaneous traumatism. J. M. H. M.

INVESTIGATIONS ON THE ÆTIOLOGY OF DISEASES IN THE HERPES GROUP (HERPES ZOSTER, GENITALIS, AND FEBRILIS). LIPSCHÜTZ. (*Derm. Wochens.*, January 21st, 1922.)

THE author claims to have inoculated successfully the corneæ of rabbits with virus taken from herpes vesicles in all three groups. The most active of the three is that obtained from herpes febrilis (100 per cent. positive inoculations), and the least active herpes zoster, which failed to reproduce lesions in a considerable percentage of animals.

In all three types of herpes both in the human cases and in the keratitis of rabbits, the author describes "cell inclusions" of definite morphological and stainable characters, which, he maintains, are nuclear reactions to the specific virus of the herpes group.

The cell nucleus as virus carrier may, he thinks, account for the difficulty in elucidating the ætiology of some other dermatoses, *e. g.* warts and condyloma acuminatum. H. C. S.

LICHEN PLANUS AND ARSENICAL DERMATITIS WITH LICHENOID CHARACTERS. KELLER. (*Derm. Wochens.*, January 7th, 1922.)

A LICHENOID eruption on the face, trunk and extremities as a sequel to arsenical melanosis and dermatitis in a woman aged 26 years with secondary syphilis is the subject of a detailed paper by P. Keller. He gives extracts of papers on the same subject by half a dozen other writers. The chances of confusion with lichen planus in this particular case were not great. There was no pruritus and the typical central depression was absent, although the individual polygonal flat papules were not unlike the specific lesions of the well-known dermatosis. Histologically the author describes infiltration of the sub-papillary vessels with mononuclear cells—no plasma-cells; hypertrophy of the horny layer, up to five distinct

strata; œdema in the basal layers and spongiosis proceeding to vesical formation in places.

Arsenic is well known to have a special affinity for the basal cells, inhibiting their reproductive functions and leading to acanthosis. In lichen planus there would appear to be a similar interference with the germ-cell layer, for acanthosis and eventually a thinning of the rete and interference with pigment formation are characteristic of the histological picture. H. C. S.

A RARE FORM OF SUPPURATING AND CICATRISING DISEASE OF THE SCALP. Fred Wise, and H. J. Parkhurst. (*Arch. of Derm. and Syph.*, 1921, iv, p. 750.)

In this contribution a chronic affection of the scalp is described, which is characterised by numerous isolated and confluent sero-purulent hemispheric lesions, which become covered with crusts, and which, on involuting, leave bald areas similar to those met with in pseudo-pelade. Histologically the nodule has a granulomatous structure somewhat resembling a tuberculous process. The purulent element was regarded as secondary, and the causation was obscure. Cases of a similar nature have been described by Nobl, Spitzer and Ruete.

J. M. H. M.

ALOPECIA CONFLUENS THYREOGENES. K. Gawalowski. (*Ceská Dermatologie*, 1922, iii, No. 2, p. 41, and iii, No. 3, p. 69.)

The author cites ten cases of alopecia areata appearing, in confluent patches, in persons who showed changes in the eyebrows: seven had a typical Levi-Rothschild's "signe du sourcil," one had no eyebrows at all, and two showed the reversed sign (medial lack of brows). Except two, none had other signs of hypothyroidism. After the administration of thyroid extract eight of them showed a striking prompt and permanent cure, although all previous treatment was unsuccessful. There was one failure in a boy who undoubtedly did not have hypothyroidism (abnormal bodily development) and one improvement in a woman with ovarian instability. The best results were obtained with small doses of thyroid (grm. 0·1 one to three times daily). Judging from the response to treatment and from the brow sign the cases were of the types of mild hypothyroidism. Such authorities as Levi and Rothschild do not consider alopecia areata as a manifestation of hypothyroidism, and Sterling claims that alopecia areata is a symptom-complex out of which the cases of pluriglandular dysfunction should be excluded. As there is no hypothesis that would completely clear the ætiology of alopecia areata, the author concludes that it might not be a clinical entity but a syndrome resulting from different causes. In the future it might be necessary to limit our clinical conception of alopecia areata. Spinka (St. Louis).

THE FATTY ACIDS OF CHAULMOOGRA OIL IN THE TREATMENT OF LEPROSY AND OTHER DISEASES. Harry T. Hollmann. (*Arch. of Derm. and Syph.*, 1922, v, p. 94.)

In this contribution results of treatment in eighty-four patients suffering from leprosy by the ethyl esters of chaulmoogra oil, at the Leprosy Hospital in Honolulu, are described; also the results with the same treatment in two cases of Lupus vulgaris. It was found that the fatty acids of chaulmoogra oil were bactericidal for the acid-fast group of bacteria, and caused the lesions and bacilli

to disappear when administered to lepers either in the form of the sodium salt or the ethyl ester. The writer considered that it was too early to say that the fatty acids of chaulmoogra oil cured leprosy, and thought that patients who had become free from all lesions, and had given a bacteriologically negative reaction should be kept under observation for a much longer period than had as yet been done before the remedy could be regarded as a cure. He also considered that from the results obtained in two cases of lupus the ethyl esters of chaulmoogra oil fatty acids should be given a trial in cases of this disease, as well as in other forms of tuberculosis. J. M. H. M.

LUPUS ERYTHEMATOSUS ACUTUS. Görl and Voigt. (*Derm. Wochenschr.*, February 11th, 1922.)

The authors recognise three types of the acute variety:

(1) Lupus erythematosus disseminatus (Kaposi). There is no disturbance of the general health. The lesions differ from the chronic discoid variety in number and localisation, and tend to appear in crops.

(2) Lupus erythematosus discoides acutus (Kaposi). The generalised eruption is superimposed, or follows the common discoid facial type, and is accompanied by fever and generalised constitutional disturbance. The lesions themselves may be erythematous, hæmorrhagic, vesicular, bullous or crusted.

(3) Pure Lupus erythematosus acutus, which resembles the type described under (2), but is not preceded by the facial eruption.

The second—a very rare manifestation—is typically multiform, and may resemble a purpura, an urticaria, or even Erythema multiforme (herpes iris) or erysipelas (perstans).

The discussion which follows is based on the case of a woman, aged 34 years, who had suffered in past years from muscular rheumatism, pleurisy and pulmonary tuberculosis. There was also mitral disease. While the eruption belonged to type (3), and the patient was seriously ill, the authors could find no coincident activity of the old pulmonary focus throughout the disease. She was treated by rising doses of a stock staphylococcus vaccine rising from 50 to 300 million, and in seventeen days the eruption had involuted, and the patient left the clinic. A tuberculous ætiology was discarded on the absence of clinical manifestations in the lung, and the authors range themselves on the side of the rapidly-growing numbers of those who regard Lupus erythematosus as a manifestation of the cutaneous reaction to a specific (non-tuberculous) bacterial toxin. They quote Cranston Low, who recently described the complete absence (in a similar case) of tubercle bacilli foci in the post-mortem findings; Logan and Rutherford, who described streptococci in the heart's blood; and Barber, whose cases of Lupus erythematosus ascribed to absorption of streptococcal toxins from tonsils and intestines are still fresh in the minds of all readers of this Journal.

The paper is interesting as showing the trend of modern dermatologica thought in Germany, where the tubercle bacillus has long been regarded as the cause of this disease. H. C. S.

LUPUS ERYTHEMATOSUS. Bruusgaard. (*Norsk. Mag. f. Læger.* February, 1922.)

Among several recorded cases of interest at a meeting of the Norwegian Dermatological Association is that of Bruusgaard of lupus erythematosus on

the face and hands, occurring in a woman, aged 22 years, who had recently been treated for pulmonary tuberculosis. Afraid to employ a subcutaneous injection of tuberculin Bruusgaard had used applications of Moro's tuberculin ointment. This had revealed a considerable hypersensitiveness of the skin, on which appeared papules and vesico-papules, extending far beyond the area of inunction.

W. J. O.

SKIN-ERUPTIONS OCCURRING IN INFLUENZA. V. Janowsky. (*Česká Dermatologie*, 1922, iii, No. 2, p. 33.)

The skin eruptions are among the rarer complications of influenza. They appear most often in the gastro-intestinal form of the disease—as urticarial and erythematous manifestations—and much less frequently in the respiratory and nervous form. The predominating type of eruption varies in different epidemics. Types of eruption:

(1) Erythematous forms, appearing usually on second or third day—(*a*) punctate, rapidly becoming confluent, forming spots on the face and trunk, rarely on the extremities; (*b*) exanthem resembling measles but of a brighter red colour, and not disappearing on pressure; (*c*) exanthem appearing in stripes on the trunk, parallel with the course of the nerves—similar to scarlatina variegata; (*d*) a diffuse, extensive, scarlatiniform erythema on the trunk, often appearing on the inner side of the thighs; this form presents in many cases great diagnostic difficulties, especially in children.

(2) Urticaria, quite common in the gastro-intestinal type, has no special characteristics, except, perhaps, a longer duration than the ordinary form.

(3) Herpes labialis and facialis is most common in the toxic and catarrhal form of the disease and in its pneumonic complications. Zoster is rare. The author reports two cases.

(4) Purpura is the rarest and prognostically the most serious skin complication.

The course of the erythematous eruption is rapid—2–3 days. They have a slight tendency to recurrence. *Desquamation never takes place*, which fact is an important differential point, especially between scarlet fever and scarlatiniform eruption of influenza. Eruptions on the mucous membranes are rarely seen. They assume the form of red spots on the inner side of the cheeks or of red bands along the border of the soft palate, very different from the congestion of scarlet fever.

The author gives a detailed differential diagnosis between influenzal eruption and drug eruptions, dermatitis scarlatiniformis, measles and scarlet fever.

Spinka (St. Louis).

CONTRIBUTION TO THE TREATMENT OF PSORIASIS BY MEANS OF THE EXTRACTS OF ENDOCRINE GLANDS. J. Camrda. (*Česká Dermatologie*, 1922, iii, No. 21, p. 38.)

A boy, aged 10 years, was a very extensive case of psoriasis that resisted all treatment for six years. To give Samberger's theory and treatment another trial the boy was started on thymus extract. When the supply of thymus preparation gave out thyroid and testes were substituted. In a little over two months the case cleared up completely. It illustrates the beneficial effect of thymus on the increase of cell vitality, and the fact that similar effect can be produced by administration of extracts of glands which are in correlation with thymus.

Spinka (St. Louis).

ANIMAL AND VEGETABLE PARASITES.

MICROSPORON JAPONICUM: A NEW SPECIES. T. Kambayashi. (*Jap. Jl. for Dermat. and Urol.*, May, 1921.)

The author bases his claims for a new discovery on certain cultural and mycological peculiarities of the fungus. It was found in 17 cases in all, of which 15 were ringworm of the scalp.

Examination of stumps revealed mycelial chains in the hair shaft, composed of small round elements ·3–·4 mm. in diameter, a typical mosaic external covering of the shaft, and Adamson's arborisation in the neighbourhood of the hair bulb.

In the clinical appearances there are therefore no striking differences from those presented by an ordinary case of the microsporon type, but on Sabouraud's medium (maltose 4, peptone 1, agar 1·8, water 100) the mycelial colonies are straw to brownish-yellow in colour, dry, irregularly globular and rice-grain-sized for the most part. Others are as large as a bean, with a globular central excrescence and radial striations running peripherally into the medium. Sub-cultures in the Erlenmeyer flask grow to a circular disc 3·5–5 cm. in diameter in 40 days. The surface is dry and velvety, and the colour is brownish yellow with an occasional rose tint. *No powdery or downy appearances* were noted.

Microscopically the mycelium is of delicate hyaline structure with simple branching, mycelium "en raquette," "spores externes" on simple gonidia carriers, and typical "organe pectines" (Sabouraud).

The absence of aërial hyphæ ("downy" or "powdery" growth) and the yellow colour argue some similarity with the ochre colonies of M. equinum, but the folded character of the latter are entirely absent in this new species, and there are mycological differences which in the author's opinion justify the claims he makes for it. H. C. S.

INJECTIONS OF TRICHOPYTIN IN THE TREATMENT OF RINGWORM INFECTIONS. F. V. Novak. (*Ceská Dermatologie*, 1922, iii, No. 1, p. 19.)

Subcutaneous injections of "Trichophytin" (a product of the State Serological Institute in Vienna) and those of "Trichon" (a polyvalent trichophytin made according to the formula of Prof. Bruck by Schering in Berlin) have been tried in the clinic in Prague, and found to be a useful addition to the usual treatment (1 per cent. hot resorcin sol.). In severe cases the injections hastened the cure. Used alone they are insufficient to overcome a ringworm infection. Trichophytin is a weaker preparation, easier to handle; its administration causes less pain and less local reaction. It is recommended in cases of superficial infection, and "Trichon" for deep cases. Spinka (St. Louis).

"PIGEON-LICE" (DERMANYSSUS GALLINÆ) AND DISEASE CAUSED BY SIMILAR DERMATOZOA. Fr. Grön. (*Tidsskrift f. d. Norske Lægeforening*, No. 23, 1921.)

Dermanyssus gallinæ is a small blind mite, about ½ mm. in length, which may often be found in large numbers in dove-cots and hen-houses, where they remain in hiding during the day to wander out for to suck blood at night. A case is reported of a man, aged 48 years, with an extensive skin eruption of numerous closely packed small hard papules over the whole body and arms, accompanied

by much itching. While the picture closely resembled that of scabies, no burrows were visible. The patient's wife, son and niece, who lived with him, were similarly, though to a less extent, affected. He had noticed numerous small greyish dust-like grains on the sheets and bed-covers. On investigation these had been shown to be the mites in question. An anti-scabietic ointment was applied. This mite, unlike that of scabies, does not burrow into the skin, but remains as an ectoparasite to suck blood from the pierced skin. Capable of quite rapid movement, these parasites had apparently invaded the living-rooms through cracks in the ceiling from the overlying loft, where were many pigeons.

W. J. O.

TREATMENT.

X-RAY TREATMENT OF SKIN TUBERCULOSIS. K. Gawalowski. (*Ceská Dermatologie*, 1921, ii, p. 225.)

The paper, written for the Scientific Society for the Fight against Tuberculosis, reviews and discusses the theories regarding the biological effect of X-rays upon the pathological tissues, particularly the tuberculous. The author arrives at the conclusion that the view maintaining that healing in skin tuberculosis under irradiation is effected by an increase in the cellular formation of antibodies is as well substantiated as the theory of disintegration of pathological tissue and overgrowth of normal connective tissue. Neither view, however, explains the resistance to irradiation of lupus vulgaris involuted to the stage of lupus planus.

Discussing the dosage used in the treatment of skin tuberculosis, the author compares the varied techniques used by the different authorities. It is certain that a superficial epilating dose is strong enough to destroy the tubercle. Meyer alone uses the full epilating dose; others favour half the strength or slightly more. As the question of cellular immunity in tuberculosis is not definitely settled, and it is not known yet which cells form the antibodies in tuberculosis, it is important to avoid doses that would decrease the vitality of the skin. At the Clinic of Prague, with its comparatively limited facilities for a large number of patients, X-ray treatments are in many cases combined with phototherapy. Finsen treatment is used on almost all face cases. The author reports good results in affections of mucous membranes. To save time he uses small doses and thinner filters.

Spinka (St. Louis).

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OF

DERMATOLOGY AND SYPHILIS

JUNE, 1922.

CLINICAL AND HISTOLOGICAL STUDIES ON THE PATHOLOGICAL CHANGES IN THE ELASTIC TISSUES OF THE SKIN.

A. KISSMEYER AND CARL WITH.*

From the Department of Skin Diseases of the Finsen Medical Institute (Director: Axel Reyn).

I. INTRODUCTION.

DERMATOLOGY presents few places where the boundary between the pathological and the normal is so difficult to define as is the case with the degenerations in the elastic tissue of the skin.

All transitions are to be found between the soft elastic skin of the child and that of old age, which is more or less thin, atrophied, and almost without elasticity. Neumann (1880), Schmidt (1891), Sederholm (1892) and Reizenstein (1894) were the first thoroughly to describe the histological changes associated with the dissolution of the elastic fibres. In patients forty years old they have been able to demonstrate fairly pronounced changes in the skin of the face, and Sederholm in other places also, viz. the scalp, though less pronounced. The latter, indeed, claims histologically to have found commencing elastic degeneration even in persons twenty-five years old. Clinically, in red-haired people in the forties we think we can observe certain changes, especially on the cheeks, where, just as on the backs of the hands and the forehead, the changes of age first assert themselves, because all through life these places are exposed to various injurious influences (sun, weather, etc.). On the cheeks

* The histological part of this work is by Kissmeyer, the clinical by With.

may be seen, with the light aslant from the front, a peculiar mother-of-pearl-like lustre, which, despite the difference, yet reminds one somewhat of that caused by elastic degeneration in quite old people and in pseudoxanthoma elasticum. This point has also been observed by certain artists. The elastic degeneration is very much more pronounced in old people; it is most noticeable in the face, as it gives a characteristically mesh-like appearance to the face, on account of the rigid immutable wrinkles. At times, too, the colour is very peculiar—like old ivory. The appearance may be so pronounced that sometimes the condition has been confounded with pseudoxanthoma elasticum, as is evidently the case with the patient described by Dohi under this diagnosis. In 1913 Dubreuilh established this condition as a definite aspect of disease, and to it he gave the name *elastoma diffusum*. He gives an excellent description of both the clinical and the histological aspects, though it is not clear from his work whether he considers the affection as a further development of the senile changes of age.

In any case, if the accompanying photograph (Fig. 1) of a seventy-year-old woman with lupus is compared with Dubreuilh's illustration no demonstrable difference is found. One notes the large wrinkles, especially in the forehead, and the mesh-like appearance; the colour, especially on the neck, was like old ivory. The histological aspect showed very pronounced changes.

Under the flattened, somewhat atrophied epidermis, in the whole of the upper part of the corium, is found a dense, irregular mass of thicker or thinner elastic fibres, most of which were very intensely coloured. In several places these changes are further accentuated, so that "balls" of rolled-up, partly broken elastic fibres are formed. On the other hand, only here and there are there slight indications of amorphous nodules of degeneration. These changes are situated everywhere at about the same depth.

These places where the elastic degeneration is specially developed evidently correspond to those portions of the skin where clinically a more pronounced yellowish colour was found, often like small nodular formations, especially on the neck.

Besides the patient mentioned we have observed another, whose history we give below, partly because of the rare, strongly pronounced elastic degeneration, and partly because of two other circumstances to which we will return later.

The patient is a woman, aged 74 years, from the country (Fig. 2), who, on and off for forty years, has suffered from outbreaks of lupus which have deteriorated badly during later years. On the forehead, on the cheeks, the upper lip and the chin the skin is heavily creased and wrinkled, while between the deep wrinkles are shallower ones, so that the skin becomes reticulated. The meshes are of various size, sometimes only as large as a hemp-seed, with patulous follicles in the centre. The colour is a peculiar yellowish green. The wrinkles, as well as the yellow colour, become less marked on the outer part of the cheeks and down the neck.

The skin of the back of the hand is obviously, like that of the face, markedly pigmented. There is somewhat pronounced atrophy.

Fig. 1.

Along the border of the hair, on a portion of the forehead which is white and apigmented, from the fact that the patient wears a hat in the summer, there are white natural scars dating from babyhood.

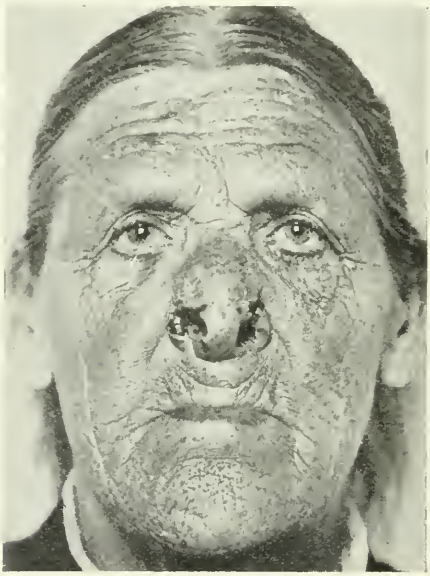
On the left side of the forehead over the eyebrows are whitish, not particularly distinct scars, caused ten years since by pricks from spines. In the right temple a fine, white, linear scar (*ca.* 8 × 0·2 cm.) appeared six years ago from a scratch with a metal point. The surrounding skin shows a yellowish colour and pronounced senile changes on spots mentioned.

On the centre of the right cheek is a bluish-white, slightly-prominent scar, about 8 × 3 cm. in size, with doubtful lupus nodules, probably of old origin. Clinically no definite senile changes.

Microscopical examination of the scar on the right temple shows: Under the flattened epithelium in the main part of the incision is a dense infiltration of

pronounced degenerated elastic tissue, the thick and partly broken fibres of which are rolled up in irregular balls, and fill up the entire upper part of the corium in a broad, rather sharply-defined belt. In the central part of the incision, corresponding to the atrophic whitish scar, the condition, however, is different. Here, rather sharply defined on both sides, is a part where, in the deeper parts, are found solitary small collections of degenerated elastic tissue, while the entire upper part of the corium contains numerous but quite fine wavy elastic fibres, not present in such large numbers as they are found in normal skin, but quite identical in character with the normal elastic tissue. It therefore seems as if at the site of the injury a number of elastic fibres had regenerated, while the deep-lying degenerated elastin must be supposed to be due to

Fig. 2.



the fact that the trauma, which led to the scar, did not reach so deep (Fig. 3). The scar on the left side of the forehead showed similar changes.

Here it may be mentioned that in a considerable number of elderly patients a peculiar yellowish colouring in both eyebrows and adjoining part of the forehead is found as a first symptom of senile degeneration. Here the skin is peculiarly finely meshed.

We will mention one other patient.

In a woman, aged 54 years, with rather pronounced pigmentation of yellow degenerated skin, especially on the forehead and the root of the nose, papules of a peculiar whitish-yellow colour up to the size of a hemp-seed and generally fairly well isolated were found in the eyebrows. At a distance the whole

presents a characteristic reticulated surface. *Microscopical examination* shows the following: In the section are seen more or less normal surface epithelium, and very numerous oblique and transverse sections of hair-follicles. Between these latter the corium consists almost exclusively—apart from a few vessels and insignificant little heaps of lymphocytic cells—of elastin, of which the fibres are thick, twisted, curled and broken; in some places more homogeneous clusters are found (Fig. 4).

The yellowish colour is, however, not confined to the face and neck. For instance, small areas (one measuring 0·5 × 0·2 cm.) with distinct yellowish colour were found in a mason, aged 70 years, with lupus erythematosus on the back of his hand, where there was distinct atrophy of the skin, which was thin and flaccid but not scarred.

Similar changes in the elastic tissue as those found with increasing age can also be shown both clinically and histologically in various more or less pathological conditions.

Before proceeding to a description of these, a short note of what we understand by degeneration of the elastic tissue must be made.

Unna (*Histopathologie der Haut*, 1894) has, as is known, thought that he could define special forms of degeneration of the elastin based on bio-chemical and morphological changes in the condition of the elastin in the corium, particularly in senile changes, but also by other degenerative processes. He has classified these changes as follows: *Elacin*, which, as opposed to the oxyphile elastin, is coloured by basic colouring matter, but otherwise morphologically has essentially the character of the elastin; *collacin*, which "combines the form of the collagen with the staining reactions of the elacin"; and *collastin*, an elastin-collagen compound which structurally shows a connection with pre-existing collagen fibres, but tinctorially has the basophile qualities of the elacin. This in itself is a rather artificial classification. Unna has now abandoned this classification, nor does he mention it in his *Biochemie der Haut*, published in 1913. Unna also has personally emphasised to one of us (Kissmeyer) that now he no longer attaches much importance to these distinctions in the degenerated elastin. When in what follows there is mention of "elastic degeneration," *morphological structural changes* must be understood.

These appear in two principal forms: (1) either a striking increase in elastic fibres, both thick (sometimes like a rosary) or quite fine, in

peculiar crumpled-up bundles which can best be described as resembling "horse-hair"—a change which is often accompanied by bursting and breaking of the fibres (Darier's elastorrhexis); and (2) as amorphous, strongly staining grains or lumps. These two changes may be found together, but frequently only the one form is found.

One of the authors who has occupied himself with these problems most thoroughly is Juliusberg (1902), who gives a summary of the result of his investigations in the following words: "Wir werden also neben die senile Degeneration der Hautstellen würden . . . die 3 Affectionen, welche klinisch durch ihre eigenthümliche weiss-gelbe bis gelbbräunliche, etwas durchscheinende Farbe charakterisiert sind, bei welchen schon diese auf eine specielle Betheiligung des 'gelben Gewebes' . . . hinwiesen, und bei welchen in der Tat die degenerativen Veranderungen der elastischen . . . Fasern das Wesentlichste des pathologischen Processes ausmachen. Es sind (1) die miliäre colloide Degeneration der Haut (Colloidoma miliare), (2) die von uns beschriebene ausgedehnte, aber ebenfalls in circumscripten Herden auftretende colloide Degeneration der Haut die sich meist (oder immer) an Granulationsprocessen anschliesst und die man vielleicht provisorisch nennen konnte 'colloide Degeneration in Granulations- und Narbengewebe.' (3) Das Pseudo-xanthoma elasticum."

As a fourth group Arzt has established changes in various other diseases, for instance, lupus erythematosus, malignant tumours, etc.

II. Degeneration of Newly-Formed Elastic Tissue in Scars.

As the elastic degeneration in scar-tissue forms the most natural transition to degeneration in normal skin we will first discuss this.

1. *Traumatic Scar.*

Passarge and Krœsig (1894) seem to be the two who have most thoroughly studied new formations of elastic tissue in scars. When investigating a six-week-old scar the first-mentioned found no elastic fibres, but in six-month-old scars, on the other hand, he found numerous fine fibres. Similar fibres were found in three-, four- and five-year-old scars, while with ten- to thirty-year-old scars, on the other hand, histologically one can only distinguish the surrounding tissue from the scar-tissue by its prominence, though macroscopically

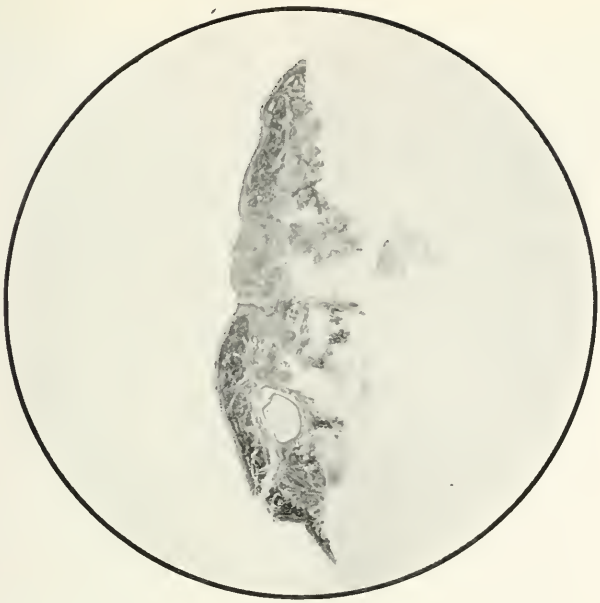


Fig. 3.—Senile elastic changes round scars of recent origin.

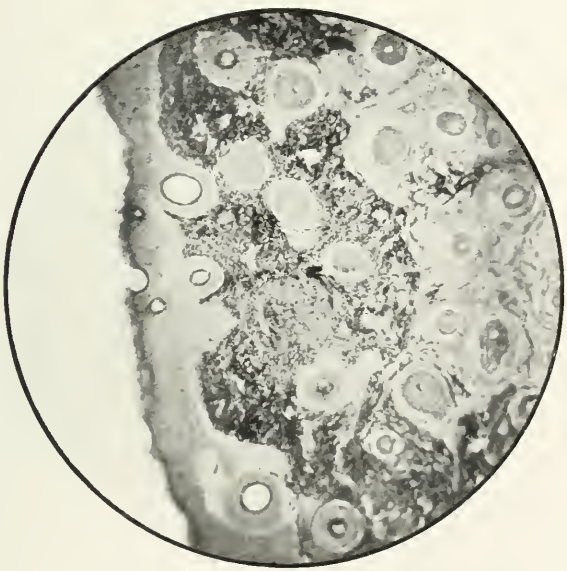


Fig. 4.—Section from eyebrow with degenerated elastin.

TO ILLUSTRATE DR. KISSMEYER'S AND DR. CARL WITH'S ARTICLE ON CLINICAL AND HISTOLOGICAL STUDIES ON THE PATHOLOGICAL CHANGES IN THE ELASTIC TISSUES OF THE SKIN.

it continues to be smooth and shiny, a point to which Ziegler is said first to have called attention. Passarge writes: "Wie sich aus den vorstehenden Angeben ergiebt, findet in Narben eine zwar langsame, doch unter günstigen Verhältnissen mit der Zeit vollständige Regeneration des elastischen Gewebes statt."

In spite of this apparent similarity the newly formed scar-tissue, at least on the face, must have less power to resist the influence of the years, because, as was first pointed out by Juliusberg, the yellow colour characteristic of the elastic degeneration appears earlier in scars than in normal skin. He refers to various observations by Jadassohn which show typical yellow colour in scars of different origin. Before referring to our own cases originating from traumata we must first refer to Juliusberg's three cases. These are—(1) scar from a cut in the forehead of a woman, aged 40 years. (2) Irregular round scars on the tip of the nose of a man, aged 48 years, which came from a sword-cut twenty-three years previously, whereby a piece of skin was cut away, which was replaced but again partly knocked off. The scar had a distinctly yellow appearance in contrast to another scar on the forehead at the border of the hair, which was pure white, due to greater protection from the sun. Otherwise the skin of the face was not pigmented and showed no senile degeneration. (3) Distinctly yellow scar from a cut in the forehead of a man, aged 40 years. Microscopical examination showed typical age changes of elastic tissue.

In Cases 1 and 3 information is missing as to the age of the scars; the same applies to the scar in the forehead of Case 2, and according to Passarge's investigations there is reason to expect that the period at which the degeneration begins is partly due to the age of the scar and partly to the age of the patient.

Besides these, Emma Dübendorfer has described a yellow traumatic scar with elastic degeneration, dating from childhood, in the forehead of a woman, aged 45 years.

Our investigations confirm this. The condition evidently is very common, indeed so common that we are inclined to regard a yellowish colour resulting from elastic degeneration as a final stage of ordinary traumatic scars in the forehead. In the course of about six months we have investigated 23 cases of this kind, and 20 of these (12 women and 8 men) had scars on the forehead, while only 3 had

scars on other parts of the face, viz. a man, aged 65 years, with a sixty-year-old scar on the cheek; a woman, aged 27 years, with a twenty-five-year-old scar under the outer canthus of the left eye; and a woman, aged 33 years, with a scar on the cheek-bone. The scars on the forehead are generally localised to the centre of the forehead; one thirty-two-year-old scar in a man, aged 35 years, was, however, just below the border of the hair.

The period for the appearance of the yellow colour in scars depends both on the age of the scar and on that of the patient. Only in the following three of our 23 patients with definitely yellow scars was the scar twenty-five years old or less.

(1) In a woman, aged 19 years, a seventeen-year-old vertical scar was found in the centre of the forehead; typical yellowish colour in upper as well as lower part.

(2) In a woman, aged 27 years, a typical yellow twenty-five-year-old scar was found under the inner canthus of the left eye.

(3) In a woman, aged 32 years, a typical yellow twenty-two-year-old scar was found in the forehead.

All the twenty-three patients mentioned were, with the exception of five, 40 years old or over; besides the above-mentioned three, there was one man, aged 36 years, with a thirty-two-year-old scar, and the woman mentioned below.

(4) In a woman, aged 33 years, a thirty-one-year-old narrow, yellow, 2 cm. long vertical cicatrix was found on the mesial part of the left eyebrow.

Here, however, we must call attention to the fact that in scars less than seventeen years old we have occasionally found indication of elastic degeneration, viz. in the following three patients:

(5) In a girl, aged 12 years, a scar, caused by a fall about eleven years previously, was found right in the middle of the forehead; in the white scar suggestion of yellowish colour was found.

(6) In a girl, aged 19 years, with a seborrhœic skin, a twelve-year-old yellowish scar caused by a fall from steps was found almost in the centre of the forehead.

(7) In a woman, aged 18 years, a fifteen-year old scar caused by a fall against stone was found in the forehead. In spots corresponding to the suture marks was a distinct yellowish colour.

The history of the last case indicates that the suture scars have a tendency to degenerate before the remaining portion of the scar. As the following short history suggests the same thing there may be reason for subjecting the question to further investigation.

(8) In a man, aged 55 years, a forty-five-year-old white scar was found in the forehead; typical yellow colour in the suture marks.

Lately we have recorded a number of control cases. In nine patients (five men and four women) natural white scars were found on the forehead after trauma, with a few exceptions dating from childhood. All the patients mentioned—excepting a woman, aged 45 years, with a scar about forty years old, and a man, aged 41 years, with an eighteen-year-old scar—were under twenty-four years of age, or had a scar which had existed only six years, so that a yellowish colour was not to be expected. In a woman, aged 40 years, a natural scar from an operation twenty years since was found under the nose, and in a patient, aged 32 years, a natural scar from trauma twenty-nine years ago on the under lip. Compare the above-mentioned man, aged 55 years, with elastic degeneration in the suture-marks.

The typical difference between old and more recent scars was well illustrated by a patient, aged 65 years, who had a typical scar of yellowish colour on the forehead, evidently dating from childhood, but on the left cheek white scars only nine years old.

Here we will again call to mind the patient with the pronounced elastic degeneration in the face, mentioned on p. 177. On the left side of the forehead was a white scar only ten years old, and therefore occurring at a period when there were considerable senile changes in the skin. Microscopical examination showed natural elastic tissue.

When, in the course of such a short time, we have been able to collect so many patients with scars on the forehead which date from early childhood and are caused by falls or blows, the main reason naturally is that in small children the forehead is particularly exposed to traumata from falls or other accidents. We are, however, inclined to think that on the whole the skin of the forehead shows greater tendency to reveal changes in age than other parts of the face. This evidently is associated with a very frequent condition, especially seen in women, which one of us (With) has named *rosacea frontis*, which shows itself as a more or less pronounced flush and infiltration of the skin of the forehead together with numerous wrinkles, often resulting in slight atrophy with or without yellowish colour. Possibly there is a connection between this condition and the yellow scar-formation.

In two cases we have had opportunity to make histological investigations, viz.:

(9) In a woman, aged 60 years, with extensive lupus erythematosus, in whom, in addition to a yellow transverse scar measuring 3 × 0·1 cm., was found on the forehead a large white scar formation surrounding that produced by the treatment of the lupus erythematosus. *Microscopically* the greater part of the epidermis was seen flattened, with deficiency of epidermic plugs. In a v. Gieson-stained preparation the corium was seen well coloured, also the corpus papillare. In the elastin-stained preparation very coarse, irregular, partly broken or rolled-up elastic fibres were here seen in almost the entire extent of the section. These changes were found just under the epidermis, being separated from this, however, by quite a narrow belt. No changes were found deeper in the corium.

(10) In a man, aged 38 years, was a scar 4 × 0·1 cm. on the right side of forehead entering the scalp, caused by a tear from a nail twenty-eight years ago. The lateral part of the scar in the scalp was white, the mesial part below a definite yellow. Here *microscopical* examination showed no essential signs of atrophy of the epithelium. The interpapillary plugs were present and the cell layers were also found to a normal extent. In the corium sebaceous and sudoriferous glands were abundantly embedded. A single hair-follicle was found on the one side of the section (against the sound skin). The fibrous tissue was stained normally with picric acid—acid fuchsin. With elastin staining quite a wealth of elastic tissue was seen both in the papillary body, which it entirely filled out, right up in the papillæ and also in the deeper parts of the corium, where abundant elastin masses surrounded the sebaceous and sudoriferous glands. This elastin appeared partly as fibres with the usual appearance and course, and partly as amorphous, lumpy masses, which were coloured very deeply by the specific dyes. Broken and rolled-up fibres (elastorrhexis) were not seen, however.

Jadassohn and Juliusberg have noticed that the reason for the changes in the elastic tissue of scars on the face must be looked for in the constant influence of the weather. The above-mentioned history (No. 10), in addition to histological investigations, as well as the following (No. 11), establishes the influence of the weather, as those scars or parts of scars which are protected against it have preserved their white colour, while the others are yellow. The woman aged 74 years, mentioned on p. 177 as having white scars at the border of the hair dating from childhood and protected against the summer sun by a hat, and thus contrasting with her yellow wrinkled skin in the rest of her face, proves the same.

(11) In a woman, aged 41 years, a narrow vertical scar about thirty-nine years old, which showed typical elastic degeneration in the suture-marks, was found on the left cheek. On the right side of the forehead and dating from the same time was found a 3 cm. scar extending from the scalp downward, the upper part of which in the scalp was white while the lower part below the scalp was yellow.

2. *Scars after Granulation Processes.*

After dealing with the traumatic scars, it is natural to find out whether corresponding changes are to be found in scars of other origin. Jadassohn has observed the following cases (published by Juliusberg): (1) In a scar after nodular tertiary syphilide on the leg of a woman, aged 30 years, individual yellow spots the size of a pin's head (compare discussion on Gray's case, p. 193). (2) Flat irregular scars at the angle of the jaw of a man, aged 60 years, with markedly senile skin; the place is plainly distinguished by its yellow colour; in his youth operated on for lymphomata. (3) Irregularly indrawn scar at left angle of jaw of a man, aged 41 years, which originated from suppurating lymphomata in youth; the scar yellowish—not on account of pigmentation; the skin of the patient only slightly senile. (4) Irregular scar on the mastoid process, after "scurvy" in childhood in a man, aged 45 years; scar sprinkled with quite small yellow spots.

Juliusberg has, according to Arzt, observed a characteristically yellowish colour in scars after variola in the face, and Emma Dübendorfer has both clinically and histologically found elastic degeneration in smallpox scars on an old woman, aged 56 years. This special form of change is made the subject of a thorough research in a fine work by Arzt. He examined ten individuals (only one woman) aged from 31 to 69. In all the patients except two the scars were of a yellowish or a peculiarly ivory-like colour. The changes appeared but little affected by the age, as great changes with nodule formation were found in the youngest patient, while less pronounced, more diffuse changes were found in the 69-year-old patient. The scars all originated on the face, and were all microscoped. By a histological investigation of a "mehrere Jahre alten Brandnarben oberhalb des Ansatzes des rechten Musculus sternocleidomastoideus, also ebenfals einer frei getragenen Hautpartie," the elastic tissue was found only slightly developed. From this case the author draws the conclusion that the weather hardly plays any special *rôle*, which is scarcely correct, as we do not know the age of the scar from the burn.

We ourselves have had the opportunity of examining scars with a yellowish colour after suppurating lymphomata in 11 patients (7 women and 4 men), aged from 21 to 41 years. The three youngest

patients (21–22 years) had only commencing changes. The scars were from 15–19 years old. Apart from 2 women, in the other 7 patients, who all—except one man of 21—were over 33, the whole scar was found to be of yellowish colour. In a man, aged 55 years, a twenty-two-year-old scar of natural white colour—after suppurating lymphomata—was found, the same being the case with a woman, aged 37 years, with a twenty-one-year-old scar.

If we compare scars after suppurating lymphomata with traumatic scars we find that the latent time for degeneration of the elastic tissue is scarcely shorter than with traumatic scars.

We will just mention a couple of cases a little more particularly, as we have had opportunity to examine them histologically.

(1) In a woman, aged 38 years, with lupus vulgaris, scars—after suppurating lymphomata when the patient was 17 years old—were found on the neck. Two yellowish papules the size of a hemp-seed and connected by a whitish bridge of skin were found in a scar which measured 5 × 0·5 cm. Besides this scar, other flat, partly whitish and partly yellowish scars were found just behind the angle of the right jaw.

Histological examination showed the following: In the section of one of the above-mentioned yellowish papules a flattened epithelium without or with only poorly-developed plugs was seen. In v. Gieson-stained preparation was seen a curious twisting of the connective-tissue fibrillæ, especially in the sub-epidermal parts. The fibrillæ were curled, some quite fine, others thick, especially in the deeper layers. There was a pronounced perivascular accumulation of lymphocytes, but also numerous dispersed spherical cells; some follicle remains but no developed hairs. With elastin staining there was seen in the central part of the section—which corresponded to a visible yellowish papule—pronounced increase of elastin, which also appeared in a peculiar morphological form, the fibres being strong, curled and broken. This change either reached right up to the boundary of the epidermis and corium, or was divided from this by a narrow zone where small amorphous lumps, strongly stained with the elastin stain, were found. This change reached the deep cutis tissue, and stopped there rather suddenly. In one place in the section these changes were found in a specially pronounced degree on a part sharply defined from the remaining tissue.

(2) In a man, aged 22 years, whitish and pigmented areas alternating with others of faint yellowish colour were found in a motley scar after an operation for lymphomata fifteen years ago.

Histological investigation showed the epithelium to be quite flattened, without interpapillary plugs. Just under the epidermis was seen a narrow belt of connective tissue, which by v. Gieson's staining method was normally coloured red with acid-fuchsin; but under this were outlying parts in the corium in which the tissues were scarcely stained by the acid-fuchsin, and the fibrillæ were very undulating and twisted as if rolled up. This, specially applied to individual, sharply-defined areas, where these changes were very much in evidence,

Numerous dilated veins were found in the corium. With specific elastic staining it was seen how the weaker fuchsin-stained parts consisted of transformed elastin, the fibres here being twisted in a corkscrew and horsehair-like way. These changes formed a layer running fairly regularly through the entire section, which layer was separated from the epidermis by a narrower belt in which were found only a few degenerated fibrillæ. In this, however, were greater and smaller amorphous lumps strongly stained with elastin stain. In some places they were accumulated in rather large clumps and heaps, and in others were quite scattered. The changes in the corium described above again formed a broad layer under the papillary body, but there was a pronounced tendency towards separation into greater and smaller distinct nests. Here, also, was pronounced elastorrhexis. The amorphous lumps were only found in the layer of the corium lying just under the epidermis, and not between the degenerated elastic fibres in the deeper layers (Fig. 5).

As, in both these cases, we found what Friedmann (1921) in an interesting work has called "fibromatoid" formation in scars succeeding scrofulodermia, we dare not preclude the idea that the changes in the elastic tissue must partly be ascribed to this. The fact is, that by examining these formations occurring after scrofulodermia, he found in 20 patients pronounced degeneration of the elastic tissue in addition to other changes. Unfortunately Friedmann has given neither the age of the scars nor of the patients. We ourselves have had the opportunity of examining a single patient, a woman, aged 40 years, who had scrofulodermia on the neck in her fourteenth year. We can entirely confirm Friedmann's observations.

Besides the scars after lymphomata mentioned, we have had opportunity of observing the colour peculiar to elastic degeneration in two patients, viz. (1) in a woman, aged 40 years, with lupus vulgaris, where a yellow scar—the size of a sixpence—originating from an excavation 3 years old was found on the left cheek. (2) In a woman, aged 49 years, with lupus vulgaris, who had a yellowish scar after operation for her lupus about 28 years ago, on the back of the right hand.

We have reason to suppose that the elastic degeneration and subsequent yellowish colour is a rare phenomenon in patients with scars after lupus. Possibly because regeneration of elastic tissue in such scars is rare. For, though during our work at the Light Institute we have had our attention directed to this question in numerous patients, we have found only the above-mentioned two patients with yellowish colour in scars after lupus vulgaris.

3. *Scars after Burns.*

Finally we shall quite shortly mention that in a woman, aged 44 years, with lupus vulgaris, we found on the left cheek and upper lip a rather indistinct scar with intact follicles, from burns at the age of 2 years; the colour was a peculiar greyish yellow. The wrinkles of the skin were strongly emphasized, and papules the size of a lentil, which showed a tendency to merge into ridge-like tracts, were seen everywhere. This condition, which somewhat called to mind certain cases of "pseudoxanthoma elasticum," was apparently due to elastic degeneration (Fig. 6).

Likewise in a woman, aged 53 years, with lupus, an extensive scar with yellowish areas of the colour characteristic of elastic degeneration was found on the right cheek. This scar dates from extensive deep burns at the age of 2 years.

Histological investigation showed very pronounced change of the elastin through the entire section, in a broad belt under the epidermis. Here there was a dense, entangled accumulation of elastic fibres, which were partly thickened and partly broken, and rolled up like "horse-hair." The changes were entirely homogeneous throughout the section. A number of deep-coloured amorphous masses were also found, especially in the upper part of the changed elastic tissue.

III. Elastic Degeneration in Transplantation Patches.

Before proceeding to the next section we must draw attention to the fact that in scars of a certain type, viz. after transplantation, one finds a peculiar yellowish colour which on account of the clinical aspect might be presumed due to elastic degeneration.* We have found no enlightenment in the literature as to the histological fate of the transplantation patches, or the reason for their appearing first white and then yellowish. The subject deserves to be investigated on a broader basis. The following remarks must be regarded as quite temporary, the object being to direct to this subject the attention of those who have more material at their disposal. We realise that there is reason to expect a considerable difference in the condition of the elastic tissue in the various types of transplantation patches; the poverty of our material has prevented us from delving into this question.

* According to friendly information from Dr. J. H. Sequeira to one of us (With), the former, during a visit to Vienna, was struck by the peculiar yellowish tone, almost like old ivory, found in a number of transplantation scars with patients whose lupus had been excised.

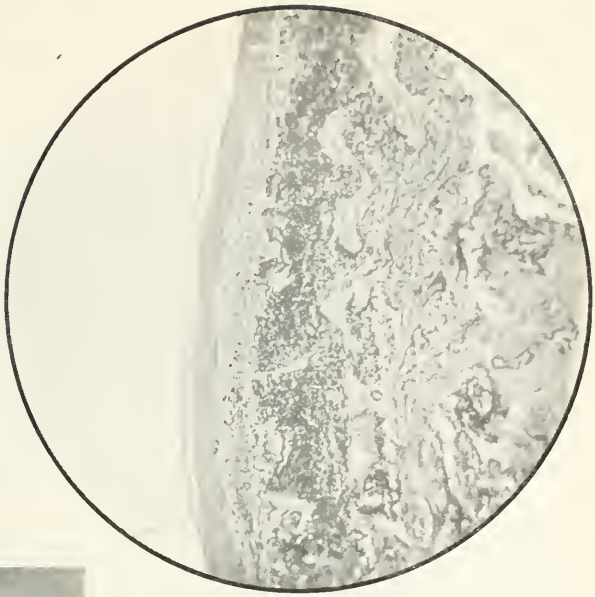


FIG. 5.—Degenerated elastin in scars from suppurating lymphoma.

FIG. 6.—Scar from a burn with marked wrinkling.

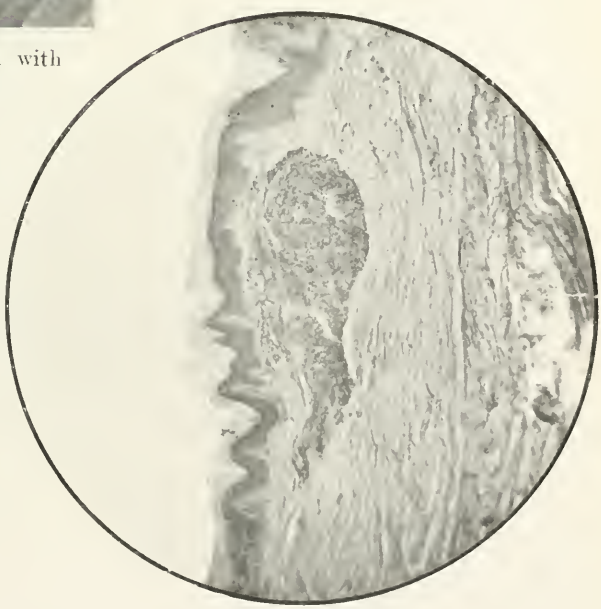


FIG. 7.—Isolated elastin degeneration in scars.

TO ILLUSTRATE DR. A. KISSMEYER'S AND DR. CARL WITH'S ARTICLE ON CLINICAL AND HISTOLOGICAL STUDIES ON THE PATHOLOGICAL CHANGES IN THE ELASTIC TISSUES OF THE SKIN.

Our cases are as follows:

(1) A woman, aged 54 years, with lupus vulgaris and moderate, yellowish, senile degeneration of the skin. In transplantation scars after an operation for ectropion twenty-eight years ago yellowish papules resembling xanthoma the size of a lentil were found under left eye.

The epidermis is not distinctly atrophic; a number of the interpapillary plugs are present, but somewhat irregular in size, mostly somewhat wide. The corium shows a normal staining reaction as regards the usual connective-tissue stains, and morphologically, also, no structure distinctly deviating from the normal skin is seen. There are scattered spherical cells in the corium, and some slight perivascular infiltration. In one place in the section, however, is a sharply defined part distinctly deviating from the remaining connective tissue, and the fibrillæ in this part have a more irregular course and stain less readily with acid fuchsin, but stain distinctly yellow with picric acid.

With elastin staining this part shows thicker or thinner rolled-up, often broken elastin fibres. This formation is rather sharply defined, almost like a small tumour in the skin, and separated from the epidermis by a quite narrow belt. In some places is an indication of conglomeration, but no small amorphous masses.

(2) A girl, aged 17 years, with lupus vulgaris. In a cicatrix—after blepharoplasty five years before—was found, corresponding to the old transplantation patch, which measured 4 by 3 cm., a peculiar yellowish colour on a part which was not sharply defined from the remaining skin and was somewhat wrinkled; the yellow part measured 2·5 by 1·5 cm.

Microscopical examination showed pronounced scar-tissue with flattened epidermis and dense connective-tissue fibres all through the corium, fibroblastic tissue in parts much nucleated. In the upper part there was much spherical cell infiltration round the vessels. For the greater part the tissue was completely free from elastin, but in a couple of places in the section was an abundant accumulation of elastic fibres, which, without being particularly sharply defined from the remaining tissue, filled up partly the upper part of the corium and partly the deeper layers. The elastic fibres were intensely twisted, and there was pronounced elastorrhexis. The fibres, however, formed rather loose bundles, and nowhere lay in tight masses. Amorphous degeneration was not observed.

(3) In a cottager, aged 49 years, yellowish colour was found in a twenty-one-year-old transplantation for ectropion of lower lid, but not in a one-year-old cicatrix on other eye.

(4) In a woman, aged 39 years, with lupus vulgaris, yellowish colour was found in an irregular scar which measured 1·5 by 1·5 cm., after an operation for lupus vulgaris when 21 years old and transplantation of epidermic grafts from the left thigh and also on the left side of nose, a darkly pigmented and very prominent scar after transplantation at same period.

(5) In a man, aged 46 years, a somewhat motley scar after an operation for lupus with transplantation was found on the left side of the upper lip, here and there of yellowish colour.

IV. Elastic Degeneration in Granulation-Tissue.

1. *Without Distinct Clinical Changes.*

Before proceeding to the elastomata proper, which, according to

Juliusberg, are now and then found in chronic granulation-tissue, we must just mention that some authors think that with different pathological conditions they have proved changes in the elastic tissue.

Schoonheid, who in 1900 wrote a comprehensive work on the histology of lupus erythematosus, is of opinion that he has found degeneration of the elastic fibres. He writes: "Zum Schluss der progressiven Veränderungen kommen typische Degenerationen an den elastischen Fasern. Diese Veränderungen sind es besonders, welche nach unserem Befunde zu der narbenähnlichen Atrophie führen. Diese bleibt eine oberflächliche, weil die meisten Veränderungen der elastischen Fasern in den oberen Schichten der cutis localisiert sind."

The changes described are rather small, hardly greater than often are found in middle-aged people, but otherwise support the observation referred to.

We also have observed a patient, aged 43 years, with extensive scar-formation and intact and somewhat distended follicles on the cheeks after lupus erythematosus. Here, as with elastic degeneration, one saw a peculiar yellowish colour, though alternating with areas of a whitish colour. The scar was about twenty years old.

Kyrle, by examining twenty patients with lupus erythematosus between the ages of 30–40, obtained the same result as Schoonheid. He proved fairly pronounced changes of the elastic tissue, especially in the papillary layer. According to Arzt, Jadassohn found similar changes in this disease in elderly persons, but ascribed them to age, an opinion which Kyrle dared not exclude. Arzt has made the question the subject of investigation on a broader basis, as with seven lupus erythematosus patients, between the ages of 16–42, he has thoroughly examined the conditions of the elastic tissue. He found no changes which could not ordinarily be explained by age. Arzt has also examined six cases of acne between the ages of 22–47. On the whole the changes were not specially characteristic, and the author was of opinion that he could substantiate a connection between the changes and the age of the individuals.

We have not yet had opportunity of studying the condition of the elastic tissue in lupus, which, taking into consideration the granulation elastomata, with which we shall deal in the next section, would be of

considerable interest. This omission is partly counterbalanced by Arzt, who has examined the conditions of the elastic tissue in four cases of lupus vulgaris, and in all cases has found "Umwandlungen am elastischen Gewebe—jederfalls viel intensiver als beim Lupus erythematodes und bei Acne—überwiegend in Form von wirren Knäueln und Verdickung der Fasern und tropfenartigen Gebilder vornehmlich in den oberflächlichsten Schichten und in der Umgebung der pathologischen entzündlichen vorgänge."

In this connection we must not omit to draw attention to the fact that among the principal works on these questions Arzt has examined eleven cases of epithelioma between the ages of 12–68, and draws the following conclusions: "So viel aber scheint uns aus den untersuchten Fällen zu resultieren, dass bei im Gesichten auftretenden Karzinomen im elastischen benachbarten Gewebe meist weitgehende Veränderungen sich finden, die ja gewiss auch mit dem Alter in einem Zusammenhang stehen; sie müssen aber absolut nicht immer mit dem letzteren parallel verlaufen können bei jüngeren Individuen auftreten und bei älteren fehlen und scheinen auch mit den entzündlichen Prozessen in der Umgebung der Karzinome in gewissen näheren Verhältnissen zu stehen."

In several cases of nævi cystepitheliomatosi disseminati in both lower eyelids, which were of yellowish colour, H. Gassman has found a degeneration which consists "in einer Fragmentierung, Verdickung und Quellung der Elastinfasern die bis zur Bildung von unregelmässigen Schollen und Klumpen führt."

W. Pick (1901) found similar changes of the elastic tissue with rather yellowish elements in epithelioma adenoides cysticum (Brooke).

2. *Clinically Distinct Changes.*

Julinsberg was the first to publish three cases of pronounced elastic degeneration in granulation-tissue:

(1) In a woman, aged 58 years, with slightly senile degenerated skin, who came to the clinic on account of tubero-serpiginous syphilide on the neck, an irregular rather sharply-defined plaque about the size of a half-crown-piece was found on the left side of the neck without the patient being able to give any information as to its origin. It consisted of a few partly isolated, partly coalesced patches of yellowish colour, which were slightly elevated and felt fairly firm.

The histological investigation showed large, circumscribed, non-characteristic infiltrations and distinct degeneration of the elastic tissue.

(2) In a man, aged 45 years, with twenty-three-year-old syphilis, two reddish-brown round patches—which with glass pressure showed a yellowish-brown colour—were found on the left upper arm in the scar from an almost healed ulcerated nodular syphilide. Elastic tissue degeneration was found here and there in addition to these two "lupoide Herde," which by *microscopy* showed lupoid structure. Pronounced elastic degeneration, besides granulation-tissue, was found in two patches of intense yellow colour.

(3) Finally, in a woman, aged 48 years, with lupus in left temple and left axilla, a somewhat depressed scar about the size of a penny, with smooth surface and yellowish colour, was found on the left knee. A protuberance full of pus is said to have existed on the site of the scar, and two similar scars were seen in front of the left ear. The histological investigation showed intensive formation of granulation-tissue and degenerated elastic fibres.

With these three cases, as Juliusberg has pointed out, must be reckoned one which Jarisch demonstrated to the Fifth German Dermatological Congress, 1876, under the name of "colloidoma ulcerosum." In this case, which Neisser was inclined to regard as somewhat atypical tertiary syphilide with elastic degeneration caused by syphilis, a combination of colloid degeneration and inflammation with giant-cells was found.

To these four cases we are fortunately able to add the following cases of lupus, which almost point for point can be compared with Juliusberg's Case No. 2. We luckily have had the opportunity to examine both histologically.

A woman, aged 49 years, with various tubercular affections, had on the right lower extremity, where the knee had been resected in February, 1917, and especially on the thigh, patches to the size of a shilling. In one of these, which measured 2 × 2 cm., the centre was scar-like; typical, isolated protuberances were seen at the periphery, and in one lupus patch a peculiar yellowish colour reminiscent of elastic degeneration. In addition were seen two isolated yellow patches where this was more pronounced. *Microscopical examination* showed pronounced atrophy of the epidermis with the disappearance of the interpapillary plugs. In the corium, on the whole, no elastin was found, but in one place in the section, in a portion not sharply defined from the surrounding tissue, was seen a rather close irregular network of elastin fibres, for a great part distinctly "curled up"; some elastorrhexis but no amorphous elastin-coloured masses. Even if this part was not quite sharply defined from the surrounding tissue it

formed—by its histological structure differing from the remaining cutis—an area in which was incipient elastic degeneration. This area presumably corresponds to one of the clinically observable yellowish patches in the skin. In addition lupous inflammatory tissue was abundantly embedded in the corium.

Once or twice we have excised a patch of lupus with light or yellowish miliary bodies, which proved microscopically to be milium. Clinically it seems possible to distinguish the elastomata by their more yellowish colour.

In addition to the elastomata in granulation-tissue we will draw attention to a very interesting case by A. M. H. Gray, which the author has communicated to With, and for which we are greatly indebted.

On March 19th, 1914, he demonstrated "a case of recurrent bullous eruptions on the legs." The patient was a man, aged 53 years, who had had an eruption on the legs for twenty-five years. During the last twelve years they had been of a bullous nature followed by ulceration; before that time there had been ulceration which had not developed on the basis of bullæ. In 1909 Radcliffe-Crocker had made the diagnosis of "tuberculous granuloma" for an affection on left thigh. For six months the patient had suffered from suppurating lymphomas and pulmonary tuberculosis. The description of the case reads:

"The patient was found to have large irregular scars on the thighs and legs, a large scar on the back of the left elbow, and several pitted scars about the forearms. The large scars on the thighs were superficial, thin, and had a very irregular outline; scattered through these scars were numerous pinhead-sized-yellow raised spots. The active lesions at the present time are of the vesicular and bullous type."

The exhibitor also called attention to a section of one of the old scars on the thigh, showing that the small yellow nodules seen were composed of small masses of elastic tissue just beneath the epidermis. Gray was inclined to consider the affection a tuberculous eruption, and as we at the Light Institute have had at least one similar patient with lung tuberculosis and disseminated ulcerations we are inclined to agree with him. In any case it is an established fact that the elastic tumours have developed in scars after a granulomatous process. Gray's unique case—with which perhaps should be classed that of Jadassohn, mentioned above (p. 185), with pinhead-sized yellow spots

in scars after tertiary syphilide—may be explained in two ways: Either the elastomata can be regarded as a continued development of the degeneration process which sooner or later attacks the elastic tissue originally destroyed by inflammation but regenerated, or, and in our opinion with more justice, the elastomata in the scars may be considered identical with those rather frequently found, as we have shown, in lupus, or in syphilitic eruptions. If so, they have arisen on the basis of the original elastic tissue, but have preserved their structure after the pathological process which stimulated their formation had ceased.

We ourselves have had opportunity of observing one case which should be ranked with Gray's, or rather, perhaps, with Jadassohn's case already mentioned and published by Julinsberg.

In a girl, aged 17 years, with extensive partially scarred lupus, of fourteen years' duration, on the back of the hand were two whitish-yellow spots—resembling milium—in scars at the base of the third finger. *Microscopically* the epithelium was seen to be flattened in places and in others to be of usual breadth with well-preserved epidermal plugs. The corium was, on the whole, poor in elastin, but in one place in the section was an oval, plate-like area, consisting of densely entangled and curled-up irregular elastin fibres, which in some places formed small amorphous masses. This part was well defined from the remaining tissue, and explains well the clinical appearance of these yellowish, milium-like formations (Fig. 7).

It will naturally be impossible in many cases to decide whether an elastoma in a scar should be considered as belonging to the primary or secondary elastic degeneration in granulation- or scar-tissue. Only where well-defined elastomata were found did we assign them to the first group.

As we have had no opportunity of observing any case of colloid-milium we will only quite briefly refer to this form. As a rule colloid-milium shows itself as pinhead-sized, slate-coloured, or yellowish transparent pseudo-vesicles (*cf.* Bosselini, 1906), which under the microscope show pronounced elastic degeneration. The "degenerated" elastic tissue is expelled like a sequestrum, and a faintly contracted scar is left. Julinsberg (1902) sets up the hypothesis that the colloid-milium is possibly due to an earlier affection—an acne pustule for example. If this proves correct, one would be entitled to compare the colloid-milium with elastic degeneration in scar- or granulation-tissue. For the rest we also refer to Arzt's interesting discussion on this subject.

(*To be continued.*)

SYPHILIS OF THE TESTICLE CONFINED TO THE EPIDIDYMIS.

A. REITH FRASER, M.D.(Aberd.),
Lecturer on Venereal Diseases, Cape Town University.

Introduction.

Syphilitic involvement of the epididymis without apparent implication of the testis proper is a well-recognised clinical occurrence. Although Michelson (1) considers that this condition is not one of extreme rarity and that it would be found more frequently if looked for, the scanty nature of the literature bearing on this subject would seem to justify the report of the following case. What we know about the subject has already been summarised by Micheel (1906) (2), Lisser and Hinman (1918) (3), and Loyd Thompson (1920) (4).

The question which occupied the minds of early workers was whether the syphilitic process could attack the epididymis irrespective of the testis, or whether the epididymitis was essentially secondary to the diseased condition of the body of the orchid. For a very long time there was considerable divergence of opinion. Ricord could not make up his mind on the point, but finally decided that syphilis of the epididymis occurred secondary to implication of the testicle itself (1843). Nelaton joined issue in 1852, and Dron emphasised the definite entity of the phenomenon with a report of fourteen cases in 1863. Kocher (1880) believed that the epididymis was affected but rarely, while interstitial orchitis and testicular gummata were well recognised. Such authorities as Virchow (1858) and Pick would not admit syphilitic attack of the epididymis, which is surprising in view of the amount of clinical material at their disposal. Hutchinson (5) recognised interstitial epididymitis to the exclusion of the testicle in very rare cases. Fournier (1875), Pinner (1884), Rosenthal (1891), and Micheel (1906) (2), however, brought forward evidence in support of Dron's contention, and the cases they reported constitute a vindication of the accuracy of his observations.

Cases of syphilitic epididymitis without involvement of the testicle have been recorded by Balme (who met with thirteen examples in a series of 2300 cases of syphilis), von Zeissl, F. R. Wright (6), Lisser

and Hinman (3), and Michelson (1). Loyd Thompson (4) also states that since following the practice of Klauder and including palpation of the contents of the scrotal sac in the routine examination of all syphilitics he has observed six cases in a total of 276 syphilitics—an incidence of about 2 per cent.

Periodicity.

The stage of the disease at which luetic epididymitis may occur shows wide variation. Cases have been recorded occurring from two months (von Zeissl) to fifteen years (Fournier, Wright) after the initial infection. Lisser and Hinman's case (3) occurred nine years after the date of the chancre and the writer's case eighteen years after infection. The majority of cases occur during the early secondary stages. Indeed, McDonagh (7) regards early syphilitic epididymitis a not uncommon symptom of the disease, and finds it often well marked before the secondary eruption appears. So-called tertiary involvement is seen less often.

Clinical Picture.

Two forms of implication of the epididymis are recognised—interstitial epididymitis and gummatous formation. The former may be acute or chronic.

Acute interstitial epididymitis.—This type is acute and painful in onset, and for this reason the patient will invariably draw the physician's attention to the condition. It is seen usually early in the course of the disease, but not necessarily so. The pain is sudden in onset and amounts to extreme tenderness on pressure. Indeed, the slightest touch will often produce severe pain. Frequently this is accompanied by a deep, dull, dragging pain in the scrotum and along the vas. The condition may be unilateral or both sides may be affected simultaneously. Swelling occurs, invariably commencing in the globus major and very soon involving the body and tail. In every case McDonagh (7) has seen, however, the process has been entirely limited to the globus major. The surface of the epididymis, at first smooth and resilient, becomes less elastic and of the texture of india-rubber, uneven, inclined to nodular infiltration and exceedingly tender to the most gentle palpation. The patient finds walking well-nigh impossible, and is often nauseated by movement or

by simple contact of the epididymis with his clothing. Hydrocele may develop, but this is by no means the rule. According to Loyd Thompson (4) the process is one of infiltration of lymphocytes and plasma-cells with hyperplasia of the fixed elements. There are no changes in the scrotal skin.

Chronic interstitial epididymitis.—This form may follow in the wake of the acute variety. While the acute form invariably passes into the chronic state, the chronic form need not start as an acute attack. Indeed, most frequently its onset is slow, painless and insidious. As a rule it is seen much later in the course of the disease than the acute form. Though usually unilateral, it also may be bilateral. As before, the spread occurs from the globus major. The swelling is irregular and diffuse and typical nodular infiltrations make their appearance. These become definitely indurated as time goes on. Hydrocele formation is comparatively frequent and may reach such dimensions that the testicle is no longer palpable (Wright, Schapira) (8). The patient's attention often is directed to the condition by the gradual increase in the size and weight of the scrotum due to the accompanying hydrocele (Hazen) (9). According to McDonagh (7), however, trauma is an essential predisposing factor in the production of hydrocele, for effusion into the tunica vaginalis is not specially prone to occur in syphilitic affections of the scrotal contents. Syphilis of the prostate and vesiculæ seminales frequently accompanies chronic epididymitis.

Differential Diagnosis.

Acute luetic interstitial epididymitis must be differentiated from epididymitis of gonorrhœal origin. As a rule this is comparatively simple, for there is something particularly suggestive of syphilis in the palpation of the affected epididymis. Moreover, on the one hand there are usually further signs of gonococcal activity, and on the other additional luetic stigmata. It should be noted, however, that the one process usually begins in the globus minor, while the other, as we have seen, begins in the head of the epididymis. If the two diseases occur simultaneously the diagnosis may be most obscure. The therapeutic result, however, will clear up the situation.

The chronic form must not be confounded with chronic gonorrhœal epididymitis, tuberculous disease, or new growth. Examination of

the prostatic fluid and the absence of other signs of gonorrhœal disease will help to exclude the former. Tuberculous disease and new growth will show implication of other uro-genital structures and there is emaciation characteristic of these conditions. The effect of anti-luetic treatment will clear up any doubt which may exist.

Report of Case.

The patient, an American Jew aged 51 years, was a small, wiry, well-built man, with a somewhat chequered career. He contracted gonorrhœa in 1892, and the disease continued as a gleet for about two years. Resolution took place then and no further trouble ensued. He was so afraid that he might acquire a second infection that he refrained from sexual intercourse for many years and indulged in self-abuse. In 1900 he had an internal urethrotomy performed in America and was apparently healthy until 1904 when, tiring of masturbation, he contracted syphilis.

The chancre was followed by implication of mucous membranes and a cutaneous eruption. From 1904 to 1906 he underwent vigorous mercurial and iodide treatment and no further symptoms supervened.

In 1910 he had a Wassermann test performed in Germany, and this was repeated in 1912 in America. These were both negative and he was granted permission to marry.

He accordingly married in 1913. A healthy child was born of the marriage in 1920. There were no abortions or miscarriages prior to this event. His wife remained apparently healthy.

In 1921 the patient had been reading some anti-venereal propaganda literature and, out of sheer curiosity, decided to have his blood re-tested by Wassermann's reaction. To his astonishment this proved to be positive. He thereupon received two doses of salvarsan, the second of which was followed by sickness, vomiting, diarrhœa and severe headache. He decided against further treatment, for he felt so ill that he thought "he was going to die." As an alternative he went to a fashionable spa, took warm baths, drank sulphur water and got well.

Six months later I saw the patient for the first time, when he consulted me regarding a sudden, acute, agonising pain in the left testicle. There was no history of trauma.

General systemic examination proved entirely negative; his

prostate was healthy, and his seminal vesicles were not palpable; the prostatic secretion was clear and contained no leucocytes; the urine was clear, free of shreds, and did not contain albumin or sugar; blood-pressure 140–120; serum Wassermann complete positive, fixing 3 and 5 M.H.D. of complement. Dr. J. Van Roojen, who examined him radiographically, reported the aortic arch normal. Dr. A. W. S. Sichel reported the cranial nerves concerned with vision normal. A serum Wassermann reaction done on his wife proved to be also positive.

The right epididymis was very much enlarged throughout—head, body and tail. It was hard, inelastic, nodular and slightly tender on firm pressure. A deep sulcus separated the epididymis from the smooth, polished, healthy body. The vas was normal.

The left epididymis was very much enlarged throughout and almost twice the size of the already enlarged right epididymis. The consistency was irregular, uneven, hard and nodular. The slightest touch over the globus major caused excruciating pain, and even the most gentle efforts at palpation of the body and tail were resented. The globus major was exceedingly large and well defined; it stood out hard and large away from the body of the testis—an almost mulberry mass exquisitively tender. The sulcus between the body and the epididymis was deep and broad, but could not be palpated on the side of the epididymis on account of the pain it produced. The testicle was the same size as the right one and was not enlarged. By comparison with the epididymis it appeared absurdly small. While this was the case on the right side, it was very much more so on the left. There was no effusion into the tunica vaginalis. The vas was thickened but not nodular, and the first three inches of its length were exceedingly tender.

The patient received 0·075 grm. novarsenobillon intravenously forthwith, and 0·15 grm. was administered every second day. Mercury (pil. hydrarg. gr. j *t.i.d.*) was administered orally. After the second dose of novarsenobillon the acute pain in his left globus major disappeared and he was able to walk with comfort in nine days' time. In four weeks he had forgotten that he ever had had a troublesome testicle and the repeated small doses of novarsenobillon caused him no inconvenience.

In six weeks' time he had received 3·075 grm. novarsenobillon and

the condition was as follows: "The right epididymis is much reduced in size and may be considered normal. It is elastic, smooth and regular in consistency and even in outline. There is no tenderness on palpation. The left epididymis, except for the globus major, is equal in size to that on the right side. There is no tenderness throughout the entire structure. Much thickening of the head remains with some nodulation, and several indurated patches throughout the body. The left vas is normal." Both testes remained normal.

Remarks.

It is possible that the previous gonococcal infection may have acted as a predisposing factor in determining the site for this spironemal activity.

The points of interest in this case are the following:

(1) Interstitial epididymitis occurred eighteen years after the initial infection.

(2) The condition was bilateral.

(3) The one side was acute and the other chronic.

(4) There was a unilateral implication of the vas.

(5) The prostate and seminal vesicles were not implicated.

(6) Both testes were normal.

(7) The condition responded rapidly to treatment.

(8) There was no other evidence of active syphilis.

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ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Meeting held on February 6th, 1922, Dr. H. G. Adamson, President of the Section, in the Chair.

Dr. Louis Savatard showed a *case for diagnosis*. A middle-aged lady consulted him in August last with regard to a wide-spread erythrodermia which had first appeared in January, 1921. Its primary situation was around the axillæ and on the hips, but in August the area of invasion had extended from the level of the axillæ to half-way down the thighs. The application of sulphur ointment had been prescribed by her doctor. The intense itching subsided with the discontinuance of the ointment and up to the last fortnight there had been no extension of the eruption. Since then three fresh foci had appeared on the flexor aspect of the left forearm as oval patches, simulating lichen scrofulosorum. There was still slight irritation at night. There was no itching of the healthy skin nor of the areas which had responded to X-ray treatment. The eruption was of a dusky red colour. There was fine scaling and some slight infiltration. The large white areas were due to the effect of the X-rays; the smaller islands of normal skin had not been so treated.

Last October he treated the condition with X-rays apparently without effect, but after a month's rest the patient wrote asking for more, as she believed the X-rays had done good. Treatment was re-commenced, and he found that a half-pastille dose was sufficient to clear any given area. There had been no relapse so far on the areas treated.

His first diagnosis was that it was a parapsoriasis. He had found similar intolerance to sulphur in other cases of parapsoriasis, and many of them, too, had some irritation at night. On the other hand, he had never found a parapsoriasis respond so distinctly to X-rays. Lately he had suspected that the condition might be a premycosis, though he had previously found that a mild sulphur ointment allayed the itching of a premycosis. A blood-count showed only slight anæmia. No biopsy had been made, but he hoped to present a section at a future meeting.

Dr. J. H. Sequeira agreed with the diagnosis of premycosic dermatitis on three grounds: (1) the clinical appearance of the eruption; (2) on palpation one could feel infiltration; (3) the response of the lesions to the X-rays. The areas which had received a half-pastille dose of the rays were quite clear.

Dr. H. W. Barber referred to two cases which he showed two or three years ago as instances of premycosic erythrodermia; their appearance was much like that in this case. One of his patients was a man, the other a woman. The woman subsequently developed tumours and died in an infirmary. He found that though X-rays could effect the disappearance of the premycosic condition, fresh areas of the eruption were always forming. The man eventually became a typical "homme rouge," remained like that for three or four months, and then his skin rapidly become normal. He afterwards developed further areas, as in the present case, but never tumours. He recently died of pneumonia. He (Dr. Barber) had wondered whether this was really a case of the condition described by Dr. Sequeira as lymphoblastic erythrodermia, and not true mycosis fungoides.

Dr. G. Pernet said this case certainly looked like the early stage of mycosis fungoides. The rounded islets of normal skin in the reddened areas were characteristic in his opinion. In an early case of this kind he would especially recommend an effervescent mixture of quinine (3 gr. or more to the ounce) *t.i.d.** He had never known a case of established mycosis fungoides recover under X-rays.

Mr. Frederick Chamberlain showed *cases of* (1) *arsenical jaundice,* (2) *arsenical dermatitis, showing the results of a special treatment.*

Case 1: Severe jaundice occurred twelve weeks after last injection of a course of six intravenous injections of N.A.B. The liver was slightly enlarged and the urine highly coloured. Arsenic (Marsh test), bile-pigments and a trace of albumen were found in urine. The patient received intravenous injections of contramine at two-day intervals. In nine days the urine was normal, but some tinting of conjunctivæ remained. It was now nineteen days since onset of jaundice and sixteen days since treatment was begun. The patient was perfectly well in himself. The liver appeared to be of normal size. The conjunctivæ were still faintly yellow.

Case 2: Dermatitis occurred after third injection of "606" as an itching erythema. The injections of "606" were continued and the skin began to exfoliate. Patient was admitted to the hospital after the fifth injection. Extensive exfoliation over whole body. "Weeping eczema" was present on the scrotum, in the groins and flexures of knees and elbows. There was blepharitis. An injection of contramine

* See Pernet, "Case of Mycosis Fungoides," *Proc. Roy. Soc. Med.*, May. 1921; *Brit. Journ. Derm.*, 1921, xxxiii, p. 344.

was given and locally a lotion of liquor calcis, olive oil and eucalyptol. The patient subsequently received four further injections of contramine at three-day intervals. He was better after the second injection and the offensive odour was gone. "Weeping" ceased after the third injection. It was now the thirtieth day of the dermatitis. The patient felt very well. The backs of hands were rather dry and rough. One large pad of exfoliating skin was not yet freed from plantar surface of left heel.

Contramine was given, dissolved in 10 c.c. of normal saline, or normal saline containing 10 per cent. glucose, by means of a 10 c.c. syringe, intravenously.

Mr. McDonagh said the formula of contramine, the carbon di-sulphide product of di-ethyl-amine, was as follows:

$$CS \begin{cases} S.NH_2\,(C_2H_5)_2 \\ N(C_2H_5)_2 \end{cases}$$

He added that in 1915 he introduced intramine (di-ortho-di-amino-thio-benzene) with the object of overcoming metallic intoxication, because experiments he had undertaken showed that non-metals were antidotes for metals, and *vice-versâ*, both in shock and intoxication. Intramine had two disadvantages: (1) It caused pain when injected intramuscularly; (2) the high protection necessary for intravenous work detracted from its therapeutic action. Experiments were undertaken to find a sulphur compound which would be soluble in water and contramine was the result. Contramine contained 28 per cent. of sulphur, it was soluble in water, 1 in 2·5, it did not cause pain when injected intramuscularly, it could be injected intravenously in solution, smaller doses were required (0·25 to 0·5 grm.), and it was more potent than intramine, owing to the fact that the sulphur was more rapidly dissociated.

Dr. W. J. O'Donovan said that the great interest and difficulty in these cases of post-salvarsan icterus lay in the uncertainty of the underlying pathological state. In work involving the daily use of salvarsan preparations these cases appeared in small epidemics, and in the environment of a venereal clinic the whole prepossession was to make a diagnosis of salvarsan jaundice; nevertheless, it was noteworthy that any general physician called in to such a case failed to make a differential diagnosis from catarral jaundice. A similar difficulty was experienced in dealing with T.N.T. jaundice. Very few of these cases died, the duration of illness and of jaundice also being very variable. In fatal cases liver atrophy was found post-mortem, but in the great majority of cases that recovered with or without treatment the histological changes in the liver could only be surmised. It was most difficult to attribute any special value to a proposed treatment for a condition of uncertain pathology in which the natural course of the disease was towards recovery. He (Dr. O'Donovan) refrained from the employment of any specific therapy for post-salvarsan jaundice; he kept the patients in bed and treated the case symptomatically. In order to obtain a true knowledge of the toxicity of salvarsan one had to follow up the life-history of such cases for a long period of time.

Dr. A. M. H. Gray said he thought there was a great difference between these two types of cases. During the last two and a half years he had had three cases of jaundice and they all occurred in the summer of last year; they were of the mild catarrhal type, and they cleared up in less than a fortnight, with very little treatment. He did not think the course of a case could be foretold at its commencement. He had had four cases of dermatitis, and they all ran the same kind of course, though one had been complicated by nephritis; but in all of them the skin rashes cleared up in about three months. Two of them were treated with intramine, the other two without it, and he did not notice any difference between them. It was of interest to learn that Mr. McDonagh had a preparation which would cut short the course of these cases.

Dr. George Pernet showed *an unusual case of multiform dermatitis factitia*. Patient, a female, aged 27 years, a domestic servant, stated she was born with skin trouble about the left leg, and that the doctors wanted to take it off. She also said that she had had the skin trouble ever since she was vaccinated in infancy. The wide extent and multiformity of the lesions should be noted. Recently she had had blisters, oblong in shape, or tailing off into a sort of comma, and there were scars and crusting at the sites where the blisters had occurred; also a cigarette-paper-looking atrophy and intermediate transitional appearances. Here and there were white patches flatly and slightly raised above the general skin level, a kind of pseudo-lichen planus albus, with discrete raised, angular, flat-topped, shiny white papules here and there beyond the patches. He felt no doubt about its being an artefact. He read a paper before the American Dermatological Society in 1909 on "The Psychological Aspects of Dermatitis Factitia,"* in which he commented on the apparent absence of motive in many of these cases, expressing the view that alternation of personality might, perhaps, be the explanation of them.

Dr. George Pernet showed a *case of unilateral morphœa-sclerodermia faciei*. Patient, a boy, aged 11 years, attended the Out-Patient Department, West London Hospital, four months ago with a patch on the centre of the right cheek about the size of a florin, which, when first noticed two months previously, was about the size of a sixpence. There was also a certain amount of longitudinal morphœa, whitish-lilac, occupying the lower right eyelid. The condition was improving under zinc ionisation.

* Pernet, *Journ. Cut. Dis.*, 1909, xxvii. p. 547.

Dr. J. H. Stowers showed a *case for diagnosis, previously exhibited (? dermatitis artefacta), showing result of treatment.** He had shown the patient, a female, aged 41 years, at the November meeting of last year as a case of alleged artefacta. The lesions were multiform and limited to the anterior surface of each leg, being red, raised, thickened and painful, and were said to have existed for upwards of twelve years. The remarkable configuration of the lesions, some with distinctly angular margins, tended to support the diagnosis. The majority of the members present agreed with the diagnosis expressed, which rested between trauma, lupus erythematosus, symmetrical sclerodermia, atrophic lichen planus and a tuberculide, but the opinions were not unanimous. For two and a half months the legs had been continuously encased in starched bandages without other treatment, with the result that marked progress had been made towards recovery, several of the smaller lesions having almost entirely disappeared, staining of the skin alone remaining. If it was artefact, he had never previously seen a case corresponding in extent and position to it, but he was not yet persuaded that the diagnosis was incorrect. Failing this, the only alternative tenable was a very unusual development of sclerodermia.

Dr. A. M. H. Gray said he had seen this case when it was last exhibited and he did not think this was an artefact, but regarded it as sclerodermia. In spite of the fact that the patient was now better he still adhered to that view. The patches had been coming out for a considerable time, yet they were all exactly alike. That would not be expected in an eruption which had been artificially produced: there would be varying stages of their production. Secondly, he did not think any of the lesions were strictly scars; he thought there was still an active inflammatory process going on, with fibrosis. There was a difference between a scar formed by the application of an acid and the fibrosis associated with sclerodermia: the latter might get completely well without leaving any mark, and he believed that would happen in this case.

Dr. MacLeod said he did not see the case on the previous occasion, but the lesion on the top of the left leg seemed to him characteristic of sclerodermia.

Dr. H. G. Adamson (President) said that when he saw the case on the present occasion he did not recognise it as the same as the one shown in November. He diagnosed it as sclerodermia, but on the previous occasion he thought it was dermatitis artefacta; the latter could not, even now, be altogether excluded.

Dr. Stowers replied that he had never seen an admitted case of sclerodermia corresponding to the conditions which his patient had developed.

Dr. Haldin Davis showed a case of *psoriasis in an infant*, aged

* See *Brit. Journ. Derm. and Syph.*, 1922, xxxiv, No. 2, p. 60.

7 months. When four months old a scaly eruption developed; this gradually spread, so that now it was almost universal; there were a few unattacked areas on the chin, the hands and feet. His diagnosis was psoriasis, notwithstanding the age of the patient, though he admitted it had now become almost a case of dermatitis exfoliativa. A point in favour of the diagnosis was that the mother had had psoriasis, and when he first saw the child the eruption was in circinate rings. He did not think it was due to the use of an irritating ointment, though "cadum" had been used, and at another hospital sulphur and zinc ointment were supplied. Nor did he think it was a case of infective dermatitis.

Dr. A. M. H. Gray said he did not consider this case to be one of psoriasis. The condition started as an ordinary rash on the napkin region, and he would have thought it was exfoliative dermatitis secondary to intertrigo. There seemed little justification for the diagnosis of psoriasis; the fact of the mother having had that disease did not count for much.

Dr. O'Donovan said that if this case was one of psoriasis he must have made many errors, as he had seen many well-nourished children with a similar generalised eruption, and the diagnosis of psoriasis had not occurred to him in regard to them. He regarded this as a case of coccal infection.

Dr. H. G. Adamson (President) agreed with Dr. Haldin Davis that this was a case of extensive psoriasis. Dr. O'Donovan had stated that a general exfoliative dermatitis was frequently met with in children, but this was not his (the President's) experience. His opinion was that there were several different forms of generalised dermatitis in babies which should be distinguished, namely: (1) "Seborrhœic dermatitis," seldom universal and attacking particularly the scalp and the flexures; (2) "dermatitis exfoliativa neonatorum (Ritter's disease)," which was really an extensive bullous impetigo (pemphigus neonatorum); (3) "dermatitis exfoliativa," a universal erythema with desquamation, often due to a drug, such as mercury, quinine, salicylates; and an extensive psoriasis. The present case he believed to be psoriasis, because of the sharp margins of the eruption, abutting on areas of healthy skin, without the outlying follicular papules of seborrhœic dermatitis or the phlyctenular lesions of bullous impetigo. The fact that the eruption was not universal excluded true "dermatitis exfoliativa." That the mother had psoriasis was also in favour of this diagnosis. Although it was rare to meet with psoriasis in infants, he had before seen psoriasis present in mother and baby.

Dr. Graham Little regarded the condition as an infectious eczematoid dermatitis, as so called by the Americans; he did not consider there was any psoriasis in the case at all. Psoriasis in young children was very rare indeed, and in order to make such a diagnosis it was necessary to be very certain about the facts—a very difficult matter in this instance.

Dr. Haldin Davis (in reply) said that the primary lesion of the psoriasis could still be seen to some extent in the sharp margins of the scaly patches. He

was content to leave the arguments in favour of the diagnosis of psoriasis in the hands of the President, who had presented the case for psoriasis far more ably than he could have done.

Drs. H. W. Barber and Maurice Shaw showed a case of *Recklinghausen's disease with pituitary tumour.*

(1) Remarks by Dr. Maurice Shaw: This boy, aged 15 years, was brought to hospital because of his obesity. He had never had any illness. He was taken in for the purpose of investigation, and the signs of Recklinghausen's disease were found. There was a large type of pigmented patch, and he had some soft subcutaneous nodules, one of which was removed for examination, but the report had not yet been received. Bilateral optic atrophy was present, and the X-ray showed a small shadow between the anterior and posterior clinoid processes. The sugar tolerance was raised. Still, he had not the typical Fröhlich's syndrome. He was sexually precocious, and he seemed to have a mixture of excessive secretion of the anterior lobe and diminished secretion of the posterior lobe. No other member of the family had had any similar affection. His condition was now improving.

(2) Remarks by Dr. Barber: A year ago he showed, with Mr. Ormond, a case of acromegaly associated with Recklinghausen's disease, and the suggestion was that the patient had a neurofibroma of the optic chiasma which was irritating his pituitary body. This patient also had the signs and symptoms of pituitary tumour.

Dr. G. Pernet said the late Sir Victor Horsley, several years ago, gave him some skin from a case of advanced adipositas cerebralis in a woman. Dr. Pernet had cut and stained sections, and found general hypertrophy of the true skin as well as an increase in the hypodermic fatty layer.*

Dr. F. Parkes Weber thought that in order to establish the diagnosis of Recklinghausen's disease this case should be further investigated. At present the boy had pigment patches which might pass for those of Recklinghausen's disease, but might also pass for ordinary pigment nævi, which were not very rare in normal individuals. There was at present no typical molluscum fibrosum on the skin, but one small tumour had been removed for examination. One or two little tumours of the nature of molluscum fibrosum were occasionally found in quite healthy persons. Of the presence of some form of pituitary disease there could be no doubt, though the sexual symptoms did not correspond to those of Fröhlich's pituitary syndrome ("dystrophia adiposo-genitalis").

Dr. Wilfrid Fox did not consider this a typical case of Recklinghausen's disease. This was generally associated with either sessile or gelatinous tumours.

* Pernet, "Adipositas Cerebralis." American Dermatological Association, 1909. *Journ. Cut. Dis.*, 1909, xxvii, p. 554.

neither of which were present in this case. The pigmentation was not of the type met with in that disease; there was a diffuse freckling, and warty patches were present. The pigmentation in this case was of a very common form. This patient, too, had no sensory signs nor any neuro-fibromata. Subjects of Recklinghausen's disease usually suffered either from itching or from a neuritic type of pain.

Postscript.—Histological examination has shown that the nodule is a neurofibroma.

Dr. H. C. Semon showed a case of *ringworm of the nails of the hands.* Recently he saw this man, who was aged 22 years, at the Ministry of Pensions. He made a tentative diagnosis of ringworm of the nails, and this was confirmed by microscopical examination. The patient said it had been present since 1918, when he was in a camp at Wareham; previously to its commencement he had been in France ten months, and before going to France he was in America—he was an American subject. The American authorities refused to receive him back when he was repatriated, because of the nail disease. He showed him specially in order to ask about treatment. In view of his urgent desire to return home, his inclination was to remove all the nails of the hands, and treat the bases with some caustic, such as pyrogallic acid, for some time after the operation. Ringworm of nails was comparatively rare in this country, and generally only one or two nails were affected. Usually the fungus which affected the nails was a trichophyton of animal origin.

Dr. MacLeod said that three months ago he had treated a case of much the same sort in a man from Java. In his case all the nails, both of hands and feet, were affected. He obtained a trichophyton-like fungus from the scraping, which he thought might possibly have been *Epidermophyton inguinale*, but had not succeeded in growing it. The patient had had Tinea cruris previously. Numerous forms of treatment had been tried, without success, and it was decided to remove all the nails. This was done under an anæsthetic. The nail-bed was then scraped and iodine applied. The parts were subsequently dressed with mercurial ointment. When last seen the nails were growing and appeared to be healthy.

Dr. E. G. Graham Little showed a case of *lichenoid linear nævus.* Patient, a male infant, aged 18 months, had had the condition since very shortly after birth. At present there were two broad streaks, consisting of raised red discrete lesions resembling lichen planus of a somewhat hypertrophic type, extending side by side and at a distance of half an inch or so from the buttock to the heel on the left side.

The case exactly resembled one shown by Dr. Stainer more than twenty years ago to the Dermatological Society of Great Britain, in which the diagnosis was divided between lichen planus and nævus. The patient was under 15 months old. Brocq mentioned the case of a child aged 4 months with a linear eruption, which he regarded as lichen planus linearis, and in view of these parallel examples the case now shown was of interest.

Dr. E. G. Graham Little showed a *case of grouped comedones*. Patient, a female child, aged 1 year, with a very extensive eruption of so-called grouped comedones, extending from nape to waist over the back, and from neck to navel in front. The mother had rubbed the child with olive oil in which she had dissolved a block of camphor.

CURRENT LITERATURE.

TREATMENT.

A PRELIMINARY REPORT ON THE "CHELONIN" THERAPY. K. Hubschmann. (*Ceská Dermatologie*, 1921, ii, p. 210.)

At the clinic in Prague, "chelonin," a tuberculous turtle vaccine, has been tried subcutaneously in thirty-five cases of tuberculous skin manifestations with following results: All but two cases (not counting five cases of lupus erythematosus) showed a definite local reaction, redness and induration, lasting from three to fifteen days and longer. Within three and a half months of chelonin trial, ten cases showed a definite improvement—lupus of the skin alone (4), lupus vulgaris of the skin and mucous membranes (4), scrofuloderma (1), lupus ulcerosus (1). Other patients show so far a slight improvement; none became worse under treatment. Those receiving additional local applications are healing more rapidly. The author recommends the use of small, repeated doses, and warns against the large doses, particularly in cases of pulmonary findings. Spinka (St. Louis).

PROTEIN-ACTIVATION THERAPY. Krüger and Pfeiler. (*Derm. Wochenschr.*, February 4th, 1922.)

The non-specific protein therapy of cutaneous maladies as opposed to a specific vaccine or serum inoculation appears to be gaining ground in Germany. There have been numerous publications on the value of "*aolan*"—a protein derived from casein—and others in the recent literature. This short paper reports the result of the authors' experimental investigation of "*yatren*"—a somewhat similar product—in cutaneous maladies of dogs, horses and pigs.

The first is a case of alopecia areata in a dog, which had resisted all local applications from March to September, 1921. These included salicylic acid, balsam of Peru, sulphuric baths and arsenic internally. A 5 c.c. yatren-casein

injection was given subcutaneously in the middle of September, and was followed in a few hours by marked pruritus and by local erythema in the denuded patches. After the second injection the redness was less marked and pruritus had diminished, and in a few days a definite improvement in the appetite, etc., had manifested itself.

Five more injections of 5 c.c. of a 5 per cent. solution of the product were given at intervals of four days. There was no further development of alopecia areata patches, and in fourteen days regrowth of the hair had begun, and the animal was eventually cured.

Similar treatment was effective in two cases of Trichophyton tonsurans in dogs, dorsal eczema with alopecia and furunculosis (for which yatren-casein is especially indicated) in a dog, an eczematous pruritus in a horse, and in an eczema of pigs. H. C. S.

CRUDE COAL TAR IN DERMATOLOGY. Charles J. White. (*Arch. of Derm. and Syph.*, 1921, iv, p. 796.)

The writer strongly advocates the use of a paste containing 5 per cent. of crude coal tar in the treatment of certain skin affections. The paste contains crude coal tar 2, zinc oxide 2, corn-starch 16, petrolatum 16. The starch and the petrolatum are first mixed together, the coal tar and the zinc oxide are next mixed, and the two products are subsequently combined. This produces a black, smooth paste which smells of coal gas and tar. This preparation is smeared on the skin and covered with a layer of cotton or linen. The application should never be allowed to remain on the skin for more than twelve hours, as it is liable to be followed by pustulation, and should be cleaned off with olive oil before the next dressing is applied. To obviate staining the clothes permanently, the discoloured parts should be impregnated on both sides with lard, and, after an hour or more, the linen can be washed with ordinary soap and water, and all signs of the discoloration will vanish. The use of this remedy is advocated in the treatment of moist varicose ulcers, moist eczema, moist seborrhœic eczema of the scalp, pruritus ani and vulvæ, neurodermite, especially of the occipital type in middle-aged women, chronic papular urticarias and moist types of epidermophytosis.
J. M. H. M.

EXPERIENCES IN THE USE OF PROPYL-ALCOHOL. Johanne Christiansen. (*Ugeskrift f. Lægev.*, 41, 1921.)

The writer recommends this alcohol as a local application, especially for acne of the face, in 35–50 per cent. watery dilutions, and as a remedy against lice. As a vehicle for other medicaments propyl-alcohol in lower dilutions (up to 50 per cent.) has generally a greater solvent power than corresponding solutions of ethyl-alcohol. W. J. O.

EXPERIENCES WITH "STANNOXYL." K. Hubschmann. (*Česká Dermatologie*, 1922, iii, No. 4, p. 98.)

After a year's experience with "Stannoxyl" at the Bohemian dermatological clinic in Prague the preparation is recommended as an efficient measure for

treatment of staphylodermias. Stannoxyl (a compound of metallic tin and tin oxide) is especially valuable in furunculosis. The preparation comes in tablets, liquid form for compresses, gauze and in ampoules. The injections are the most efficient. They were given subcutaneously and intramuscularly, 2 to 4 c.c. daily; were well tolerated, did not cause a local or general reaction. There were good results from direct injections into large lesions (carbuncles) or their immediate vicinity. The cosmetic effects were excellent. The effect of injections became manifest in twenty-four hours. The subjective symptoms promptly disappear. The regressive changes take place in two to three days, and go on rapidly. No new lesions appear as a rule. Stannoxyl, being an antistaphylococcic remedy only, has no effect on the furuncles involuted to the stage of painless infiltrations. Hot aluminium acetate solution was used to bring on their dissolution. Spinka (St. Louis).

EXPERIMENTAL RESULTS OF IONISATION IN SKIN CONDITIONS. Wirz. (*Derm. Wochenschr.*, 1922, lxxiv, No. 14, p. 321.)

The author summarises his own conclusions under six headings:

(1) Ionisation with adrenalin produces a more diffuse, intensive and prolonged anæmia than is possible by the more widely known and practised infiltration method. It is particularly useful as a preliminary to the caustic destruction of spider nævi or distended venules, which, by the blanching of the environment (themselves being incapable of contraction), are caused to stand out prominently on a more or less white background, and which can therefore be followed to their ultimate ramifications.

He states that 2–3 drops of a 1–1000 adrenalin solution on the *anode* (positive +) of an electrolytic system of 2·5 m.amp. will produce complete anæmia lasting 5–6 hours in 5 minutes.

(2) Painless local anæsthesia by ionisation with a saline solution containing cocaine ·02, and adrenalin ·00005 per c.c. is very strongly recommended for small cutaneous operations, such as excision of lupus patches, cauterisation, etc., and it is stated that subsequent reactions and inflammations are less obvious and painful, while the risks of cocaine poisoning, etc., are practically *nil*.

(3) Electrolysis of ichthyol solutions for chronic sycosis, first recommended by Ehrmann, and now almost forgotten in the therapy of this intractable disease, is worthy of further trial. A solution (strength not stated) is dissociated at the *kathode* (negative) terminal, and a stream of 4–5 m.amp. can be allowed to pass for 10 minutes, according to the tolerance of the patient.

(4) Iodide of potash, similarly used, is valuable for trichophyton infections of the glabrous skin.

(5) and (6) Tubercle, whether lupus or scrofuloderma, and gonorrhœa are not a hopeful field for the practice of ionisation on physical grounds alone.

H. C. S.

QUARTERLY SURVEY OF DERMATOLOGICAL LITERATURE.

ERYTHEMAS, INFLAMMATIONS, ETC.

Affections of Hands and Feet, Suggestions for Treatment. E. W. Ruggles. (*Arch. of Derm. and Syph.*, April, 1922, v, No. 4, p. 462.)

Breast-Fed Pellagra. S. R. Lustberg. (*Archives of Pediatrics*, April, 1922, xxxix, No. 4, p. 255.)

Carotinoid Skin Pigmentation. H. Hashimoto. (*Journ. Amer. Med. Assoc.*, April 15th, 1922, lxxviii, No. 15, p. 1111.)

Citronella Oil, Dermatitis caused by. C. S. Lane. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 589.)

Cutaneous Sensitisation Tests, Value of, in Eczema, etc. D. M. Sidlick. (*Amer. Journ. Dis. Child.*, April, 1922, xxiii, No. 4, p. 316.)

Dermatitis Herpetiformis, Two Cases in Children. E. A. Oliver and C. J. Eldridge. (*Journ. Amer. Med. Assoc.*, April 1st, 1922, lxxviii, No. 13, p. 145.)

Dermato-polyneurosis (Erythrœdema). H. Thursfield. (*Brit. Journ. Child. Dis.*, January–March, 1922, xix, No. 217, p. 27.)

Elephantiasis of Vulva. J. G. MacNaughton. (*Journ. Trop. Med. and Hygiene*, March, 1922, xxv, No. 5, p. 55.)

Eruptions on Hands and Feet, Diagnosis of. C. M. Williams. (*Arch. of Derm. and Syph.*, February, 1922, v, No. 3, p. 161.)

Erysipelas and Streptococcal Septicæmia. A. Erian. (*Practitioner*, May, 1922, cviii, No. 5, p. 373.)

Erythrœdema, Case of. F. Parkes Weber. (*Brit. Journ. Child. Dis.*, January–March, 1922, xix, No. 217, p. 17.)

Exanthem, Atypical. D. Greenberg. (*Med. Record*, March 18th, 1922, ci, No. 2180, p. 460.)

Exfoliative Erythrodermias, Ætiological Study. J. Schaumann. (*Acta Dermato-Venereologica*, 1922, i. pp. 3–4.)

Helsingfors, Communications from the Dermatological Clinic in. Axel Cedercrentz. (*Proceedings of the Medical Society of Finland*, January–February, 1922.)

Herpes and Varicella. W. M. Elliott. (*Glas. Med. Journ.*, May, 1922, xcvii, p. 274.)

Herpes Zoster, Unusual Cases of. E. F. Corson and F. C. Knowles. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 619.)

Hyaloma (Pseudocolloid Milium), Case of. R. Ruedemann. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 591.)

Industrial Oil Dermatitis. A. D. McLachlan. (*Glas. Med. Journ.*, April, 1922, xcvii, p. 212.)

Keratodermia Blenorrhagica. E. C. Gager. (*Journ. Amer. Med. Assoc.*, April 1st, 1922, lxxviii, No. 13, p. 941.)

Lichen Planus in a Husband and Wife. S. Feldman. (*Arch. of Derm. and Syph.*, May, 1922, v. No. 5, p. 579.)

Lichenifications, Abnormal. L. M. PAUTRIER. (*Ann. de Derm. et de Syph.*, February, 1922. No. 2. p. 49.)

Lip, Vaccinia of. A. SCHALEK. (*Journ. Amer. Med. Assoc.*, February 18th, 1922. lxxviii, No. 7. p. 501.)

Match-Box Dermatitis and Conjunctivitis. C. RASCH. (*Ugeskrift for Læger*. 1921. p. 34.)

Measles, Studies on. R. KAWAMURA. (*Japan Med. World*, February 15th, 1922. ii. No. 2. p. 31.)

Mineral Oils, Skin Diseases Produced by (Solar Oil). NIELS NANDER. (*Ugeskrift for Læger*. 1921. p. 47.)

Occupational Diseases of the Skin. R. PROSSER WHITE. (*Journ. of State Med.*, February, 1922. xxx. No. 2. p. 47.)

Phenolphthalein Eruptions. F. WISE. (*Arch. of Derm. and Syph.*, March, 1922. v, No. 43. p. 297.)

Phenolphthalein Urticaria, Case of. E. F. CORSON. (*Journ. Amer. Med. Assoc.*, March 25th, 1922. lxxviii. No. 12. p. 882.)

Purpura Hæmorrhagica after Mumps. LEDUC. (*Clin. Journ.*, March 22nd, 1922, No. 1393. p. 140.)

Purpura Fulminans, Case of. H. L. DWYER. (*Journ. Amer. Med. Assoc.*, April 22nd. 1922. lxxviii. No. 16. p. 1187.)

Rhinoscleroma. V. PARADO-CASTELLO and M. N. DOMINGUEZ. (*Arch. of Derm. and Syph.*, April, 1922, v. No. 4. p. 478.)

Sclerema Neonatorum, Case of. E. BOURNE. (*Lancet*, February 25th, 1922. p. 368.)

Scleroderma Following Nerve Injury, Case of. L. B. KINGERY. (*Arch. of Derm. and Syph.*, May, 1922. v. No. 5. p. 579.)

Skin-Diseases seen by Industrial Physician. E. L. OLIVER. (*Journ. of Industrial Hygiene*. May. 1922. iv. No. 1. p. 21.)

Spider-Bite of Glans Penis. W. S. WOODY. (*New York Med. Journ.*, May 3rd. 1922. cxv. No. 9. p. 542.)

Syringomyelia, Trophic Changes in. F. H. KOORZ. (*Med. Journ. of South Africa*, February, 1922. xvii. No. 7. p. 133.)

Typhus Fever, Cases with Rash Resembling. F. S. HONE. (*Med. Journ. of Australia*, January 7th. 1922. i, No. 9, p. 1.)

PARASITIC.

Foot-and-Mouth Disease, with Special Reference to its Occurrence in Man. A. K. CAMERON. (*Lancet*, February 18th, 1922. p. 353.)

Mycetoma caused by Nocardia Indica. W. WELCHMAN and J. H. H. PIRIE. (*Med. Journ. of South Africa*, August, 1921. xvii, No. 1. p. 6.)

Mycetoma in N. America. M. F. BOYD and E. D. CRUTCHFIELD. (*Amer. Journ. of Trop. Med.*, July, 1921. i. No. 4.)

Mycosic Intertrigo. DUBREUILH and P. JOULIA. (*Ann. de Derm. et de Syph.*, April. 1922. No. 4. p. 145.)

Oriental Sore, Serological Investigation. W. M. MCKINSTRY. (*Journ. Roy. Army Med. Corps*. March. 1922. xxxviii. No. 3. p. 216.)

"Pigeon-Lice" (Dermanyssus Gallinæ) and Skin Disease Caused by Similar Dermatozoa. FR. GRÖN. (*Tidsskrift f. d. Norske Lægeforening*, 1921. p. 23.)

Ringworm of Hands and Feet, Further Studies on. T. H. MITCHELL. (*Arch. of Derm. and Syph.*, February, 1922, v, No. 2, p. 174.)

Tinea Versicolor of the Face. D. N. SIDHEK and E. F. CORSON. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 604.)

Tropical Septic Ulcer (Delagoa Sore), Recent Epidemic of. A. F. APOSTOLIDES. (*Journ. of Trop. Med. and Hyg.*, April 1st, 1922, xxv, No. 7, p. 81.)

Yeasts and Hyphomycetes, Resemblances in Cutaneous Scrapings. F. O. WEIDMAN. (*Arch. of Derm. and Syph.*, March, 1922, v, No. 3, p. 325.)

Yeast Infections of the Skin, Cases. S. S. GRUNBAUM and J. V. KLAUDER. (*Arch. of Derm. and Syph.*, March, 1922, v, No. 3, p. 332.)

PATHOLOGICAL.

Nævus Elasticus. C. WITH and A. KISSMEYER. (*Ann. de Derm. et de Syph.*, April, 1922, No. 4, p. 169.)

Pathologic Histology of Synovial Lesions of the Skin. G. M. MACKEE and S. C. ANDREWS. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 561.)

Positive Cutaneous Tests, Histologic Study. A. STRICKLER. (*Journ. Amer. Med. Assoc.*, April 29th, 1922, lxxviii, No. 17, p. 1287.)

Rodent Ulcer, Multicentric Origin of. G. L. CHEATLE. (*Brit. Journ. Surg.*, April, 1922, ix, No. 36, p. 529.)

Sacral Dermoid Cysts. SOFUS WIDERÖE. (*Med. Revue*, December, 1921.)

Synovial Lesions of Skin, Pathologic Anatomy of. D. W. MONTGOMERY and S. D. CULVER. (*Arch. of Derm. and Syph.*, March, 1922, v, No. 3, p. 329.)

Urticaria, Case Sensitive to *B. diphtheroid* and *Staphylococcus albus.* R. L. GIRDWOOD. (*Med. Journ. of South Africa*, March, 1922, xvii, No. 8, p. 157.)

TREATMENT.

Acridin Staining Preparations (Trypaflavin, Proflavin, etc.) in Skin Therapy. A. KISSMEYER. (*Ugeskrift for Læger*, 1921, p. 43.)

Arsenical Skin Pigmentation. D. W. MONTGOMERY. (*Med. Record*, April 22nd, 1922, ci, No. 2685, p. 655.)

Chaulmoogra Oil Derivatives. M. D. KYOTO. (*Japan Med. World*, January 15th, 1922, ii, No. 1, p. 1.)

Diachylon Ointment. D. W. MONTGOMERY and S. D. CULVER. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 607.)

Experiments in Auto-Injections of Blood for Dermatosis. J. NICOLAS, J. GATE and D. DUPASQUIER. (*Ann. de Derm et de Syph.*, April, 1922, No. 4, p. 163.)

Giant Urticaria Case treated by Autogenous Streptococcus Vaccine. W. E. M ARMSTRONG. (*Lancet*, May 20th, 1922, ccii, No. 5151, p. 995.)

Lepers, Antimony Treatment of. F. CAWSTON. (*Journ. Trop. Med. and Hyg.*, February 1st, 1922, xxv, No. 3, p. 27.)

Lupus Erythematosus. J. M. H. MACLEOD. (*Practitioner*, April, 1922, cviii, No. 4, p. 236.)

Onychauxis and Thyroid Therapy. H. F. ALDERSON. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 602.)

Protein Therapy, Non-specific. E. AHLSWEDE. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 586.)

Tuberculosis, Sun Treatment of. A. Rollier. (*Brit. Journ. of Tuberculosis*, January, 1922, xvi, No. 1, p. 1.)

RADIO-THERAPY.

Deep X-Ray Treatment of Cancer, A Personal Impression of the. Erlangen Frauenklinik. (*Lancet*, February 25th, 1922, p. 366.)

Gamma Rays and Malignant Disease. R. Morton. (*Lancet*, February 25th, 1922, p. 364.)

Minimum Erythema Dose. A. W. Erskine. (*Amer. Journ. of Roentgenology*, March, 1922, ix, No. 3, p. 148.)

Occupational Radio-Dermatitis. P. Degrais. (*Paris Médical*, April, 1922, xii, No. 14, p. 293.)

Roentgen Ray Skin Reactions and Temperature Changes. C. L. Martin and G. T. Caldwell. (*Amer. Journ. of Roentgenology*, March, 1922, ix, No. 3, p. 152.)

X-Rays in Dermatology. H. C. Semon. (*Practitioner*, April, 1922, xciii, No. 4, p. 259.)

SYPHILIS.

Diagnosis and General.

Chancre and its Scar. G. Milian. (*Paris Med.*, February, 1922, xii, No. 8, p. 159.)

Children, Syphilis in. H. B. Graham. (*Med. Journ. of Australia*, March 11th, 1922, i, No. 1, p. 265.)

Effects of Venereal Disease Legislation in West Australia. D. Smith. (*Med. Journ. of Australia*, January 21st, 1922, i, No. 3, p. 57.)

Fundamental Forms of Syphilis. F. X. Dercum. (*New York Med. Journ.*, May 3rd, 1922, cxv, No. 9, p. 504.)

Northern European Conference to Combat Venereal Disease (Copenhagen, May, 1921). K. Grön. (*Tidsskrift f. d. Norske Lægeforening*, 1921, Nos. 21, 22, 23.)

Parotitis, Syphilitic, Two Cases. G. Kjellberg. (*Acta Dermato-Venereologica*, 1922, i, p. 2.)

Spirochætes in Gland Serum. L. Chatellier. (*Ann. de Derm. et de Syph.*, April, 1922, No. 4, p. 174.)

Stomach, Syphilis of. J. W. McNee. (*Quart. Journ. of Medicine*, April, 1922, No. 59, p. 215.)

Stomach, Syphilis of, Two Cases. A. F. Hurst. (*Guy's Hosp. Reports*, April, 1922, lxxii, No. 2, p. 193.)

Syphilis and Lupus. G. Portmann. (*New York Med. Journ.*, May 3rd, 1922, cxv, No. 9, p. 508.)

Syphilitic Re-infection, Case of. Galliot. (*Paris Méd.*, March 4th, 1922, xii, No. 9, p. 194.)

Transmissibility of Syphilis. S. Feldman. (*New York Med. Journ.*, May 3rd, 1922, cxv, No. 9, p. 512.)

Ulcerating Granuloma in a Syphilitic Patient. M. B. Parounagian and H. Goodman. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 597.)

Venereal Disease To-day. J. E. R. McDonagh. (*Practitioner*, March, 1922, cviii, No. 3, p. 172.)

Wassermann Reaction on a Military Garrison. D. W. Beamish. (*Journ. Roy. Army Med. Corps*, May, 1922, xxxviii, No. 5, p. 376.)

Treatment.

Acetone Treatment of Syphilis. O. Smiley. (*Journ. Amer. Med. Assoc.*, February 18th, 1922, lxxviii, No. 7, p. 509.)

Bismuth Salts, Antisyphilitic Action of. G. Milian. (*Paris Méd.*, March 4th, 1922, xii, No. 9, p. 189.)

Dermatitis and Asthma from Hypersensitiveness to Local Contact with Arsphenamins. J. V. Klauder. (*Arch. of Derm. and Syph.*, April, 1922, v, No. 4, p. 486.)

Eparsenol and Bismuth Preparations, Experiments at Paué in the Treatment of Syphilis. Prof. Ehlers. (*Ugeskrift for Læger*, 1922, p. 1.)

Incomplete Treatment of Syphilis: Its Dangers. M. Pinard. (*Paris Méd.*, March 4th, 1922, xii, No. 9, p. 187.)

Neo-Arsphenamin, Deterioration of. G. B. Roth. (*Journ. Amer. Med. Assoc.*, April 22nd, 1922, lxxviii, No. 16, p. 1191.)

Neuro-Syphilis, Intravenous Hypertonic Salt Solution in. J. Wynne. (*Arch. of Intern. Med.*, January, 1922, xxi, No. 1, p. 72.)

Nitritoid Crises after Subcutaneous 914. Balalian. (*Paris Méd.*, March 4th, 1922, xii, No. 9, p. 195.)

Nitritoid Visceral Crises following 914. H. Gougerot. (*Paris Méd.*, May, 1922, xii, No. 19, p. 393.)

Organic Arsenicals, Chemotherapy of. C. N. Myers. (*Journ. of Lab. and Chem. Med.*, October, 1921, vii, No. 1, p. 7.)

Silver Arsphenamin, Effects on the Kidney. D. M. Sidlick and M. L. Mallas. (*New York Med. Journ.*, May 3rd, 1922, cxv, No. 9, p. 540.)

Silver Arsphenamin in Treatment of Syphilis. J. D. de Medina. (*Arch. of Derm. and Syph.*, March, 1922, v, No. 3, p. 321.)

Syphilis on Board Ship, Treatment of. R. H. McGiffin. (*Journ. Roy. Naval Med. Service*, April, 1922, viii, No. 2, p. 143.)

Treatment of Syphilis by Salvarsan alone. Rudolf Krefting. (*Tidsskrift f. d. norske lægeforening*, 1922, p. 2.)

Ulcerative Stomatitis and Colitis, Respective Parts Played by Mercury and Bacteria. J. Almkvist. (*Acta Dermato-Venereologica*, 1922, i, pp. 3–4.)

Pathology.

Arsphenamin, Agglutinative Action. J. Oliver and E. Douglas. (*Journ. of Pharm. and Exp. Therapeutics*, March, 1922, xix, No. 2, p. 187.)

Formaldehyd-Gel Reaction and the Wassermann, A Comparison. V. Burke. (*Arch. of Derm. and Syph.*, April, 1922, v, No. 4, p. 469.)

Globulin Content of Blood-Serum in Syphilis. M. E. Bircher and H. R. McFarland. (*Arch. of Derm. and Syph.*, February, 1922, v, No. 2, p. 215.)

Neo-Salvarsan, Action on Phagocytic Activity of Leucocytes. R. Tunnicliffe. (*Journ. of Infectious Diseases*, May, 1922, xxx, No. 5, p. 545.)

Positive Wassermann Reactions, Incidence of, in 484 Non-syphilitic Patients. R. A. Kilduppe. (*Arch. of Derm. and Syph.*, February, 1922, v, No. 2, p. 207.)

Precipitation Test for Syphilis. C. Y. Wang. (*Lancet*, February 11th, 1922, p. 274.)

Sachs-Georgi Reaction. J. L. Word and D. T. M. Large. (*Journ. Roy. Army Med. Corps*, March, 1922, xxxviii, No. 3, p. 213.)

Sachs-Georgi Reaction as a Substitute for the Wassermann Reaction. J. A. Murto. (*Acta Dermato-Venereologica*, 1922, i, pp. 3–4.)

Sachs-Georgi Reaction in Syphilis. J. L. Brownlie. (*Lancet*, December 24th, 1921, p. 1322.)

Sachs-Georgi Reaction: Results in Blood and Fluid Examinations. E. Salen. (*Acta Dermato-Venereologica*, 1922, i, pp. 3–4.)

Sigma Reaction for Syphilis, A Comparison with the Wassermann Reaction. A. F. Rook. (*Lancet*, January 21st, 1922, p. 118.)

Simple Quantitative Precipitation Reaction for Syphilis. R. L. Kahn. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 570.)

Spirochætosis, Venereal, in American Rabbits. H. Noguchi. (*Journ. of Exper. Med.*, March, 1922, xxv, No. 3, p. 391.)

Syphilimetric Colour Indices. E. F. Muhr. (*Journ. of Lab. and Clin. Med.*, October, 1921, vii, No. 1, p. 1.)

Vernes Reaction: Technique and Preliminary Experiences. L. H. Cornwall. (*Arch. of Derm. and Syph.*, April, 1922, v, No. 4, p. 433.)

Wassermann Reaction, Interpretation of. S. Wallenstein. (*New York Med. Journ.*, May 3rd, 1922, cxv, No. 9, p. 514.)

Wassermann Reaction, Rationale of the. J. E. R. McDonagh. (*Lancet*, December 24th, 1921, p. 1319.)

Wassermann Test. L. B. Bull. (*Med. Journ. of Australia*, February 18th, 1922, i, No. 7, p. 172.)

Wassermann Test with Chancre Fluid. J. V. Klauder. (*Arch. of Derm. and Syph.*, May, 1922, v, No. 5, p. 566.)

REVIEWS.

An Introduction to Dermatology.*

Dr. Norman Walker's *Introduction to Dermatology* is so well known and has been so often reviewed in this Journal that there is little to add in a notice of this, the seventh edition. It has for long been recognised as one of the best books on the subject for students. It presents the winnowed experience of a master teacher in which all is arranged—to use the author's own expression—in a digestible form. The student is pleasantly conducted through the whole domain of dermatology. His interest in a disease is seized at once by a graphic summary of its chief clinical features and points of interest, and is sustained and carried on through diagnosis, pathology and treatment. The paragraphs on treatment are particularly clear and authoritative, and are of value not only to the student, but also to the expert dermatologist. Apart from the text a word of praise must be given to the many excellent illustrations, and especially to the 84 coloured plates reproduced from wax models, which compare most favourably with the similar well-known plates in the Jacobi-Pringle "Dermatochromes." Among the new matter in this edition there is, on p. 61, a brief reference to cutaneous reactions as a means of determining the causative agent in urticaria, with a coloured plate illustrating the results of various cutaneous tests. There are several new coloured plates of dermatitis venenata—a subject which affords one of the most readable chapters in the book. The only not quite satisfactory section is that upon syphilis. The descriptions of the secondary eruptions are perhaps too brief and somewhat misleading, and the author's advice that "the diagnosis of syphilis should never be made from the skin eruption alone" seems to discourage the student from making himself, as he should, so familiar with the aspects of the commoner eruptions of syphilis that he may generally make a correct diagnosis from the observations of the skin eruption itself. There are three excellent coloured illustrations of tertiary syphilitic eruptions but none at all of secondary eruptions, and the roseola of syphilis is described as a "mere erythematous blush" or "exceptionally a close imitation of erythema multiforme"; while the lenticular papular syphilide is said to be usually of the scaly or psoriasiform (or, as the author prefers to call it, "seborrhœic") type. That in the early stage of syphilis "two or three doses of ·5 grm. [of salvarsan or one of its substitutes] given at intervals of ten days may sometimes be all the treatment required" is, with our present experience, to be regarded as dangerous advice. H. G. A.

Diseases of the Skin.†

The appearance of a fourth edition of Dr. Sutton's treatise on diseases of the skin is a testimony of its popularity. The symptoms of the various diseases are

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* *An Introduction to Dermatology.* By Norman Walker. LL.D., M.D., F.R.C.P., Physician for Diseases of the Skin, The Royal Infirmary, Edinburgh. Seventh Edition. Edinburgh: W. Green & Son.

† *Diseases of the Skin.* By Richard L. Sutton, M.D. Fourth Edition. London: Henry Kimpton, 1921.

presented clearly and simply, and particular attention is paid to pathology and treatment. The profusion of admirable illustrations both of the clinical and histological features of almost every disease make the work a really valuable contribution to dermatology as an atlas of skin diseases. There are nearly a thousand illustrations in black and white and several coloured plates, and it would be difficult to praise too highly the life-like character of the majority of the clinical illustrations or the clearness of the microscopical pictures. The teaching value of these realistic photographs would perhaps be enhanced if they bore a closer coherence with the text or were the features they illustrate pointed out by explanatory legends. There is a direct reference in the text to hardly any illustration, so that the points they illustrate are apt to be lost to the student. For example, on p. 105 there is an excellent illustration of erythema *ab igne* which shows very clearly the characteristic livedo network, but there is no reference to this particular feature in the text. Again, between pp. 134 and 242 there are six illustrations of cases labelled squamous eczema, but there is no direct mention of any of these cases in the text, and merely on p. 227 a very brief description in a few lines of "squamous eczema." Among the illustrations of secondary syphilis there is one, Fig. 649, labelled "erythéme, papuleuse, post erosive or syphiloide post-erosive; dermite papuleuse disseminée" of Jacquet, but no indication that this is the later stage of a simple napkin-erythema and not really a syphilitic eruption.

Sometimes the author's statements seem to be even too concise, as for example when he says without further explanation that "it is very probable that urticaria is always due to anaphylaxis," or of herpes febrilis that "it is extremely probable that the affection is bacterial," without any hint as to whether the supposed bacterial infection involves the root-ganglia as in herpes zoster, or the skin itself. Similarly, such statements as "if several or more in number (referring to plantar and palmar warts) dependence is to be placed mainly on the X-rays or radium, no screen was employed," leave one in doubt as to the dosage and technique. Such may perhaps be regarded as captious criticisms; but they are made on behalf of the "less experienced practitioner" to whom the work is particularly addressed; it is, however, also full of interest and valuable information for the advanced dermatologist. Of special interest for the latter are the various photographs of diseases not often met with in this country, such as creeping eruption, blastomycosis, mycetoma, yaws, etc., and also the chapter upon diseases of the mucous membranes adjoining the skin. H. G. A.

BOOKS RECEIVED.

Diseases of the Skin. By Oliver S. Ormsby, M.D., Professor of Skin and Venereal Diseases, Rush Medical College, University of Chicago. 2nd Edition. 1921. Pp. 1166. 445 engravings and 4 plates. Philadelphia and New York: Lea & Febiger. Price $10.00.

Die Wassermannsche Reaktion. By Dr. Harald Boas. Privatdozent in the University of Copenhagen. With foreword by G. M. R. Prof. A. Wassermann. 3rd Edition. 1922. Berlin: S. Karger. Price M. 36.

Rezepttaschenbuch für Dermatologen. By Prof. Dr. Carl Bruck, Altona 1922. Berlin: Julius Springer. Price M. 48.

NOTICES.

British Association of Dermatology and Syphilology.

2nd Annual Meeting, 1922.

The Second Annual Meeting will be held in Edinburgh on Monday and Tuesday, July 24th and 25th. The following programme has been arranged:

Monday, 24th, 10.0 a.m.—At the University. Annual Business Meeting, when the President, Dr. Norman Walker, will give an address.

10.30. Discussion on "The Question of Sensitiveness to Non-bacterial Proteins and Toxins." To be opened by Dr. Arthur Whitfield (London) and Dr. S. Cranston Low (Edinburgh).

2.30 p.m. Demonstration of cases at the Royal Infirmary.

7.45. Dinner at the Royal College of Physicians. Before the dinner at 7.15 p.m. the librarian will demonstrate old books and atlases on dermatological subjects in the Library of the College.

Tuesday, 25th.—10.30 a.m. At the University. Discussion on "The Toxic Effects of the Arseno-benzol Compounds, with Special Reference to the Supervention of Dermatitis and Jaundice." To be opened, as regards dermatitis, by Dr. David Lees (Edinburgh), and as regards jaundice by Dr. Rupert Hallam (Sheffield).

2.30 p.m. Demonstration of cases at the Royal Infirmary.

Members of the Association desiring to take part in the meeting should communicate with the Hon. Secretary, Dr. Arthur Whitfield, 135, Harley Street, London, W. 1.

Annual Meeting of the British Medical Association in Glasgow.

The Section of Dermatology will meet, under the Presidency of Dr. Leslie Roberts, on Wednesday and Thursday, July 26th and 27th. On Wednesday, Dr. Cranston Low and Dr. H. W. Barber will open a discussion on "The Ætiology of Seborrhœa and Seborrhœic Dermatitis," and on Thursday the following papers will be read: Dr. W. J. O'Donovan. "Occupational Dermatitis"; Dr. G. H. Lancashire, "Dermatitis Artefacta," and Dr. J. Goodwin Tomkinson, "Alopecia areata and Strabismus, A Family Group of Cases." The Secretaries are Dr. W. H. Brown, 20, Park Circus, Glasgow, and Dr. Haldin Davis, 17, Cavendish Place, London, W. 1.

THE BRITISH JOURNAL
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JULY, 1922.

CLINICAL AND HISTOLOGICAL STUDIES ON THE PATHOLOGICAL CHANGES IN THE ELASTIC TISSUES OF THE SKIN.

A. KISSMEYER AND CARL WITH.

From the Department of Skin Diseases of the Finsen Medical Institute (Director: Axel Reyn).

(*Continued from p.* 194.)

V. Pseudoxanthoma Elasticum.

Among the aspects of disease dependent on degeneration of the elastic tissue none has interested dermatologists so much as pseudoxanthoma, a name proposed by Darier, who was the first to give a thorough description of its histology. Before proceeding to describe this disease, in which each new case can be counted on to create interest, partly because, up to the present only fifteen more or less certain cases have been described or mentioned, and partly because the individual cases are in several ways so divergent from one another that it is difficult to find a common view-point, we will describe our own three cases.

(1) M. D—, a lady clerk, aged 26 years, came to the Institute on June 6th, 1918. Her father had died from blood-poisoning when 49 years old; the mother, a half-brother about 30 years old (with psoriasis), and 6 younger brothers and sisters (only two males) are alive and well with the exception of Nos. 3 and 5, who show the same abnormity as patient. Except for No. 2, a young man about 22, whose skin is said to be normal, we ourselves have examined the rest, of whom the youngest is 16. The patient herself is said to have been well with the exception of pyelitis following one pregnancy (the child, 6 years, is well, without symptoms of any kind of disease, and especially without any distinct changes on

the neck). The patient presents no other symptoms of disease. W.R. negative. The patient's skin affection was first observed on the abdomen at the age of 10; the skin was red and discoloured, with large patches of the same character as at present; the affection has since disappeared. About the same time she noticed patches on both sides of the back of her neck. They spread so much that when she was 16 years old they had reached the front of the neck. During pregnancy at the age of 20 the midwife noticed the lesions on genitalia; at the same time those on the abdomen disappeared. The eruption has been treated with X-rays, carbonic acid snow and the Kromayer lamp, but seems rather to have spread during the time she has been under observation.

The patient is rather slight and somewhat fragile in appearance, and of a reddish-blonde complexion; the skin on the face is a little seborrhœic. On both sides of the neck is a symmetrical affection reaching higher on the left side; at the back of the neck it just reaches the border of the hair, and—with scattered elements—the middle line; towards the front it does not quite reach the middle line, while downward it reaches some centimetres above the clavicle (see Fig. 8).

Everywhere on the part described the folds of the skin remain, and there are flat, lentil-sized, fairly regular, whitish-yellow papules which in the upper part are arranged so closely that continuous flat-plateaux are formed, while outward and downward the elements become more and more separated from one another. Everywhere distinct patulous follicles are seen.

When the patient is quiet the affection is not specially conspicuous, but when blushing or when in some other way there is hyperæmia in the skin the yellow colour becomes more conspicuous and shows a peculiar greenish transparent lustre. In both axillæ, on a part which measures 10 by 5 cm., especially in the upper part, are papules as large as lentils. In the bends of both elbows, where the affection is only about a couple of years old, a yellowish patch—produced by closely situated, flat, and on right side slightly elevated spots up to the size of hemp seed—is seen on a part measuring about 5 by 4 cm. A similar affection on a part measuring 10 by 6 cm. is found on the front of the thighs, reaching upwards just to the inguinal furrow, outwards almost to great trochanter, and downwards to the adductors. Here, however, the papules are more scattered, and in the lower part are almost lentil-sized, but in the centre are the size of peas and grouped into patches the size of a shilling, with patulous follicles; the colour, which is somewhat pigmented on the neck, is on these parts rather more whitish yellow. On each side are about 200 papules. Continuous with these patches, and laterally with labia majora, are similar elements which are arranged in smaller groups. On each labium majus is a larger group 5 by 10 cm., and a third about 6 by 4 cm. on both sides of the perinæum and adjoining part of the seat. On the last-named part the pea-sized papules are very dense, forming almost tumour-like plateaux. The affection continues above the inguinal furrow upwards on the lower part of the abdomen, where scattered elements are found as high as *mons veneris*. Apart from this there is no lesion on the abdomen at present. In each popliteal space is a similar eruption to that found in the bends of the elbows, but far less pronounced.

Microscopically, in a general view of a section through a papule on the thigh, is seen a well-defined "tumour" in the corium; the epidermis is if anything of normal appearance, with abundant pigment in the lowest cell layer. This tumour

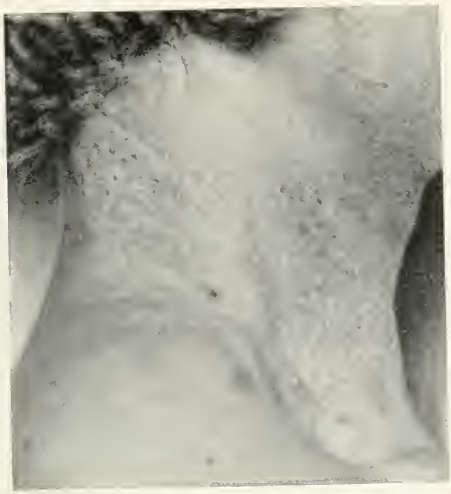

Fig. 8.—Pseudoxanthoma elasticum.

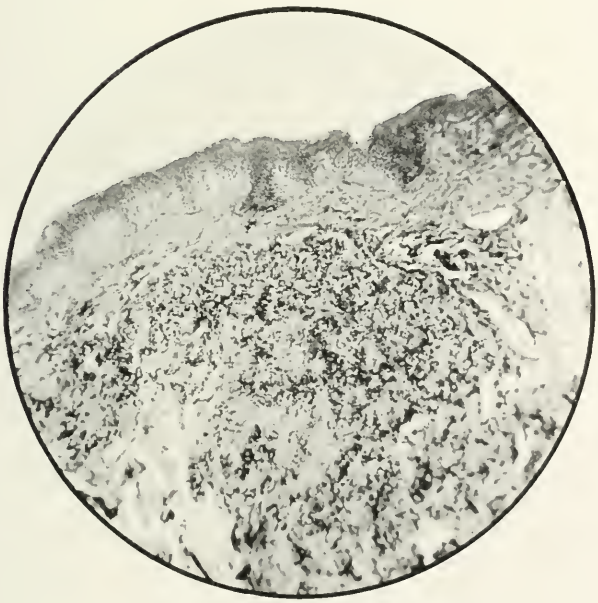

Fig. 9.—Pseudoxanthoma elasticum.

TO ILLUSTRATE DR. A. KISSMEYER'S AND DR. CARL WITH'S ARTICLE ON CLINICAL AND HISTOLOGICAL STUDIES ON THE PATHOLOGICAL CHANGES IN THE ELASTIC TISSUES OF THE SKIN

appears to consist of regions of a peculiarly wavy and spirally twisted tissue, which is lacking in nuclei apart from a few scattered connective-tissue ones. Round the "tumour" and entering it are found a few vessels. While the connective tissue of the corium only quite faintly assumes the orange colour, the twisted tissue regions are coloured, though faintly, by the hæmotoxylin, presumably because they imbibe this and assume a reddish-violet tone. Stained with acid orcein and cresyl violet as a dual stain these regions are seen faintly coloured —as is the connective tissue with this method of staining—with the elastic fibres in the upper part of the cutis coloured as usual. In the broad wavy regions are, besides, darker elastin-stained parts. These elastin-coloured formations are sometimes broad, sometimes narrow, often broken, fibrillated, sometimes ramified, and sometimes irregular, swollen balls, sometimes necrotic masses.

The elastin appears most closely to resemble rolled-up balls of somewhat irregular fibres like horse-hair. This is, indeed, the quite typical aspect of pseudo-xanthoma elasticum (see Fig. 9).

(2) J. K—, a servant, aged 22 years, sister of above mentioned. The patient previously enjoyed good health and did not notice her affection until the sister applied to the Institute; she is dark-blonde, not sandy. At the only examination which was made (July, 1918) on both sides of the neck a fairly symmetrical eruption was found, which on the left side where it was most developed measured 11 by 10 cm. It was localised above and reached the border of the hair at the back. On the right side it measured 8 by 5 cm. Flat or slightly raised yellowish elements, which here and there collected into low ridges, were seen on the part mentioned. These elements were distinctly conspicuous when there was hyperæmia of the skin; at other times they were almost invisible.

On a part about 5 by 3 cm. large on the front of the thighs were found 20 papules, partly bluish-red, partly reddish-yellow, and about the size of peas. Similar affection to that of the sister was found in the axillæ and plicæ cubiti, but none on the abdomen.

(3) K—, aged 12 years, butcher's boy, brother of the above mentioned. Previously healthy, and is said to have had the present affection for several years. In both regiones laterales colli and on the back of the neck to the extent of about 10 by 9 cm. were found numerous brownish-yellow elements about the size of a lentil with tendency to coalesce; below the elements were more scattered but towards the border of the hair more densely collected. On the lower two-thirds of the abdomen the skin was rough and dry, as if somewhat ichthyotic, and with a yellowish tinge, but without isolated elements of the type above described.

The three patients mentioned were demonstrated in the Danish Dermatological Society by With under a wrong diagnosis (*Hosp.*, 1918, p, 1742), and later at the Fourth Scandinavian Dermatological Congress, 1919 (*Proceedings*, 1921, p. 128).

The diagnosis was first made by Prof. Unna in Hamburg, on the histological preparations taken to him by Kissmeyer. For this valuable assistance our best thanks are due to Prof. Unna.

As in Herxheimer and Hell's work (1912) as well as in Throne and

Godman's (1921) we find a through *résumé* of the cases described up to that date, we refer the reader to them. If our cases are to be compared with any of the previous ones it is natural to think of those of Werther and Gutman's. Like ours, it was a question of young individuals who had had the affections from youth and were reddish coloured (with freckles). In all of them the essential localisation was the neck, and a hereditary trait apparently was present; in our first case, two of the remaining five brothers and sisters had the affection and in the second case two of the three suffered from it. Although in none of the remaining cases is there any information as to other cases amongst brothers and sisters, one cannot in any circumstances preclude the disease being of a hereditary nature. If it is so, then concurrence of the factors which give rise to the appearance of the abnormality happens only rarely. Naturally one realises that the hereditary trait in some cases by no means makes it impossible for the affection to be acquired by influences from without or diseases from within. Also it may not in all cases be a question of the same disease even if the form is identical. Herewith must be reckoned Balzer's, Darier's and Pinkus' cases besides those described by Werther and Gutmann; also presumably Bodin's, where there was no affection on the neck, however, but on the contrary, as in the majority of those mentioned in the axillæ, the groins, and on the abdomen—that is to say, on parts of the skin where there is considerable mobility, and where, consequently, the elastic tissue is particularly developed. And finally Bruno Bloch's case in a girl, aged 18 years, without any family history. This is a typical case with localisation on the neck, and some elements round the umbilicus. Microscopical examination showed the typical picture. Bloch thinks that, as an ætiological factor, toxic processes which produce necrosis of the elastic tissue as in argyria, Bence-Jones albuminuria, etc., must be considered, and that it is not a question of an "elastoma."

A perfectly typical case is described by Friedmann, in a woman, aged 25 years. At the histological investigation calcination of the degenerated elastic fibres was found. At the French Dermatological Association Milian has described a typical case in a woman, aged 42 years, with tertiary syphilides.

Herewith must certainly be reckoned, in addition to the nine cases mentioned, those of Wolff, Mito, and v. Tannenhain.

The latter, in a woman aged 74 years, found on the front of the upper arms, on the thighs, over the iliac crests, under the chin and on the side of the breast an eruption consisting of opal and yellowish irregular, lentil-sized, greatly projecting nodules, many of which ran together into large plaques.

Microscopical examination showed, in the papillary body, faintly defined areas with the elastic fibres thickened and rolled up, and in parts granular necrosis.

Taking everything into consideration it seems that the case should most naturally be considered to be pseudoxanthoma, though its similarity to senile degeneration cannot be overlooked.

The same applies to the four following cases mentioned in the English literature. The first case, in a woman, aged 56 years, is described by Graham Little, and was demonstrated in the Dermatological Section of the Royal Society of Medicine, May 21st, 1908. The affection commenced twenty years before and appeared as reticular areas of yellowish (buff-coloured) infiltrated papules or lines, which here and there were scarcely raised above the level of the skin. The affection had its seat on the neck, especially on the lateral aspects; a similar affection was found in patches in the bends of the elbows. The face was free. It had not been possible to perform a biopsy, but as "the exhibitor had had two cases of much more limited distribution of pseudoxanthoma elasticum in which a biopsy had corroborated the diagnosis," there seems no reason to doubt that all three cases were typical. Together with Sequeira, Little demonstrated on March 17th, 1910, a probably typical case in a woman, aged 19 years; it had lasted at least seven years and had not changed perceptibly. The affection showed itself as small tumours consisting of elastic fibres greatly increased in quantity, which were swollen and torn into granules and lumps.

This case, which possibly is identical with one of the last two mentioned by Little, was originally demonstrated by him in 1902 at the Dermatological Society of London. We have been unable to find a further description of it.

In the discussion at the meeting of March 17th, 1910, Colcott Fox mentioned that, with Malcolm Morris, he had seen, a couple of years previously, two sisters from Ireland who "looked exactly like the present case." If we include the last-mentioned case, which we are

not justified in identifying with Werther's three Irish brothers and sisters as we have no information thereon, we thus find thirteen probably typical cases in all described or mentioned in the literature.

In addition to the cases mentioned, we are inclined to class therewith Whitfield's case described in Allbutt and Rolleston's *System of Medicine*. In an elderly woman—who on account of aphasia and hemiplegia was unable to give any information as to the duration of the affection—nearly the whole front of the body, especially the lower part of the abdomen, was found to be covered with small tumours, which were distinctly protuberant, soft, and yellowish—like old ivory. By their distribution and appearance they presented some similarity to old "striæ albicantes," from which they were easily distinguishable, however, by their being raised above the level of the skin, and by genuine striæ being found amongst them. The same lesions, though less pronounced, were found on arms, legs, and neck. The histological investigation showed in the lower part of the corium "large collections of fragmented, angular pieces of tissue giving the ordinary elastic tissue reactions."

The author informs us that Dr. J. J. Pringle has shown him an exactly similar case in an elderly woman; about the latter it has not been possible to obtain further information.

A typical case is also reported by Throne and Godman (1891) in a woman, aged 39 years, whose sister—who died of phthisis—showed the same changes in the skin. The histology was typical. Also Kingbury and Heimann's case in a woman, aged 21 years, showed a similar skin affection on the neck; microscopical examination confirmed the diagnosis.

In sixteen out of the above-mentioned seventeen cases of pseudoxanthoma elasticum the colour seems to have been yellowish.

One more characteristic we will call to mind, namely that the involvement of the face is only mentioned in Darier's case; here changes on the upper lip and at palpebral commissures were found.

In our opinion Whitfield's case presented some similarity to senile degeneration, accentuated by reason of the exhausted condition of the patient. There is scarcely any doubt that the same is the case in a woman, aged 72 years, with the skin of her face yellow like old ivory and divided into areas by furrowing, which is described by Rygier under the diagnosis of pseudoxanthoma. In the face of a woman,

aged 74 years, Dohi found an eruption consisting of flat, lentil-sized papules from straw colour to yellowish-brown, now isolated, now forming a net-work, and placed symmetrically on the forehead, eyebrows, cheeks, upper lip and chin. No doubt this case is due only to senile degeneration, and if it has not been recognised as such this apparently is only owing to pronounced papule formation. This, however, is not rare with senile atrophy; it was found, as mentioned, both macro- and microscopically in a previously described case. Microscopical examination of Dohi's case showed irregular, thickened, partly fragmented decaying elastic fibres in the papillary body.

Besides the more or less typical ones, Herxheimer and Hell seem inclined to class a series of more doubtful cases with pseudoxanthoma elasticum. As these cases all present considerable interest we will go through them critically and try to group them.

Herxheimer and Hell (1912) have described a symmetrical affection on the cheeks in a boy, aged 16 years; the eruption was of a normal, rather dull colour, and appeared as a delicate trellis-work of fine lines, with pin-head-sized areas in between. Microscopically there were found in the papillary body well-defined heaps of closely placed, thickened, fairly regular elastic fibres, forming all transitions from the normal. A certain similarity to this case is presented by Bosselini's (1900). In a woman, aged 45 years, he found a slate-coloured affection consisting of hemispherical, shiny papules from a lentil to a hemp-seed in size, separated from each other by regular grooves; the affection was symmetrical and localised to the forehead and root of the nose, spreading downwards and outwards on to both cheeks; elements resembling nævus verrucosus were found on the thumb and forefinger. Microscopical examination showed—in the middle layer of cutis—round or oval foci of entangled basophile—reacting elastic fibres; the affection began six to seven years before on the forehead and had slowly spread.

Herewith I will also class Dübendörfer's case on the left upper gluteal region in a boy, aged 7 years. On an area the size of the palm of the hand were found dull, distinctly yellow, sharply defined and faintly elevated stripes and spots, with here and there indication of a network. In the middle and deepest layer *microscopical* examination showed irregularly rolled up (gequollene) elastic fibres and bands.

Arzt has also described two atypical cases:

(1) In a man, aged 59 years, was found on the left side of the face —about the level of the angle of the mouth and about the size of a shilling—an almost hairless and circular patch of the same consistency as the surrounding skin. The patient knew nothing about traumata. The author is of opinion that the histology in several ways deviates from hitherto observed cases and summarises them as follows: "So ist vor allen die ganze Kutis von Veränderungen betroffen, die einzelnen Fasern sind grösstentheils erhalten, die Knäuelbildung ist relativ selten zu finden und überwiegt weitaus der horizontale Verlauf der Fasern, während degenerativen Veränderungen nur äuszerst spärlich in Erscheinung treten."

According to the author a real increase of the elastic fibres is found.

(2) In a man, aged 45 years, was found at the level of the skin, in front of the right ear, a hairless patch the size of a two-shilling piece. *Microscopical examination* showed only slight changes in the deeper layers of cutis, but greatly thickened elastic fibres in the middle layers.

Arzt, however, takes a somewhat different point of view, as, on the basis of histological investigations, he writes as follows: "Es lassen sich also wohl ohne besonderen Gezwungenheit zwei Gruppe beim Pseudoxanthom unterscheiden, solche mit strukturellen und degenerativen Veränderungen am elastischen Gewebe, denen unser Fall 2 zuzuzählen wäre, und solche, bei denen ein degenerativer Prozess mehr weniger fehlt, die Fälle Dübendörfer, Juliusberg und teilweise Herzheimer and Hell und unser ersten Fall."

As will be evident from the following we are on this point at issue with Arzt, who, moreover, discusses various questions in this connection, especially the influence of age.

These five cases, in spite of diversities, offer a certain slight similarity, and, in any case, do not resemble the other forms which show elastic degeneration. Herxheimer and Hell's case, in particular, presents a certain similarity to a peculiar affection on the cheek of an old woman which is said to have originated from a burn, which has been described previously (Fig. 6, p. 188).

Juliusberg (1917) found in a woman, aged 86 years, on the left side of the neck, two sulphur-coloured 0·4 by 0·25 cm. large, slightly elevated, solid, non-transparent swellings which showed histologically sharply restricted areas consisting of dense elastic fibres with necrosis and the formation of clumps in several places at the edges.

This case ought not to be included with pseudoxanthoma, but presents greater similarity to elastomata in scars or granulation-tissue, and for the present should be classed therewith. For the rest see Juliusberg's interesting discussion.

Pinkus, 1912, demonstrated at the Berlin Dermatological Society a case of "pseudoxanthoma elasticum," but as he himself writes, "bei dieser Patienten bestehen nur einige Knötchen zu beiden Seiten des Halses," this case, no doubt, may be rejected; presumably it must be classed with elastic degeneration in scar-tissue.

VI. Yellowish Colour of Skin from Various Causes.

Juliusberg, in the work quoted, maintains that the elastic degeneration gives the tissue a peculiar colour, from light to intense yellow, and different from that due to pigmentation and to the embedding of cell masses as in xanthoma. In this, however, he is only partly right, as our experience, now somewhat extensive, has convinced us that in many cases it may be very difficult, not to say impossible, to distinguish between milia and elastomata in lupus tissue. For this reason we have thought it advisable to say a few words about other conditions which may give the skin a more or less yellowish colour; for instance, this is the case with nævus sebaceus. That full glands can give a yellowish colour is now and then seen very distinctly, for example, in the glands of the lower lid, which may have almost the same yellow colour, as in the so-called pinguecula, where the yellow colouring is due to degeneration of the elastic tissue (Fuchs, see Juliusberg, *loc. cit.*, 1902, p. 176). In the literature we have found the same yellow colour described by Otto Müller under the name nævus xanthelasmoides; in a prostitute he found a peculiar yellowish colour in a narrow zone surrounding the vulva. Microscopical examination showed a nævus mollis, but nothing is found in the description which can with certainty explain the yellow colour. The elastic tissue was not examined. The author writes: "So dürften wohl zwei Faktoren in Betracht zu ziehen sein, die an dem Zustandekommen derselben hauptsächlich beteiligt sind, nämlich die Hypertrophie der Epidermis und die Lokalisation der Nævuszellnester in allen Schichten des Coriums. Den Talgdrüsen möchten wir eine Rolle hierbei nicht zuschreiben" (1909, p. 213).

McDonagh, in 1912, described small, yellowish tumours in the face in children, where the yellowish colour seems to be caused by a sort of fatty degeneration, as will appear from the following summary of his work:

"In conclusion I should suggest that these tumours under discussion are nævi of the type endothelioma, and that owing to a fatty change which occurs in the cells during their dissolution a xanthoma-like condition is produced. The name nævo-xantho-endotheliomata would describe them exactly."

Here we will also call to mind Thibierge's "lymphangioma capillaire xantholasmoide," consisting of yellowish small tumours on the thigh in a woman aged 35 years. They were only slightly protuberant, and showed a tendency to run together; the affection was peculiar because of the colour, which was "jaune pâle, légèrement rosée et tirant un peu sur le brun." Histologically were found no changes of the elastic tissue and no explanation of the yellow colour.

Later (1909) Will. S. Gottheit described a clinically very similar case under the name pseudo-xanthomatous lymphangioma; in a woman, aged 32 years, yellowish tumours of thirteen years' duration were found on outer side of left thigh. In this case distinct change of the elastic fibres was found and with it the explanation of the yellow colour.

Here we will also mention a characteristic case of Kissmeyer's in a man, aged 29 years, which presented the appearance of scattered yellowish, distinctly sub-epidermal, lentil-sized, fairly firm nodules in the skin, partly grouped. They had existed only for about one month. Microscopical examination here showed no changes of the elastin, but pronounced infiltration round the vessels in a restricted area. *Microscopically* the yellow colour of these elements does not easily allow of explanation.

Rasch's case of a man, aged 51 years, with polyneuritis, though clinically presenting a slight similarity to pseudoxanthoma elasticum, occupies, however, a distinctive position on account of its histological structure. In the lumbar region and corresponding part of the abdomen but not reaching the centre line, soft, slightly infiltrated prominences which were somewhat paler than normal skin and in places slightly wrinkled, and from the size of a lentil to a pea, were found closely grouped on the back and more discrete in front. The

disease had begun three to four years before. Microscopical examination showed, just beneath the epidermis and corresponding to the soft prominences, areas which in part consisted of thin and fine elastic fibres and some few lumps. In the deeper corium the elastic tissue was irregularly distributed and rolled up. On account of its peculiar microscopical appearances this case is still unique.

At this place we will mention a very rare skin abnormality, which was demonstrated by With in the Danish Dermatological Society, October 2nd, 1918, and later on at the Fourth Scandinavian Dermatological Congress in Copenhagen (June, 1919) and which was described as "nævus sclerodermicus thoracis." Clinically With found a certain likeness to pseudoxanthoma elasticum, but the microscopical examination of a small piece of skin did not bear out this opinion. Later Lewandowsky in 1921 described the abnormality as a new disease, called it "nævus elasticus" and gave the correct description of the microscopy. He examined four cases, and found as the characteristic feature a lack of elastic tissue in the upper part of the corium or small bundles of broken and twined elastic fibres there. The abnormality we have preferred to name "dystrophia elastica follicularis thoracis"; the details will be published in full later.

VII. Conclusion.

As opposed to Arzt, but especially Bosselini, who maintain that there are histologically different aspects corresponding to the different clinical forms, we, on the basis of our own plentiful material where we have had opportunity to investigate the histology of all forms excepting pseudo-colloid milium, are of opinion that this is not the case.

Because, if we review the observations on different forms of elastic degeneration reported in the foregoing pages, we shall see that this shows itself partly by a quantitative increase in elastin, sometimes—as in most cases of senile change—to such an extent that this forms an almost compact tissue mass in the upper part of the corium, and partly by structural changes of the elastic fibres. It shows itself as an irregularity in thickness, the fibres most often becoming thicker, sometimes only partially, so that rosary-like thickenings are formed, and more twisted and undulating. Very frequently there appears a

peculiar curling up of the elastic fibres into balls, so that they come to resemble entangled horse-hair. The individual fibres may then also be ramified. Simultaneously with this the elastin seems to show greater inclination to break, so that in the particular sections are seen proportionately many broken fibres, often with some curling up of the (thickened) broken ends (elastorrhexis elastoklasis). With this—though more rarely—is seen another change, the formation of amorphous masses of elastin which take elastin colouring matter very intensely. These two changes are, as mentioned, only rarely present simultaneously.

It is characteristic of all changes that (as Schmidt and Reizenstein have already observed) they leave a narrow belt free under the epidermis (Unna's subepithelial boundary layer). Only under this —sometimes quite sharply defined—do the changes commence which occupy the papillary body and the upper part of the cutis, but they do not go deeper into this (except with pseudoxanthoma).

In senile degeneration the degenerative changes are often diffuse; parts can be observed, however—also clinically—where the colour characteristic of the elastic degeneration is more greatly conspicuous, and microscopically corresponding with this, we have seen the structural changes more strongly pronounced.

In cases of scars—either traumatic or inflammatory—the degenerative changes are most frequently localised, either in the bulk of the scar or as nodules. Here, in the case examined by us, the histological aspect always corresponded very closely with that observed clinically. Here, as shown in Fig. 5, p. 188, the histological aspect may be produced which greatly reminds one of pseudoxanthoma elasticum, as rather sharply defined heaps of degenerated elastin are found. Such a far-reaching process as is found in pseudoxanthoma elasticum will, however, hardly be found in the other conditions. In this affection (pseudoxanthoma elasticum) the changes are more strongly pronounced; the collagen bundles in conjunction with the elastin have formed small, sharply defined, tumour-like formations in the skin, of which the main histological characteristic is a strong curling up and granular necrosis of the—often ramified—elastic fibres, and pronounced "elastorrhexis." The more deep-seated changes in pseudoxanthoma elasticum were possibly due to its development at an earlier age.

That the name pseudoxanthoma elasticum is unfortunate most will agree, but that it still remains is due partly to the difficulty of finding a name which covers the pathologico-anatomical aspect, and partly to the disinclination to alter a name—though unfortunately chosen—which is generally known and understood by all.

To establish the term "elastoma" is considered by B. Bloch, for example, as unfortunate, because it is not a question of a proliferative tumour but of a degenerative product. That it is, as assumed by Schmidt for senile degeneration, exclusively a question of an increased density of the elastin on account of atrophy of the connective tissue is scarcely correct, at any rate for all forms, but possibly it is a question of primarily proliferative processes in the connective tissue, and consequent degenerative elastin changes. It is natural, we suppose, as far as possible to classify the elastic degenerations according to their incidental cause—a point of view somewhat divergent from Arzt's.

The elastic degeneration, produced by the continued influence of the weather over long periods on the parts which are exposed thereto and are specially susceptible on account of special structure (the face, especially the forehead, the neck, the back of the hands), is found first and foremost in senile degeneration, but also "pre-senility" in traumatic scars and in scars from transplantation and burns, just as after granulation processes, because the newly-formed elastic tissue is less capable of resisting the above-mentioned factors. The colloid-milium, which is found only on the face and, if Juliusberg's hypothesis is correct, only after a previous granulation process, must be reckoned as allied to this group or, rather, to that which follows.

The small elastomata and the elastic degeneration seen now and then in tuberculous and syphilitic lupoids must presumably be regarded as a further development of the degeneration process of the normal elastic tissue dependent on the inflammation, and different from the slow degeneration of regenerated and therefore less resistant elastic tissue. Therefore it cannot with certainty be placed with the other forms; that it may be impossible, clinically as well as histologically, to discriminate between elastic degeneration in scar-tissue and that in granulation-tissue is a question in itself; the latter occurs also in protected areas.

To discriminate between different histological types of elastic degeneration has been tried before, but, as appears from the above mentioned, this is impossible, because the histological aspect may be identical in the different conditions, and only contingent on the process.

To attempt a morphological classification discriminating between diffuse and circumscribed forms is impossible, because the senile elastic degeneration is not by any means always diffuse, and because pseudoxanthoma elasticum is sometimes circumscribed and sometimes diffuse.

If we employ an ætiological classification, which seems more practical, it will be necessary to distinguish between the following main types. For all of them, excepting the last, it holds good that the elastic degeneration asserts itself especially on such parts of the skin (face, forehead, neck, and possibly hand-backs) as are daily and yearly exposed to the continued influence of the weather.

(1) Diffuse senile degeneration.

(2) Pre-senile degeneration, no doubt of newly-formed elastic tissue in scars from traumata, burns, transplantation, and after granulation processes, which is less capable of resisting the weather. Approximate to this group must be counted colloid-milium, only found in the face, and if Juliusberg's hypothesis is correct arising on a basis of preceding granulation processes.

(3) Pseudoxanthoma elasticum, an affection no doubt generally arising on an hereditary basis, and most frequently associated with the large flexible surfaces of the body.

(4) The small elastomata seen now and then in tuberculous and syphilitic lupoids, which presumably arise on a basis of an acute degeneration process of the original elastic tissue occasioned by inflammation, and as a further development of the degeneration of the normal elastic tissue which is found more or less pronounced in chronic granulation processes. This differs from the slow degeneration of regenerated and therefore less resistant elastic tissue in scars. If our interpretation of Gray's case is correct these elastomata appear to be able to exist after the granulation process has ceased.

We ask our chief physician, Dr. Axel Reyn, to accept our best thanks for valuable assistance. Mr. N. Beale has kindly translated the Danish text of this paper into English.

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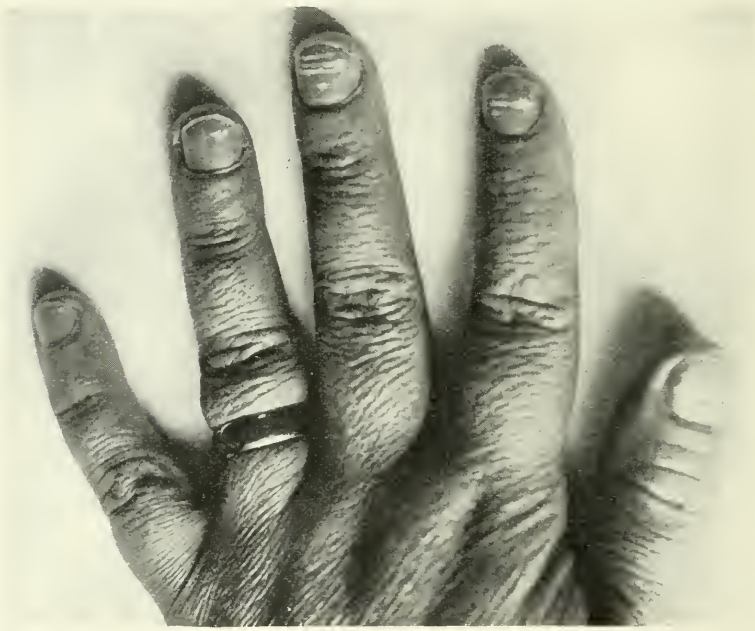
CLINICAL NOTES.

LEUCONYCHIA STRIATA.

KNOWSLEY SIBLEY, M.D.

B. E—, a widow, aged 57 years, who had had psoriasis for thirteen years, presented marked white bands on most of the fingers and



especially the thumb-nails, where some six distinct bands were noticeable. There were no bands on the toe-nails, nor anything peculiar about the hair. The teeth were all removed when she was 21 for caries.

The nails were smooth on the surface and otherwise did not show any change in their structure at the present time, though at one time they were affected by psoriasis. The patient stated the bands always

appeared at the base of the nail and gradually grew up to the free end.

Her mother's mother had similar bands, and several other members of her family were likewise affected, the family being known by their peculiar nails. The patient's daughter is stated to occasionally have small white bands on her nails. At the present time they are only marked by white spots.

Unna makes three divisions of the condition:

(1) Leuconychia punctata—white spots.

(2) Leuconychia striata—white bands or striæ.

(3) Leuconychia totalis, which condition involves the nail in its entirety.

A case of this I saw in a young girl the subject of lichen planus who stated that her nails had been quite white ever since she could remember.

The white bands are probably caused by an incomplete cornification of the nail, as is normally present in the base or luna of the nail.

In the *British Journal of Dermatology* for 1911 I published a very marked case of leucopathia unguium in a man, and collected the literature on this subject at that date.

A CASE ILLUSTRATING THE ASSOCIATION OF VON RECKLINGHAUSEN'S DISEASE WITH DERANGEMENT OF INTERNAL SECRETION.

ERNEST MALLAM, D.M.
Oxford.

I have been much interested in the account published in the June number of the Journal of "a case of Recklinghausen's disease with pituitary tumour," shown by Drs. Barber and Maurice Shaw; and I feel impelled to publish a strikingly similar case in my own private practice. I naturally had the wish to show the case to the Society, but this I fear is impossible to attain, as the child is very sensitive to his abnormalities, and the mother asks *cui bono*.

The patient, a boy, is the child of a father aged 56 and a mother aged 26 when he was born, and was thought to be normal at birth.

A number of pigmented patches were noticed on the child during early infancy, which were regarded as moles; but little attention, if any, was paid to them, as his father's family are said to be prone to them. He has an elder brother, who certainly has a good many pigmented nævi on his face and body. But I cannot speak for his father, who is dead; or for any other of his father's family from personal observation.

I am told that from the age of 9 months till he attained to 4 years he was an exceedingly delicate, puny, backward child, with a thin frame and an enormous abdomen; and that he suffered from constant diarrhœa and vomiting. But from his fourth year till last December, when he was eight, he has grown and developed enormously; with the result that he was prodigiously fat and big, weighing $8\frac{1}{2}$ stone, standing 4 ft. $10\frac{1}{2}$ in., and measuring $32\frac{1}{2}$ in. round the umbilicus.

The sexual organs were greatly developed for a child of 8, the pubic hairs fairly well grown, the voice low pitched, and he had developed a troublesome tendency to masturbate.

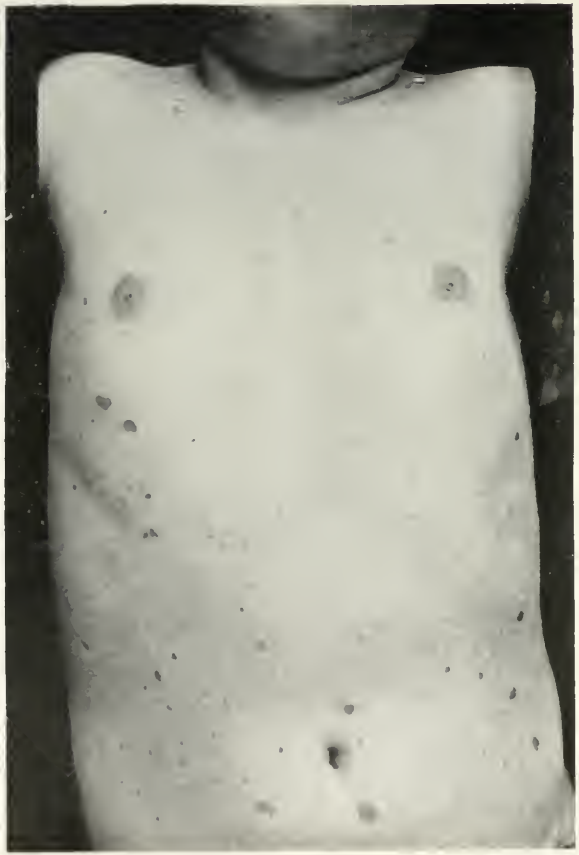
The skin presented an early grade of von Recklinghausen's disease. The patches of pigmentation can be well seen in the photographs. Many sessile masses of fibrous material could be felt on the trunk, flanks and shoulders, which, when picked up between the finger and thumb, gave the sensation of small collections of worms.

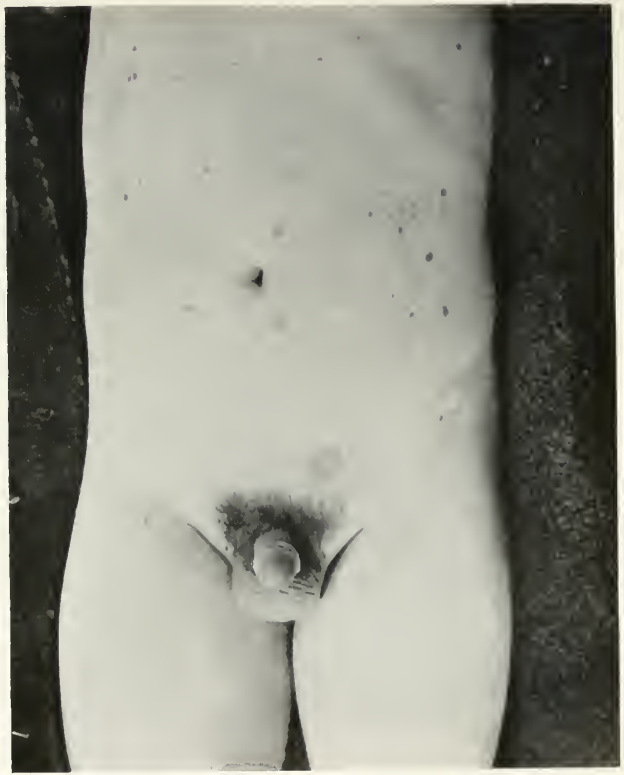
They were, as a rule, painless under manipulation, but he had often complained of a sensation like an electric shock when one or other part of his skin was touched, which, I understand, was entirely his own simile. One of these tumours was removed, and described by the pathologist as "fibroma with some hypertrophy (papillomatous) of the epidermis."

The hair was very strong and coarse, the nails brittle.

His mind was acute, he was thoughtful for his age and took a good place in his school. At games he was bad, readily liable to headache and fatigue. In short, apart from his large clumsy bulk, frequent headache when tired from work or play was the only complaint.

Physical examination did not reveal any signs of disease beyond those enumerated. The heart, lungs, kidneys and viscera all





DR. ERNEST MALLAM'S CASE ILLUSTRATING THE ASSOCIATION OF VON RECKLINGHAUSEN'S DISEASE WITH

appeared normal. Special attention was given to the ductless glands. There was no evidence of supra-renal growth; the thyroid was not enlarged.

The eyesight was good, there was no optic atrophy, and no diminution in the fields of either eye.

An X-ray of the skull showed a well-defined sella turcica, of normal size. His bones were large but healthy, and there were well-marked gaps between his permanent incisors.

The subsequent history of the boy is of interest.

He has taken thyroid extract 2½ grains every night, and has remained the same weight during the past six months.

In April he had mumps, and in spite of my anticipating trouble, and taking every care, he had a definite orchitis and was quite ill.

But the most interesting feature in the case is, that nearly all the sessile fibrous tumours in the skin have entirely disappeared, and one can only find an occasional ill-defined fibroma in the flanks, and that with difficulty.

My own diagnosis was von Recklinghausen's disease associated with a destructive tumour of the pineal.

Injections of the extracts of the pineal and pituitary glands produce similar effects, whilst extirpation of the pineal in cockerels produces more rapid growth of the body, earlier development of the testicles and secondary sexual characters (Schafer's *Endocrine Organs*).

Leonard Kidd has described a group of cases, mostly boys, in which rapid growth of the body, unusual adiposity and marked sexual precocity are associated with tumours of the pineal (*Review of Neurology and Psychiatry*, 1913).

Hyperplasia of the pituitary causes overgrowth of the body, and sometimes sexual precocity, but the obese Fröhlich type is associated with genital hypoplasia rather than with this condition. Moreover in this case the radiograph contra-indicates any pituitary growth.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Meeting held on March 16th, 1922, Dr. H. G. Adamson, President of the Section, in the Chair.

Dr. Henry MacCormac showed a *case of spurious diphtheria of the skin*. The patient was a male, aged 51 years. Twenty-five years ago he contracted syphilis, for which he took mercurial pills for eighteen months. He remained well until about six months ago when a sore or ulcer developed on the mucous membrane of the left cheek. Some teeth were then extracted and after this there was rapid destruction of the left cheek. He stated that at this period—about four months ago—he received five injections of neosalvarsan, which at first caused an arrest of the destructive process, but that later, in spite of the continued use of the remedy, the ulceration became again active. On January 16th he was admitted to the Middlesex Hospital; there was at this time a considerable degree of destruction of the left cheek, pus was being freely formed, and there were some constitutional symptoms. In consideration of the history and the positive Wassermann reaction it was decided to give a further series of injections of novarsenobillon. The first injection of this series was followed by considerable improvement.

On January 25th a swab was taken from the pus and was reported as giving an almost pure culture of Klebs-Loeffler bacillus. As this finding did not seem to be in complete accord with the clinical signs it was decided to inoculate two guinea-pigs with a pure culture, one animal being protected by serum in the usual manner. Before the report could be received the house-physician developed diphtheria, and the patient was then removed to the fever hospital. Nevertheless in spite of this strong presumptive evidence, the animal inoculations and further culture experiments proved that the bacillus belonged to the xerosis type.

This case was of interest because it demonstrated that without elaborate control tests no diagnosis of diphtheria of the skin should be made.

Dr. W. Knowsley Sibley showed a case of *lymphadenoma cutis*. C. J—, aged 24 years, was shown before the Section by Dr. Sibley in July and October, 1914, and again in November, 1916,* by the late Dr. Dudley Corbett, and on two occasions photographs of his condition were published. The small tumours, especially about the posterior part of his neck, one of which was about the size of a tangerine orange, had more or less disappeared, probably as the result of repeated X-ray treatment. The penis and scrotum, however, presented a mass of small tumours which completely obliterated the outline of the organs. His general health continued about the same as recorded in previous reports. Blood report by Dr. Arthur Young, January 17th, 1922: Red blood cells, 6,300,000 per cubic millimetre; white cells, 25,800 per cubic millimetre. Differential leucocyte count: Polymorphonuclear cells, 54·5 per cent.; small lymphocytes, 17 per cent.; large lymphocytes, 11 per cent.; large hyaline cells, 3·5 per cent.; eosinophils, 11·5 per cent.; neutrophil myelocytes, 0·5 per cent.; basophils, 1 per cent.; eosinophil myelocytes, 0·5 per cent.; transitional cells, 0·5 per cent.

Pathological report on section.—Nodule excised from shoulder: The section showed a cellular infiltration in the corium and hypoderm. The only change in the epidermis was the flattening of the interpapillary processes. The cellular infiltration was confined to the immediate neighbourhood of blood-vessels, lymphatics and sweat coils, and consisted of—(1) polygonal cells with large pale nuclei with very well marked nuclear membranes and chromatic network; (2) fibroblasts; (3) a few small round cells; (4) a few degenerated cells with pyknotic nuclei; (5) no plasma-cells. Blood capillaries appeared normal, but lymphatics showed well-marked proliferation of their endothelial linings, with dilatation of their lumina, in places. Sweat coils showed, in places, proliferation of their epithelial linings.

Dr. Whitfield said he was one of those who reported pathologically on this case, but he now thought his idea was wrong. He did not have sections to stain; he had to report on a very small number of stained sections. He now thought it belonged to a rare group, of which he had seen only one instance, an ichthyosiform dyskeratosis with hyperkeratosis of the mouth of the follicle, with an inflammatory reaction around, giving rise to little nodules which were very difficult to diagnose histologically. His case, which had the lesions limited to one side of the back, developed sebaceous cysts, as in the present patient. He

* *Proceedings*, 1913-14, vii, pp. 276-81; 1915-16, p. 2; 1916-17, pp. 64-68.

thought it probable that the small piece of gland from this case which was submitted to him was disintegrated gland resulting from chronic infection of the skin.

Dr. F. Parkes Weber said he did not think the condition in this patient could be lymphadenoma of any kind. By that one usually meant, in England, Hodgkin's disease; abroad it was sometimes called lympho-granulomatosis maligna. To have that disease confined to the skin and subcutaneous tissue (multiple nodules) would be most extraordinary. And if the nodules were thus localised, the patient's appearance would be probably very different.

Dr. J. M. H. MacLeod showed a case of *hydroa æstivale*. This was a typical case of hydroa æstivale in a girl, aged 11 years, who had had it during the summer weather for the last five years. The type of lesion was intermediate between lesions of the summer prurigo type of Hutchinson and the more vacciniform type described by Bazin. They consisted of dusky conical papules, about half the size of a lentil, and occasional small vesicles, some of which became secondarily infected by scratching. These, when shrivelled, formed a small scale, which, on separating, left a pitted scar. They were present in the usual situations, namely the back of the hands and wrists, face and ears, and were absent on the neck and the covered parts of the body. The individual lesions healed up in a few days, but the condition was rendered permanent by successive crops of papules. The lesions usually appeared about that time of the year and lasted well on until the end of the autumn. Their occurrence in a girl was of interest owing to the old idea that they chiefly affected boys—an idea not in accordance with his experience. There could be little doubt that the actinic rays of sunlight were responsible, but it was probable that there were other exciting factors, as he had known the eruption to be aggravated by wind on a dull day. The type of lesion was somewhat different to that which occurred in chronic solar dermatitis, so that it was probable that there was some underlying idiosyncrasy. It had been suggested that this might be congenital, or that it might be connected with some form of toxin. The result of treatment, so far, had been disappointing.

Dr. S. E. Dore said he thought Dr. MacLeod was right in saying that actinic rays were not the only ætiological factors in these cases. He had had a case which was treated with ultra-violet light, and under this treatment the lesions considerably improved.

Dr. F. Parkes Weber thought it had been said that cases of hæmatoporphyrinuria were peculiarly liable to attacks of something like Hydroa æstivale.

In those cases he believed it had been proved beyond doubt that the eruption was caused by the actinic rays. But subjects of the skin condition in question were by no means always hæmatoporphyrinuric, and it might be that those who were not hæmatoporphyrinuric were supersensitive to something other than the rays which caused the eruption in patients with hæmatoporphyrinuria.

Dr. Haldin Davis said that he also had a case which suggested that the actinic rays were not the only factors. It was that of a lady who developed the condition comparatively late in life, *i. e.*, after she was 20. In her case the areas affected were not those exposed to the light, for the face and hands were not involved, but the neck and forearms, which she kept covered, were affected. With increasing age the trouble had become worse.

Dr. Barber said that during the last two or three years he had had five cases in which this condition had certainly developed during adult life; three of them were females. In these patients the lesions, especially on the backs of the hands, were exactly like those seen in cases of Hydroa æstivale; there were papules, bullæ, and eczematous patches; superficial scarring was sometimes seen. In hospital he had been able to investigate one or two of these adult cases, but not a juvenile case. All the adult patients had intense indicanuria; he did not know whether this was so in the juvenile cases. If such drugs as sulphonal were injected into a white rat or rabbit and the animal was then exposed to the sun, a rash similar to that present in this case ensued and the animal might die. He had wondered whether, at any rate in the adult cases, some product of putrefaction was absorbed from the intestine, which sensitised the skin to light. It was only a suggestion; he had no experimental evidence as yet to adduce in favour of such a theory.

Dr. Douglas Heath said he had recently seen a case of congenital hæmatoporphyrinuria in a child with a rash, very much like that in this case, on the backs of the hands and on the face. The teeth were distinctly pink. The eruption was always bad in the summer and nothing of it was seen in the winter. In addition, there were one or two small bullæ on the elbows and several on the scalp. There was also something akin to Epidermolysis bullosa in the condition. A weakness of the skin seemed to be present which caused the lesions to develop after slight injuries as well as on account of sensitiveness to light.

Dr. J. H. Sequeira said that some years ago he had been trying to intensify the action of the Finsen light, and he injected erythrosine into the skin. He had had to give it up because of the reaction of the skin in the areas treated by the erythrosine; it was very acute. It showed that certain bodies coming into contact with the skin intensified the action.

Dr. F. Parkes Weber, in further comment, said that the pink coloration of teeth could be explained in cases of hæmatoporphyrinuria in early life in the same way as the green coloration, which he had once seen in a case of prolonged jaundice in the first weeks of life shown by Dr. H. Thursfield in 1912.* It was said that in *young* animals fed on madder the dentine might become tinged. In very early life hæmatoporphyrinuria, if present in the blood in the tooth-pulp, could apparently be imbibed by the dentine, so as to give the teeth a pinkish appearance.

* H. Thursfield, *Proc. Roy. Soc. Med.*, 1912, v (Sect. Study of Dis. in Child.), p. 147.

Dr. Whitfield said he had had only one case of this disease in an adult, and he had investigated her case throughout. He did not remember whether indicanuria was found, but she had a mild, though definite acidosis. By means of drugs and dieting the condition was terminated, the acidosis being got rid of. He believed that Hydroa puerorum died out as the patients became older. Acidosis was much more easily produced and was a good deal more common in children than in adults; and this case might be worth investigating from that point of view.

Dr. E. G. Graham Little showed three cases of *multiple rodent ulcer*. A series of three cases, which had previously been shown, were brought by the exhibitor for Dr. J. Darier, of Paris, who was present, to express his opinion on. The first of his cases had a most extensive eruption of very superficial flat epitheliomata, over 100 in all. Some were not ulcerated, but were raised red plateau-like infiltrations of the skin. One had become the seat of a large red tumour $1\frac{1}{2}$ by 1 in. This was excised, and proved to be definitely typical rodent ulcer. Two of the other lesions, different in character, were also examined and were found to be early rodent epithelial proliferation. Since then five or six cases had been shown: Dr. Gray had had two, Dr. Savill one, and he had had three. They were all of the same type, with curiously red lesions. The first case he showed was mistaken for Lupus erythematosus, and when he showed it there that diagnosis was freely offered. In Dr. Savill's case there was a prior history of definite extensive seborrhœa, and in Dr. Gray's cases psoriaris had been present.

Dr. A. M. H. Gray regretted his two patients were unable to attend. A picture of the first case (shown February 19th. 1920) was published in the Journal,* where a full description of the case was given. That patient had had psoriasis for years and had it at the time of exhibition, the two types of lesions being easily distinguishable, both clinically and microscopically. His age was 51 years. The other man was aged 42 years. He had twelve lesions on the body, but none of them were polypoid, as was one in the first case. There was a history of psoriasis dating from childhood, but no lesions had been observed while under his (Dr. Gray's) care. Mount, in a paper on Bowen's type of epithelioma read before the American Dermatological Association last year,† reported eleven cases of that disease. In the ensuing discussion, Sutton, of Kansas, and Morrow, of San Francisco, claimed that they had seen these cases of superficial multiple rodent ulcer; and they both concluded that the early lesions of Bowen's precancerous dermatosis were identical in character with the early lesions of the

* *Brit. Journ. Derm. and Syph.*, July, 1920, xxxii, p. 233.

† *Arch. of Derm. and Syph.*, December, 1921, p. 769.

multiple rodent ulcer cases. The matter was still more interesting in view of Dr. Sequeira's case, which he published as one of Bowen's disease, but which had lesions identical with those in the cases shown by Dr. Little, Dr. Savill and himself.

Dr. DARIER said he was very glad to have had the opportunity of seeing these cases, which he had believed to be rare, but which appeared to be of not infrequent occurrence in England. In the cases now shown the lesions were very superficial epitheliomata, with well-defined edges, and histologically were basocellular; there was no dyskeratosis, and they were quite dry. In Bowen's disease, on the other hand, there was dyskeratosis, and the lesions were moist. When they became malignant the glands were found to be involved, and the type of epithelioma was a distinct one of its kind. Therefore the two conditions described had nothing to do with each other. With regard to the treatment of the superficial epitheliomata, the X-rays, in considerable dosage, were usually successful.

Dr. ADAMSON (President) said that it was satisfactory to have had Dr. Darier's authority for the distinction between Bowen's disease and this type of rodent ulcer; that the lesions in Bowen's disease showed a dyskeratosis, and that there were secondary growths in the lymphatic glands—features which were absent in the rodent ulcer. He believed he was right in saying that in Bowen's disease the epithelioma showed dyskeratosis also in the glands. He thought these large superficial multiple rodent ulcers had many of the features now recognised as those of the more usual type of rodent ulcer; they had the rolled edge and the scarring. And he had wondered whether the cases really had had psoriasis or whether the superficial rodent ulcers merely simulated psoriasis.

Dr. J. J. PRINGLE said he had seen that morning a gentleman, aged 83 years, whom he had had under close observation for a large number of years. He had suffered from psoriasis since boyhood, diagnosed by the elder Startin, Erasmus Wilson, Robert Liveing and Radcliffe Crocker. A "rodent ulcer" had been excised near the inner canthus of the left eye in 1908, causing marked ectropion. Sir Archibald Reid had also successfully destroyed two rodents arising from normal skin on the right cheek and below the left ear, leaving healthy scars. When he came under the speaker's observation he had some typical psoriasis in classical positions (knees, elbows, extensor surfaces of arms, scalp and back) in addition to innumerable "senile sebaceous warts" over the entire trunk, one of which, situated over the sacrum, had undergone "malignant degeneration" with central ulceration, and was invading the surrounding skin, whilst many others showed earlier stages of a similar change. X-rays and radium had no beneficial effect either on the principal lesion of this type or on others in a less advanced stage, but carbon dioxide snow applied somewhat ruthlessly to more than eighty of them over a period of years had produced surprisingly satisfactory results. Unfortunately no microscopic examination had been made of these lesions of sebaceous origin. In 1914 typical rodents arising from healthy skin were successfully removed by Mr. Hayward Pinch, at the Radium Institute, from the tip of the nose and centre of the left cheek. In 1916 the edges of a few of the psoriasis lesions, on the trunk only, where observed to have altered their characters, having become raised and very firm to the touch, and a microscopic examination revealed the characteristic appearances of "rodent." Many of these had been successfully, and apparently permanently, destroyed by unscreened

radium plaques, but a few patches still continued to undergo similar changes. There had never been any glandular involvement, and the old gentleman's general health was satisfactory. In the light of Dr. Darier's observations, the difference in reaction to radium between the malignant growths of different origin appeared to be of special significance and clinical importance.

Dr. E. G. Graham Little showed a case of the *pre-tumour stage of mycosis fungoides*. The patient, a man, aged 50 years, showed a large number of circumscribed roughly circinate patches of dermatitis, some 2 to 4 in. in diameter, distributed chiefly on the legs, arms and back of the body, showing a moderate but definite degree of infiltration and much itching. There were no tumours and no greatly enlarged glands; the earliest patches began about three years ago, and the condition had steadily progressed. Section showed an early cellular infiltration of the pars papillaris of the corium. None of the patches had disappeared, but new patches were continually forming.

Dr. Gray said he felt inclined to dispute the diagnosis. The lesions were very numerous, superficial and symmetrical; he could not find any infiltration, and there was but little itching. He suggested it was typical parapsoriasis en plaque.

Dr. Whitfield agreed with Dr. Gray's view. First, in a case of mycosis fungoides there was always a slight fulness or rising of the skin at the edge; secondly, the converse was true of parapsoriasis; that when the skin was thrown into folds there was evident a slight depression or atrophy of the skin. In this case the plaque was below the general level of the skin.

Dr. Agnes Savill showed a case of *sarcoid*. The patient was a woman, aged 50 years. She had two large nodules on each upper arm, practically symmetrical, and two patches on the cheeks; they had been developing for eighteen months. When she first saw her six weeks ago the upper arms were much larger than now, and were purple, whereas now they were reddish. She had been having doses of pituitary and thyroid, beginning with ½ gr. thyroid and increasing to 2 gr., and of pituitary 2 gr. twice a day. The nodules themselves were unaffected, but the swelling between them had gone. The face nodules were very much less infiltrated than formerly.

Dr. Adamson (President) said he had observed two cases very like Dr. Savill's case. One of these cases he had shown as an example of subcutaneous "sarcoid" of Darier and Roussy.* In the other case the subcutaneous nodules (on the arms) were associated with a typical lupus erythematosus on the face. Dr. Darier, had, however, seen Dr. Savill's case and had said that it was not a sarcoid, but

* *Brit. Journ. Derm.*, 1912, xxiv, p. 394, and 1910, xxii, p. 89.

that it resembled some cases recently described by Schaumann* (of Stockholm) under the name of "benign lympho-granuloma." But this was really a new name which Schaumann had suggested for lupus pernio, and he (the President) could not agree that Dr. Savill's case or his own cases (which he thought resembled it) were examples of lupus pernio; and since Dr. Darier did not identify it with the Darier-Roussy sarcoid, he felt that the diagnosis of these cases must still remain open.

Dr. F. Parkes Weber said the boy he brought to a former meeting† with red patches on the cheeks, etc.—in some respects resembling a case of lupus pernio—had died in an infirmary. He now thought that the case was an exaggerated example of the condition which had been described by Australian doctors‡ as "erythrœdema" (this was suggested by Dr. J. H. Sequeira at the meeting in question), and recently by Weston,§ Byfield|| and others in America as resembling acrodynia and pellagra.

Dr. George Pernet showed a stained section from a case of *kerato-epithelioma scroti*. Patient, a man, aged about 45 years. Duration fifteen months. Clinically: An irregular figure-of-eight shaped, raised horny growth (about $\frac{5}{8}$ by $\frac{1}{2}$ in.) on the right side of the scrotum. It felt like a thick coin through a cloth. The lesion had been fomented and ointments applied, but the growth had become somewhat larger. No enlargement of inguinal glands. Diagnosis: Epithelioma. It was excised. Microscopically it showed cancer-cells of the pavement kind arranged in masses penetrating the derm. Numerous horny cell-nests were present. On looking up the literature of tumours of the scrotum no case of the kind was found.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

DIGESTIVE ANTI-ANAPHYLAXIS: TREATMENT OF CERTAIN URTICARIAS AND DERMATOSES. P. Pagniez and P. Vallery-Radot. (*Ann. de Derm. et de Syph.*, 1920, 6th ser., i, p. 436.)

Basing their work on anaphylaxis, the authors record instances of urticaria provoked by animal or vegetable proteins controlled by methods of desensitisation. This they accomplished either by a preliminary ingestion of small

* For abstract of Schaumann's paper see *Brit. Journ. Derm.*, 1917, xxix, p. 225.

† April 21st, 1921. *Cf.* illustrated account by F. Parkes Weber, *Brit. Journ. Derm.*, 1921, xxxiii, p. 228.

‡ *Cf.* A. J. Wood, *Med. Journ. Australia*, 1921, i, p. 145.

§ W. Weston, *Arch. Ped.*, New York, 1920, xxxvii, p. 513.

|| A. H. Byfield, *Amer. Journ. Child. Dis.*, 1920, xx, p. 347.

amounts of the foods to be eaten, or in other cases by giving 50 cgrm. of peptone before meals. Failure might be explained by assuming that the urticaria was not of alimentary origin. H. M. C.

PHENOLPHTHALEIN ERUPTIONS. Fred Wise and E. W. Abramowitz. (*Arch. of Derm. and Syph.*, 1922, v, p. 298.)

Phenolphthalein, a phenol derivative extensively used as a purgative, is capable of producing in susceptible individuals a peculiar erythematous eruption of the skin with bullous, vesicular, and eroded lesions of the mucosæ and genitals. The eruption is somewhat similar to that which may result from antipyrin or arsphenamin. It consists of irregularly grouped polychromatic plaques, varying in diameter from that of a pin-head to several inches, and in colour from pink to bright red or dusky purple. It is of a chronic persistent character, and is followed by pigmentation, which may remain for months, or even years. The lesions tend to flare up after ingestion of the drug, and the exacerbations may be accompanied by constitutional symptoms, such as headache, malaise, and a rise of temperature.

Sections of an active macular lesion showed œdema of the skin, dilatation of the lymph spaces and a cellular infiltration, consisting of round cells and connective-tissue cells about the blood-vessels and chromatophores lying in the perivascular lymph spaces of the subpapillary region. The pigment is melanin. J. M. H. M.

FORMALIN DERMATITIS. B. Chajes. (*Derm. Wochenschr.*, 1922, lxxiv, No. 18, p. 417.)

The addition of formaldehyde in a concentration of only $\frac{1}{4}$ per cent., as a preservative in an adhesive paste used in a brush factory, is claimed by the author as a cause for the simultaneous appearance of dermatitis of the hands and forearms in seven out of the thirteen workpeople employed. The epidemic was controlled as soon as the formalin was omitted.

The point of interest emphasised is that solutions of formalin of double the strength responsible in these cases are frequently used by dermatologists all over the world, without ill effect, in cases of hyperidrosis and other septic and evil-smelling conditions.

The explanation would seem to lie in the fact that tolerance to an irritant of any kind would naturally be diminished by the constant and daily repeated immersion of hands and forearms in softening and presumably slightly keratolytic fluid or paste over a period of years. Idiosyncrasy to the chemical could hardly be urged in a percentage of over 50 per cent. affected, although in one of them the symptoms were sufficiently severe to enforce decubitus and prolonged absence from work. H. C. S.

CONTRIBUTIONS TO THE STUDY OF THE EXFOLIATIVE ERYTHRODERMIAS FROM AN ÆTIOLOGICAL POINT OF VIEW. Jörgen Schaumann. (*Acta Dermato-Venereologica*, vol. i, nos. 3–4.)

This paper is based on the case of a man, aged 64 years, who from infancy, following vaccination, had had lupus vulgaris on the right arm, which in spite of

many forms of treatment had gradually extended with the formation of abscesses on to the neighbouring part of the trunk. Some six to eight months previous to his death the general health became poor with wasting and diarrhœa, a generalised erythrodermia developed with a shedding of the axillary and pubic hairs and accompanied by slight rise of temperature. Six months later the abscesses were healed and scarcely any sign of lupus remained. During the last month of life the general erythrodermia diminished, while the patient gradually became weaker. Post-mortem examination revealed the presence of Hodgkin's disease.

In a *résumé* of the literature the ætiology of erythrodermia exfoliativa is discussed at considerable length, and the conclusion is drawn that the same agent may give rise to an erythrodermia of polymorphic types, so that with tuberculosis there may occur examples both of dermatitis exfoliativa and pityriasis rubra. In cases of so-called secondary exfoliative dermatitis this condition may be a bacterial toxic phenomenon, while a nuclear derivative such as choline may be the causative factor in the production of prurigo in association with affections of the lymphatic system. W. J. O.

ON AN ERYTHRODERMIC TYPE OF BENIGN LYMPHO-GRANULOMATOSIS. J. Schaumann. (*Ann. de Derm. et de Syph.*, 1920, 6th ser., i, p. 561.)

In a long paper the author described a case of cutaneous lymphogranulomatosis where the eruption consisted of erythematous areas without subsequent atrophy. The nature of the case was proved by microscopic examination of a lymphatic gland; there were also found enlargement of the liver and spleen. The existence of this superficial variety brings it into line with the forms of leprosy, of mycosis fungoides, of leukæmia, where at one time there may be seen an erythrodermia, at another a tumour formation. H. M. C.

NATURE OF BENIGN LYMPHO-GRANULOMA. Jörgen Schaumann. (*Acta Dermato-Venereologica*, ii, 4, p. 409.)

From the sputum of a case of lupus pernio (reported in *Ann. de Derm.*, 1917, p. 357, obs. I) associated with pulmonary disease, inoculations made into guinea-pigs and a rabbit produced tuberculous lesions from which cultures giving the morphological, cultural and biochemical characteristics of *bovine B. tuberculosis* were obtained. Schaumann concludes from this one observation, in view of certain peculiarities (described) of lupus pernio and Boeck's sarcoids, that the condition of benign lympho-granuloma (of which the above-named lesions are the cutaneous manifestations) is an infection of the hæmopoietic system by *B. tuberculosis* of bovine type. W. J. O.

A CASE OF XANTHOMA TUBEROSUM MULTIPLEX WITH ASSOCIATED DIABETES. C. de Gamrat. (*Ann. de Derm. et de Syph.*, 1920, 6th ser., i, p. 497.)

In a careful analysis of the clinical condition of a patient with xanthoma diabeticorum, de Gamrat comes to the conclusion that there is no clinical or histological difference between this condition and multiple xanthoma without diabetes. H. M. C.

ANIMAL AND VEGETABLE PARASITES.

OBSERVATIONS ON AN EXTENSIVE HUMAN INFECTION BY SARCOPTIC MANGE OF THE HORSE. R. A. S. Macdonald. (*Lancet*, i, p. 738.)

It was found necessary to destroy a horse suffering from generalised sarcoptic mange. The carcass was used by a class of veterinary students, for such purposes as palpation, dissections, operations, etc. The time spent on this work by each individual varied from two to four hours.

With the exception of those students who were mere onlookers, or were engaged on the head and neck—parts which had been cured by treatment—all suffered from a most pronounced and continuous itching. The forearms, ankles and calves were affected by the typical papular rash. Each papule was the size of a large pin's head, slightly elevated and of a fiery red colour. The hands sometimes escaped the eruption, because they were frequently washed with carbolic soap. Some of the students developed secondary lesions on the trunk, thighs, shoulders and upper arms.

The highly contagious nature of the disease being recognised, treatment was undertaken on the earliest appearance of symptoms. Hot scrubbing baths followed by the application of sulphur ointment rapidly cured the cases. Clothing was at once cast off and disinfected. Where this last precaution was neglected reinfection took place.

Sarcoptes scabiei were found on the carcase in abnormally large numbers. It is suggested that the mites migrated from the dead and chilling equine to the human hosts and set up irritation in from two to twenty-four hours.

R. P. W.

SCABIES AND SCABIES TREATMENT. H. P. Lie. (*Medicinsk Revue*, February, 1922, p. 70.)

Attention is drawn to the increased frequency of scabies in Norway during the last thirteen years. A short account of Norwegian itch, *scabies crustosa*, with the report of a case, is followed by a brief commentary on the general mode of transmission of the disease. The more commonly employed methods of treatment are summarised. W. J. O.

THE DIAGNOSIS OF SOME ERUPTIONS ON THE HANDS AND FEET. Charles M. Williams. (*Arch. of Derm. and Syph.*, 1922, v, p. 161.)

This paper is mainly concerned with the diagnosis of eczematous conditions of the feet and hands, due to ringworm fungi, from those caused by other irritants. As a preliminary an examination was made of normal toes in thirty-nine people. Scrapings were taken from the interdigital clefts, examined microscopically and cultures mode. Of these one gave a culture resembling the epidermophyton and a second the *Tricophyton lacticolor*. It is uncertain whether those organisms were saprophytic or truly pathogenic.

Thirty-six cases of the acute vesiculo-pustular type were examined, and cultures were only obtained from five.

The epidermophyton was found in two, and *T. lacticolar*, *T. acuminatum* and *T. plicatile* from one each.

In fifteen cases of a more chronic type, in which the vesicles rapidly dried up and may be followed by a small brownish dot or give rise to a scaly patch, fungus was demonstrated in seven and cultures obtained in three. These consisted of the epidermophyton, *T. lacticolor* and *T. plicatile*.

The eczematoid eruptions of the hands due to fungi are described, and their difficulty of diagnosis from dermatitis due to other irritants is duly appreciated. In them the demonstration of a parasite was found to be much more difficult than in the feet. J. M. H. M.

FURTHER STUDIES ON RINGWORM OF THE HANDS AND FEET. James Herbert Mitchell. (*Arch. of Derm. and Syph.*, 1922, v, p. 174.)

According to the observations of the writer, there are two organisms which are mainly concerned in the pathogenesis of ringworm of the hands and feet, namely, *Epidermophyton inguinale* and a white organism which was described by Kauffmann-Wolff in 1914. The latter organism grew as a fluffy white colony, which after about a week presented a central button with a cream-coloured areola. A pleomorphic form rapidly developed and the original type of organism was lost.

About 20 per cent. of the cultures made resulted in *E. inguinale* and about 33 per cent. in the white fungus. J. M. H. M.

RESEMBLANCE OF YEASTS IN CUTANEOUS SCRAPINGS TO HYPHOMYCETES. Fred D. Weidman. (*Arch. of Derm. and Syph.*, 1922, v, p. 325.)

In a short paper Weidman refers to the resemblance of yeasts in cutaneous scrapings to hyphomycetes. In three cases of scrapings from the skin, in what appeared to be ringworm, he observed mycelial filaments under the microscope which gave cultures of yeasts and not of ringworm. He points out that under certain conditions yeast fungi may develop a mycelium in the skin, which may render the diagnosis from ringworm fungus difficult. J. M. H. M.

YEAST INFECTIONS OF THE SKIN. S. S. Greenbaum and Joseph V. Klauder. (*Arch. of Derm. and Syph.*, 1922, v, p. 332.)

In this contribution the literature on yeast infections of the skin is reviewed, and seven cases investigated by the writers are described. The most common deep infection by yeast is blastomycosis, while the best known superficial infection is thrush. Schamberg has reported an instance of thrush in an infant in which the oral lesions were associated with reddish scaly patches on the face, vulva, thighs and buttocks, where the eruption resembled "eczema marginatum." *Oidium albicans* was demonstrated in the scales from different lesions in the infant. Other instances of this sort are to be found in the literature, due to monilia and oidium.

Another form of superficial yeast infection is that known as intertrigo saccharomycetica, which is characterised by an irregularly inflamed patch sharply marginated and usually moist from exudation. This condition may occur in the groins and perinæum or between the fingers, and the lesions present a similar appearance to ringworm infection in the same locality.

A study was made of the yeasts which occur in the normal skin. One hundred

and fifty unselected persons were examined. Cultures were made from the cutaneous surfaces of the axillæ, inguinal folds and interdigital spaces. The medium employed was glycerine agar. In thirty-five cases yeasts were found, and these were classified into four types, three of which were true saccharomyces and one a cryptococcus. In seven cases of intertrigo saccharomycetica the yeasts conformed to one or other of the four types. These yeasts were proved to be pathogenic to guinea-pigs, and to be capable of auto-inoculation on a human subject. The lesions produced by them were easily cured by 10 per cent. tincture of iodine or 1 per cent. chrysarobin ointment, provided the skin was kept dry.

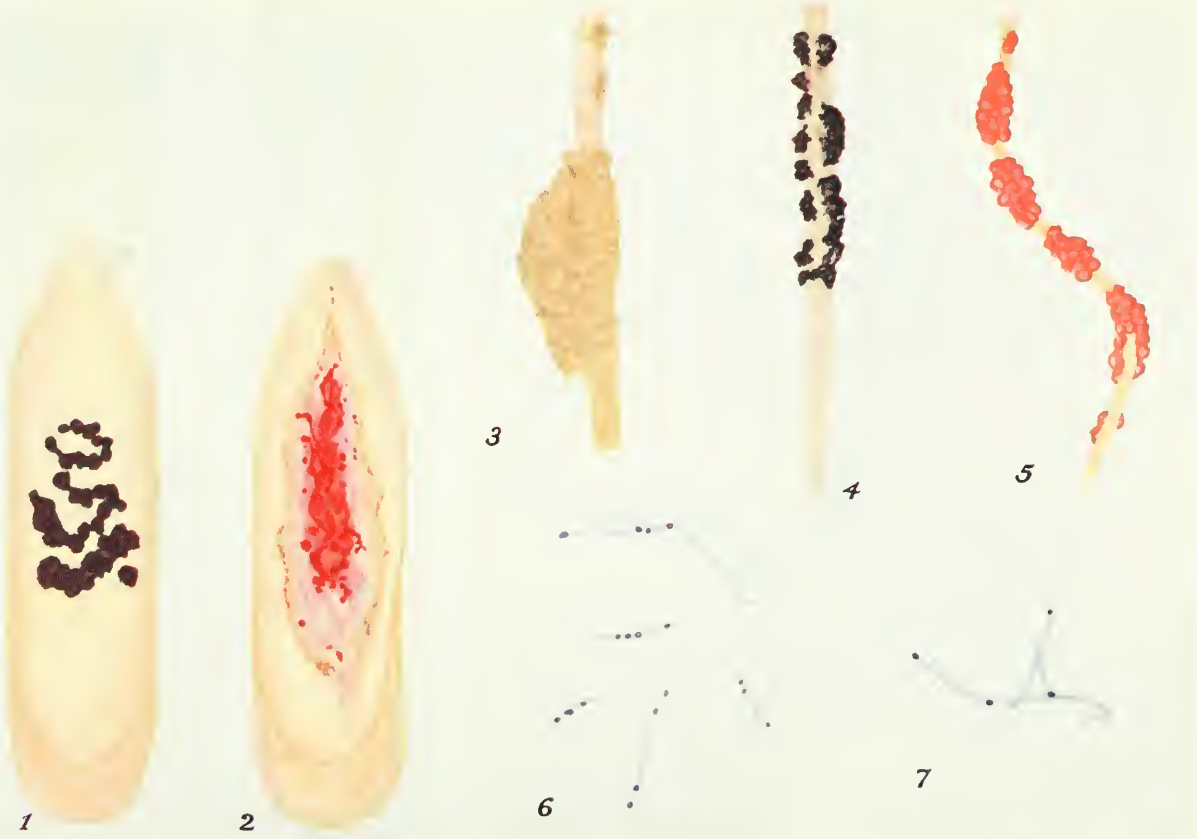
J. M. H. M.

REVIEW.

Diseases of the Skin.*

When the news of the untimely death of Dr. Stelwagon reached this country some two years since, it was feared by many that the eighth edition of this work would also be the last. Fortunately for English-speaking dermatologists, early in 1919 Dr. Stelwagon, realising that his health was very uncertain, asked Dr. Gaskill to assist him in preparing the ninth edition, and so this edition has now appeared. The work is so well known that it needs no description. Suffice to say that a certain amount of obsolete material has been eliminated in order to make way for new material, including descriptions of some of the rarer diseases, such as acrodermatitis hiemalis, endothelioma, espundia, keratolysis exfoliativa, amœbiasis cutis and folliculitis ulerythematosa reticulata. The value of this work lies in the extraordinarily wide survey of current dermatological literature, and it would not be going too far to say that no modern work approaches it in completeness; it is to "Stelwagon" that the dermatologist turns when he wishes quickly to obtain a survey of all the important papers which have been written on a particular subject. Needless to say this aspect of the book has been kept thoroughly up to date, and much new material has been added since the last edition. There are, however, some omissions. There is little reference to the question of protein sensitisation in urticaria, or to the non-tuberculous theories of the causation of lupus erythematosus, which have come to the fore of late, are given little notice. Further, no reference is made to the possibility of a tuberculous ætiology of erythema nodosum, nor is there any reference to Schaumann's interesting observations on the relationship of lupus pernio and the sarcoids of Boeck. These are, however, small points in a work of such magnitude, especially when the editorial difficulties are considered. British dermatologists will, without doubt, look forward to future editions of this invaluable work from Dr. Gaskill's pen.

* *A Treatise on Diseases of the Skin, for Advanced Students and Practitioners.* By H. W. Stelwagon, M.D., Ph.D., with the assistance of H. K. Gaskill, M.D. Ninth edition. Pp. 1313. 29 coloured and half-tone plates and 401 illustrations in text. Philadelphia and London: W. B. Saunders Co., Ltd., 1921. Price 50*s.* net.



1. Micrococcus Nigrescens, Castellani (Glucose Agar Culture). 2. Micrococcus Castellanii, Chalmers and O'Farrell. 3. Trichomycosis Flava. 4. Trichomycosis nigra. 5. Trichomycosis rubra. 6 and 7. Nocardia Tenuis from hanging drop culture.

TO ILLUSTRATE THE ARTICLE ON TRICHOMYCOSIS BY Dr. A. CASTELLANI and Dr. F. A. G. WILKINSON.

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OF

DERMATOLOGY AND SYPHILIS

AUGUST—SEPTEMBER, 1922.

OBSERVATIONS ON TRICHOMYCOSIS AXILLARIS FLAVA, RUBRA AND NIGRA.

ALDO CASTELLANI, C.M.G., M.D., F.R.C.P.,
Lecturer, London School of Tropical Medicine; Physician, Tropical Section and Dermatological Ward, Ministry of Pensions Hospital, Orpington;

AND

A. GEDEN WILKINSON, M.B., Ch.B., D.P.H., D.T.M.,
Medical Officer, Tropical Section and Dermatological Ward, Ministry of Pensions Hospital, Orpington.

During the summer months of 1920 and 1921 we have carried out an investigation on the frequency of trichomycosis axillaris in patients admitted to the Tropical Section of the Orpington Hospital. We have found that the incidence of the infection in summer is extremely high, more than 80 per cent. of the patients admitted being affected. In hospital only one variety of trichomycosis was noted—the yellow variety. In private patients, in addition to the yellow variety, we have found two cases of the red and one of the black variety: the observation was made during the spell of very hot weather at the end of July, 1921, and the three patients had just arrived from Ceylon, all by the same boat.

Most of the patients seem to have contracted the affection in tropical and subtropical countries, but it was found also in individuals who had never been out of England or France. To show the frequency of the affection we found that out of 57 patients admitted to two of our wards at Orpington, 51 showed the condition.

GENERAL REMARKS.

Some remarks on trichomycosis axillaris principally based on the observations and researches of one of us in the tropics and various

European countries may not be out of place, as there still appears to be a great deal of confusion concerning the affection, especially as regards its ætiology.

Synonyms. Historical and Geographical.

Trichomycosis axillaris, which is also known as lepothrix (*pro parte*), trichomycosis palmellina (*pro parte*), trichonocardiasis axillaris, trichomycosis nodosa, trichomycosis chromatica, chromotrichomycosis, etc., has been known for many years, but only recently its various clinical types have been differentiated by one of us (C.) and the ætiology of each elucidated.

Paxton, in 1869, described a nodular affection of the hair of the axillary and genital regions, which was later named lepothrix by Wilson. Paxton's work was confirmed by Patteson and Pick, who called the condition trichomycosis palmellina. Payne, Eisner, Sonnonberg, Babes and Barthelemy carried out investigations on the ætiology of the condition and described various bacteria, including *Bacillus prodigiosus*, as causative agents. In 1911, Castellani, working in Ceylon, differentiated three varieties of the affection—the *yellow* variety, due to a fungus which he called *Nocardia tenuis* (*Discomyces, Streptothoriæ, Cohnistreptothrix tenuis*); the *black* variety due to the same fungus plus a black pigment-producing coccus, which he called *Micrococcus nigrescens*; and the *red* variety, due to the same fungus plus a red pigment-producing coccus, to which later Chalmers and O'Farrell gave the name *Micrococcus castellanii*. The two authors called the conditions trichonocardiasis. Recently Macfie has thoroughly investigated the condition in West Africa and has described a sub-variety of it, which he has called trichomycosis fusca.

Ætiology and Pathology.

As already stated, the most widely different organisms have been described as causative agents by various observers. In 1911, one of us, studying the condition in the tropics, separated three principal varieties of the affection—the yellow, the black and the red—and carried out some researches with the object of elucidating their ætiology. His researches showed that in the yellow variety a minute fungus was constantly present in enormous numbers (*Nocardia tenuis*,

Castellani, 1911; syns.: *Streptothrix*, *Discomyces*, *Cohnistreptothrix tenuis*, Castellani). In the black variety he found the same fungus plus a black pigment-producing coccus, *Micrococcus nigrescens*, Castellani, 1911, living in symbiosis with it; in the red variety he observed the same fungus plus a red pigment-producing coccus living in symbiosis with it, which later was called *Micrococcus* (*Rhodococcus*) *castellanii* by Chalmers and O'Farrell, who made a very thorough investigation of the affection in the Sudan in 1913.

The microscopical examination of the affected hair with low power shows that the shaft is covered at several places by roundish formations, partially or totally encircling it. Under a high power, using a cleared specimen, these formations will be seen to consist in the yellow variety of enormous numbers of the bacillary-like, mycelial hyphæ of *Nocardia tenuis*, embedded in an amorphous cementing substance. In the red and black varieties, in addition to the masses of bacillary-like bodies which are the mycelial segments of *Nocardia tenuis*, large groups of cocci-like bodies are observed (*Micrococcus nigrescens* in the black variety and *Micrococcus castellanii* in the red variety).

Nocardia tenuis, Castellani, 1912. (*Syns.: Discomyces, Streptothrix, Cohnistreptothrix tenuis, Castellani*, 1912.)

The microscopical examination of the nodules in cleared specimens reveals the presence of enormous numbers of rod-like bodies—the bacilliform hyphæ of a nocardia—which are Gram-positive, but not acid-fast. If the nodules are kept in alcohol or formalin for several months the fungus apparently loses partially or totally its property of being stainable by Gram's method. The bacillary bodies vary in length from 2 to 8 μ and more; the average breadth is approximately 0·14 to 0·3 μ; they may be straight or slightly bent, very seldom if ever branching; they are fairly closely packed together, and are embedded in a cementing substance, apparently secreted by the fungus. This ground substance is fixed to the cortex of the hair, and a portion of it lies under the cuticle and some of the superficial layers of the cortex. In regard to cultivation, Chalmers and O'Farrell observed some slight growth in hanging drops of equal parts of human serum and normal saline. The fungus grew, showing branching forms and coccal forms (Coloured Plate: 6 and 7). The branching

was monopodial and the hyphæ were non-septate. Macfie, in one case, succeeded in cultivating the fungus on ascitic sugar agar, the colonies being very small and translucent.

Micrococcus (Nigrococcus) nigrescens, Castellani, 1911.

This is a Gram-positive, rather large, non-motile coccus, which in certain media may take the appearance of a cocco-bacillus. It produces a black pigment. Sugar media are more suitable for the growth of the organism than the ordinary agar.

Sabouraud maltose agar.—Colonies appear twenty-four to forty-eight hours after inoculation. They are roundish, at first white, but after a couple of days the centre of each colony turns black, and the pigmentation slowly spreads excentrically. After a time the colonies may coalesce into a jet-black mass.

Glucose agar.—Growth similar to Sabouraud, but slightly less abundant. The black pigmentation develops from the centre of the colonies and slowly spreads towards the periphery (Coloured Plate: 1).

Levulose agar.—Identical to glucose.

Saccharine agar.—The pigmentation is less pronounced, and does not spread to the whole of the growth.

Raffinose agar.—Same as saccharine.

Lactose agar.—Scanty pigmentation.

Alkaline maltose agar.—Black pigmentation well marked, though in many cases it does not extend to the whole of the growth.

Acid maltose agar.—Growth less abundant than on acid maltose. Black pigmentation well marked.

Mannite agar.—As alkaline maltose.

Inulin.—As alkaline maltose, but pigmentation less pronounced.

Saccharose.—As inulin agar.

Glycerine agar.—Abundant growth, the whole of which after a time becomes a jet-black colour.

Galactose.—As inulin.

Adonite.—As acid maltose.

Ordinary agar.—Growth much less abundant than on most sugar agars, and black pigmentation less marked.

Serum.—Growth fairly abundant, but there is only a trace of pigmentation. The medium is not liquefied.

Gelatine.—No liquefaction. The growth on the surface shows after

a time some dark pigmentation, but the growth along the stab is white.

Milk.—No change.

Broth.—General turbidity. A thin pellicle is often present. The microscopical examination shows cocci arranged in pairs or irregularly. They do not appear to be capsulated.

Peptone water.—Some growth at the bottom, while the rest of the tube is clear.

Sugar broths.—No formation of acid or gas.

Indol.—Most strains produce a trace of indol.

Micrococcus (Rhodococcus) castellanii, Chalmers and O'Farrell, 1913.

This coccus, isolated in 1910 by Castellani from the red variety in Ceylon, and later further investigated in the Sudan and named by Chalmers and O'Farrell, is more difficult to isolate and to grow than the coccus observed in the black type of the affection. It is interesting to note that as a rule it grows better and shows more pigment on ordinary agar than on sugar media. It is a round or oval coccus, measuring from about 0·3 to 0·7 μ in diam. It is separated medianly by a clear central line into two half-moon-shaped segments, thus producing a diplococcal appearance. It is colourless and non-motile, but excretes an amorphous non-granular lemon chrome-coloured pigment. In old cultures another pigment of dark brownish-red colour appears (according to Ridgway's standards this colour is madder-brown), but its relationship to the earlier yellow pigment can easily be proved, as demonstrated by Chalmers and O'Farrell, by removing some of it and suspending in a sufficiency of distilled water, when the fluid at once resembles a similar suspension of the yellow pigment. When, however, this is done in a very small quantity of water, a faint reddish tinge can be observed. The best medium for showing the striking *yellow pigment* is the potato, when in twenty-four hours the growth assumes that colour. The *red* pigment shows best in the ordinary agar slope, which, when old, exhibits the dark red pigment in the centre and the yellow pigment at the sides (Coloured Plate: 2). The organism is easily stained by all the ordinary staining reagents, and is Gram-positive. However, even in preparations showing most of the cocci well coloured by Gram's methods a few cocci may be seen decolourised, and occasionally one may see cocci with one demilunar

segment well stained while the other is completely decolourised. The organism does not appear to have a capsule.

The coccus grows aërobically and also anaërobically. The optimum temperature appears to be 37° C.; it also grows at 20° C. on agar slopes, but not as abundantly as at 37° C., and the pigmentation is much less marked. Its rate of growth depends somewhat upon the medium; it grows quickest on potato, and next best on ordinary or glycerine agar. On solid media it gives rise to a yellow growth at first, but on most media, if kept long enough, some red colouration will subsequently be found. The best medium for the red colouration, as already stated, appears to be the ordinary agar slope. With regard to the other agar media, it grows well on glucose and maltose agar. Like *Micrococcus nigrescens* it produces neither acid nor gas in glucose, levulose, galactose, arabinose, lactose, saccharose, raffinose, dextrin, inulin, amygdalin, erythrite, adonite, dulcite, isodulcite, mannite, sorbite or inosite. It grows slowly on blood-serum, which it does not liquefy, and well in broth and peptone water, in which it forms a general turbidity. Gelatine is not liquefied. It does not produce indol.

In agar stabs the growth is confined to the line of puncture and to the formation of a small yellow knob on the surface.

Classification of Micrococcus castellanii.—Chalmers and O'Farrell have thoroughly investigated this point: "The organism belongs to the family *Coccaceæ* (Zopf, emended Migula), and must be grouped with the genus *Micrococcus* (Hallier, 1866, emended Cohn, 1872). In this genus it certainly belongs to those forms which grow well on agar media and are Gram-positive, and in this division it belongs to the sub-division which produces colours.

"The cocci of this sub-division which possess red coloration are only three in number—*Micrococcus roseus* (Baum, 1885), *Micrococcus ruber* (Trommsdorff, 1904), and *Micrococcus rubidus* (Hefferan). Under the term *M. roseus* (Baum, emended Lehmann and Neumann) are gathered a large number of rose-coloured diplococci which are not known to be parasitic, and which produce growths on potato which are limited to the streaks. These growths are faint rose colour with an oily lustre, and are often surrounded by a whitish glistening zone, thus giving rise to a very different appearance from that produced by *M. castellanii*. *Micrococcus ruber* (Trommsdorff, 1904), or, as it is sometimes named,

M. chromidrogenus ruber, which was isolated from a case of chromidrosis, is characterised by the fact that it does not grow on potato; its colouring matter is not soluble in water, and when treated by sulphuric acid the red colour turns blue-green, while *M. castellanii* does grow on potato and its colouring matter is unaffected by 25 per cent sulphuric acid; it appears to be closely related to *M. roseus* var. *carneus,* and to be non-parasitic."

Pathology.

From our own observations and those of Chalmers and O'Farrell it would appear that when the nocardial fungus first attacks the hair

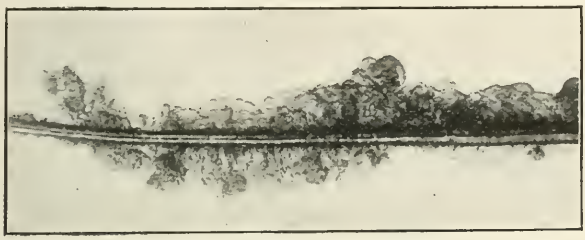

Fig. 1.—Trichomycosis flava.

Fig. 2.—Trichomycosis nigra.

it grows and pushes its way under a cuticular scale and then works its way into the cortex, raising, in so doing, its superficial fibres, which, together with the cuticular scale, form a covering or protection for the fungus, which probably finds its nutriment in the cortex. The fungus does not penetrate very deep into the cortex, but grows outwards, forming the characteristic nodules. This method of growth explains why the hair is so little affected; the deeper layers of the cortex, the medulla, and the root of the hair are not involved, though the hair at times loses its lustre. In an early stage of the infection the cuticle and some fibres of the cortex may be seen to be raised in ridges, which

run in wavy lines across the shaft of the hair transversely to its long axis; masses of the fungus may be seen growing under these ridges. A nodule consists of a mass of the rod-like hyphæ of the *Nocardia* embedded in a firm homogeneous ground substance. In the black and red varieties the nocardial masses are surrounded by large numbers of cocci—*Micrococcus nigrescens* in the case of *Trichomycosis nigra* and *M. castellanii* in the case of *T. rubra*.

Symptomatology.

Trichomycosis flava.—The affected hairs of the axilla and pubes present nodular formations of a yellow, and, occasionally, yellow-

Fig. 3.—Nodule of trichomycosis nigra, cleared specimen. Note bacilliform hyphæ of nocardia tenuis and masses of cocci (*Micrococcus nigrescens*).

greyish colour, plainly visible to the naked eye, of rather soft consistency in the tropics, being easily removed by scraping with a triangular needle or any similar instrument (Coloured Plate: 3, and Fig. 1). The nodules are much harder and generally of much smaller size in temperate zones, so much so that at one time one of us considered that there were two distinct clinical varieties of trichomycosis flava—the tropical variety, characterised by the nodules being large, soft, and easily removed, and the European variety or lepothrix, *sensu stricto*, characterised by the nodules being hard, small and difficult to remove. The microscopical examination of cleared specimens shows the

formations to consist solely of enormous numbers of bacillary-like bodies —the rod-like hyphæ of *Nocardia tenuis*, Castellani, embedded into an amorphous cementing substance. Trichomycosis flava affects the hairs of the axillary regions, and more rarely those of the pubes. The affected hairs may occasionally become lustreless and somewhat depigmented.

Trichomycosis nigra.—The nodules are generally of the same size and consistency as those in trichomycosis flava, but are of a black colour (Coloured Plate: 4, and Fig. 2). The microscopical examination shows masses of rod-like nocardial elements (*Nocardia tenuis*), surrounded by large numbers of cocci (*M. nigrescens*) (Fig. 3). *Trichomycosis nigra* appears to affect only the axillary hairs, as we have never come across trichomycosis nigra of the pubic hairs.

Trichomycosis rubra.—The nodules are red (Coloured Plate: 5), but the red pigmentation is of varied intensity, and MacFie has described a subvariety of less vivid colour than usual which he has called *T. fusca*. The microscopical examination shows the nodules to consist of large masses of nocardial elements (*N. tenuis*), surrounded by masses of a coccus (*M. castellanii*). Trichomycosis rubra may affect both the axillary and the pubic hairs.

Mixed types.—It is not at all rare in the tropics to find patients affected with two varieties of trichomycosis: the hairs of the one armpit may show the yellow variety, while the hairs of the other armpit may present the black type or the red type. At times the same individual hair may present some of the nodules yellow and others black or red. We have not yet observed all the three varieties present at the same time on the same patient.

Method of Infection.

The usual method of infection appears to be from man to man. This is strongly supported by the following observation made by Chalmers and O'Farrell in the Soudan:

"A young European, known to be quite uninfected with trichomycosis, became greatly interested in the work carried out on the condition at Khartoum. He examined cases which came to the laboratory, and handled and examined fresh hairs removed from the

axillæ. When he visited the laboratory he was clad in tennis attire, and as he moved about his shirt rucked up from below repeatedly, and whenever this occurred he adjusted it by pulling forward his leather belt with one hand while he pushed the soft shirt downwards inside his trousers with the other. Two weeks after examining cases he first noticed a reddish appearance on the hairs of the pubes. On examination it was found that the hairs were infected with the red variety of trichomycosis—that is to say, with the variety which he saw and handled in abundance. It grew rapidly on the pubic hairs, but did not extend to the axillæ."

This observation tends to show that the incubation period is about two weeks, this being the length of time necessary before the infection produces sufficient growth on the hairs to attract attention.

Complications.

In acute cases in which the infection is very heavy an erythematous condition of the axillæ may be observed. Hyperidrosis is common, but so far we have not come across cases of chromidrosis associated with trichomycosis. In certain cases we have noticed a yellowish discoloration of the skin of the axilla and in one case which was more completely investigated a nocardial fungus was found in the patches very similar or identical with *N. tenuis*.

Diagnosis.

This is very easy, being based on the presence of yellow nodules (trichomycosis flava), red nodules (trichomycosis rubra) and black nodules (trichomycosis nigra) on the hairs of the axillæ and pubes.

Differential Diagnosis.

The various types of trichomycosis have to be differentiated from Cheadle and Morris's tinea nodosa (known also as Beigel's trichosporosis), Behrend's nodular trichosporosis (Behrend's trichosporosis), Piedra (trichosporosis tropica), Unna's piedra nostras (Unna's trichosporosis), and finally Du Bois's trichosporosis. The differentiation is quite easy in the case of trichomycosis nigra and rubra, as none of the above conditions show any black or red pigmentation. These

conditions are also easily differentiated from trichomycosis flava, as they seldom, if ever, attack the axillary hair, and their causative fungi belong to the genus *Trichosporum*, Behrend, 1890. The hyphomycetes belonging to this genus are of much larger dimensions and show totally different morphological characters from *Nocardia tenuis*. The fungi of the genus *Trichosporum* are arthrosporales living parasitically on the hairs in the form of large oval or roundish bodies varying in diameter from 3–4 μ to 12–15 μ. Fungi of the genus *Nocardia*, Toni and Trevisan, on the other hand, are bacilliform, and usually 1 μ or less in diameter (see Castellani and Chalmers' *Manual of Tropical Medicine*, 3rd edition, p. 1101).

Tinea nodosa, often known as Beigel's trichosporosis, was first described by Cheadle and Morris in London, and later by Beigel in Germany. It is a nodular affection of the hair of the scalp and is caused by *Trichosporum beigeli* (Rabenhorst, 1867).

Behrend's trichosporosis (Behrend's nodular trichomycosis) affects the hair of the beard and is due to *Trichosporum ovoides* (Behrend, 1890).

Unna's trichosporosis, or piedra nostras, is very similar to Behrend's trichosporosis; it attacks the hair of the moustache and beard, and is due to *Trichosporum ovale* (Unna, 1896).

Trichosporosis tropicalis (*piedra*) is common in certain parts of South America; it generally affects the hair of the scalp, and is characterised by the presence of extremely hard nodules, hence the name piedra (stone). It is caused by *Trichosporum giganteum* (Behrend, 1890).

Du Bois's trichosporosis has been observed on the pubic hair of persons suffering from diabetes and is caused by *Trichosporum glycophile* (Du Bois, 1910).

Prognosis.

None of the varieties of trichomycosis axillaris has a tendency to spontaneous cure while the patients reside in a hot tropical country. On the patient going to a cold climate the condition may subside or even disappear completely. Trichomycosis nigra seems to disappear in a cold climate much more rapidly than T. flava or T. rubra.

Trichomycosis axillaris is an affection of not much importance, but we have known European ladies in the tropics greatly distressed by

it, as when they wear low-necked dresses the disfiguring red or black patches in the axillary regions are quite visible. It is a curious fact also that natives when affected with trichomycosis seem to regard it with disgust and readily seek treatment, and Chalmers and O'Farrell have brought forward the hypothesis that the general custom of shaving the axillary hair among certain native tribes may have originated in their profound dislike of this complaint.

Treatment.

The treatment originally used by one of us in Ceylon is generally efficacious. The affected hairs are dabbed twice daily with an alcoholic solution of formalin (formalin ʒj, spir. rect. ad. ʒvi); at night a 2–5 per cent. sulphur ointment is rubbed in. To allay the irritation of the skin at times caused by this treatment, calamine lotion may be applied. Resorcin and salicylic alcoholic solutions have also been used, but as a rule they are not so efficacious. Tr. iodine alone has practically no effect, but is useful in obstinate cases after a few days of the formalin-sulphur treatment.

Literature.

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A SPECIALISED FAVOID SCALP CONDITION PECULIAR TO THE SYPHILITIC NATIVE OF SOUTH AFRICA.

A. REITH FRASER, M.D.Aberd.,
Lecturer in Venereal Diseases, University of Capetown; Late Medical Inspector of Venereal Diseases, Union Government of South Africa.

Introduction.

The scalp condition we are about to discuss is known to the natives in the large areas where it is most prevalent by the name of *wit kop, dikwakwadi,* or *white head.* It is well known to practitioners in South Africa, and particularly to those who are called upon to deal with syphilis among the natives in the rural areas. I am unaware, however, of any communication dealing with this condition except in the South African medical press, and the object of this note is to bring *wit kop* to the notice of British dermatologists.

Some twelve years ago the subject was brought to the immediate notice of the medical profession in South Africa by McArthur and Thornton. Since that time, however, except for an isolated attempt to discover its true ætiology in 1915, little further investigation has been undertaken, and nothing has been written. The condition, however, is an interesting one, its incidence among syphilitic natives is wide-spread, and its ætiology is not yet definitely decided.

Geographical Distribution.

Wit kop appears to be most prevalent in British Bechuanaland, where so much pioneer work in native syphilis was carried out by D. C. McArthur. Here the entire native population is extensively syphilised. Curiously enough acquired syphilis is met with only rarely, the great bulk of the syphilis one sees being hereditary in type. Moreover active lesions are not confined to the second generation, but appear with very similar orientation and distribution in the third, fourth, and even subsequent generations. This extraordinary wholesale syphilisation has been so well recognised, and the association of *wit kop* is so frequent and consistent, that the latter has come to be

considered a specific manifestation of heredo-syphilis in the degenerate Bechuana. Cases have also been met with in the Eastern Province, considerable numbers appear for treatment at the Rietfontein Lazaretto near Johannesburg, and sporadic cases are met with in many other parts of the South African Union from Capetown to the northern Transvaal.

Clinical Picture.

The native scalp is covered with a thick growth of short, black, crinkly hair which grows in closely set, small, thick clumps. Picture, then, the native on his open veld, dusky of skin, grinning of face, clad in beads and loin cloth, fitted with a well-moulded plaster-of-Paris skull cap clinging closely to the scalp and showing naught but a fringe of black, crinkly hair round its lower margins, and there you have a thumb-nail presentation of the Bechuana suffering from *wit kop*. In no case does the condition affect the European and it is but rarely seen in the numerous half-breed bastard races that have spread inland from the coast.

The condition commences as a number of isolated macules on an apparently healthy scalp. These frequently appear in the neighbourhood of the vertex but not necessarily so. Isolated patches have been noted immediately above the occiput, a little way above the hair margin behind the ears, and occasionally in the fronto-parietal region. These macules have the usual characters of syphilitic macules and are slightly raised and almost colourless. They appear irregularly and have no relation to hair-follicles. They pass through the usual developmental stages of papule and pustule, any accompanying inflammatory process being exceedingly mild. Indeed their non-inflammatory career is characteristic. Coalescence begins during the papular stage, and when the pustule is fully developed, coalescence is well advanced. The pustule soon shows a marked tendency to slow crust-formation. The crust is dry and friable from the start. It appears to develop in layers which are added to from below. These are firmly bound together and do not become detached in wafers like impetigo. Moreover they never present the characteristic artificially-stuck-on appearance of this condition, and the absence of any vesicular stage in their evolution should also be noted. Soon these crusts coalesce and become firmly attached to similar crusts developed

in their immediate neighbourhood. Their colour as a rule is dirty white, but it may be an absolute dead white, and in cases of long standing a yellowish tinge is noted occasionally. The hair soon suffers from pressure, becomes dry, brittle, lack-lustre, and easily split, and falls as a result of trophic changes.

The fully-developed condition shows a complete implication of the whole scalp which now is covered with a thick, dry, dirty-white crust, and is totally devoid of hair except round the nape of the neck and in front of the ears. In these areas, however, the growth of hair is unimpeded. The surface of the encrusted area may be quite smooth, but more often is irregular—resembling a relief map of the Deeside hills. It is uneven and undulating, due to the heaping-up of the crusts, with numerous small craters scattered throughout. Here and there it is indented, and in long-standing cases may be almost stony hard. The outer layers are always friable, but the deeper layers are tough and firmly adherent to the scalp proper. These outer friable layers are readily detached, and slight friction will produce a white, powdery, surface scaling. When a crust is raised or removed, a red non-inflamed denuded surface is revealed, practically devoid of serous or sanguineous exudate.

Compare this evolution with that of favus, which condition *wit kop* most closely resembles. The earliest sign of favus is the exhibition of numerous minute, white, scaly patches, which in a few weeks assume their definite cup-shaped appearance. These are then the size of linseed-seed, each one perforated with a hair. This sulphur-coloured mass gradually increases in size until the saucer-shaped scutulum, firmly fixed by its centre to the under-lying tissue, is apparent. When the crust is removed one finds a corresponding cup-shaped depression bathed in serous and sanguineous exudate. While favus is characterised by a well-known mouse-nest odour of the scutulum, the *wit kop* scalp exhibits no odour other than that of an ordinary healthy native scalp—an odour which curiously baffles description.

The most characteristic feature of *wit kop* is the complete absence of local irritation. There is no pain, discomfort, heat or itching. Should this be the only active lesion present it is most unlikely that the native will seek advice or treatment. The condition as far as he is concerned simply does not exist. In this way it again differs widely from favus. *Wit kop* is, moreover, essentially non-contagious.

This favoid condition occurs only in natives suffering from syphilis, male and female alike, and it has never been met with affecting a European. The Wassermann reaction is invariably positive in these cases. It has been freely stated that *wit kop* is a manifestation of heredo-syphilis, and its occurrence in acquired syphilis has been doubted. It is true that the commonest age-incidence in Bechuanaland is between two and ten years, but there is so little acquired syphilis in the *native reserves* there, that observers have had little opportunity of meeting the condition in the adult acquired disease. McArthur has among his Bechuanaland records an instance where a mother and child were simultaneously affected. The mother, however, he regarded as an heredo-syphilitic. Quite recently the writer met with a case of *wit kop* in an adult native, and in view of its apparent rarity it may be worthy of mention.

Case 1.—The patient was a well-built, heavy, muscular Basuto, apparently about 30 to 35 years of age. He showed a healing chancre on his glans penis, which, he stated, was some two and a half months old. He also had a wide-spread pustular syphiloderm. There were numerous buccal mucous plaques, and a large mass of discoid anal condylomata. Adenopathy was general and advanced. The scalp was involved in the general spread and distribution of the pustular eruption, and extensive patches of a favoid incrustation which was readily recognised as *wit kop* were present. There was a large area situated in the left parietal region roughly the size of a crown, another patch the size of a florin near the occiput, and numerous smaller patches were scattered here and there towards the vertex. The hair in the implicated areas was atrophic, brittle, and of a greyish-brown colour. Elsewhere the hair was black, crisp, and healthy. According to the patient, he had never suffered from any disease of the scalp before, and the present lesion developed coincidently with the generalised eruption. The serum Wassermann reaction gave a positive reading, and active antiluetic treatment was instituted. Before further investigation could be pursued, however, the Basuto tired of the restraint of hospital routine and departed in the night. There seems no doubt that this case illustrates the occurrence of *wit kop* as a secondary manifestation due to or accompanying acquired syphilis in an adult native.

FIG. 1.—An early *wit kop* scalp, showing the heaping-up of the crusts, and the almost complete loss of hair.

FIG. 2.—Case showing an early response to oral mercurial medication.

TO ILLUSTRATE DR. REITH FRASER'S ARTICLE ON A SPECIALISED FAVOID SCALP CONDITION.

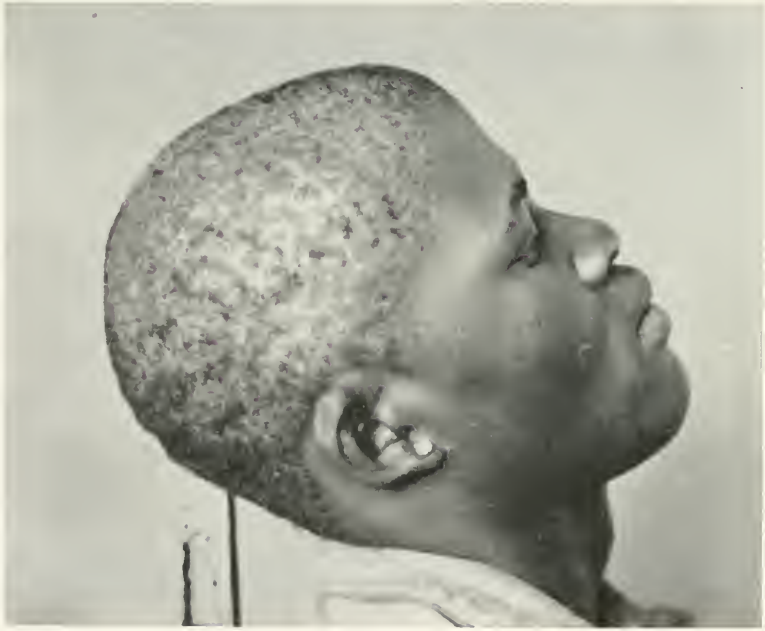

FIG. 3.—Same case as in Fig. 2, showing the response to a single intravenous injection of 0·5 grm. original salvarsan (606). Note the annular syphiloderm on the cheek.

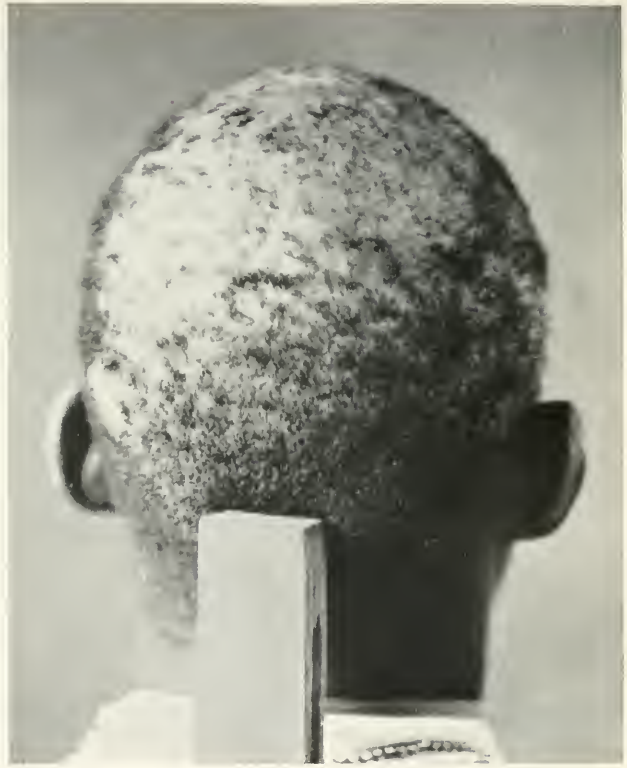

FIG. 4.—A fairly typical *wit kop* scalp in the early stages.

TO ILLUSTRATE DR. REITH FRASER'S ARTICLE ON A SPECIALISED FAVOID SCALP CONDITION.

In the heredo-syphilitic, *wit kop* is frequently associated with mucous plaques and massive anal condylomata. A characteristic petechial area around the mid-line of the hard palate has been commented on by McArthur. This is frequently accompanied by a subacute œdema of the nasal mucosa and a persistent rhinitis. These symptoms are characteristically precursors of the destructive naso-pharyngeal lesions so commonly seen in Bechuanaland, and so classically an aftermath of a youthful *wit kop*. The writer has also been struck with the high incidence of Wall's mulberry molar in these heredo-syphilitic *wit kop* children. Indeed, the favoid scalp, the mulberry molar and the chronic rhinitis form a much more characteristic triad in Bechuanaland heredo-syphilis than that of Hutchinson.

Subsequent Course.

In 1910 McArthur and Thornton wrote: "It is very intractable to treatment, liable to recur, and many cases develop naso-pharyngeal trouble. It is common in children and in young adults; this symptom (*wit kop*) constantly enables one to place them as late cases of hereditary syphilis." It should be noted, however, that this statement was made in pre-arsenobenzene days, and that in the extensive rural districts where McArthur worked, prolonged and uninterrupted mercurial treatment was a matter of the greatest difficulty and uncertainty.

If left untreated the condition will persist for years, but, like other heredo-syphilitic manifestations, it tends to spontaneous recovery or latency as puberty approaches. In some cases a complete regrowth of hair takes place after puberty, but patchy alopecia frequently persists. Indeed a denuded, polished, thin and atrophic condition of the skin of the vertex known as *kalkop* is well known. In cases of long standing, sub-resolution is frequent and relapses are common. It will be noted frequently that such a relapse occurs simultaneously with the lighting into activity of other syphilitic foci. In the *native areas* this is really a fortunate circumstance, for it means that the patient will present himself for treatment of his other lesions with the result that his scalp condition is likewise benefited.

Ætiology.

Most workers appear satisfied that *wit kop* is very intimately

associated with syphilis in the native. Of this there can be no doubt, for on no occasion has the condition been observed in a healthy non-syphilitic native, either infant or adult, as a new individual disorder. There is much ground for assuming that the *Spironema pallidum* is *primâ facie* the causal agent. Whether other factors are also at work is not clear, and any positive evidence is lacking. Some doubt on the spironemal origin of the condition, however, has been thrown by the work of Mitchell and Robertson. These workers succeeded in isolating a fungus from four very advanced and old-standing *wit kop* scalps which they describe as being closely allied to the *Achorion schönleinii* of favus. They express no opinion, however, with regard to the ætiological or predisposing significance of syphilis, although they recognise that *wit kop* has not been noted in any non-syphilitic native or in a European.

The least convincing fact brought out in their experiment is the ease with which mice are infected with their fungus, and the exceedingly irritating lesions which it produces. Were *wit kop* due to such a spore growth it is reasonable to suppose that it would be an exceedingly contagious condition. It is the fact, however, that no case of infection being transmitted from one scalp to another and no epidemic of *wit kop* occurring among native kraals has been reported. Indeed *wit kop* is notoriously non-contagious, and patients have lived in kraals under the most favourable conditions for spreading an infective or contagious disorder for years, without passing on the infection to other members of the kraal household. Nor is the condition infectious to other syphilities, acquired or hereditary. A native suffering from *wit kop* may live in a kraal household where every member is syphilitic without passing on his scalp infection. It is surely inconceivable that this could happen were the condition of the same category as favus. The non-irritating character of *wit kop* has already been noted, yet the lesions produced in the experiment just referred to were so irritating that the experimental mice "scratched their ears right off."

When one considers the chronic non-irritating course which this scalp condition runs, it is not surprising to find spore growths flourishing. It is impossible to ignore, however, the evidence of spironemal origin or association. One must therefore endorse the opinion expressed by McArthur and Thornton, Mehliss, Brodziak,

and several other workers, that *wit kop* is probably a specialised syphiloderm peculiar to the South African native.

Definition.

Perhaps *wit kop* might best be described as a non-contagious favoid condition of the scalp characterised by the formation of white, hard, dry, superficially friable, confluent, firmly adherent crusts, which give the appearance of a tightly fitting white skull-cap, slow in evolution and chronic in duration, met with only among syphilitic natives in South Africa.

Treatment.

For many years the treatment of the condition has been unsatisfactory. This is due to the fact that uninterrupted anti-syphilitic treatment is difficult and expensive to carry out. In the *native areas* distances are so great, roads so impossible, the people so ignorant, the veld is so wide, transportation so difficult, and the population so scattered, that adequate treatment by modern methods has not yet been undertaken on a large scale. Treatment therefore depends chiefly on the native himself. He presents himself at the nearest surgery (which may be 150 miles away) as the spirit moves, arms himself with a supply of some mercurial preparation, and departs to his distant kraal. There he takes much or little of the said preparation as the mood seizes him, and no one may say him nay.

Many cases find their way to hospital, however, and there the response to systematic treatment may be observed. As a rule the scalp responds to antiluetic measures coincidently with other lesions. The response to mercurial treatment alone is slow, but if continued without interruption a satisfactory response is the rule. Local application of dilute nitrate of mercury ointment (Mitchell and Robertson) or calomel cream (Brodziak) will hasten the process of local resolution. Isolated doses of salvarsan are insufficient to affect the condition materially, but a series of doses produces a definite and rapid response. The effect of combined arsenobenzene and mercurial medication is very marked in cases treated in hospital as indoor patients, and their stay in hospital is seldom longer than that of any other active luetic. Mehliss sums up the position as far as the Transvaal native is concerned thus: "I have never seen *wit kop, sui*

generis. The cases sent to Rietfontein Lazaretto have always turned out to be syphilis and have responded at once to salvarsan and mercury."

Summary.

Wit kop is the name given to a favoid scalp condition which is prevalent among syphilitic natives in Bechuanaland.

The bulk of evidence goes to suggest that it is a specialised papulo-pustular syphiloderm characteristic of heredo-syphilis in the Bechuanaland native, but occurring coincidently with the secondary eruption in adult native syphilis elsewhere.

A fungus of the *Achorion schönleinii* type has been isolated from *wit kop* scalps of very long duration. Mice are readily infected with this fungus and an exceedingly irritative lesion is produced. Since *wit kop* is essentially a non-contagious, non-irritative process, it seems unlikely that such a spore growth is an ætiological factor of importance.

The condition has never been met with in a European, nor in a non-syphilitic native. It occurs but seldom, and atypically, in the coastal bastard races.

Untreated cases run a slow, chronic, unresolving course, with a marked tendency to relapse. Cases treated with arseno-benzene and mercury respond rapidly.

The writer has had peculiar opportunities of examining very large numbers of *wit kop* cases, the majority of which were under the care of Dr. Max Mehliss and Dr. F. A. J. Brodziak. To them I would make acknowledgment for allowing me to benefit from their unique experience and vast masses of clinical material. My thanks are also due to Dr. D. C. McArthur, who very kindly placed at my disposal his Bechuanaland notes and records, the publication of which would form no mean contribution to the literature of syphilis. The photographs are from his collection, and I am grateful for permission to reproduce them here.

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THE ASSOCIATION OF EYE-LESIONS WITH ROSACEA.*

R. CRANSTON LOW, M.B., F.R.C.P.,

Lecturer on Diseases of the Skin, Edinburgh University, and Assistant Physician to Skin Department, Royal Infirmary, Edinburgh.

Some months ago I was asked by one of the ophthalmic surgeons to the Royal Infirmary what was the connection between rosacea and some forms of keratitis and corneal ulcer. I had to confess that I had never noticed any association of the two conditions, and if I had seen cases of rosacea with eye trouble I had not connected that trouble with the rosacea. The surgeon assured me that these cases were quite common, and within the following week sent five cases from the Eye Department all suffering from mild rosacea of the face and a kerato-conjunctivitis of one or both eyes. Since then no case of rosacea turned up with eye trouble till about a month ago, when I saw a sixth case, and a few days ago when I saw a seventh. Of these seven cases five were females and two males. Three were affected in one eye only and four in both eyes. All suffered from typical rosacea of the face and all from the milder type of the disease.

On looking through the standard text-books on dermatology I can only find a reference to eye trouble in rosacea in MacLeod's, Stelwagon's and Ormsby's, but the condition seems to be well known to ophthalmic surgeons, is mentioned in the text-books on eye diseases, and nearly all the cases recorded have been reported in journals on ophthalmology. The most recent article on the subject is by Triebenstein, and appeared in the *Klin. Monatsbl. für Augenheilkunde* in January of this year. During the last ten years Triebenstein saw 274 cases of eye trouble in rosacea patients. Of these 173 were females and 101 males. This predominance of females over males does not mean that eye complications are commoner in the female. I think all dermatologists are agreed that they see more cases of rosacea in the female than in the male. Whether the disease, however, attacks women more frequently than men is doubtful,

* Read before the British Association of Dermatology and Syphilology on July 25th, 1922.

because women probably come to the doctor more readily if any eruption occurs on the face than do men. During the last two years at the Royal Infirmary 61 cases of rosacea have been seen—35 in females and 26 in males—and in private I have seen during that time 42 cases—31 in females and 11 in males. The predominance of females is therefore even more marked in private than hospital cases. The ages of the patients ranged from 20 to 64, the majority being between the ages of 30 and 50.

It is not necessary to go into the eye condition in rosacea in detail. It will be sufficient to mention that these consist of blepharitis, conjunctivitis and keratitis, either separately or combined.

Rosacea lesions do not often occur on the skin of the outside of the eyelids, but a certain amount of dilatation of the blood-vessels there is not uncommon. I think it is common experience, too, that a great many cases of rosacea show a slight scaly blepharitis of the edges of the lids. This causes very little trouble and does not lead to the falling of the eyelashes. Personally, I have always associated that form of blepharitis with the scaly seborrhœa of the scalp, and put it down to that and not to the rosacea. But the fact is interesting, and supports the seborrhœic theory of rosacea.

Conjunctivitis occurs in rosacea in two forms:

(1) A non-characteristic conjunctivitis with slight redness of the mucous membrane. This form affects chiefly the conjunctiva of the lids and the redness is due to numerous minute dilated capillaries.

(2) A more severe form of conjunctivitis which is not so common as the first form, and which shows as small, raised, papular lesions of the size of the head of a pin, greyish in colour, and surrounded by a ring of minute dilated capillaries. These lesions correspond exactly with those of rosacea on the skin. They may be single or multiple, and usually occur on the conjunctiva of the bulb. If these papules disappear they may leave areas of dilated vessels behind. These lesions look extremely like those of phlyctenular conjunctivitis, and a case of rosacea associated with phlyctenular conjunctivitis was shown at the Dermatological Section of the Royal Society of Medicine in 1908 by Graham Little, but was probably an example of rosacea conjunctivitis. Triebenstein states that it is almost impossible to distinguish the two conditions, but the presence of rosacea on the face and the age of the patient helps in the diagnosis. Phlyctenular

conjunctivitis occurs almost entirely in young persons, whereas rosacea conjunctivitis occurs in adults between the ages of 30 and 50 years. In phlyctenular conjunctivitis the redness around the lesions is more diffuse and does not consist of such distinct bunches of capillaries.

These two forms of rosacea conjunctivitis, the one on the inside of the lids and the other on the bulbar conjunctiva, usually occur together, and in most cases a scaly blepharitis is also present. These forms of conjunctivitis are as a rule amenable to treatment and do not cause any permanent injury to the eye.

Of the six cases which I have mentioned all showed this papular form of conjunctivitis, and in one there was a definite ulceration of the cornea as well.

Keratitis occurs in rosacea in three forms. A mild form with ulceration of the cornea with infiltration around, a severe form with ulceration and sub-epithelial infiltration, and the severest form of all with a progressive rodent-ulcer-like inflammation of cornea. These forms leave scars and opacities of the cornea, and interfere with vision according to the severity of the lesions.

Ætiologically I think there is no doubt that the skin and eye lesions are identical. The incidence of eye lesions does not depend on the severity of the rosacea, as most cases with eye lesions seem to show the milder type of rosacea. The simple redness of the conjunctiva corresponds to the areas of dilated capillaries seen in rosacea, the phlyctenular-like lesions correspond to the papular rosacea, and the ulcerated corneal lesions to the pustular rosacea. Another point of interest is the fact that, especially in the milder eye lesions, the use of a 1 per cent. ichthyol zinc ointment or a 1 per cent. sulphur salicylic ointment gives the best results in treatment.

The treatment of the rosacea is also said to have a beneficial effect on the eye condition and the two should be treated simultaneously. It is an unfortunate fact that nearly all cases of rosacea with eye trouble consult the ophthalmic surgeon before getting treatment for their skin.

I feel sure that eye lesions in rosacea are much more common than most dermatologists are aware, and that closer co-operation between the ophthalmologist and the dermatologist would be greatly to the benefit of the patient.

Before leaving this subject reference must be made to another eye condition which is possibly connected with rosacea, viz. chalazion. One case of rosacea in a male, aged 64 years, whom I saw recently, had had a chalazion removed recently. Fuchs, in his *Text-book of Ophthalmology*, describes chalazion as a chronic affection of the Meibomian glands, and quotes Horner as being the first to point out the analogy between chalazion and rosacea. Chalazion is a chronic inflammation beginning in the Meibomian follicles, which correspond to the sebaceous glands of the skin.

I was at the Eye Out-Patient Department of the Infirmary the other day, and the surgeon on duty showed me five cases of rosacea with conjunctivitis or keratitis, or both, which happened to be attending on that day, and he assured me that they always have that type of case under treatment.

None of my 42 private cases had any eye lesions, probably because any patient with an eye lesion had gone direct to the oculist. That is only natural, as he is frightened lest he should get some permanent damage to the eye if it were not treated, and also because the irritation and pain of the eye lesion make it urgent, whereas the skin lesion, being as a rule only slight, does not worry the patient much.

Only one of the seven cases mentioned by me came to the Skin Department first. All the other six were sent from the Eye Department.

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ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Meeting held on May 18th, 1922, Dr. H. G. Adamson, President of the Section, in the Chair.

Dr. S. E. Dore and Dr. A. W. Stott showed a *case of* (?) *erythromelalgia*. Dr. Dore said the patient, a girl, aged 16 years, had an attack of erythema accompanied by œdema in both legs near the ankles in December, 1916. The patches were bright red in colour and were acutely tender, especially towards night. There was no constitutional disturbance. If she went to bed and rested, it subsided in three days. Similar attacks occurred in December of each of the next two years. In 1919 the condition started in November, and had persisted since that date. She suffered, though only slightly, from chilblains on the toes. She had had tonsillitis occasionally. No other member of the family was similarly affected. Her general condition seemed to be good. Temperature, urine, blood and stools were normal. He thought it might be erythromelalgia, chiefly on account of the bright red patches, and the fact that she was always worse when in the upright position.

Dr. Stott said that when he saw the patient a year ago he thought the condition was lymphangitis, due to infection, probably by a streptococcus, and he had her investigated from that standpoint. She had slight marginal gingivitis, and that might have been the source of the infection. Streptococci were grown from the stools, the post-nasal space and the gum, and a vaccine made and injected at intervals into the patient. Nothing happened after the first few doses, but after the fourth the condition reacted violently and became worse; but subsequently cleared up entirely and patient led a normal life for two months. The leg condition then returned and she had several more doses of stock vaccine, but with no good effect. He therefore thought his original idea was not correct. Dr. Dore regarded it as a vasomotor condition, therefore she had had galvanism and various other remedies. Before he saw the patient she had been taking thyroid extract and calcium lactate for a year, with no beneficial result.

Dr. H. MacCormac said a number of similar cases with an erythematous patch on one or both legs, which might persist for months, or even years, had come to his out-patient department. There were some subjective sensations, and occasionally there was improvement during the summer. He now had one such case in the ward, and the lower aspect of the erythema was limited by the position of the upper edge of the shoe. This had led him to wonder whether the prevailing type of thin stocking worn by girls in all kinds of weather had something to do with the condition.

Dr. H. W. Barber said that in a patient with a similar condition he had found the clotting-time of the blood very considerably prolonged. She had improved on a mixed thyroid-parathyroid preparation by the mouth, and intramuscular injections of calcium chloride.

Dr. F. Parkes Weber thought that this case should not be called erythromelalgia, and that Dr. MacCormac and Dr. Barber had suggested its correct grouping, namely, that it was an example of a circulatory condition, tending in the direction of "Bazin's disease."

Dr. J. M. H. MacLeod agreed with Dr. Parkes Weber. He had a typical case of erythromelalgia in an oldish woman, who afterwards manifested mental symptoms; apparently it was due to arterio-sclerosis affecting the brain. There was, in that case, much redness and intense pain. He agreed that it was a vasomotor condition in the present patient.

Dr. Dore (in reply) agreed that the condition was vasomotor, but it was not worse in cold weather and for this reason he did not regard it as an ordinary stagnatory erythema. The bright red patches appeared when the limbs were in the dependent position and that was why he suggested that it might be allied to erythromelalgia. He did not think it was allied to Bazin's disease; there were no permanent deep-seated nodules and it was acutely painful.

Dr. H. W. Barber showed a *case of Fox-Fordyce disease*. This girl had what, he thought, was an extremely rare condition, which was first described by Fox in 1902; cases had also been published by Fordyce, Brocq, Haase and others. Fordyce named it "chronic itching papular eruption of the axillæ and pubes," and was inclined to class it with simple lichenification, or the névrodermite chronique circonscrite of the French. He did not think it was of that nature, one reason being that the distribution was always the same, namely, in the axillæ, pubic region, and to some extent on the presternal skin. Another point against its being simple lichenification was that the X-rays, even in big doses, had practically no effect on the eruption. The patient had now less itching, but he attributed that to the improvement in her general health rather than to the influence of the rays. Probably these patients secreted some irritant through the sweat glands. He had examined sections histologically, and confirmed what Fordyce described, but this did not help one

much as to the ætiology. She had had the eruption just over two years.

Dr. G. Pernet said he had seen two or three cases of this type, but at an earlier stage, in young women, strictly limited to the axillæ and the pubic region. There was marked pruritus in these areas coming on paroxysmally, but without any obvious lesions. Was the condition in the case shown by Dr. Barber a complication of a precedent pruritic condition?

Dr. H. G. Adamson said he had seen a similar case in a young lady, aged 25 years. In each axilla, at the centre of the chest and on the pubes were patches made up of closely set, small, red, raised, apparently peri-follicular patches. There was much itching and he had diagnosed "lichenification" or "lichen simplex chronicus" and had given two pastille doses of X-rays at one month's interval without any result. There was no sweating and no pustulation so that the lesions did not suggest a furunculosis or sycosis. They had some resemblance to closely set verrucæ planæ, but he had discarded that idea and had made no definite diagnosis.

Dr. F. Parkes Weber suggested that these "Fox-Fordyce" cases might be allied to those of recurrent abscesses or inflammation in the axillary sweat-glands, which appeared every summer. There might be a low grade infection, which became especially manifest in summer time, when the sweat glands were most physiologically active. In some people the microbic agent might be insufficient to form actual abscesses. Such cases as he mentioned had been described in Switzerland and elsewhere.

Dr. Barber replied that the lichenification in these cases was almost entirely follicular. There was lymphocytic inflammatory infiltration round the pilo-sebaceous follicles and sweat-glands. Most of the cases described, as far as he knew, were in women.

Dr. E. G. Graham Little showed a *case of angioma serpiginosum*. Patient was a boy, aged 12 years, whom he had only seen once, and the history was that this curious nævoid condition appeared on the right leg, in a linear distribution near the ankle. He had it at $2\frac{1}{2}$ years of age, and it had steadily progressed up the leg, and had reached the mid-thigh. The patches took the shape of punctate hæmorrhagic spots. He had thought it might be Schamberg's pigmentary disorder, but it was more correct to regard it as angioma serpiginosum. The punctate arrangement recalled the "cayenne-pepper spots" in Schamberg's original description. Otherwise the patient was healthy. There had been no family disease.

Dr. H. G. Adamson (President) said he was glad this case had been brought, as it had been suggested at a previous meeting that Schamberg's disease and angioma serpiginosum were the same disease. Clearly the case now shown was not one of Schamberg's disease, which was definitely a pigmentation. In this case there was no pigmentation but there were dilated blood-vessels, which could

be pressed out, except at little points where a dilated papillary vessel had become encysted in the epidermis and converted into a granular detritus, such as occurred in "De Morgan's spots" and other forms of superficial angiomata.

Dr. H. G. Adamson showed a case of *melanosis cutis, with melanotic carcinoma*. The patient, Mrs. C. H—, presented on the thenar eminence of the left thumb a roughly circular patch of pigmentation 1½ inch in diameter. The pigmentation was dark brown, almost black, and it occupied the outer border of the patch, the more central part having become depigmented and pale in colour. The patch was not raised and there was no feeling of infiltration. It appeared sixteen years ago as a small black spot. Towards the palmar side of the pale area there was a raised dark brown projecting tumour abont ½ inch in diameter, which seems to be protruding through the epidermis. This first appeared twelve months ago. There was also an enlarged gland in the left axilla. On the right cheek was an ordinary brown pigmented mole, noticed since childhood, and in front of the right axilla a deep brown mole noticed since birth.

The patient's lesion was an example of what was probably a melanotic carcinoma, arising from a pigmented patch such as had been described by Hutchinson* as "lentigo melanosis," and by Dubreuilh† as "mélanose circonscrite précancereuse." It had been demonstrated by Dubreuilh and by Darier that these melanotic patches were identical in histological structure with ordinary pigmented moles. He asked for opinions as to treatment. The usual method in these cases was free surgical removal of the whole pigmented area, together with suspected glands, but as rapid general dissemination had been known to occur after this proceeding, Dubreuilh had recommended surgical removal and Darier removal by electrolysis of the malignant growth alone, and it had been stated that sometimes after this more limited operation there had been no further new growth and that the glandular enlargements had subsided.

Dr. Graham Little referred to a case, that of a man, aged 70 years, who had a dark blue, mole-like pigmentation scattered about his forehead for some years. He said that nine months ago he had begun to develop a patch similar to that in the present case. It was removed, and recurred in the scar almost immediately. Then the patient came to the speaker, who took him to Mr. Warren Low for a

* *Archives of Surg.*, 1892, iii, p. 319; v, 1894, p. 253 (col. plate).

† *Ann. de Derm. et Syph.*, 1912, 5 sér., iii, pp. 205–230.

surgical opinion. Mr. Low's strongly expressed wish was to remove the whole pigmented area, but it was difficult to acquiesce in that proposal, as the area was about 2½ in. in extent, and new lesions were coming out rapidly, separated from the others by areas of normal skin. Dr. Little advised the man not to have them interfered with. A week or two ago when again seen, a growth had taken place in one of the patches, and it was a carcinomatous tumour, about the size of a walnut. That new growth he would have removed. He had seen a similar case in an elderly woman who at first had only one or two of the lesions, and ended up with fifty to sixty. She died of internal carcinoma four months after the spread commenced.

Dr. PERNET reminded the Section of a similar case in a woman which he had shown of melanotic nævo-carcinoma about the lobule of the right ear. The case was submitted to a surgeon, but he did not feel inclined to interfere with it. Radium was applied with apparent success.* He had also shown a case of melanotic carcinoma of the big toe originally. The toe had been amputated, and a very unusual recurrence of growths occurred on the front of the same leg (multiple infective lymphangio-endotheliomata).†

Dr. A. M. H. GRAY said that in view of the fact that the glands in the axilla were already enlarged the prognosis was very bad. He recommended massive doses of X-rays both to the primary growth and to the glands.

Dr. ADAMSON, in reply, said he did not regard these cases as very common; no case had been shown at the Section during the last ten years; it was comparatively rare for a mole to develop malignant characters. In reply to Dr. MacLeod, he could not from his own experience express an opinion as to whether these growths were ever sarcomatous, but Dubreuilh and Darier amongst others had demonstrated that although their melanotic growths arising from moles might closely simulate sarcoma, the character of the nucleus of the cells and their gradual transition from epithelial cells showed them to be epithelial and not mesoblastic in origin.

[*Postscript.*—Since this case was exhibited the gland in the axilla has been removed, and as this proved to be "melanotic" the whole of the pigmented area on the palm was excised. A report of the histological findings will be published.]

Dr. GEORGE PERNET showed a case of *rodent ulcer of unusual type (mixed follicular rodent and superficial epithelioma)*. Patient, a male, aged 42 years, had had the trouble on the left ear three and a half years; it began on the edge of the lobule, and had gradually increased to the present condition. When first seen, there was a margin of narrow line ulceration, and in places follicular growths of a translucent kind with coursing vessels, reminding one of rodent ulcer.

* *Proc. Roy. Soc. Med.*, 1918–19 (Sect. Derm.), pp. 11, 42; *Brit. Journ. Derm.*, 1918, xxx, p. 217, and 1919, xxxi, p. 108.

† *Proc. Roy. Soc. Med.*, 1919–20 (Sect. Derm.), p. 17; *Brit. Journ. Derm.*, 1920, xxxii, p. 16.

Ionization improved it a good deal, but, as it was "hanging fire," he had recently had radium applied, and that caused the reaction which they now saw. A biopsy at the spreading border in front of the ear (before radium was applied) showed rodent appearances about the hair follicles with superficial epithelomatous changes and superficial cell-nests.

Dr. George Pernet showed a *case of sclerodermia*. Patient, a female, aged 31 years, had had this oblong sclerosed patch on the nape of the neck just to the right of the middle line and extending sowewhat into the hair region for four months. She had been under treatment a month, and the condition was improving; she had been treated with massage and zinc ionization. There was also some dystrophy and transverse ridging of the nails. He did not know whether the same ætiological factor was responsible for both conditions. The two conditions might be only accidentally associated.

Dr. S. E. Dore showed a *case of adenoma sebaceum*. This boy, aged 6 years, had adenoma sebaceum of the Pringle type. There was vascular dilatation accompanying the sebaceous growths. It was noticed on one cheek at the age of one year, and similar lesions rapidly followed on the opposite side and on the nose and chin. The lesions were grouped about the naso-labial folds, lower parts of the cheeks and chin, and were stated to be gradually increasing in number. They varied from a pin's point to a pin's head in size, and were very slightly raised above the surface of the skin—except in one instance, there being a more elevated and larger flat growth as large as a pea in the centre of the right cheek. There was no evidence of mental deficiency, but he had had fits, which began at three months of age and lasted until he was a year old. He also had a flat growth on the right side of the chest, which he thought was fibromatous. It was common to find molluscous growths about the iliac and the lumbar region in these cases.

Electrolysis was undoubtedly the best treatment, but in hospital practice this was difficult, and he would like to ask if X-rays have been found of benefit in these cases.

Dr. H. W. Barber showed a *case of nodular leprosy*. This man was originally in the Army, and had served in India, Palestine, South Africa and Egypt. In June, 1920, he joined the Irish Police, and

two months later he noticed patches on his chest, which he regarded as ringworm. Four months after that he felt ill, and nodules began to appear round the elbows in July, 1921, and then on various parts of the body, including the face, legs and thighs. He was discharged from the police, and was treated at a hospital with salvarsan injections. The exhibitor took him into Guy's Hospital and excised two nodules, sections from which showed large numbers of Hansen's bacilli. He was now under Dr. Graham Little, at St. Mary's, and was, he understood, being treated with a vaccine prepared from the nodules. Dr. Winkelried Williams had shown a case in which a vaccine apparently yielded good results.

Dr. Haldin Davis showed a *case of leprosy*. This case of leprosy was interesting from two points of view. In the first place it was remarkable for the prolonged incubation period. The patient, a woman, aged 68 years, was a native of Riga—a district well known as a home of leprosy—but she left that city twenty-two years ago, and had since lived in England and also in Philadelphia, where it was very improbable that she could have contracted this disease. Nevertheless, it only made its appearance for the first time about six months ago, so that it must be assumed that it had been latent in the system ever since she left Russia. In the second place the case was interesting for the resemblance which the clinical lesions present to mycosis fungoides. The flat areas of infiltrated skin present on the forearms and shoulders, spreading in circinate figures and enclosing within them islands of apparently normal skin, were exactly like the lesions of mycosis fungoides; and when he first saw the patient he thought she was suffering from that disease. She had, however, other signs of leprosy consisting in thickening of the ulnar nerves, loss of eyebrows, and areas of anæsthesia, and the diagnosis had been placed beyond any doubt by the sections which Dr. Nabarro had prepared, which show the typical structure of leprous nodules and large numbers of lepra bacilli.

Dr. F. Parkes Weber said that some years ago he showed before the Section* a case of leg eruption, and no one suggested that it was leprosy. Some time later the patient had a disease of the conjunctiva, which the oculist thought was of a kind seen only in the subjects of leprosy. The leg lesions were then found to be swarming with leprosy bacilli.† That patient was a Russian-Hebrew,

* F. Parkes Weber, *Proc. Roy. Soc. Med.*, 1917, x (Sect. Derm.), p. 164.

† F. Parkes Weber, *ibid.*, 1920, xiii, p. 12.

but he had been in England two years before the cutaneous affection was first noticed.

Dr. MacLeod said no one had yet grown the leprosy bacillus, and until that had been done it seemed idle to talk about vaccines for the disease. Deycke grew a streptothrix, but it was found that the bacteriolysis, which was supposed to be produced by nastin, was equally well produced by benzoyl chloride.

Dr. W. J. O'Donovan showed a case of *bullous ichthyosis*. W. S—, female, aged 1 year 11 months, was born at full time; the family history gave no record of any skin affection. There were no spots on this child at birth, but on the second day crops of blisters appeared and had continued to do so at frequent irregular intervals. When he first saw this patient at the London Hospital in September, 1921, only an impetiginous condition was noted. Under treatment the scales disappeared and thick patches of epidermis or bare areas of burst blisters were visible. Temporary improvement followed a week's rubbing with mercury ointment, then after a $\frac{1}{3}$ pastille dose of X-rays all over the eruption cleared up entirely. A month later (on April 6th, 1922) the child was readmitted, now presenting a tylotic condition of its hands and feet and a marked hyperkeratosis over its elbows, knees and neck. Over the abdomen, there were segmented-like bands of cross-hatched thickened epidermis. The differential blood count was natural; the Wassermann reaction was negative; there was no adenopathy. An injection of milk produced a marked local reaction, but the complete exclusion of milk and milk products from the child's dietary produced no alleviation. Dr. George Pernet described a very similar condition in the *British Journal of Dermatology*, in November, 1911.*

Dr. Adamson (President) said he thought this was a case of linear nævus. These multiple streaks often appeared months, even years, after birth, and sometimes they were not noticeable until five or six years of age. It seemed to him that the blisters occurred only upon the areas of linear nævus and not upon the rest of the skin. He did not regard it as a case of epidermolysis bullosa associated with linear nævus, but as a warty linear nævus with bullous formation at the site of the nævus.

Dr. W. J. O'Donovan showed a *case of tar acne*. This man, now aged 43 years, first worked in the tar industry when he was 17, and handled tar, creosote and pitch for a period of nineteen years. Since leaving this work seven years ago his condition had not improved.

* Pernet, "Bullous Ichthyosis," *Brit. Journ. Derm.*, 1911, xxiii, p. 344, with full bibliography.

His back was almost a carapace of acne scars, comedones and multitudes of small areas of indolent inflammation. In the gluteal cleft were abscesses for which he had sought medical aid. He had no telangiectases and no warts; his face was darkly pigmented. A photograph of his face appears in Dr. Sequeira's "Diseases of the Skin," 3rd edition, 1919, p. 89.

Dr. E. G. Graham Little showed a *case of folliculitis decalvans*. The patient was a middle-aged nurse, who gave the history that the loss of hair commenced only six months ago. At the present time there was loss of hair with cicatricial atrophy over about half of the frontal area of the scalp. There were numerous still active peri-follicular pustules.

Dr. A. M. H. Gray showed a *case of recurring stomatitis*. The case was shown a few months ago*; it was recurrent stomatitis, for which no cause could be found; it had been present four years. In the discussion, Dr. Pernet suggested it might be erythema iris, and during the last few weeks the patient had developed typical erythema iris lesions on the hands.

BRITISH ASSOCIATION OF DERMATOLOGY AND SYPHILOLOGY.

The Second Annual Meeting was held in Edinburgh on Monday and Tuesday, July 24th and 25th, under the Presidency of Dr. Norman Walker. On Monday the proceedings opened with the Annual Business Meeting and an Introductory Address by the President. This was followed by papers on "The Question of Sensitiveness to Non-bacterial Proteins and Toxins," by Dr. Arthur Whitfield (London) and Dr. Cranston Low (Edinburgh), which led to a very full discussion. A short paper on "Lupus Erythematosus," by Dr. Fredk. Gardiner, completed the morning's programme. In the afternoon dermatological cases were exhibited in the Skin Department of the Royal Infirmary by Dr. Norman Walker, Dr. Gardiner, Dr. Cranston Low and Dr. Aitkin, among which may be mentioned a series of cases illustrating the treatment of lupus vulgaris by Dr. Walker and cases

* *Proceedings*, 1921, xv, p. 4.

illustrating eye changes in rosacea by Dr. Low. After tea Miss Rae gave a most interesting demonstration on the preparation of wax models to illustrate skin diseases, which was much appreciated.

On Tuesday morning a discussion took place on "The Toxic Effects of the Arseno-benzol Compounds, with Special Reference to the Supervention of Dermatitis and Jaundice." Dr. David Lees (Edinburgh) opened the discussion with special reference to dermatitis, and Dr. Rupert Hallam (Sheffield) referred especially to jaundice; most of the members present took part in the discussion. Subsequently Dr. Low read a paper on "The Association of Eye-lesions with Rosacea."

In the afternoon Dr. David Lees gave a clinical demonstration in the Venereal Diseases Department of the Royal Infirmary.

On Monday evening, by the kindness of the President and Council of the Royal College of Physicians, members dined in the magnificent hall of the College. The table was resplendent with roses and thistles, for the tasteful arrangement of which the Association is especially indebted to Mrs. Walker and her friends. Before the dinner members were given the opportunity of inspecting many old books and atlases dealing with skin and venereal diseases, which had been arranged for inspection by the Librarian, Mr. T. H. Graham. Needless to say a most enjoyable evening was spent.

On Tuesday, Dr. Cranston Low entertained the members of the Association at a garden party at his house at Currie.

The Association is much indebted to the authorities of the University of Edinburgh and the Royal Infirmary, as well as to the Royal College of Physicians, for placing rooms at their disposal, and to the University Union for allowing the members to lunch at the Union on the two days of the meeting. The success of the meeting, however—and it was assuredly a great success—is due to the organising skill of the President and Dr. Low, the Local Secretary, to whom also thanks must be given for much hospitality shown.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

OCCUPATIONAL DISEASES OF THE SKIN AND HANDS IN CALIFORNIA INDUSTRY. Robert T. Legge. (*Cal. State Journ. Med.*, December, 1921, pp. 461–462. *Journ. Ind. Hygiene*, May, 1922, p. 11 [abstract].)

The writer describes a skin disease amongst the packers in a large tile and electric lamp manufacturing company. The men were found to be infested by the *Pediculoides ventriculosus*, conveyed to them from the straw in which they packed the goods. The straw was submitted to sulphur fumigations, but these were found to tarnish the metals. Formaldehyde was then substituted, followed by drying in the sun, which effectually killed the insects.

The second dermatosis observed was amongst the packers of dried figs. This seasonal occupational disease is caused by the milky juice, containing a protein enzyme, which exudes from the stems, skin of the fruit and in the latex tubes of the branches when manipulated. Amongst the fresh fruit pickers the symptoms may appear in three or four hours. They are stinging sensations, blisters and a sanguineous oozing. The dried fruit packers develop these symptoms more slowly, because some of the enzyme is undoubtedly weakened or destroyed by the drying process. The prevention of this trouble requires further investigation. In the meantime the wearing of cotton gloves is recommended, and smearing the hands with a high grade mineral oil.

In his opening remarks, Legge, describing the various types of trade eruptions, says "that machine oils and chlorine gas are examples of the irritants which produce pustules." In all the reported cases of pustular rashes supposed to be due to this gas, careful inquiry has elicited the fact that other injurious agents have been present, such as tar or some of its constituents. Chlor-acne is probably quite a misnomer, and until the proofs are more convincing that chlorine does produce such eruptions, when locally brought in contact with the skin in industry, it is undesirable to perpetuate statements of doubtful correctness, either in articles or text-books. R. P. W.

A FORM OF INDUSTRIAL DERMATITIS. Allison D. McLachlan. (*Glasgow Med. Journ.*, April, 1922, p. 212.)

This dermatosis, caused by the "cutting compounds" used in engineering works, affected 7 out of 200 operatives examined by the writer. He feels sure that not a few other cases escaped his notice and that they are missed by industrial surgeons, or are usually grouped under the general heading of septic sores.

The lesions are symmetrical, are seen in the interdigital spaces, on the backs of the hands, and the cuff-areas of the forearms. They are usually ill-defined, slightly raised, infiltrated, itching, red scaly patches, or may develop as vesico-pustules and bullæ. McLachlan finds them most rebellious to treatment, unless work is suspended.

On analysis, he found these cutting compounds essentially consisted of an emulsion of soap, oil (mineral) and water. As the same fluid, by pumping, is made to circulate so as to cool and lubricate certain parts of each machine, and then fall into open trays, it becomes freely contaminated. The writer examined

the bacterial content of his samples and also gives the recorded findings of other investigators. He arrives at the conclusion that at present bacteriological evidence only warrants us in believing that the organisms found may be a source of secondary infection, aggravating a dermatosis, which the chemical and physical properties of the oil, etc., have initiated. R. P. W.

PATHOLOGY.

THE PATHOLOGICAL ANATOMY OF SYNOVIAL LESIONS OF THE SKIN. Douglass W. Montgomery and George D. Culver. (*Arch. of Derm. and Syph.*, 1922, v, p. 329.)

In this paper the writers point out that the so-called "synovial lesion" of the skin is wrongly named, as it is not connected with either synovial membranes or joints, but is only situated over a superficial tendon, such as the extensor tendon of a finger.

On microscopical examination it proves to be of epidermal origin, and consists of an epidermal cyst covered by a horny epithelial cap, and with a cavity filled with gluey contents due to colloid degeneration of the epithelial cells.

The treatment advised by the writers is X-ray or radium, and they deprecate the use of the curette or cauterisation with trichloracetic acid, as they are liable to leave scars. J. M. H. M.

SYPHILIS.

PRE-ROSEOLOUS SYPHILITIC PERIOSTITIS. L. Chatellier. (*Ann. de Derm. et de Syph.*, 1920, 6th ser., i, p. 444.)

Chatellier calls attention to the occurrence of periostitis of syphilitic origin arising before the appearance of the rash. He records several instances of this in one case in an infant of 18 months where a typical syphilitic chancre was found below the iliac crest. Reference is also made to syphilitic lesions of the kidney and meninges preceding the secondary rash. H. M. C.

SUBCUTANEOUS FIBROID SYPHILOMAS OF ELBOWS AND KNEES. Howard Fox. (*Arch. of Derm. and Syph.*, 1922, v, p. 198.)

In this short paper the writer describes a rare manifestation of late syphilis in the case of a negress, aged 45 years. It took the form of extremely hard, painless, subcutaneous nodules about the average size of a horse chestnut. These were situated above the elbows and knees. They appeared two years previously and had remained unchanged during this time. They had no apparent relation to the bursæ. They responded slowly and completely to anti-syphilitic treatment. Histological examination of one of the lesions showed the structure to be that of a dense fibrous gumma. J. M. H. M.

URTICARIA IN A CASE OF CONGENITAL SYPHILIS. Wagner. (*Derm. Wochenschr.*, May 27th, 1922, lxxiv, No. 21.)

The patient, a poorly-nourished youth, aged 17 years, came to the Kreibich Clinic at Prague, with a history of urticarial wheals on face and hands. The exciting factor was wind and cold. There was no hæmoglobinuria, nor any suggestion of hæmolysis as a cause of the eruption, which was produced under

control, on exposure. Katabolic toxic products of autogenous or external origin could also be excluded.

The Wassermann reaction was + + +, and there was a pronounced congenital and familial history of syphilis. The mother was a tabetic, and had had several miscarriages. In view of the symptomatic cure of this case by neosalvarsan injections, the author suggests that the underlying cause was a luetic vascular trophoneurosis. H. C. S.

SYPHILIS OF THE SYMPATHETIC NERVOUS SYSTEM. Sklarz. (*Derm. Wochenschr.*, 1922, lxxiv, No. 17, p. 393.)

Every physician would admit that a disease which spares practically no tissue of the body must have certain specific effects on that still almost unexplored territory which we term the sympathetic system.

It is the author's purpose to call attention to groups of symptoms, which he suggests are due to involvement of sympathetic nerves and ductless glands in the general infection. At the outset he points out that this infection is probably complex, and may be—

(1) A simple infection with the spirochæte;

(2) A Herxheimer reaction produced by the drug employed; or

(3) A direct and simple action of the drug on the tissues in question.

Dermographism, he states, is quite a common manifestation of "sympathetic" disturbance, especially in early secondary cases with a roseolar eruption. Stellwag's or Graefe's sign can sometimes be obtained in later or latent cases, and is, of course, evidence of hyperthyroidism, although there is usually no thyroid enlargement to be seen. Arrhythmia and palpitation were noticed to follow N.A.B. injections as well as mercurial in some cases, and were regarded by more than one author as an angioneurotic symptom-complex. Conjunctivitis and facial hyperæmia and "shock" after intravenous injections must be placed in the same category and under group (3). In these susceptible cases the exhibition of adrenalin and calcium salts previous to injection will mostly prevent the genesis of these reactions, and is strong evidence of their "sympathetic" origin.

The question of lues of the adrenal bodies is touched upon, and it is suggested that there may be some connection between it and alopecia, leucoderma of the neck, and other pigment anomalies met with in the course of the disease.

The author would also claim the trophic ulcers and other necrotic manifestations common to tabes and general paralysis as examples of sympathetic nerve disease produced by syphilis. He points out that herpes zoster and vitiligo occasionally follow the paroxysmal crises of tabes, and he reminds us that bladder and rectum paralyses are due to the cutting off of sensory impulses which normally control the voluntary mechanism of their respective functions. All these disturbances, together with sexual impotence, vascular crises of which the acute dyspnœa of tabes is one example in the medullary circulation, exophthalmos without struma, the appearance of anæsthesia in Head's areas, and many other even more obscure phenomena are drawn into the circle of sympathetic disturbance and labelled by Sklarz as manifestations of its infection.

H. C. S.

QUARTERLY SURVEY OF DERMATOLOGICAL LITERATURE.

ERYTHEMAS, INFLAMMATIONS, ETC.

Anthrax in American Tanneries. Editorial. (*Journ. Amer. Med. Assoc.*, July 1st, 1922, lxxix, No. 1, p. 43.)

"Benign Lymphogranuloma," Nature of. JÖRGEN SCHAUMANN. (*Acta Dermato-Venereologica*, ii, No. 4, p. 469.)

Carbide and the Human Skin. O. SACHS. (*Wien. Klin. Wohnschr.*, 1920, xxxiii, p. 333.)

Dental Sepsis, Some Cutaneous Effects of. HENRY C. SEMON. (*Lancet*, May 6th, 1922, p. 889.)

Dyed Furs, Skin Eruption caused by. C. RASCH. (*Ugeskrift f. Læger*, No. 15, 1922.)

Eczema. H. B. MILLS. (*New York Med. Journ.*, August 2nd, 1922, cxvi, No. 3, p. 125.)

Erysipelas, Two Fatal Cases. J. H. POLLOCK. (*Irish. Journ. of Med. Science*, June, 1922, Series v, No. 4, p. 172.)

Erysipelas, Metabolism in. W. COLEMAN. (*Arch. of Int. Med.*, May, 1922, xxix, No. 5, p. 567.)

Erythema chronicum migrans. ARVID AFZELIUS. (*Acta Dermato-Venereologica*, ii, p. 1.)

Finger Nail Changes after Rheumatic Fever and Tuberculosis. W. H. ROSENAU. (*Journ. Amer. Med. Assoc.*, June 10th, 1922, lxxviii, No. 23, p. 1783.)

Gangrene of Feet after Influenza. J. B. S. MUIR. (*Middlesex Hosp. Journ.*, May 1922, xxiii, No. 1, p. 7.)

Herpes and Varicella. W. M. ELLIOTT. (*Glas. Med. Journ.*, May, 1922, xcvii, p. 274.)

Impetigo Contagiosa, in Schools. A. I. SIMEY. (*Lancet*, April 15th, 1922, p. 738.)

Infancy, Skin Diseases of. A. M. H. GRAY. (*Practitioner*, July, 1922, cix, No. 1, p. 67.)

Irritants of the Skin, External and Internal. C. G. LANE. (*Boston Med. and Surg. Journ.*, July 20th, 1922, clxxxvii, No. 3, p. 108.)

"Langris Finger," Fatal case of. F. F. LIMAGE. (*Ind. Med. Gazette*, July, 1922, lvii, No. 7, p. 256.)

Leishmaniasis, Dermal, Note on. J. W. D. MEGAW. (*Ind. Med. Gazette*, April, 1922, lvii, No. 4, p. 128.)

Leishmaniasis, New Form of Cutaneous. V. N. BRAHMACHARI. (*Ind. Med. Gazette*, April, 1922, lvii, No. 4, p. 128.)

Leprosy, Papacosta's Reaction in. D. A. TURKHUD and C. R. ARARI. (*Ind. Journ. of Med. Research*, April, 1922, ix, No. 4, p. 850.)

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Leucodermia Post-parapsoriatic, Case of. JOHAN ALMKVIST. (*Acta Dermato-Venereologica*, 1922, ii, No. 4, p. 468.)

Lips, Commissural Lesions of. A. RENAULT. (*Med. Press*, August 2nd, 1922, No. 4342, p. 91.)

Lips, Eczema of Vermilion Border. D. W. Montgomery. (*Med. Record*, 1920, xcviii, p. 141.)

Rat Bite Fever, Case of. B. M. Gupta. (*Ind. Med. Gazette*, April, 1922, lvii, No. 4, p. 139.)

"Naga Sore," Epidemic of. S. N. Mathur. (*Ind. Med. Gazette*, March, 1922, lvii, No. 3, p. 96.)

Ochronosis, Case, and coloured plate. B. S. Oppenheimer. (*Arch. of Int. Med.*, June, 1922, xxix, No. 6, p. 732.)

Plant Dermatitis. H. N. Ridley. (*Journ. of Trop. Med. and Hygiene*, July 15th, 1922, xxv, No. 14, p. 225.)

Raynaud's Disease-Phenomena. J. A. Buchanan. (*Amer. Journ. of Med. Science*, July, 1922, clxiv, No. 1, p. 14.)

Scarlet Fever, Diagnostic Points. H. R. Mixsell. (*New York Med. Journ.*, cxvi, No. 3, p. 159.)

Scleremа Neonatorum. Alex. Burichmann. (*Norsk. Mag. f. Lægev.* April, 1922.)

Sclerodermia, Case of Acute Generalised. Hans Sivertsen. (*Med. Revue*, October, 1921.)

Sclerodermia Neonatorum, Case of. O. H. Westergaard. (*Medicinsk Revue*, March–April, 1922.)

Spoiled Corn Dermatoses. G. Romiti. (*Gaz. degli Osped. e delle Clin.*, 1919, and H. Lavon, May 31st, 1920, xii, No. 1, pp. 22–23.)

Tuberculous Chancre. J. A. Dixon and Rendle Short. (*Brit. Journ. of Surg.*, July, 1922, x, No. 37, p. 44.)

Variola in Baghdad. H. P. Sinderson. (*Edin. Med. Journ.*, July, 1922, xxix, No. 1, p. 18.)

Vincent's Organism, Infection with. C. Barker. (*New York Med. Journ.*, July 19th, 1922, cxvi, No. 2, p. 88.)

Xanthoma Tuberosum with Jaundice and Diabetes Insipidus. J. P. C. Griffith. (*Arch. of Pediatrics*, May, 1922, xxxix, No. 5, p. 297.)

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Mycetoma of Leg, New Variety of Streptothrix in. J. W. Cornwall and H. M. Lafrenais. (*Ind. Journ. of Med. Research*, July, 1922, x, No. 1, p. 239.)

Myiasis, Case of. W. F. M. Loughnan. (*Journ. Roy. Army Med. Corps*, xxxix, No. 6, p. 458.)

Myiasis Oestrosa, Human Case. D. M. Greig. (*Edin. Med. Journ.*, June, 1922, xxviii, No. 6, p. 263.)

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Sarcoptic Mange of the Horse, An Extensive Human Infection. R. A. S. Macdonald. (*Lancet*, April 15th, 1922, p. 738.)

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Sporotrichosis, Case of Gummatous. L. M. Warfield. (*Amer. Journ. of Med. Science*, July, 1922, clxiv, No. 1, p. 72.)

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Fibroma Molluscum, Case of. D. F. Michal. (*Ind. Med. Gazette*, June, 1922, lvii, No. 6, p. 219.)

Malignant Growths of Face, Prophylaxis of. R. Eastman. (*Journ. Amer. Med. Assoc.*, July 8th, 1922, lxxix, No. 2, p. 118.

TREATMENT.

Erythema Nodosum treated by Streptococcus Vaccine. A. S. Levinsohn. (*Med. Record*, 1920, xcviii, p. 859.)

Giant Urticaria treated by an Autogenous Streptococcus Vaccine. W. E. M. Armstrong. (*Lancet*, May 20th, 1922, p. 994.)

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Scarifier for Skin Tests and Vaccination. F. C. Dudley. (*Journ. Amer. Med. Assoc.*, May 20th, 1922, lxxviii, No. 20, p. 1538.)

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SYPHILIS.

Backache, Syphilitic. W. Thompson. (*Amer. Journ. of Med. Science*, July, 1922, clxiv, No. 1, p. 109.)

Cervical Gummatous Adenitis. W. P. Cones. (*Boston Med. and Surg. Journ.*, July 13th, 1922, clxxxvii, No. 2, p. 65.)

Cutaneous Syphilis and Tabes. H. B. Beeson. (*Journ. Amer. Med. Assoc.*, lxxviii, No. 20, p. 1537.)

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Arsphenamine, Biological Reactions. J. Mier and S. S. Yamada. (*Journ. of Pharm. and Exp. Therap.*, July, 1922, xix, No. 6, p. 393.)

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THE BRITISH JOURNAL

OF

DERMATOLOGY AND SYPHILIS

OCTOBER, 1922.

OCCUPATIONAL DERMATITIS.

FREDERICK GARDINER, M.D., B.Sc., F.R.C.S.Ed.,

Physician to the Skin Department and Lecturer on Dermatology, Edinburgh University.

In discussing this subject the writer has only continued the research which he started many years ago. Most of the literature deals with *trade dermatitis* in so far as it came within his disposal. Yet *occupational dermatitis* is a much wider subject, and more suitable for statistics for discussion of the Edinburgh area. The 621 cases which the writer proposes to discuss are those which have come under his notice during the last ten years at the Skin Department, Royal Infirmary, Edinburgh. These cases include individuals drawn from all over Scotland and England, but, as indicated above, there is not the same percentage of dermatitis definitely due to a trade as would be obtained in a manufacturing area. While much has been done along the lines of ventilation and cleanliness to prevent the irritation incidental to work, yet, so far as the writer is aware, little has been mentioned as regards the class of individuals likely to be affected. The matter has generally been loosely passed over by a phrase such as "certain people are susceptible to certain irritants or unfit to continue at certain work." There must be some difference in the nerve or blood supply or in the textural construction of the skin which makes it more liable than another to a dermatitis from an external cause. The name *dermatitis* is purposely used to distinguish it from *eczema*, which the writer prefers to confine to a similar eruption due to internal causes. That an *eczema* and *occupation dermatitis* are indistinguishable are well known. In MacLeod's recent *Diseases of the Skin* he says that "not only are many forms of trade dermatitis

indistinguishable from acute local eczema, but they may be the starting point of a generalised eczema."

Taking the subject of dermatitis there are three terms which must be defined: (1) *Occupation dermatitis* implies inflammation of the skin arising in connection with any work whatsoever; (2) *trade dermatitis* is more limited, indicating inflammation of the skin arising from exposure to irritation while the individual is engaged in a specified trade. The first, therefore, includes the second. (3) *Dermatitis venenata* is another term used. This by many is defined as an eruption due to some chemical vegetable irritant coming in contact with the skin. J. C. White, in Kober and Hansen's *Diseases of Occupation*, is quoted as defining its characteristics thus: "Mainly a sudden onset, a rapid evolution of primary lesions, some peculiarities in their situation within the cutaneous tissues, an unusual colour in their fluid contents, a greater intensity of inflammatory action and continuity of development within given areas, the localities attacked and the sharply defined limitations of the regions affected, a marked symmetry and an artificial appearing configuration in the eruption, their occurrence in those employed in certain arts and professions and other unusual extraordinary appearances at times that cannot be defined." The classic instances are seen following exposure to the *Primula obconica*, or the irritation on the face following the use of a hair-dye. Its occurrence may also be seen after the application of a turpentine stupe or a belladonna plaster. In only the first of these four cases, and then only if the man was a gardener, could the condition be called an *occupation dermatitis*. On the other hand, an actor may have to apply cosmetics and paints to his face, with the result that a *dermatitis venenata* ensues, and there is no doubt that here the condition can be classed as one of *occupation dermatitis*.

Taking the statistics for the writer's own department in 1919, there were 1194 new cases, and of these 128 (41 males and 87 females) came with dermatitis and 87 were *occupational dermatitis* (37 males and 50 females)—that is, 68 per cent. of all dermatitis or eczema cases were due to occupation.

This is a pretty heavy percentage, and when one bears in mind that a medical examination for admission to a factory consists mainly in a report on the general physique, the condition of the skin will be ignored unless for some very obvious skin condition. As the skin is

a first line of defence it should be examined as a routine, especially in certain classes of work.

Occupations.—Below is a list showing the occupations at which the individuals worked, the majority being engaged in domestic work. Details of some will be gone into later.

Appearance of the eruption.—This is, in the writer's opinion, not of very great consequence, as there is a general similarity amongst all cases. Briefly put, a powder or a vapour produces an erythematous eruption, an alkali a moist exuding nummular type, and an acid a more deeply eroded phase, in some cases indistinguishable from the effect of an alkali. It is common sense to realise that the more potent the irritant the more serious will be the effect on the skin.

To quote from Prosser White, "they exhibit the features of inflammatory reaction, any differences depending upon the volume, activity or intensity of the irritant and its molecular form. This last may be either solid, liquid or gaseous. If associated with heat the action is intensified. The chief distinguishing features of the occupational eruptions are their groupings, situation, mode of appearance, spread and evolution." The phases vary of course as to whether the condition is acute or chronic.

Occupations.	Cases.	Occupations.	Cases.
Housewives	254	Painters and French polishers	14
General labourers	59	Chocolate workers	6
Chemical workers	25	Munition workers	4
Rubber workers	24	Agricultural workers	14
Iron and steel workers	36	Upholsterers	3
Colliery workers	32	Leather workers	6
Mill workers	26	Linoleum	4
Bakers	16	Actors	3
Printers	12	Butchers	12
Wood workers	13	General	51
Tailors	8		

Irritants.—The variety of irritants is very great. In a paper published some years ago the writer pointed out the effects of soap, and he is still more convinced of the ætiological standpoint that they bear. The suffering and economic loss is out of all proportion to the benefits derived by the modern soaps and soap powders. One has to admit that town life probably brings in its train a general lowering

of tone. It will be generally recognised that the health of the town dweller compared with the individual spending his life in the country is only about 90 per cent. of the latter. Even allowing for this 10 per cent. reduction, which will apply to the skin as well as to the body, the increase of this dermatitis must be due to other causes, and the soaps are the chief agents responsible in the writer's opinion.

It is fatuous to attempt to give a list of possible irritants—these are roughly indicated in the list of occupations—but the following cases are examples chosen out of the large list. Later when dealing with other points of ætiology further irritants will be incidentally mentioned.

T. S—, male, aged 36 years, worked in tweed mills and had done so for five months. His duty was to scour the cloth with soap and soda. The condition of the forearms (all round) and the backs of the hands and fingers was that of a moist nummular and œdematous dermatitis. His skin was definitely seborrhœic in the recognised areas, and the hot liquids which he had to work with in his occupation induced sweating. He reported that many others were similarly affected.

Mrs. W—, housewife, aged 26 years, was confined two months previously, and still looked seedy and perspired freely. The new arrival necessitated more washing, for which she used the much-advertised soaps and powders. This had been followed for the last three weeks by an eruption of a thickened type with some vesiculation on both palms.

J. D—, male, aged 25 years, worked in a rubber factory as a cementer of the soles of shoes. The irritation on the hands and arms was scaly and erythematous. This appeared three months after being at work, and he had had repeated attacks since. Again, he had a seborrhœic skin.

D. R—, male, aged 34 years, by occupation a miller for the last four years, and has suffered from dermatitis for the last seven months. The eruption, which occurred in a papular form on the arms, legs and abdomen, was attributed by him to the foreign hay. The condition may have been parasitic, but it appeared on a man of good health who suffered from an imperfectly acting seborrhœic skin.

J. M—, female, aged 19 years, had been working for four months in a chocolate factory. She had moist, sweaty hands, and the eruption, which had lasted a week, affected the backs of these and the sides of the fingers as a vesicular and pustular rash.

J. T—, aged 15 years, process engraver, had been one month at work, and for the past week had suffered from a moist, papular and itchy eruption all over both hands. This was traceable to bichromates and acids.

J. M—, male, aged 55 years, had been working for eight months with chromic acid before the eruption, now lasting four months, appeared. He had persisted in working for a month of this last period. The skin was generally stained yellow and the spread of the dermatitis had been as follows—first the right hand, then the left, next the nose, and lastly the feet. At the ala nasi, left ankle

(anterior part), and on the left great toe there were erosions, the foot also being œdematous.

W. S—, male, aged 48 years, oil refiner, was under treatment with an acne-like eruption on the arms and legs lasting nine months, attributable to the shale oil. This represented the early stage of an eruption which, as is well known, may go on to epithelioma.

A. G—, male, aged 52 years, paraffin refiner for twenty-nine years. After nine years at work an eruption appeared on the face, arms and body of a generalised dermatitis with paraffin epithelioma on the scrotum. He also suffered from hyperidrosis and indigestion.

Several cases of T.N.T. dermatitis of the usual type have been under the writer's care. The eruption affected the hands and face, but the following case is of interest as it exactly resembled lupus erythematosus—a condition often due to some change in the vascularity of the skin attributable to toxins.

J. R—, male, aged 40 years, labourer, worked at munitions from 1915 till November, 1919, filling shells with T.N.T. After six months at this work an eruption of a scaly and erythematous character with some scarring appeared, affecting the fingers, cheeks, chin and eyebrows. There was also some cicatrisation of the ear lobules.

An interesting group illustrates the effects of varieties of wood which apparently produce their effects through oils and oleo-resins which they contain. In the well-known varieties of plant dermatitis the irritant is probably a volatile oil.

J. S—, aged 51 years, who had worked at his trade of cabinet-making for thirty-five years and never suffered from any irritation before, developed an itchy eruption on the back of the neck with a papular, vesicular rash on the backs of the hands, which soon became moist and spread up the forearms, whilst at the same time the face became so erythematous that the doctor, whom he then consulted, diagnosed it as erysipelas—a diagnosis which he, however, altered next day as the eruption had subsided in great part. This patient was working at the linings of the cabins for the "Mauretania," which were of satinwood. He was aware that the irritation sometimes followed the working of teak, but although he had previously worked with satinwood he never had heard of it causing any trouble. The eruption had lasted nineteen weeks before the writer saw him, and during this time he attempted to work on two separate days when a recurrence immediately ensued. In the same workshop there were five other men similarly affected although not to the same extent. Some of these were only employed in shifting the blocks, but others were, like this patient, more in contact with the dust—their duties being planing, sawing and veneering. Although the patient had previously worked with satinwood and had no ill-effects, the occurrence at this time may be explained in various ways: (1) The large amount of the wood being used, the man stating that he had never seen so much of it together at once; (2) that there are various kinds of satinwood and not all equally harmful; and (3) that his own health was not so good as formerly.

Prosser White* mentions that some varieties are harmless, and that Dr. Auld had isolated the alkaloid *chloroxytonine*, which is probably the cause of the dermatitis

W. B—, male, aged 48 years, joiner, who had been so employed for thirty years, developed a rash on the face of an erythematous and slightly scaly type which had lasted off and on for four years. A general examination revealed a distinct seborrhœa. The origin of the attack he traced to teak wood, and he reported that it gets worse every time it is introduced in the course of his occupation.

There was some suspicion in this case about other woods affecting his condition, although the primary dermatitis was due to teak. His general health was not of the best, and it is reasonable to believe that before the age of 44 he must have worked with teak and that it then did not affect him.

J. L—, male, aged 18 years, joiner, developed a rash on the hands, subsequently spreading to the face and hands, which was of an erythematous nature. This commenced after the first day of working with teak, but he had continued at work for fourteen days.

R. L—, male, aged 15 years, a joiner's apprentice who had worked at his trade for a year, came under observation with an erythematous and crusted eruption round the cheeks, mouth and chin, which had come on after working only two days with teak. He also was found to have a seborrhœic skin.

In obtaining the histories of individuals suffering from occupation dermatitis, careful inquiry has to be made or wrong deductions follow, and although it is not always possible to get full details, yet the following cases illustrate the fact that some little alteration in their work may be a determining factor for an attack.

J. M—, female, aged 18 years, working in a biscuit factory, which she has done for four years, and whose duty up till a year ago was to pack plain biscuits. Chocolate biscuits were then used, and after some months an eruption developed on the back of the hands and the front of the wrists of a moist, erythematous and scaly type which had lasted five weeks. The explanation is found in the fact that she suffered from a marked hyperidrosis of the palms, and as a result the biscuits softened in her hands and the moist chocolate irritated. It is a well-known fact that chocolate in all forms is an irritant, and many cases have been noted in confectionery works, etc.

C. H—, male, aged 32 years, chemical worker, a healthy man, appeared at the Infirmary with an erythematous rash on the face which was œdematous. The backs of the hands showed some superficial erosions. The condition had lasted two days. For eighteen months the man had worked in a chemical factory. For four months his work had been extracting brucine by means of toluol. This produced eventually a dermatitis of the face and hands lasting about a week, and finally his duties were changed. Later he was employed in the extraction of strychnine, but two days previously he had gone into the finishing room and was

* Prosser White, *Occupational Affections of the Skin*, 2nd ed., pp. 252–3.

exposed to the vapour of acid spirit when the present eruption appeared. He had distinct hyperidrosis.

A. J—, male, aged 23 years, worked as a warehouseman with hay seed. This he had done for several years. He had often worked with all forms of seeds, but on the present occasion there seems to have been some alteration in the hay seed, because after three days at work he felt sick and then a papular erythematous eruption appeared on the elbow, neck and chest which had lasted three months. In the course of his work he had to immerse his arms in the seeds up to the elbow. His general health was good, but he had a definite seborrhœa. The conclusion come to was that it was the type of seed which was the cause. In other cases recorded an eruption similar to this, but more papular, has been found to be due to the *Pediculoides ventricosus*, but no trace was found in this case.

L. D—, female, aged 35 years, photographic worker for many years. Previously amidol had been used as a developer, but recently pyro was substituted, and a papular, vesicular eruption commenced on the backs of the fingers. She had also a marked seborrhœa. There was no doubt about the change of irritant in this case as the information was given voluntarily.

Another detail of interest in the history of these cases is that one irritant may set up a dermatitis, which subsequently renders the patient susceptible to other irritants which he or she was previously immune to.

This may be illustrated by the case of M. C—, female, aged 38 years, laundress. When seen she suffered from a scaly erythematous eruption on the arms and the lower third of the face which had lasted two days, this being all the time she had been at this work. The irritants were undoubtedly steam and soap. On questioning, however, the interesting fact was ascertained that she had earlier in her life worked in a laundry with no bad effects, but that six years previously she had developed a dermatitis on the face and hands when in Canada, and this was due to the well-known poison ivy.

J. H—, male, aged 29 years, had been previously in the Army. After demobilisation he commenced to work with morphia, and three weeks later developed a dermatitis which necessitated his stopping work for three weeks. For seven months he worked at the mill where the nux vomica bean was ground down. When the writer saw him the eruption had lasted four weeks and affected the face, arms and wrists, and was scaly and erythematous with a tendency to moisture and exudation about the wrists and chin. He had a well-marked seborrhœa of the scalp. The whole appearance was remarkably like a morphia dermatitis, but was more pustular.

Investigations were then carried out with the ready assistance of Messrs. T. & H. Smith and their chemist. I thought that possibly the bean contained a volatile oil, but this was found not to be present. In the bean there is a fat which was extracted for me and found to be non-irritant to the skin. Having eliminated these two points, the next point was the hairs on the bean itself. These are long and very soft. As is well known the bean is exceedingly hard, and is more destructive to the knives and steel grinders than any other in common use. One came to the conclusion after inquiry and seeing the apparatus that the

condition was simply due to dust and lack of cleanliness, but probably the preceding morphia dermatitis had some effect in making the man more susceptible. I may here thank Messrs. T. & H. Smith for their extreme courtesy and ready help, and also state that the facilities for cleansing were always provided, and it was the man's fault for not using them.

Mrs. M—, aged 62 years, housewife, has had recurring attacks of a vesicular eruption on both hands for the last ten years. This originally commenced with weeding a garden, but recurrences since she traces to the use of soaps and sodas. It is well to remember that in her case the skin has become, like the woman, older and less resilient.

A. R—, aged 51 years, gardener, suffering from a vesicular and erythematous eruption on the arms and face. He had been at this occupation for many years, but some years ago his health broke down. Thereafter he found that he had become susceptible to the *Primula obconica*. This illustrates, of course, in the first place the effects of ill-health, which is elsewhere discussed, but from the present standpoint the interest is that the eruption was traced to *Humea elegans* and lasted one week, and that he had been tending these plants for a week before the dermatitis appeared.

Humea elegans is noted as one of the plants that causes dermatitis venenata, but it is less apt to do so than the *Primula obconica,* and the probability is that it would not have affected him had he not previously suffered from primula dermatitis.

A. M—, male, aged 42 years, millworker, suffering from an erythematous eruption on the backs of both hands, reported that he had been six years at the same work, and that the present eruption had lasted eleven weeks. The oil and wool were believed to be responsible for the dermatitis. He also stated that thirteen years previously he had an attack of dermatitis due to alkalis. His skin was definitely seborrhœic, and while this case may illustrate possible previous damage rendering the skin more liable to suffer, it also illustrates the slow breakdown of a seborrhœic skin.

Sites of the eruption.—The following statistics have been carefully drawn up, noted and analysed, because, although one was familiar with the common areas affected, the comparative frequency of each area and the line of spread remained matters for consideration :

Sites.	Cases.	Per cent.
Wide-spread	71	11·4
Arm, excluding the hand	273	44
Arms alone affected	90	14·4
Arms indefinitely*	185	29·7
accompanied†	135	21·5
unaccompanied	50	8

* The term "indefinitely" is used to denote all aspects.

† "Accompanied" means another part or parts involved.

Sites.	Cases.	Per cent.
Arms (extensor aspect)	56	9
accompanied	26	4·1
unaccompanied	30	5
(flexor aspect)	32	5·1
accompanied	21	3·3
unaccompanied	10	1·6
Lower extremity	79	9·8
Legs alone affected	22	3·5
Legs indefinitely	62	9·9
accompanied	45	7·2
unaccompanied	17	2·7
Legs (extensor aspect)	8	1·2
accompanied	7	1·1
unaccompanied	1	·1
(flexor aspect)	9	1·4
accompanied	5	·8
unaccompanied	4	·6
Hands	370	59·5
Hands alone affected	245	39·4
Hands indefinitely	196	31·5
accompanied	70	11·1
unaccompanied	126	20·2
Hands (extensor aspect)	120	20
accompanied	48	7·7
unaccompanied	72	11·5
(flexor aspect)	54	8·6
accompanied	7	1·1
unaccompanied	48	7·7
Face and neck	146	23·5
accompanied	113	18·1
unaccompanied	33	5·3
Feet	8	1·2
accompanied	4	·6
unaccompanied	4	·6
Combinations—		
Hands and arms	81	13
Legs and arms	37	5·9

Sites.	Cases.	Per cent.
Combinations (continued)—		
Face, neck, arms and hands	98	15·7
Face, neck and body	3	·4
Face, neck and legs	4	·6
Arms and trunk	8	1·2
Face and hands	19	3
Arms, legs and face	7	1·1
Hands and feet	6	·9
Trunk	14	2·2
unaccompanied	1	·1

A consideration of the statistics enclosed shows—as naturally would be expected—a preponderance on the hands, viz. in 370 cases; the arms come next in 273 cases, then the face and neck in 146 cases, and the lower extremity in 79 cases.

The hands are more involved in work, and these, with the arms and face, are the most exposed, being generally devoid of covering.

A further consideration of the numbers involving the hand reveals the fact that of the 370 cases where that part of the body was affected, in 245 it had spread no further. Provided with thickened epidermis in the palms, it is readily understood why 120 cases affect the extensor aspects and only 54 the flexor aspects. When this occurs it is generally observed that the spread is mostly between and round the fingers (the area involved most commonly in cheiro-pompholyx), and that the palms remain completely free.

When the arms show manifestations of external irritation the proportion of cases remaining localised is about the same as in the hand, and again while the extensor aspect is most commonly affected —the proportion of 56 to 32 of the flexor aspect—as in the hand, the great majority, 185, spread to both aspects.

On the legs, where the frequency is less, the proportions are almost identical.

On the face and neck a like resemblance is noticeable.

In cases affecting more than one area the combinations are very interesting. The face, neck, arms and hands show 98, being greater than that of the hands and arms (81), indicating that having once spread the eruption readily attacks all exposed areas. In the group of 37 affecting the legs and arms, the spread may be due to clothing

or infection. Only in 19 cases has the eruption spread directly between face and hands and omitted the arms.

Now, while in the case of the combinations the spread may be due to simultaneous exposure to the irritant, no one can study these cases without noticing that although the surrounding area may be somewhat devitalised by the irritant, yet the dermatitis is often spread by a staphylococcal infection which readily supervenes.

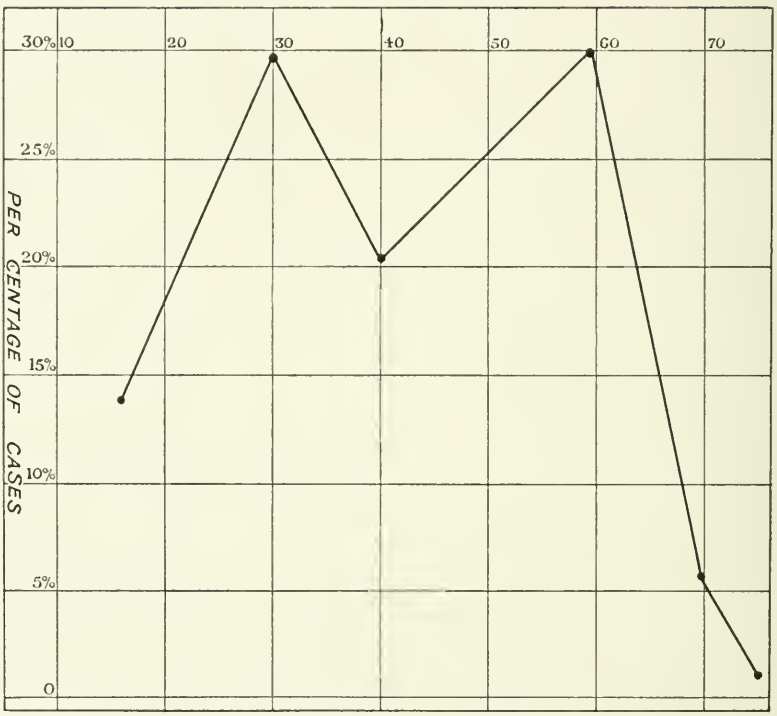
These sites are determined by various factors, namely, the nature of the occupation, the character of the irritant, and the texture of the skin on the irritated parts. For instance, a fluid irritant will naturally affect, in the first place, only the hands and forearms when these are alone engaged in the occupation, but a vapour or dust will irritate not only the arms but the face as well, and in certain cases, where the hot vapour can penetrate through the clothing, other parts of the body may be affected. In the case of the housewife the palms, although exposed to irritation, are effectively protected by Nature. An eruption is often noticed on the front of the wrist and the extensors of the forearm because naturally they come more into contact with the irritant than the flexors. The maltman, working and often treading amongst the steaming grain, is seen at times to develop an erythematous dermatitis chiefly in the lower limbs, which have become sodden, and also on the face, which is uncovered. To a certain extent also cognisance should be taken of the fact that certain parts are more easily cleansed than others. The average coal miner working in a moist seam only wears a thin semit while engaged in his labours. On returning home he removes this garment and washes the trunk down to the waist, the lower region being left severely alone. As a rule no eruption occurs on the trunk, but it is quite common to find a staphylococcal infection of the buttocks and groins, due to the imperfect washing of, or non-removal of sodden dirty garments from, these parts.

Age at onset.—There may be some falsity in these figures because many of the patients coming into the infirmary move from one occupation to another. For instance, a man may be working as a carter one day and the next employed as a labourer in a chemical factory, or a girl may have been working in a printing works, get married and have household work to do subsequently.

The following are the statistics :

Ages.	Cases.	Per cent.
Under 20	86	13·8
20 to 30	180	28·9
30 „ 40	127	20·4
40 „ 60	187	30·1
60 „ 70	34	5·6
Over 70	7	1·1

Age at Onset of Dermatitis.



The two crucial periods are evidently between 20 and 30 and 40 and 60. Probably under 20 and over 60 the numbers working are fewer, and between 30 and 40 is the age of activity, and also the age at which the skin has fully recovered from the effects of the changes at puberty. The effects of puberty on the skin are seen in acne, which may commence at fourteen and last well on into the twenties.

Duration of the attack.—The duration of the attack is sometimes very vaguely given, but details, so far as they could be obtained, are recorded in 594 cases :

Duration.	Cases.	Per cent.
A week and under	64	10·7
1 to 4 weeks	150	25·2
1 to 2 months	101	17
2 to 6 months	113	19
6 months to 1 year	60	10·1
1 to 2 years	47	7·9
2 years and more	59	9·9

One has to take along with this the figures for those who have suffered from previous attacks, and this has been voluntarily mentioned in 100 cases. The economic problem bears strongly on this matter. If a man or woman has a post they may be loth to leave it because of good pay, or more often because of the difficulty of getting another. As a result of this a slight irritation is at first ignored, and while, in some cases, the skin may develop a resisting power, in others the sufferer applies some sort of application to allay the irritation and remains at work. In other types after a week or two work may have to be stopped. Treatment necessitates some weeks, and if that is inefficiently carried out it may last much longer. The victim feels the want of money even when living in these gilded times of national health insurance, and, when he or she sees the skin dry, and cracking ceased, considers it is time to resume work. Therein is the grave error that one has constantly to combat. Although the surface epidermis has recovered the true skin underneath is still swollen from the vascular dilatation and infiltration. In such a state it rapidly succumbs to the effects of re-irritation. Such a patient carries on for years with an unhealthy skin working for certain periods and undergoing treatment for other periods. This is frequently noted in the cases of decent charwomen, who, having no other source of income, live a haphazard existence, partly able to work and partly on the sick list.

The following illustrate this type of recurrent attack, while other cases will be found noted under other groups :

M. G—, male, aged 64 years, works in a tweed factory. He was two years at his work before the irritation appeared. He was exposed to the actions of various dyes and chromes, and the eruption has relapsed at irregular intervals for the last twelve years. The skin is definitely seborrhœic in type, and the eruption affects the arms, hands and legs in the form of an erythematous and scaly condition of the skin. The palms even are markedly thickened and cracked.

No seasonal variation could be ascertained, but it was vaguely stated that cold or hot weather made it worse. A more careful questioning elicited the fact that alterations in health were a more likely cause—if the dye-stuffs did not change. In his case a so-called "cure" was never a return to normal skin.

Mrs. B—, aged 37 years, a housewife, suffering from a nummular, moist eruption on most of the aspects of the hands and forearms, attributable to soaps and sodas, gave the following history:

The first attack was ten years previously, the second six years previously, and the present attack had lasted three months, during which period she had to nurse a sick husband. She also manifested both seborrhœa and hyperidrosis. The worry and anxiety accounts for the last attack, and some alteration in health —of which she had no remembrance—no doubt accounted for the others.

J. D—, female, aged 25 years, rubber worker, with very evident hyperidrosis of the hands, reported herself with a papular and vesicular eruption on the forearms. This commenced soon after her initiation into this work, and has lasted with periods of recovery for five years.

A. P—, male, aged 48 years, mason, has been at his trade all his working life, and has suffered from recurrent attacks of dermatitis for many years, which attacks, he states, vary with the weather. The sodden skin of the sufferer from hyperidrosis accounts for the eruption all over the hands—moist and crusted on the back, and thickened and deeply cracked on the palms. The present attack has lasted eight weeks, but his hands bear the marks of continued devitalisation.

Seasonal variation.—This may have some effect in certain cases, but especially in those associated with hyperidrosis. I have examined records for previous years, but there is no regularity. I append statistics for the past year:

Month.	Total skin cases.	Dermatitis cases.	Per cent.
January	107	10	9·3
February	74	7	9·4
March	101	13	12·8
April	87	13	14·9
May	96	5	5·2
June	101	6	5·9
July	98	8	8·1
August	81	7	8·6
September	118	6	5
October	112	11	9·8
November	101	2	1·9
December	76	8	10·5

How long at occupation.—Complete records are often difficult to obtain, and were not always secured in the writer's absence. For 140 cases the figures are as below:

Time.	Cases.	Per cent.
Over 3 years	56	40
1 to 2 years	15	10·7
6 months to 1 year	11	7·8
2 to 6 months	31	22·1
2 to 4 weeks	16	11·4
2 weeks	1	·7
1 week and under	10	7·1

It is remarkable that the great majority have been so long at work. Is it an illustration of the old adage of frequent dropping wearing away a stone? Apparently a few days is common, but if a week or more has elapsed it becomes more common, and then the number gradually increases up to six months. One-week cases are probably those in which the irritant is pretty powerful, and those occurring later are due to more steady chronic irritation. According to the above table we find that again after thirty or forty years of work there is a great increase, as if the skin got thoroughly worn out.

Fordyce remarks that "those with special susceptibility of the skin have to give up soon—these, however, being in the minority. The majority only develop the eruption after being at work for a long time. After an outbreak acute exacerbations are common, and this is a frequent type for hospital."

The following two cases illustrate types of long and short duration at work. In the first case the irritant itself was also more active.

J. C—, male, aged 30 years, came to the Royal Infirmary with an erythematous eruption on the face and arms, the latter also showing a papular phase. On inquiry it was ascertained that he had been working in a chemical factory at the preparation of di-acetyl morphia. With a typical seborrhœic and hyperidrotic skin it was not surprising to find that he had only been engaged at this occupation for fourteen days.

M. T—, female, aged 17 years, exhibited a swollen and vesicular eruption on both hands extending up to the arms and chest. This was ascertained to be due to the irritation of the moist clay which she worked with in the brick-works. She had been three years at this work, but the eruption had only lasted for three months.

Alterations in health.—The foregoing figures and the deductions possible from these are of value, but of much greater importance is the determination if possible of the predisposing causes.

Obviously, therefore, we have to consider the constitution as a whole, and it is self-evident that any lowering of the general vitality

will lower the vitality of the skin, which is well supplied with blood-vessels, nerves and lymphatics. In eighty-six cases, *i. e.* 13·8 per cent., this is recorded. Consequently we find that cases occur following such illnesses as influenza or pneumonia. It is common observation that the individual who has not fully recovered from such an illness is often spoken of as feeling "soft." While this may indicate muscular weakness, it will frequently also be accompanied by a tendency to perspire on slight exertion. Undoubtedly this as well may be due to the muscular weakness lowering the tonicity of the cutaneous blood supply, but it may also be due to vaso-motor weakness and therefore have a nerve causation.

Observations will later be given showing that hyperidrosis as a condition *per se* is a predisposing cause of occupation dermatitis. The skin is an important excretory organ, which, as Pembrey states, excretes twice as much as the lungs and almost as much as the kidneys. It follows accordingly that imperfect excretion, such as results from renal inadequacy or constipation, will throw a greater strain on the skin. This skin under this strain will naturally be more liable to succumb to irritation.

The other factor with which it is closely allied is the question of intestinal toxæmia, which is known to produce numerous skin eruptions such as erythema multiforme, dermatitis herpetiformis and urticaria.

The French school, as represented by Jacquet and Jourdanet, go so far as to regard all cases of trade dermatitis as due to indigestion occurring in the individuals. Of 27 cases 22 yielded to treatment along this line. Darier also cured 4 cases in 7 days by treatment of digestion without local treatment, and nine were cured or improved without suppression or professional contact. The writer has tried dieting in many of these cases but without avail unless as regards improvement of the general health, and he agrees with Herxheimer, who reports no progress by dieting alone, and states—"There is no foundation for the assumption that the susceptibility implies a difference in the condition of the internal organs or to the vital processes in general."

The effects of precedent illness are exemplified in the following cases:

M. D—, aged 56 years, had been for a year assistant beater in a paper mill, his duty being to mix the wood pulp with alum, vitriol and resins. The digestion

was quite normal, but he showed a definite seborrhœa and hyperidrosis. The eruption, which had lasted three weeks, was observable on the face, hands and forearms. On the face it was of an erythematous type, but on the arms there were moist nummular patches. Six months previously he had an attack of bronchitis of seven weeks' duration. Undoubtedly this illness had lowered the general vitality and increased the hyperidrosis, so preparing the way for the breakdown of the skin.

A.C—, female, aged 21 years, a worker in a cotton mill for five years Her duty consisted in making fishing nets, and for the last two years she had suffered from a papular eruption on the backs of both hands. This eruption followed immediately after an attack of rheumatic fever.

W. B—, male, aged 58, linoleum worker for thirty years, came with an eruption on the hands and forearms of an erythematous and crusted type of four months' duration. His duties consisted in mixing paints, oil and tar in the preparation of the linoleum. His hands were much more moist than normal. He voluntarily gave the information that measles directly preceded the attack, making the skin unfit to resist the irritation, which it had been able to do for the twenty-nine years previous.

D. F—, female, aged 20 years, brickyard worker, suffering from an eruption on the palms of a vesicular type which she traced to the glaze used in the bricks. Her general health was notably below par. She was anæmic, suffered from gastric disturbance and dysmenorrhœa.

The effects of the debility of the skin following on the menopause or again at old age are often noticed, and the following cases may be mentioned :

C. M—, female, aged 49 years, charwoman, suffering from a scaly thickened eruption on the forearms and hands, which had lasted two and a half years, and attributed by her to soaps and sodas. She showed a marked seborrhœa not only of the scalp but of the ears and breasts typical of the climacteric period, when there is much vascular and nerve disturbance in many cases accompanying the glandular change.

M. L—, aged 61 years, had been all his life at a bottler's establishment. He developed an eruption, which had lasted four months, of a moist, scaly nature and affected both hands. He obviously looked an old man (old at 61), and the senility of the skin was doubtless responsible.

A. P—, male, aged 55 years, a metal working engineer during his working life, came with a papular, exuding eruption which had commenced on the hands and spread to the trunk. Again this man was older than his years.

R. M—, aged 65 years, miner, who had worked in the mines since boyhood, developed an eruption three or four months previously and lasting till seen, first in the form of a staphylococcal infection of the thighs and then affecting the backs of the hands and forearms. The fibrous development in the skin, the diminished elasticity, the lowered vascularity and their concomitants were undoubtedly responsible in his case for the skin succumbing at last to the filthy environment.

Mrs. M—, aged 45 years. No previous attacks, but now debilitated and suffering from the flushings of the menopause. She came with a scaly eruption, nummular in parts, affecting the dorsal aspects of both hands and attributable

to the modern cheap soaps and sodas. Her work was the same, the irritations were the same, but in her was the change, and the skin being part of the whole suffered because it was the first line of defence.

A. L—, male, aged 61 years, worked for seven years in a glass works with sand, carbonate and nitrate of soda. He came with an eruption of three weeks' duration, scaly in character and affecting the flexors of the forearms and face. According to his account the eruption appeared on a warm day in June when the strong wind blew the sand and soda on to him. That he had a tough skin is indicated by the fact that he often used to wash with soda, but he now naturally cannot do so, and one can safely state that during seven years he had been exposed to many windy and hot days. The inference therefore is that the senile skin is responsible.

Of some interest are the number of cases who voluntarily gave a history of a previous injury and very commonly a burn :

M. F—, female, aged 37 years, engaged in domestic labours, came with a moist and crusted eruption on the backs of both hands and forearms, the cause of which she attributed to soaps and sodas. There was, on examination, a definite seborrhœa, but she voluntarily gave the information that she had previously been burnt on both arms. The eruption had lasted a year, and she had long been accustomed to domestic work, so that it may be inferred that the lowering of the vitality by the burn is a responsible factor.

R. R—, male, aged 56 years, French polisher for forty years. The eruption, which has lasted nine months, was moist and œdematous and affected the hands, arms and face. He traced the cause to the use of the chromates, nitric acid and turpentine, and the turpentine he found was the most irritating, but he also voluntarily gave the information that he had burnt his fingers in hot glue before the outbreak. Previous to this damage to the skin the irritants had never affected him.

Numerous cases have been noted where the patient has resumed his former avocation after having been at the war. Is it that the skin has lost its resisting power through lack of use, or—what in the writer's opinion is more probable—that there has been some lowering of the general vitality and alteration in the glandular structure of the skin ?

The following cases may be mentioned :

M. C. K—, aged 27 years, linotype operator, was seen suffering from a swollen erythematous condition on the arms and face. He gave the history of having been working at this before the war, having then been five years in the Army. He resumed this work a year ago, and the present eruption broke out after he had been eleven months so employed, and it has lasted a month. It was noted that his hands were markedly hyperidrotic, which probably explains his susceptibility.

W. W—, aged 27 years, gardener, and had been for eight years. He had been in the Army, but resumed work as a gardener a year ago. During his period of

army service he had suffered from furunculosis and probably scabies. He exhibited a definitely typical dermatitis of an erythematous and vesicular type, affecting the face, arms and hands and traceable to the *Primula obconica*. He stated that before the war he was immune to irritation from this plant. In his case there is no doubt that the furunculosis had lowered the general vitality of the skin.

A. M. S—, aged 42 years, had been a glass-blower all his life. For three years and nine months he was compelled to serve in the Army, and six weeks after resuming work he developed an eruption of a pustular and cracked type which appeared on the palms and the flexors of the fingers. This eruption has occurred five times in seven months, and the present had lasted ten days. As a glass-blower he works with a hot iron and often with water, and while his hands had been previously resistant they were now not so owing to some alteration.

At present there are at the Out-patient Department of the Infirmary a considerable number of these cases in attendance, and the difficulty of obtaining a cure and the liability to relapse is a matter of common observation and remark. That the war had a serious effect on the nervous constitution of many is admitted, but one also feels that many of these individuals do not desire a complete cure. They prefer to live on pensions and free treatment, and the best results are obtained when they are kept under strict observation. The writer is quite convinced that in a certain percentage the relapses are purposely brought on to ensure further doles.

Preceding skin condition.	Cases.	Per cent.
Seborrhœa	175	28·1
Hyperidrosis	168	27
Pediculosis	17	2·7
Syphilis	5	·8
Varicosity	3	·4
Xeroderma	8	1·2
Psoriasis	1	·1
Chilblains	3	·4
Scabies	4	·6
Acne	3	·4
Urticaria	3	·4
Furunculosis	1	·1
Impetigo	1	·1
Senile	2	·3
Septic sore	1	·1

Preceding skin condition.—Regarding preceding skin conditions 63·6 per cent. were on examination found to have definite manifestations of these.

Seborrhœa takes precedence in 28 per cent. of the total cases, and its significance can scarcely be over-stated. The name is an unfortunate one, but it is a recognised entity and implies a faulty excretion of the natural oil of the skin. The sebum in a healthy skin is neither too fluid nor too dry and renders the skin pliable while also protecting it from irritation. Experiment has revealed the fact that the horny layer is especially soluble in alkali and sebum naturally will counteract its influence. If the sebum is too thick it will accumulate in parts and other parts will be devoid of it. If too thin it probably does not provide a proper lubrication. There also may be some chemical change in the sebum of an unhealthy skin which renders it a less satisfactory lubricant to the epithelium. Particularly on the hair does one notice the effect of seborrhœa, where the lustreless appearance and the lack of resiliency is patent to the most casual observer. On the rest of the skin it will undoubtedly have a similar effect, although on the finer lanugo hairs it is not so noticeable. While present in most parts of the body the sebaceous and sweat-glands in certain areas are more numerous or larger. On the face and neck they are both numerous and large, and there we find 146 cases.

Excessive sweating is noted in 168 cases, *i. e.* 27 per cent. This, in many instances, is associated with some debility, while in others it is the result of working with hot materials. In any event the effect is to produce a sodden epidermis, and a sodden epidermis is more liable to break down when exposed to irritation. A familiar example of this may be seen in the person who rows in a boat with dry hands and suffers little inconvenience except cornification after frequent exercise, whilst another who perhaps has been fishing and got his hands moist will frequently be found to develop blisters after rowing.

Xeroderma is a congenital condition where there is a thickening of the horny layers of the skin and an excessive dryness due to imperfect development of both the oil- and the sweat-glands. Owing to its lack of pliability the skin readily cracks, and it is not to be wondered at that it predisposes to occupation dermatitis.

Pediculosis produces itching and abrasion of the skin, which rapidly becomes septic. This sepsis, lowering the vitality of the skin, makes it much more prone to further irritation in connection with work. Pediculosis was found in seventeen out of the number of cases.

The following cases illustrate the effect of seborrhœa:

R. M—, aged 23 years, plasterer, developed a nummular scaly eruption on the extensors of the forearms shortly after going to work. The condition subsided for two or three days and then recurred, the present attack having lasted ten days. He had been in the Army for one or two years. On examination he showed a definite manifestation of seborrhœa extending to the scalp and ears. He, personally, was inclined to blame the modern plaster, which, as is known, dries much more quickly and is greatly different from the older-fashioned material used.

R. M—, male, aged 30 years, has been in a chemical factory working with opium for six months. The eruption, which had lasted thirteen weeks, was erythematous and affected the face, eyes, forearms and groins. On careful examination he showed definite seborrhœa of the scalp and flexors as well as some hyperidrosis. This case illustrates very well the fact that this well-known irritant took a long time to produce damage to his skin.

Mrs. J—, aged 24 years, laundry worker for three months. The eruption, which had lasted for a month, was erythematous and vesicular in type, and affected the face and the backs of the hands. It was traceable to the effects of steam, soaps and sodas incident to her occupation. She again showed a marked seborrhœa.

A. L—, male, aged 49 years, rubber worker, came with a moist, nummular and partly crusted condition all round both arms which had lasted off and on for about twenty years. He blamed rubber solution and chalk used. The seborrhœic condition was again here very evident.

S. M—, male, aged 45 years, had worked as a confectioner for twenty-nine years. The eruption, which had lasted two months, was moist, scaly and erythematous, and affected the backs of both hands and forearms. He blamed the sugar and flour. This patient showed a marked seborrhœa and hyperidrosis. It is possible in his case that changes in the sugar and flour may have had something to do with the occurrence after this long period at work, but age forty-five affects men as well as women, and at this time there is a glandular transition probably making him more susceptible.

M. G—, female, aged 18 years, came with a scaly, erythematous eruption on the palms and showed elsewhere a marked seborrhœa. The following history is interesting: Two years ago she had a similar attack when a cleaner in a shop, but this she stated partly disappeared. For the last five months she had been working as a French polisher, and the eruption, traceable to the turpentine and oils, only started after three months at the work, but had continued over two months. There is obviously here again a case which shows, not acute susceptibility, but a slow breakdown.

C. J—, aged 14 years, photographic worker, worked for seven weeks before the present eruption, which had lasted one week, appeared. It was of a papular nature and affected the extensors of the arms and hands. She showed a very

definite seborrhœa, and again illustrates not so much the susceptibility as the gradual breakdown on a seborrhœic skin.

The following cases may serve to illustrate the effect of hyperidrosis in the production of occupation dermatitis:

Mrs. S—, aged 62 years, whose occupation consisted in working with hot solutions of various coloured dyes, came with a papular and very itchy eruption affecting all the aspects of both forearms. The condition had lasted three weeks, and commenced nine days after being at work. Her hands and skin generally were markedly moist, and no doubt this would be intensified by the hot solutions.

D. L—, painter, aged 23 years, commenced at this work six months previously, and developed an eruption which had continued for a week when seen. The cause was found to be a tar paint, which produced a vesicular and crusted eruption on the backs of the hands and the backs and sides of the fingers in the case of a man with a marked hyperidrosis.

M. B—, aged 21 years, dining-car waiter on the railway, came with a vesicular eruption on the backs of the hands lasting six days. He had been at this occupation for three years, and his duties included washing up of plates. His hands showed evident hyperidrosis, and it is of interest that I have seen him on three successive summers with recurrences probably intensified during the hot weather.

The effects of xeroderma is seen in the following case:

J. Y—, female, aged 25 years, rubber machinist. She had been fourteen days at the work before the appearance of an erythematous and scaly eruption on the face and arms. The condition had lasted three weeks, and was traceable to chalk. Her skin, however, on examination, was of the dry, rough type which one associates with xeroderma—a disease which may be regarded as a mild form of ichthyosis.

No further examples are given, as the cases mentioned under "Irritants," etc., also detail accompanying skin conditions.

Other skin conditions which *per se* render the individual more liable to irritation may be illustrated in the following cases:

Mrs. C—, aged 28 years, rubber worker, only three weeks at work, developed a moist, scaly eruption on the fingers, which she traced to lampblack. On close examination the skin generally revealed the fact that she was a sufferer from chronic urticaria. One could literally write her name by producing wheals on the skin, and it could not be wondered at that any irritant would cause still further trouble.

L. M—, female, aged 18 years, also a rubber worker, had been four years at work, but the present eruption had only lasted two weeks, affecting both hands, which were swollen and scaly. The history of a precedent scabies was readily given, and explained the recent susceptibility to the irritation of the cement, which previously had not affected her.

D. M—, male, aged 39 years, heating engineer, after six years at work developed a pustulo-vesicular eruption on the arms which had lasted three weeks. Some weeks prior to this he suffered from pediculus pubis, which had produced pustules, not only on the common site, but up to the axillæ and shoulders.

Conclusions.—The summation of the preceding tables reveals the fact that 481 cases out of the 621—that is to say, 77·4 per cent.—suffered from preceding skin condition or general illness. This percentage is a very high one indeed, and it provides food for reflection. Prosser White's book, the most extensive dealing with the subject, devotes two or three pages to the discussion of the effects of immaturity, ill-health and hyperidrosis, and quite evidently recognises their importance, but not to the same extent as the present writer Youth, he states, is the stage of immaturity, and it is not only sensitive, because of immaturity as he suggests, but for the reason indicated in this paper that youth is the stage of glandular disturbance. It is the mainspring of the watch which is the most specialised part and therefore most liable to break down, so the glands in the skin are the most specialised parts in that organ, and therefore more prone to suffer damage, and still more prone to do so at a stage when they are undergoing change. It is a most significant remark that—"The abnormal activity of certain glands, such as the sebaceous, may heighten predisposition to the ill-effects of certain substances, such as oil, tar and petroleum. Unna says it is needful to look for existing 'seborrhœa,' especially pityriasis capitis, as it increases the susceptibility of the skin."

Hyperidrosis is also mentioned briefly as well as the pre-existence of idiopathic eczema and individual untidiness as being factors of great importance. Idiosyncrasy and toxæmia are dealt with a little more fully.

These extracts are given not as criticising a most valuable work, but as illustrating the fact that little research has been done along the lines of this article. The writer has been in a favourable position in so far that he has had special training on diseases of the skin, with opportunities for seeing a large number of cases. Consequently he has been able to look at dermatitis more minutely from this standpoint than the average medical inspector, who, in the majority of cases, only considers the provision of means to prevent irritation. This being so, and if idiosyncrasy takes as lowly a place in the ætiology as the writer considers, it points to the necessity of a much more thorough examination of candidates for various trades, especially where the individual is to be exposed to the known skin irritants.

The liability to error with all tables of statistics is great, but the

foregoing are the result of many years' observation—literally from 1908 to 1920—and allowing for the known unreliability of the average patient to give accurate information, they have been drawn up as carefully as possible.

Taking the statistical survey in the sequence given in this paper, one may summarise as follows:

(1) There are definite occupations which are liable to cause damage to the skin.

(2) Some irritants act mechanically and others act chemically.

(3) Alterations in materials used may cause the development of a dermatitis in the case of a worker employed for many years at the same occupation.

(4) That a previous dermatitis may subsequently render a worker susceptible to an irritant which he or she could previously resist.

(5) While it is characteristic of occupation dermatitis that it occurs on the parts exposed to the irritant, that the majority of cases occur on the hands, next in order of frequency arms, face, neck and lower extremities.

(6) That spread may be from the irritant itself or may be due to secondary infection.

(7) That the attacks may commence in youth, but, if not, are more common over forty.

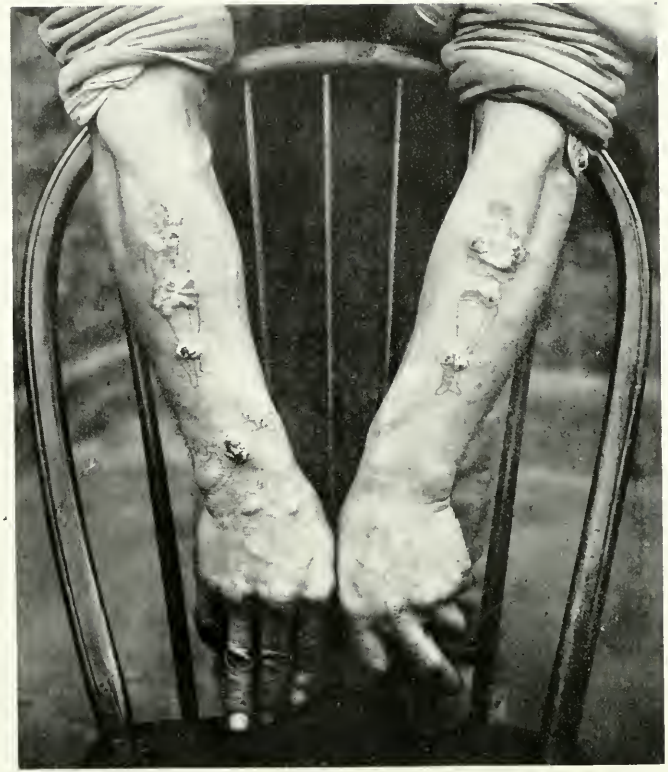
(8) That recurrences are very common. The recurrent type is an exceedingly common one.

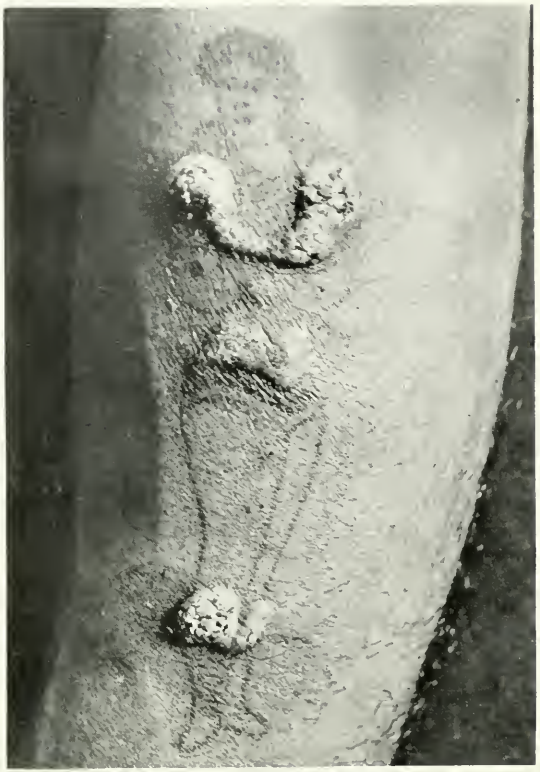
(9) That in the case of a powerful irritant dermatitis may ensue within a day or two, that where there is hyperidrosis it is likely to appear within a few weeks, that where there is seborrhœa there is a more gradual breakdown which may be months or years, that a large number occur after many years, and that the largest number occur after many years due to various causes.

(10) That illness, the climacteric and old age are important points in the causation of an outbreak.

(11) That local injury is also an important factor.

(12) That the condition of the skin should be a matter of close examination in all applicants for occupations which incur liability to dermatitis.





TO ILLUSTRATE DR. ERNEST MALLAM'S NOTE ON AN UNUSUAL COMPLICATION FOLLOWING TATTOOING.

CLINICAL NOTES.

AN UNUSUAL COMPLICATION FOLLOWING TATTOOING.

ERNEST MALLAM, D.M.,
Oxford.

Owing doubtless to the general use of the electric needle for tattooing and to the discontinuance of relying entirely on the saliva of the operator as the sole lubricant during the performance, complications such as cellulitis, syphilis, and tubercle are now relatively very infrequent. And, considering the number of men who have been tattooed during recent years, I submit that it is remarkable how rarely any disaster follows, and therefore feel called on to report one which came under my notice.

In June, 1915, A. R—, aged 33 years, a sapper in the Royal Engineers, was tattooed at Chatham, on the backs of both forearms and wrists, with a decoration of the realistic if somewhat indelicate type so popular with Tommy Atkins, which was coloured red and blue.

All went well till two years after, when, during the summer of 1917, a number of warty growths began to appear on the red areas of the figures. When he came into my ward in the Third Southern General Hospital in the following winter it was noted that absolutely all the red areas, but only the red areas and a very small margin round them, were affected. By this time these warty tumours had been steadily growing for six months and were beginning to show cracks and small necrotic areas, though there was a complete absence of any discharge or exudate. They were entirely confined to the skin, which was freely moveable and not otherwise indurated or inflamed. There was no evidence of glandular infection or of other metastases. The naked-eye appearance and distribution of the affection is well shown in the illustrations.

By the kindness of Capt. F. C. Linton, R.A.M.C.(T.), I was able to ascertain that the man had been tattooed in the usual manner, with a large number of others, by a so-called "professor," who practised the art as a livelihood at Chatham. I obtained some of the red pigment

used, which proved to be ordinary vermilion, or sulphide of mercury. I found it impossible to arrive at any hypothesis as to why this man, after two years of good health, should react in this peculiar manner. The Wassermann was negative and there was no history or evidence of any constitutional disease.

A specimen was removed and examined histologically by Dr. Gibson, whose report I give *verbatim*:

"The pigment-granules lie in the corium, and are surrounded by intense proliferation of connective-tissue elements. The epidermis is markedly hypertrophied and actively proliferating. Cell-nests are present. There is polymorphonuclear leucocytosis both in the corium and epidermis. There is no evidence of any infecting agent. The whole appearance is that of an epithelial papilloma of doubtful malignancy, and should be allied to the condition of chimney-sweeps' carcinoma and the carcinoma of paraffin workers. The causal agent is undoubtedly the pigment."

I have hesitated to accept this reading without obtaining other opinions. Drs. Gray and O'Donovan have also kindly examined the section for me, and have expressed the view that the warty overgrowth is not of the nature of carcinoma cutis, but rather that of lupus verrucosus.

Treatment first with X-rays and subsequently with CO_2 snow had very little effect on it, though as time was a great consideration the latter was only given a short and half-hearted trial, and resort was had to the surgeon, who removed all the affected areas.

The wounds all healed up well.

I have recently seen the man and found that the skin of both arms is quite healthy, and free from either warty growths or keloids.

He is working as a bricklayer, and has developed a group of aggregated warts about the size of half-a-crown on the palm of his left hand, and another about a quarter that size on the right.

These are evidently due to the irritation of his work, and are disappearing quickly under the local treatment provided by his doctor, assisted by the protection afforded by a glove. But their very presence suggests that his skin reacts to any irritation more readily than that of the ordinary labourer.

He appeared to be otherwise well and free from blemish.

It is probable that more experienced dermatologists are familiar

with this condition, but I have only been able to trace one other similar case, *i. e.* that reported by Fox in the *Amer. Journ. Cut. and Gen.-Urin. Dis.*, ii, p. 216. Here the warts—which came one year after tattooing—were numerous, discrete, and apparently much smaller than most of those on my patient. With one exception they were scattered on the indigo lines. We are not told the position of this exception. As the case was four years old when reported, we are given to infer that it was easily cured and caused no suspicion of malignancy or other trouble.

NOTE ON DR. NOXON TOOMEY'S ARTICLE ON HYPODERMIASIS (OX-WARBLE DISEASE).

By K. GRÖN, M.D.,

Senior Physician to the Skin Department of the Municipal Hospital, Ullevaal, Christiania.

As the bibliographical references to the occurrence of gad-fly larvæ in the skin of man, which are mentioned in Dr. Noxon Toomey's interesting article "Hypodermiasis (Ox-warble Disease)" in the *British Journal of Dermatology and Syphilis*, February, 1922, are not complete, nor entirely correct as far as Norwegian literature is concerned, I would put forward some supplementary remarks, amongst which is the observation that the disease here in Norway has been known and described over a much longer period than Dr. Toomey has mentioned, and that the number of cases reported is considerably larger.

The first apparently to have noticed the occurrence of gad-fly larvæ in human skin were the well known naturalists Alexander v. Humbolt and Bonpland; on their journey in the years 1799–1804 to the equinoctial countries in America they detected a species of gad-fly which attacked man, in whom it produced abscesses which most commonly were found on the abdomen. Similar occurrences were apparently noticed in Surinam, where Lambré in Paramaibo (see *Nederland. Weekblad vor Geneeskunde*, July 5th, 1852) observed the larva of an œstrus beneath the skin of a human being. The larva, which was well known there by the name "Muskeeten-Wurm" gave rise to circumscribed swellings in the skin on different parts of

the body from which through a small opening there was evacuated a watery bloody fluid.

The first reports from Scandinavia date almost back to that of Howships. The earliest published account was written by Sundevall who—in *Svenska Wetenskaps Academiens Handlingar*, 1840—gave a detailed description of the larva which was found on a little girl, aged $6\frac{1}{2}$ years, in Halmstad.

Attention to the presence of fly-larvæ beneath the skin in children was first drawn in Norway by L. Esmarck (*Ugeskrift for Medicin og Pharmacie*, March 24th, 1842); he recorded in all 4 cases, of which the earliest had occurred several years previously; all his cases were in children.

The credit for a fuller presentation of the subject is, however, due to S. Höegh, of Söndmöre, whose first account appeared in a letter read before the Medical Society, April 26th, 1854 (*Norsk Magazin f. Lægevidenskaben*, 1855, p. 69); later in the same journal, 1869 (vol. 23, pp. 489–508), he gave a more detailed account of the disease based on 22 cases of his own; the majority (20) of them were children of ages 3 to 12 years. He distinguished (1) recurring series of swellings with only one larva, (2) recurring ditto, with several larvæ, and (3) persistent single swelling with one larva. The most frequent site of the tumours' occurrence was the head.

The case added by W. Boeck (*Medical Society's Proceedings*, 1871, p. 227), was one referred to him from the country, as also was that which Winge reported with two larvæ. Borthen's case was observed by himself and the parasite in question demonstrated by Heiberg. The latter has later and more fully reported and demonstrated the larvæ from three cases—one December 18th, 1878 (*Proceedings Medical Society*, 1878, p. 285), and two October 5th, 1881 (*Proceedings*, 1881, p. 266). An eminent zoologist, Robert Collett, now deceased, maintained that there was no parasite specific for man (*Œstrus hominus*), but that the examples found were of the nature of an hypoderma, probably *H. bovis*. Of this same opinion was a Norwegian entomologist Schöyen (*Swedish Entomological Journal*, 1886, vii, p. 171), as had also been asserted previously by Allen (quoted by Toomey).

Of more recent years is a communication from Dr. Münster-Mohn (*Med. Revue, Bergen*, 1905), and Fr. Harbitz reports in all five cases

from different parts of the country with the majority from Vestland in *Norsk. Magazin for Lægevidenskaben*, 1913, No. 10, under the title "The finding of some animal parasites in man: demonstration before the Medical Society, March 12th, 1913."

There must, therefore, have been observed in Norway altogether nearly 35 to 40 cases, probably considerably more, as the majority of cases have perhaps not been published. A remedy commonly employed in Norway is the application of a ring about the swelling, the ring being pressed firmly against the skin by means of a handkerchief or some such article, so that the larva cannot escape, and thus spontaneously or by surgical interference is evacuated.

From Denmark, in an article by J. E. V. Boas (*Hospitalstidende*, No. 8, 1907, and *Monatshefte für prakt. Dermatologie*, May 15th, 1907), entitled "*Larva migrans*—a gastrophilus larva in the skin of man, occurring in Denmark," there is in addition to a case of gastrophilus larva beneath the skin in the case of a child, reference made to two further cases of Hypoderma larvæ in men, one somewhat doubtful (Eschricht, 1845), the second quite definite (P. V. Gad, 1902). Both of these were from Jutland.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

CASE OF PLURIGLANDULAR DYSENDOCRASIA WITH A NOVEL CUTANEOUS SIGN. Karel Gawalowski. (*Acta Dermato-Venercologica*, ii, 3, p. 370.)

The case reported was that of a married woman, aged 26 years, who had suffered from epilepsy since the age of twenty, and whose father also had been an epileptic. She had been twice pregnant, during which periods the irritation of the skin had been markedly mollified, to become aggravated after the second parturition.

The skin-condition of the scalp showed alopecia with thickening accompanied by desquamation and some few crusted pustular lesions; of the face roughness, desquamation and a swollen appearance; the ears were drawn, thickened, and showed fissures and crusts. The outer third of the eyebrows was lacking. The skin of the trunk and limbs was rough and rugose, with all the follicles prominent, this condition being most marked on the breasts and shoulders, where the follicles appeared as round papules capped with horny spines. Complete absence of lanugo hairs. Colour of the skin was a dirty white, with a yellowish passing into a brownish tint, most obvious on the breasts, folds of the groin and in the axillæ. Complete absence of axillary hairs.

Radiographic examination revealed enlargement of the sella turcica, a well-developed appearance of the bones of the left hand, with some slight enlargement of the second, third and fourth fingers, and definite enlargement of the thymus gland.

In this case a pluriglandular dyscrasia of the thyroid, pituitary, thymus and ovarian glands was suggested, in which the primary lesion was probably that of the pituitary of the nature of acromegaly. The inter-relation and interaction of these endocrine glands is discussed at some length. W. J. O.

CASE OF ACUTE GENERALISED SCLERODERMIA. Hans Sivertsen. (*Medicinsk Revue*, October, 1921.)

The case reported is that of a boy, aged 7 years, who, after two months' apparent indisposition, showed symptoms of acute rheumatic fever with pericarditis followed after eight days by an alteration of the skin of the neck, extending quite rapidly (in the course of a few days) over practically the whole body with the exception of the scalp, hands, feet and posterior surfaces of the thighs and legs. The face assumed a stiff, mask-like expression; the tongue, too, was stiff, and could not be protruded beyond the teeth. The peculiar feature was the parchment-like, almost woody hardness, which allowed no pitting on pressure, and a suggestion of the underlying muscles being infiltrated and adherent to the hard skin. No alteration in sensation and no tenderness. After ten weeks in bed the boy was allowed to be up, and the whole condition gradually cleared, to leave the skin quite free of any perceptible abnormality. W. J. O.

CASE OF SCLERODERMIA NEONATORUM. H. Westergaard. (*Medicinsk Revue*, March–April, 1922.)

Case report of a female infant with symmetrically-distributed deposits of hard wax-like masses in the subcutaneous tissue, most marked on the thighs, buttocks

and back. In addition there was considerable rigidity of the lower limbs, suggesting a cerebral diplegia following the difficult labour. In the course of three months the skin became quite supple and all the hard masses disappeared. The writer's differentiation of this case from sclerema neonatorum is not clear, nor convincing. W. J. O.

SCLERODERMA FOLLOWING NERVE INJURY. Lyle B. Kingery. (*Arch. of Derm. and Syph.*, 1922, v, p. 579.)

A case is here reported of scleroderma, typical in both its clinical and histological details, which occurred in the distribution of a traumatised nerve. The patient was a medical student, aged 26 years. He had had a root abscess in connection with a lower first molar tooth. This necessitated extraction of the tooth, which was done under local anæsthesia. Three weeks after the operation a depigmented macule appeared on the cheek opposite the extracted tooth. This spread, and in four or five weeks included the lower half of the left side of the face. Eight weeks later the affected skin became thickened and stiff and gradually assumed the characters of scleroderma—a diagnosis which was verified by histological examination. J. M. H. M.

SCLEREMA NEONATORUM. Alex. Brinchmann. (*Norsk. Mag. f. Lægev.*, April, 1922.)

This report concerns a male infant who appeared stiff with a hypertonic condition of the body and limbs on the day following birth, when there had been considerable difficulty in inducing respiration after the mother's prolonged labour. When first seen by author at age of 5–6 weeks there was a pronounced wax-like thickening of the subcutaneous tissue occurring in patches over the limbs, thorax and back, without any accompanying alteration in the appearance of the overlying skin. In addition there was some intertrigo and persistent pyodermia, which cleared under treatment. The sclerematous condition gradually improved to leave no sign at the infant's age of five months.

The unique feature of the case was the demonstration, in the histological examination of the one piece of tissue excised, of deposits of amorphous chalk granules in many of the fat alveoli of the subcutis, which also showed connective-tissue fibre, of varying dimensions arranged in strands about the fat alveoli, giving a lobulated appearance to the section. There was no round-celled infiltration, but some giant cells along the connective-tissue strands. No trace of chalk could be found in any of the arteries, in their walls, nor in their lumina. W. J. O.

PHLEBITIS TUBERCULOSA NODOSA CUTANEA. Dohi and Hashimoto. (*Jap. Zeitschr. f. Dermat. and Urol.*, April, 1922, xxii, No. 4.)

This is an attempt by the authors to differentiate between the symptoms of Bazin's disease and tuberculous lesions which localise themselves symmetrically to the course of the saphenous vein and its tributaries.

The lesions consist of firm subcutaneous nodules, and vary in size from that of a pea to a finger-tip. They are often spindle-shaped, and the overlying skin is usually not attached to them. The patient's general health is not affected as a rule, but clinical examination may reveal apical catarrh, old pleuritic scars or

scrofuloderma, or papulo-necrotic tuberculides. Sometimes typical "Bazin" lesions are present, and the von Pirquet test is always positive.

In two of their cases (out of the four published) tubercle bacilli were demonstrated in the intravenous thrombi, and typical giant-cell systems were present in the sections from all of them, whereas the inoculation of guinea-pigs was not successful.

In the diagnosis acute cases have to be differentiated from erythema nodosum and chronic types from erythema induratum (Bazin).

The nodules of the phlebitic tuberculide are sharply demarcated and have a much firmer consistence than those common to the Bazin types. H. C. S.

NEW GROWTHS.

MULTIPLE SOFT WARTS ON THE BUCCAL MUCOUS MEMBRANE. Stern. (*Derm. Wochenschr.*, 1922, lxxiv, No. 12, p. 274.)

The diagnosis of this exceedingly rare condition is based by the author on the histological findings. There were, briefly, hypertrophy and hyperplasia of the interpapillary processes and prickle-cell layers, parakeratosis, but no hyperkeratosis. Vascular dilatation in the papillary body and increase of connective-tissue cells without round-celled infiltration. The differential diagnosis of condyloma acuminatum is discussed, and the latter rejected on histological grounds.

The condition, of which an excellent illustration is given, occurred in a girl, aged 14 years, and involved the inner surfaces of both lips only. It had been present for two years. There were no warts on the fingers, by inoculation from which the infection could have been derived, as described in two similar mucous membrane cases by Max Joseph (1898), and one by Anderson (1904). The ætiology therefore remains obscure, but the author suggests as a possibility the stimulus of an attack of diphtheria, when the patient was 12 years of age, and since when the mother had noticed the eruption.

A cure was effected by excision with scissors. H. C. S.

HÆMANGIO-SARCOMA OF THE SKIN. Arthur M. Greenwood and Theodore K. Lawless. (*Arch. of Derm. and Syph.*, 1922, vi, p. 10.)

The patient who forms the subject of this case was an elderly man. The affection had begun, when he was forty-four, on the face as a uniform redness, which gradually covered the face and neck, and later appeared in other parts of the body. The affected skin gave the appearance of a superficial vascular nævus, which varied in shade from crimson to purple. In addition to the diffuse areas were crimson-red papules, varying in size from a pin-head to a pea, ring-like lesions, with a slightly elevated border and small pigmented macules.

A histological examination was made, and this showed a cellular infiltration arranged parallel with the epidermis in the form of islands and various-sized cords, in which were many vascular channels. The cells were oval, many of them being large, and containing from 1–5 nuclei, and resembled endothelial cells. In many places these cells were sending out protoplasmic substances, marking a tendency to the formation of vascular channels.

Histologically the condition appeared to be an hæmangio-sarcoma, or, as it is sometimes called, an hæmangio-endothelioma. The nævoid arrangement of the growth suggested that it might have originated in a nævus. J. M. H. M.

PATHOLOGY.

THE PATHOLOGIC HISTOLOGY OF SYNOVIAL LESIONS OF THE SKIN. George M. MacKee and George C. Andrews. (*Arch. of Derm. and Syph.*, 1922, v, p. 561.)

Recently an article appeared on this subject by Montgomery and Culver, in which a statement was made by them that the lesion is a papilloma or wart which has undergone colloid degeneration. According to the writers, however, this view is incorrect, and they still maintain that the lesion is a cyst, and probably a synovial cyst, connected with the capsule of the underlying joint and independent of the overlying skin. In connection with the assertion that it responds to treatment by X-rays and radium, the writers consider that this may be explained as the result of inhibition of the activity of the secreting cells in the wall of the cyst, and a subsequent gradual absorption of the cyst-wall.

J. M. H. M.

HYPERSENSITIVENESS TO LOCAL CONTACT WITH THE ARSPHENAMINS PRODUCING CHRONIC ECZEMATOID DERMATITIS AND ASTHMATIC SYMPTOMS. Joseph V. Klauder. (*Arch. of Derm. and Syph.*, 1922, v, p. 486.)

In this contribution a case is reported of the occurrence of chronic dermatitis and respiratory symptoms due to external contact with arsphenamin. The patient was a doctor, and a scaly erythematous eruption developed on his hand which he attributed to contact with the drug. This was associated with sneezing, coughing, and a sense of constriction in his chest whenever he opened an ampoule of neoarsphenamin. This hyper-sensitiveness to the drug was believed to be due to a drop of 1 in a 100 solution, which he had had injected subcutaneously into his arm for experimental purposes some eight months previously.

This points to a danger which may result from faulty venipuncture where the drug gets injected outside the vein. This may result not only in discomfort and pain but also in the production of a sensitisation to the drug, which may end in the subsequent development of one or the other type of arsenical dermatitis.

J. M. H. M.

TREATMENT.

NON-SPECIFIC PROTEIN THERAPY. Edward Ahlswede. (*Arch. of Derm. and Syph.*, 1922, v, p. 586.)

The value of non-specific protein therapy in the treatment of skin-diseases is referred to in this paper. The non-specific protein employed was germ-free and toxin-free milk albumin solution. This was prepared under exact bacteriological technique, and 10 c.c. of it was injected into the buttocks. This was followed in from six to ten hours by a reaction in the affected skin. Three days later a second injection was given, followed by a third and fourth injection at similar intervals. When the reaction died down a cure might result.

This treatment was found to be of value in acute and chronic staphylococcic diseases of the skin (furunculosis, pyoderma, etc.), in superficial and deep trichophytia, in buboes, gonorrhœic complications, carbuncles, and cases of chronic suppuration. No hard and fast rules could be laid down concerning the number of the injections and the interval between them. J. M. H. M.

SYPHILIS.

THE BORDET-WASSERMANN REACTION IN EFFUSIONS IN SYPHILITICS. Riser. (*Ann. de Derm. et de Syph.*, 1920, 6th ser., i, p. 452.)

Sixteen patients with old-standing syphilis who showed pleural or peritoneal effusion or œdema of the legs were examined. The writers assert that the positive Wassermann reaction in the effused fluid corresponds with the blood reaction and does not prove local syphilitic lesions. These views were confirmed by post-mortem findings. H. M. C.

DERMATITIS EXFOLIATIVA UNIVERSALIS IN THE COURSE OF ANTILUETIC TREATMENT WITH NEOSALVARSAN. R. Sramek. (*Ceská Dermatologie*, 1922, iii, No. 3, p. 64.)

The case is one of a severe hypersensitiveness to neosalvarsan. The initial dose (0·45 grm.) brought on two angio-neurotic attacks, temperature, severe angina with exudate, and erythrodermia universalis on the third day. Symptoms cleared up and did not reappear under mercury. The tentative dose of 0·15 neosalvarsan brought on again the angio-neurotic complex, a severe dermatitis exfoliativa universalis with changes in the nails, loss of hair, and a marked hyperkeratosis plantaris and palmaris. Histological examination of the patient's skin showed a striking dilation of the skin capillaries and their crowding with blood-corpuscles—a finding that would agree with Unna's explanation of the nature of the dermatitis exfoliativa, namely a vasoplegia. This vasoplegia may be due to the direct effect of arsenic on the blood-vessel walls (dermatitis is much less common after intramuscular injections), or due to the effect of arsenic on the nerves or the glands maintaining the tonus of the blood-vessels. The course of treatment of the author's case showed that the vasoplegia depended undoubtedly on the changes in the thyroid. The thyroid dysfunction was also indicated by the changes in the hair, the nails, and anidrosis. The patient recovered under the administration of thyroid extract. The case is further interesting because of the absence of a positive Wassermann Bordet reaction. Seven months after the chancre there are no secondaries.

Spinka (St. Louis).

INTRAMUSCULAR MERCURY INJECTIONS: A NEW TECHNIQUE. Pontoppidan. (*Derm. Wochenschr.*, 1922, lxxiv, No. 15, p. 348.)

A six months' trial of the method has given good results. It consists of the insertion of a "pencil" with the following formula into the ordinary 1 c.c. Record syringe:

℞ Calomel vapore parat. 3
Ol. cacao 6 m. ft. bacill. Nr. lx.

The syringe is manipulated carefully in a bunsen or spirit flame. The "pencil" melts at 30° C.

It is claimed for the procedure that—

(1) Over-dosage is impossible.
(2) No time is wasted in shaking emulsions.
(3) The smallness of mass injected causes but little pain.
(4) Considerable reduction of the risk of infection as may occur in dipping a non-sterile syringe into a mercurial emulsion. H. C. S.

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THE QUESTION OF SENSITIVENESS TO NON-BACTERIAL TOXINS AND PROTEINS.*

ARTHUR WHITFIELD, M.D., F.R.C.P.,
Professor of Dermatology in King's College, London.

Mr. President and Gentlemen,—When I was invited to open this debate I was rather unhappy for two reasons. The first is that it seems to me that the subject is rather close to that chosen for last year's meeting, and must lead to some repetition and overlapping. If, however, any additional clarity be the outcome of this further discussion, I do not think we need worry overmuch about that.

The second and more potent reason is that I believe that our knowledge of this subject is still so fragmentary that it is difficult to make any contribution to it without overstepping the line of ascertained fact and wandering along the seductive paths of unsupported theory.

It will be my aim, therefore, to restrain myself within the limits of what I believe to be firmly established fact, and to avoid as far as I can offering you the results of arm-chair speculation.

At the same time I have made my paper fairly short in order that there may be a generous amount of discussion, since at the present time I believe that what we want most is a rich accumulation of clinical facts and any relevant experiment in order to have material for the building up of a correct explanation.

* Read before the British Association of Dermatology and Syphilology on July 24th, 1922.

I think that we may divide our present knowledge into two parts. The first part is that which we have obtained as dermatologists by careful clinical observation, and the second is a rather nebulous conception which we have derived ultimately from the experimental pathologist and bacteriologist.

Now the first part has been known to us for a long time, and a very fine book was written upon it by the late Prof. White, of Boston. Since that time various additions have been made to our knowledge both by clinical observation and by planned experiment, and I am proposing to leave the external side mainly to Dr. Cranston Low.

The second part of our knowledge—that ultimately derived from the experiments, at first accidental and afterwards intentional, of the pathologist and bacteriologist—is apparently much more vague, and the subject is evidently of the highest complexity.

You will perhaps forgive me if, in order to make myself clear, I remind you of two old-established facts.

The first is that if a foreign protein or cell is introduced into the body by any means other than by the digestive tract, a process of chemical activity is set up which results in the destruction of that protein or cell, and this process is more or less though not absolutely specific for the substance introduced. This is, of course, the method used for the production of the hæmolytic amboceptor for the Wassermann reaction.

Secondly, and as far as I know dating from shortly after the discovery of the diphtheria antitoxin, it is known that when foreign protein is introduced in this way a change is produced in the condition of the animal so treated which may be very dangerous to his life, causing the state which is known as anaphylaxis.

These long terms seem to have an irresistible attraction for the members of our profession, and it is, I presume, at least partly for this reason that the well-known sensitiveness of certain people to certain external irritants has been, in my opinion, wrongly identified with this peculiar form of protein sensitisation.

I may remind you of certain—to me at all events—irreconcilable points of difference between these two forms of sensitiveness.

Taking, for example, sensitiveness to *Primula obconica* as one of the most familiar to us in this country, and comparing it with the

true anaphylactic state produced by the injection of horse-serum, we can put the points of difference in an almost tabular form:

Simple sensitiveness.	Anaphylaxis.
(1) First contact usually causes some, though possibly negligible, reaction.	First contact usually causes no disturbance.
(2) Further contacts cause reactions, which are usually greater in inverse proportion to the interval between them.	Further contacts only produce a reaction after a considerable interval has elapsed. Provided that the contacts follow in quick succession, no ill-effects usually follow.
(3) The occurrence of a severe disturbance is in no way protective, and a further contact will almost certainly be followed by a further disturbance, *i. e.* the sensitiveness is not destroyed, but, on the contrary, is usually exalted by the reaction.	If a severe disturbance be produced and the animal recover, a further contact does not usually produce a further disturbance, *i. e.* the sensitiveness is destroyed by the reaction.

Now in trying to get some idea of what takes place in the production of certain erythematous, urticarial and eczematous eruptions, we have to bear in mind that there are certainly two, and probably three, methods of spread which we should consider. A lesion may spread, first, by direct lymphatic draining; secondly, by absorption into the blood-stream and modification of the whole body fluids; thirdly, probably by reflex nerve influence.

According to which of the three methods comes into action we may expect either spread along a definite path, or wide-spread and symmetrical distribution, or, lastly, the appearance of symptoms at a distance but not necessarily wide-spread or even symmetrical.

Next we must always remember that in cases where the horny layer is ruptured, whether at the time of the introduction of the irritant or as a result of its action, the picture is liable to be complicated by the entrance of the bacterial factor.

Where we can do so, therefore, we shall be wise to study first those cases in which the effects are produced without breach of the horny layer, or where by correct management the substance is introduced

under conditions which as far as possible preclude bacterial complication.

I may here allude again to the cases which I reported in my Lumleian lectures. These were cases of erythemato-urticarial eruption which occurred some days—usually ten—after severe traumatic ecchymosis unaccompanied by breach of surface.

I do not want to worry you with a great many clinical histories, but I may perhaps be allowed to quote one as an instance.

A lady fell down and twisted her wrist, probably sustaining a slight fracture, at any rate producing severe ecchymosis. No particular ill-effects were felt until the tenth day, when she burst out in an eruption of urticarial papules and erythema.

The rash subsided in a comparatively short time and no further trouble was experienced. Now I have collected four such cases in all, showing the eruption on the tenth day after injury and all getting well in a short time.

I have inquired very carefully in the endeavour to find out whether the ecchymosis which was followed by the eruption had any time relationship to any previous bruising which might have acted as a sensitiser, but in no instance has this been the case. This does not surprise me, as if this were a case of anaphylactic sensitisation by previous extravasation one would have expected the ill-effects to have followed quickly and not after an interval of ten days.

I have talked to one or two of my surgical colleagues, hoping that they may have come across similar cases, but they have not observed any such, and I think they considered that I had found a mare's nest.

Four cases are not much to go upon, and it is therefore with considerable satisfaction that I have noted the experimental support of my observations in some recent work in France.

In the treatment of various dermatoses by the method of injecting intramuscularly the patient's own blood or separated serum, it has been found, though rarely, that an erythemato-urticarial rash has been produced, and in one case also a synovial inflammation resembling that caused by the injection of diphtheria antitoxin.

I think, therefore, that at present we can only state that there are some patients who at some times will react to the extravasation of their blood into their tissues with the production of an erythematous eruption.

The next form of auto-sensitisation to which I will refer is that of the patient's skin to the serum of his own blisters.

I have already published my experience of this in a case of acute bullous eczema in which the trickling down of the serum from the bullæ caused in rapid succession an erythematous streak, a wheal, and, finally, a row of vesicles which ran together to form a bulla.

This patient was at the same time suffering from classical acute gout in the toe, and it occurred to me that there might be some potent toxin contained in the blister serum. I therefore trickled a considerable quantity of the serum drawn off in a sterile hypodermic syringe over the skin of my own forearm and allowed it to dry in, but no sign of disturbance followed.

It is interesting to note that in a quite recent American investigation into *Rhus toxicodendron* poisoning, it is specially stated that the investigators were unable to produce any disturbance in the patients by trickling the serum from the blisters over the patients' skin. This is perhaps slight additional evidence in support of my contention that there is a difference in kind between plant sensitiveness and serum sensitiveness or anaphylaxis.

It would have been of interest to draw off some of this patient's own blood and to inject some of it into his muscles and to trickle another portion over his skin, but it is unfortunately not often easy to get permission for these experiments. It would also have been interesting in the ecchymotic cases to trickle some of their blood over their skin and see if it caused a local lesion. Only by experiments such as these shall we be able to tell whether it is the unaltered or comparatively unaltered blood or serum which has the exciting action on the susceptible patient, or whether it is a special property acquired in the bruised or eczematous tissues.

Following on these two types of case, I wish to draw your attention to a third which is probably familiar to you all.

There is a type of patchy eruption common on the outer sides of the limbs, especially above the external malleolus, over the great trochanter and over the subcutaneous border of the ulna. It might be called by some lichenification, by others follicular hyperkeratosis and by others again scaly eczema. It is frequently associated with so-called "muscular rheumatism." The lesion is not very severe and

usually only itches for short periods during the day, especially on exposure to change of temperature. If rubbed briskly, either accidentally or because of the itching, a regular sequence of events develops.

First there is erection of the hair-follicles, secondly a considerable redness, and thirdly an outflow of serum into the skin so that the part swells up slightly and becomes stiff.

Now several of my patients tell me that when these changes have occurred, after a short but variable time itching begins in various regions asymmetrically placed and widely separated from the original site. It is of course possible that we are dealing here with the absorption of bacterial products, and it is also possible that it may be due to simple reflex nervous irritation, but it is at least possible that it is due to the absorption of the exuded lymph and the production of a toxic urticaria—at all events it occurs with the subsidence of the urticarial reaction in the original site.

Well, Sir, I must leave this part of the subject in this unsatisfactory state of confusion in the hope that the contributions of others may throw some added light on the subject.

As I have said, I look to further clinical observation to give us some lead in elucidating these strange cases, and I will therefore allude shortly to two hitherto unpublished cases.

The first is that of a lady who was punctured in the leg by some insect which she saw but did not identify.

The trauma caused an urticarial papule, and then a vesicle which dried up in a day or two and apparently healed completely.

About fourteen days later the lesion swelled up again and developed an almost herpetiform group of vesicles, and twenty-four hours later still an acute vesicular eczema burst out all over her face and was so severe as almost to close her eyes. Here apparently the effects of the bite caused a delayed development of some further toxin, which by means of the circulation caused an acute eczema at a distant site. I think I ought to say that this lady had dyed her hair with one of the dark dyes—a suspicious circumstance—but she assured me that she had never had any trouble from this cause, and had moreover used no hair dye for several months as she was giving it up. As more than two inches of the root ends of the hair were snow white her statement was probably true, but whether there was any added sensitisation of

the skin of the face due to the use of the dye long before I am unable to say positively, though I doubt it.

The second case is one that interests me greatly because it is the kind of case which may, I think, eventually lead to our obtaining valuable information.

The patient was a lady who was a terrible sufferer from hay fever. It is interesting to note that one of her children was born in the late spring, when she had had the longest possible respite from her trouble, and this child was free from hay fever. The other child, born in late summer when she had been suffering severely for some time, was a sufferer from the disease.

The dermatological interest of the case lies in the following facts: With each attack of hay fever she suffered from a severe pityriasis of the scalp accompanied with marked fall of the hair.

This pityriasis, for which she came to me, differed in no way clinically from the ordinary dry pityriasis capitis, and yielded to microscopical examination the ordinary bottle bacillus and staphylococcus infection. It also yielded easily to the usual treatment for this affection in spite of the continuance of the hay fever, and this leads me to think that the pityriasis was of the ordinary infective type from which most of us suffer to a greater or less degree, and that she was simply rendered more susceptible to infection by her hay-fever intoxication.

This patient was also a chronic dyspeptic, and told me that if she ate strawberries they disagreed with her and also aggravated her hay fever, or if she were not in contact with grass pollen, say on a yacht, a plate of strawberries would give her indigestion and all the symptoms of hay fever.

This association of dyspepsia with the ill-effect of a food leads me to mention a case reported to me by my clinical assistant, Dr. Thomson. He has a patient who is egg-sensitive, but not permanently so. She is an intermittent sufferer from dyspepsia, and when her digestion is in good order she can eat egg with impunity, but if she is in the dyspeptic state and then eats an egg she develops the ordinary symptoms of egg-sensitiveness. I suggest that this is good evidence of the erroneous cleavage of the molecule as a cause of the symptoms of sensitiveness.

Lastly, I would allude very shortly to my results with the cutaneous

sensitisation test. I do not want to decry it, but I must in sincerity say that having carried out and had carried out a considerable number I have up to the present derived no advantage from them. As two rather surprising results I may mention the case of a worker in maize products who developed eczema on the arms, and a baker who also developed eczema of the arms and was convinced that it was due to a new sample of flour that he had been using for a few months. Both of these patients when carefully tested showed no reaction to samples of their own products.

Lastly, I have a patient who suffered from urticaria and had been inoculated for some time with a culture from her own tonsils. She was tested to numerous substances by one of the foremost protagonists of this kind of work. The only thing he found her markedly sensitive to was a streptococcus and he therefore thought that her urticaria was due to this organism.

Personally, I should have been more inclined to attribute her cutireaction to the streptococcus to the fact that she had undergone a long course of streptococcus inoculations.

EXFOLIATIVE DERMATITIS FOLLOWING ON THE ADMINISTRATION OF ARSENOBENZOL AND ITS DERIVATIVES.*

DAVID LEES, D.S.O., M.B., F.R.C.S.E.,
Lecturer on Venereal Diseases, University of Edinburgh.

Since Ehrlich's salvarsan was first experimented with in human therapy in 1909 by Alt, Hoppe and Schreiber (1), toxic effects resulting from its use have been noted, and of these dermatitis probably ranks next in severity to hæmorrhagic encephalitis. Fortunately, like the latter condition, its incidence in the severer forms is rare when due precautions are taken in the administration of the arsenical products.

In a series of 4500 cases of syphilis treated in the Royal Infirmary, Edinburgh, to whom 36,100 injections of the arsenobenzol products were given, ten severe cases have occurred, and about the same number of minor cases. Mercury has been given to practically all the cases, chiefly by the intra-muscular method, during the same period.

The action of arsenic on the skin when applied locally or when given orally over a prolonged period in therapeutic doses was well known for a considerable period prior to the introduction of salvarsan, and Brooke and Roberts (2) have thoroughly described the cutaneous manifestations following the epidemic of arsenical beer poisoning in England during 1901. It has a strong affinity for the keratin tissues, and can be found in the skin, nails and hair of patients who have shown intolerance to the drug in the form of an exfoliative dermatitis.

Ætiology.

In most of the other complications which follow on salvarsan therapy in syphilis, *e. g.* nephritis, jaundice, etc., there is wide divergence of opinion as to whether the remedy or the disease is the causal factor; in exfoliative dermatitis occurring during or after salvarsan therapy there is almost a general consensus of opinion that the skin symptoms are the direct result of the therapy, and especially so of

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the arsenical radicle in the preparation used. There are no doubt other accessory factors, several of which have been emphasised by different workers, and there are certain individuals in whom there exists a special idiosyncrasy of the skin to any external or therapeutic irritant.

Salvarsan dermatitis had been recorded as early as March, 1910, before Ehrlich's preparation was on the market, in a paper by Iversen (3) read before the Society of Russian Physicians in Petrograd, in which he described the case of a hysterical and alcoholic luetic woman who had been given 0·05 grm. "606" intramuscularly. Four days subsequently her temperature rose to 102° F., and she developed broncho-pneumonia and an erythema which he says might have been taken for that of scarlet fever.

Similar cases were described by Wechselmann, and he attributed them at first to septic infection by pathogenic skin bacteria at the site of the intramuscular injection, because of the fact that the erythema always started there as a patch about the size of the palm of the hand, and gradually became generalised over the body. He was of opinion that the skin condition and the associated conjunctivitis were infectious diseases taking a peculiar course owing to the action of the remedy, but after further observation he modified his opinion and thought that these exanthemata were the result of an unusual idiosyncrasy to arsenic, and advised that as they were more frequent with intravenous therapy and the direct introduction of arsenic into the circulation, intramuscular therapy was to be preferred.

Ehrlich attributed the majority of these reactions to shock resulting from pain at the site of the injection, associated with a toxic amount of the preparation, and drew attention to the fact that these reactions occurred chiefly in cachectic patients and in those with other pathological complications. He still adhered to and advocated the intravenous route as the best for salvarsan therapy. Later Wechselmann was struck by the fact that in most of these exanthemata there was an incubation period of eight to ten days before the onset of symptoms, and he considered that there was an exact analogy between them and serum disease as described by Von Pirquet and Schick in 1905. Moore and Keidel (9), in reporting on twenty-three cases, have recently drawn attention to the evidence in favour of the anaphylactic origin of this reaction to salvarsan. In support of the

theory that patients who develop severe dermatitis are those in whom the skin is hypersensitive to arsenic, Pusey quotes the case of a patient who developed arsenical palms following on so small a dose as one hundredth of a grain of arsenious acid given as a tonic for a period of one week.

Recently I have seen a patient who developed a general erythema subsequent to so small a single dose as 0·15 grm. of novarsenobillon, and one who developed a severe exfoliative dermatitis three days subsequent to 0 3 grm. of the same drug. The only other factor present in these cases in addition to this hypersensitiveness was that of focal sepsis, as in both cases dental focal infection was very marked. This factor in the ætiology has been drawn attention to by Stokes ([6]), who considers that foci of septic infection, even if latent, increase the susceptibility of the skin to exfoliative accidents and reduce the resistance of the kidneys to arsenical therapy. Another ætiological factor which the same author ([7]) draws attention to is the history of previous dermatoses. Patients who have or have had a marked dermatitis are, he states, definitely predisposed to exfoliative dermatitis from salvarsan.

The cases which I have seen have borne this out, and in nearly all of them there has been some degree of seborrhœic dermatitis or the patient has been of seborrhœic type. An additional ætiological factor present in most of my cases is that they are usually of a nervous temperament. There is no doubt but that there is a close relationship between such gross lesions of the skin and irritation of the nervous mechanism, and the association in many cases of peripheral neuritis with dermatitis suggests the possibility of the nervous mechanism taking part in the process.

Considerable discussion has arisen as to whether the simultaneous exhibition of mercurial and arsenical therapy predisposes to dermatitis and other signs of intolerance. Loewey and Wechselmann were the first to make this observation, and Schamberg ([10]) is of decided opinion that simultaneous mercurial therapy causes intolerance to the arsenical preparation because of the action of the mercury on the kidneys interfering with the rapidity of excretion of the arsenic. On this account he administered the drugs alternately, and, although giving intensive dosage, he has in 12,000 injections only met with two cases of exfoliative dermatitis. Stokes ([11]), Strathay, Smith, and

Hannah [12] are in agreement with this theory but do not lay so much stress on it as Schamberg and others. Moore and Keidel's twenty-three cases had neither mercury nor iodides and the effect of mercury could be excluded in them. So, too, in several of the cases reported by Whiteside [13] and others. My experience has been similar, and one of the worst cases in the series occurred subsequent to a single provocative injection of ·3 grm. novarsenobillon as a diagnostic test in a suspected latent congenital case.

Alcoholics are in my experience especially prone to dermatitis, and the taking of alcohol during treatment predisposes to this as to other signs of intolerance.

Harrison [14] lays considerable stress on this and on exposure to cold as an ætiological factor in increasing the susceptibility to dermatitis, and states that it is commoner and more severe in winter. Ffrench [15] also supports this view. In the cases which I have had neither of these two factors of exposure and seasonal incidence have been prominent features. Certainly exposure to cold subsequent to the onset of dermatitis will make the condition more severe and render the patient much more liable to dangerous complications.

Effects of Drug Used.

All the arsenobenzol derivatives may give rise to dermatitis, but in my experience the "606" group are more prone to cause exfoliating lesions than the "914" group.

I have not had a case with silbersalvarsan or with disodo-luargol, but I have seen the condition subsequent to sulfarsenol. That the reaction is due to the arsenical radicle in the preparations and not to the amino one is abundantly proved by the number of cases which have been reported of the development of severe dermatitis after the use of preparations such as Fowler's solution or sodium cacodylate.

In considering the ætiology it must be assumed that the dosage is judicious and not too frequent, that the mixing of the drug, the distillation and sterilisation of the water or saline to be used as a solvent and the technique of administration are sound. The patient also must have been carefully examined for any existing pathological lesion, especially of the kidneys, and must have been properly prepared if the administration is to be an intravenous one. Neither the lesions of syphilis nor the duration of the disease exercise any

modifying influence on its incidence, and that syphilis has little to do with the development of the erythematous process is apparent from its occurrence in non-syphilitic cases, as reported by Strathay, Smith, Hannah and others. McDonagh [17] has stated that this and other lesions resulting from the arsenobenzol products are caused by the metallic arsenic over-oxidising the tissues of the body, and Ffrench is in general agreement with this view.

Intramuscular medication is less liable to be followed by dermatitis than intravenous medication.

Clinical Signs and Symptoms.

Arsenic is vasculo-toxic, and the first effect seen is a general erythema or redness due to dilatation of the vessels of the skin. This dilatation later leads to œdema of the skin surface, which then becomes an exuding area, and finally with the increased pressure from the exuded material scaling and exfoliation occur.

The condition is ushered in by formication and pruritus round the mouth, on the backs of the hands and on the arches of the feet. In some cases a localised erythema occurs immediately after the administration of a therapeutic dose of the drug and resembles closely the rash of scarlet fever. This may be transient, but in other cases it is followed some days later by the generalised erythema and succeeding dermatitis. In other cases the erythema does not develop till some days or it may be weeks subsequent to the administration of salvarsan, and is quickly followed by the exfoliative process.

In association with this erythema, Sicard and Roger [16] have drawn attention to the loss of the Achilles jerk, which they take as an indication that the tissues are impregnated with arsenic. The knee-jerks, they state, are rarely affected. The same authors mention a prodromal sign of arsenical intoxication in the nature of a patch of erythema provoked by the application of iodine to the skin. If the patient is becoming intolerant a vesicular dermatitis will speedily be produced at the site of application. I have noted a similar phenomenon in two cases on flicking the skin over a vein subsequent to rubbing the part with alcohol before giving an intravenous injection, and I have noted the absence of Achilles reflex in two recent cases.

Herpes labialis is, I think, a prodromal sign of intolerance, and should make one careful as to further immediate dosage. Herpes

zoster occurs in association with dermatitis, but at a later stage. Loss of weight, albuminuria, malaise and persistent headache are all danger-signals in the therapy of syphilis.

The initial erythema commences commonly on the inner aspect of the forearms. It very soon becomes generalised and symmetrical in its distribution. The affected skin closely resembles the rash of scarlet fever, but is rather darker in colour and more morbilliform in character. The conjunctivæ are involved in the inflammatory process, as are also the mucous membranes of the mouth and throat, giving rise to lachrymation, photophobia, thirst, and a mild degree of laryngo-bronchial catarrh. There is always considerable swelling and œdema of the face and eyelids. Itching is often intense and makes the patient's condition miserable. The temperature reaction varies from 100° to 104° F. but the pulse remains good, and there is not usually a great deal of effect on the general health and the patient does not feel ill. There is a moderate degree of leucocytosis. There is no pain apart from the intense itching. The erythema quickly develops into vesicles and it may be pustules, and the skin becomes covered with thin scales which desquamate from the surface. The scales gradually become larger and coarser, and on the hands and feet the skin may be cast off in the form of large keratotic plaques. The hair may be completely shed, and so, too, the finger-nails.

In the earlier stages the condition may be weeping, but the fluid is thin watery sweat and does not tend to form crusts. There is not a great deal of induration, though I rather think that it is more pronounced in syphilitic cases than with the exfoliative dermatitis due to other causes.

Secondary infection of the denuded skin surface is not an uncommon sequel to the scratching, and occurs on the flexor aspects of the body. The scales gradually become more branny and the denuded skin shows a dark brownish-red pigmentation, which becomes more marked as the desquamation proceeds. The skin finally becomes dry, inelastic and atrophic. The severity of the skin reaction is not always a reflex of the acuteness of the arsenical poisoning, and some of the grossly exfoliative cases show a comparatively mild systemic reaction and no complications. The blood-pressure is seldom altered. Gastric symptoms, which are present in ordinary cases of oral arsenical poisoning, are scarcely ever prominent.

The urine may show traces of albumen, but not always. It is remarkable, when one considers the profound skin changes, how little the other organs of the body are affected as far as one can judge clinically. The urine content in favourable cases remains normal, although there may be a diminution in the urea output. Digestion is little altered. Loss of sleep from the itching and skin irritation may cause some degree of mental irritability, and to some extent impair the general health.

Convalescence and recovery of the skin condition are slow, even in favourable cases. While in many cases the dermatitis runs a more or less normal course, in others complications are apt to arise. The most dangerous of these is the development of broncho-pneumonia from exposure to cold, and it is as a result of this complication that most fatal cases occur. It results from an extension of the initial laryngo-bronchial catarrh to the bronchioles, and in cases which show this symptom initially great care should be taken to avoid any exposure to cold or chill. Polyneuritis has been noted in several cases by Beeson, Moore and Keidel, Duhot, Ehrlich and Wechselmann. Beeson also reports a case of facial paralysis. In my own series of ten cases icterus has occurred in two, but no case has yet been reported of dermatitis following icterus. Nephritis may occur as a complication and also myocarditis in severe cases.

Multiple subcutaneous hæmorrhages occasionally occur in severe cases, showing that the arsenic has damaged the smaller vessel walls, and the condition may become purpuric in character.

Clinical Pathology.

If the process goes on to exfoliation arsenic can be demonstrated in the skin, urine and fæces, and in fatal cases it has been found in practically every tissue of the body, but it is evidently not in sufficient quantity to cause renal irritation.

The blood picture is an interesting one. The polymorphonuclear leucocytosis varies with the degree of fever, and in most cases as the exfoliation progresses and the skin function begins to diminish there is a remarkable corresponding eosinophilia produced. This is found also in psoriasis, dermatitis herpetiformis and pemphigus, varying

from 5 to 15 per cent., but in arsenical dermatitis the eosinophil count may reach as high as 35 to 40 per cent.

In cases not progressing well the eosinophils disappear as the patient's resistance is lowered. The blood-serum in practically all cases shows a negative Wassermann reaction during the exfoliative process and for some time subsequently.

Morbid Anatomy.

In fatal cases the skin shows small subcutaneous hæmorrhages. Everywhere in the integument there is loss of subcutaneous fat, and the muscle tissues of the surface are very dry and often show degeneration. The lungs and bronchi show passive congestion. The heart and liver are often the seat of fatty degeneration and are pale and almost pulpy to the touch. The kidneys are congested, but with little or no other signs of active irritation. The supra-renals are reduced in size. The stomach and intestines show a subacute inflammatory reaction.

Latham ([18]) has demonstrated arsenic post-mortem in practically all the excretory organs of the body and in the mucus from the alimentary canal.

Diagnosis.

This rarely presents any difficulty to the syphilologist, but always does so to the general practitioner, whom the patient may consult without divulging the fact that he or she has had arsenobenzol therapy.

The initial erythema with slight fever, followed by the desquamating process, with intense itching, and its general symmetrical distribution, can hardly be diagnosed from pityriasis rubra unless the initial history of the case is known or there is evidence of some old syphilitic lesion. The erythema in arsenical dermatitis is if anything darker in colour, and the succeeding pigmentation is more marked and there is a less tendency to hyperkeratosis. There is no history of the previous application of chrysarobin or other irritants to the skin. From psoriasis it is distinguished by its more rapid development and by its affecting every part of the body; by the profuse desquamation and subsequent pigmentation and by the thin papery nature of the

scales. The absence of the Achilles jerk and the association of mucous membrane lesions in the mouth and of conjunctivitis would tend to confirm the suspicion that the case was one of arsenical dermatitis.

In cases undergoing a course of arsenobenzol therapy the important point is to diagnose early, and formication, herpes, or any eruption of an urticarial nature should warn the clinician that the patient is intolerant of arsenic and should call for great care in its subsequent administration. Slight degrees of albuminuria, loss of weight, malaise and Sicard's cuti-reaction to iodine are additional prodromal diagnostic signs.

Prognosis.

In mild cases the prognosis is good if the patient is put under favourable hygienic conditions and all anti-syphilitic therapy abandoned. In severe cases the prognosis is less favourable and is dependent on the avoidance of complications such as broncho-pneumonia, which is often fatal, and on the absence of nephritis.

Treatment: Prophylactic.

Careful clinical and serological examination of a patient before undergoing salvarsan treatment is essential, especially with regard to previous dermatoses, to impaired function of the kidneys or of any part of the genito-urinary tract, such as stricture, to examination for any area of focal sepsis, and to the absence of gross lesions of any of the vital organs. The patient must be carefully prepared for intravenous medication, the initial dose should be a moderate one, the utmost care should be exercised in the mixing of the drug, special attention being paid to the reduction of the "606" group to the disodium salt, to filtration, to its being in sufficient dilution, and to the purity of the solvents. The technique of administration should be carefully carried out.

The injection should be given slowly, and subsequent to the treatment the patient should rest and avoid exposure to cold. The solution should be prepared just prior to its administration and the dosage and intervals between doses should be carefully regulated. Even

with this meticulous care at the initial treatment and prior to subsequent administration of the drug, cases of intolerance will occasionally occur.

Abortive Treatment.

When the condition is seen in the early erythematous stage the larger proportion of cases can in my experience be aborted. The most rapid results are attained by putting the patient to bed immediately and drawing off ten to twenty ounces of blood by venepuncture. In addition all arsenical and mercurial therapy should be suspended and a bland diet given. In those early cases I have also found intramine, as suggested by McDonagh, in doses of 3 to 5 c.c. every third day, valuable in helping to abort the threatened exfoliative process. Sulphur in doses of 30 gr. three times daily is also helpful in counteracting the arsenical poisoning and reducing the toxic erythema.

In the established case which has become vesicular or even begun to desquamate in places, intramine is in my experience not of so great value. It acts well in some cases, while in others it seems to have no effect on the progress of the lesion whatever. In a case which I saw in consultation with Dr. A. R. Fraser ([19]), intramine caused a recurrence of the exfoliative dermatitis, the patient became decidedly worse and multiple subcutaneous abscesses developed all over the body. In these fully-developed cases the patient must be kept in bed. All anti-syphilitic treatment, whether mercury, arsenic or iodide, should be suspended. Daily evacuation of the bowel by saline cathartics or paraffin is essential. From the hyperæmic condition of the whole skin surface such patients are extremely susceptible to colds and should be protected against any extremes of temperature. The diet should at first consist of barley-water, milk and milky foods and anything which will increase the hyperæmia of the skin, and especially alcohol, should be avoided. Care should be taken with diet for some time and the patient kept in bed until the temperature is normal, and even after this the skin condition demands the safe-guarding of the patient against cold. Later the diet should be a nutritious one and cod-liver oil may be given to replace the loss of subcutaneous fat. Internally in the acute stage sublimed sulphur 30 gr. three times daily and sarsaparilla are valuable for their

neutralising effect on the metallic poison and for their laxative action on the bowel. If the bowels are not sufficiently active the administration of Strathpeffer or Harrogate waters exercises a beneficial effect.

Locally in the erythematous or exfoliative stage lotions are the only practicable method of treatment on account of the vast expanse of surface involved. The B.P. calamine lotion made without glycerine is effective in soothing the itching, and the powder which is deposited after the fluid part has evaporated protects the inflamed skin, absorbs any excess of secretion, and by mechanically contracting the vessels reduces the hyperæmia.

In the later stages baths and ointments are more valuable, the baths being tempered by the addition of three or four pounds of bran or of oatmeal and soda. This is the best method of removing the scales, and subsequent to the bath an ointment consisting of equal parts of zinc oleate molle and ichthyol 5 per cent. will soothe and overcome the dryness of the skin. When the face condition, the hands and the feet are very painful, and large keratotic scales are being cast off, the most soothing preparation is a boracic starch poultice in the form of a jelly. For the parts in and around the eyes, ears and nose, ungt. rosæ is an efficient emollient. For the head and hairy parts olive oil or vaseline is as effective as any preparation in removing scales and relieving the itching.

Influence of Arsenical Dermatitis on the Patient's Syphilis.

If the blood-serum be examined during an attack of dermatitis the Wassermann test will generally be found to be "negative," and it remains so in quite a percentage of cases for some time. In others it may remain permanently "negative." Buschke and Freymann ([20]) and also Bruck ([21]) state that such cases show no further manifestations, either clinical or seriological of syphilis. Galliot ([22]), on the other hand, quotes a case in which a meningitic lesion recurred, and the Wassermann test remained "positive" subsequently, though previously temporarily "negative." Gougerot ([23]) discusses this, and raises the important question whether other extraneous irritants such as X-rays and ultra-violet rays, which could produce a dermatitis, would have a similar effect. He quotes twenty-eight cases in which

he has seen a clinical recurrence of the syphilitic lesions, and considers the observations of Buschke, Freymann, and Bruck as dangerous if all such cases are not carefully observed for some years subsequent to the dermatitis.

In three cases which have come under my notice, two of them cases of central nervous system syphilis, the Wassermann test was only temporarily made "negative," and the Wassermann of the cerebro-spinal fluid was not affected at all.

Indications for Further Treatment.

When and with what drug may treatment be instituted subsequent to an arsenical dermatitis?

Ffrench ([15]) has stated that further treatment may be commenced during the convalescent period, but I am doubtful if this is advisable, except in the very slight erythematous cases which have been aborted, and in such cases the same drug should never be repeated. Nicolas ([24]), in commenting on the paper by Gougerot, states that all such patients remain intolerant of the drug for months or years, and that the only alternative method of treatment is by the soluble mercury preparations which should be given guardedly to begin with, and continued with, if tolerated, till a cure is achieved. In the erythematous cases one's preference is to exhibit mercurial therapy only when the skin and hair condition have completely healed—usually in three or four months. After two months of this medication, if it is tolerated well, one may try an alternative arsenical preparation, such as silber-salvarsan or sulfarsenol, which are less toxic. The renal function should be kept under constant observation in such cases, both as to amount, albumen content and casts, and to begin with the dosage should be very small and given intramuscularly, and the patient may be desensitised by an initial minimal dose—say one hundredth of the minimal therapeutic dose—before giving the therapeutic dose. This will act in a similar manner to the cuti-reaction suggested by Stuart and Maynard with a small quantity of the therapeutic agent intra-dermally.

If, however, the patient has had a gross exfoliative dermatitis and there are subsequently no clinical signs of disease, and the cerebro-spinal fluid shows no pathological or serological changes, although

the Wassermann test of the blood-serum may show some degree of positivity, the danger of a recurrence of the dermatitis is such a serious one that it is advisable to continue the treatment with mercury and iodides only. If the renal function is intact this is the much safer procedure, but in all such cases careful watch must be kept over the condition of the urine, the body-weight and the general well-being of the patient.

There is always the danger that if a patient has shown intolerance to arsenobenzol or its derivatives, the liver function may easily become impaired and jaundice develop. In all such cases the continued administration of sulphur or sulphur waters by the mouth, both from its alterative and from its aperient action, acts as an efficient prophylactic against the recrudescence of any gross skin or other reaction when mercurial treatment is exhibited.

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A NOTE ON THE TREATMENT OF PSORIASIS VULGARIS BY INTRAVENOUS INJECTIONS OF SODIUM SALICYLATE.

JULIO BRAVO,

Medical Inspector of Venereal Diseases; Assistant Physician at the Dermatological Clinics, Hospital de San Juan de Dios, Madrid.

In the service of Dr. Sainz de Aja, Hospital de San Juan de Dios, Sainz de Aja and I have treated for some months several cases of psoriasis by intravenous injections of a sterile solution of sodium salicylate. Some of these cases have been shown at the meetings of the Spanish Dermatological Society.

The favourable results obtained with this method (Sachs's method, *Wien. klin. Woch.*, April 21st, 1921) are important enough to be communicated, and as the first who treated psoriasis with sodium salicylate was Radcliffe-Crocker, I desire to pay a little homage to his name by sending these lines for publication in the *British Journal of Dermatology and Syphilis*.

Sainz de Aja and I have published a paper on this subject with full particulars in the *Actas dermo-sifiliográficas* (October–December, 1921). This note will be simply a brief abstract of that paper. We usually employ a 20 per cent. solution of sodium salicylate. We have also employed a 50 per cent. solution, but it is not advisable because the patient feels during the injection a sensation of burning along the vein, and there is a marked tendency to thrombosis.

The initial dose is generally 0·5 grm., the second 1 grm., the third 1·5 grm., etc., till the dose of 3 or 4 grm. is reached. This maximal dose is to be repeated, the interval between the doses being from two to three days.

The tolerance is generally surprising. Acute cases are most amenable to this method of treatment. Notwithstanding, we have obtained good results in inveterate cases and even in mixed conditions (such as psoriasis on a seborrhœic basis).

We believe the good effect produced by sodium salicylate depends on the keratolytic property of the salicylic radical. To corroborate this opinion Dr. Sainz de Aja proposed the treatment of keratosic conditions by intravenous sodium salicylate, and we therefore treated several cases of keratodermia and hyperkeratosis. The results obtained are very encouraging.

The method is a simple one, and brings about the clearing up of lesions without the troublesome application of ointments.

It is with great regret that we have to record the death of Sir James Galloway, which occurred in London on October 18th. Sir James has occupied a foremost position among English Dermatologists, and was Editor of this Journal from January, 1896, to December, 1904. A biographical note will appear in our next number.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Meeting held on June 15th, 1922, Dr. H. G. Adamson, President of the Section, in the Chair.

Dr. H. C. Semon showed *two cases of ringworm of the nails in sisters.* The elder sister, aged 37 years, contracted the disease six years ago, and it had affected symmetrically the middle, ring and little fingers of both hands. During this time the nails had been shed spontaneously, and in the case of the little finger of the right hand twice. Microscopic examination in potash had revealed a segmented mycelial growth, from which it was hoped a culture would be secured. The toe-nails were normal.

The younger sister gave a history of six months' infection, and stated that she thought she contracted it after using her sister's manicure set. In her case the middle and little finger of the right hand, and the little finger only of the left hand, had been attacked.

The source of infection in the elder sister's case could not be traced.

It would be remembered that recently the speaker showed a case of ringworm of all the nails of the hands: a report of this case had been published in the *Proceedings** and in the *British Journal of Dermatology*.† He now passed round a culture on standard acid glucose agar, which has been isolated and prepared by Dr. W. Broughton-Alcock, chief pathologist to the Ministry of Pensions. During the development of the fungus the medium had changed colour from its normal yellowish tinge to a decided red, and the rugose surface of the white culture had also assumed a pinkish tinge. Dr. Alcock and Dr. Castellani were of opinion that the case must be regarded as one of infection by the *Epidermophyton rubrum*. Members would remember that it was decided to remove all the nails and treat the nail-bed subsequently (as suggested by Dr. MacLeod's experience) with weak mercury ointment. This was done, and the patient was

* *Proceedings*, 1922, xv (Sect. Derm.), p. 31.

† *Brit. Journ. Derm.*, June, 1922, p. 208.

removed to a convalescent home, with strict injunctions to keep his nails covered in finger-stalls. It appeared, however, that the directions were not followed, as he was in the habit of using the roller towel in the annexe of the ward. Ten days after the patient's admission two ward maids developed tinea circinata of the shoulder and sacral regions respectively, and a third ward maid developed ringworm of the nails of two fingers of the left hand seven weeks after his admission. The disease had recurred in all the nails in the original case.

It would therefore seem that ringworm of the nails must be regarded as a more infectious condition than was generally described in text-books, and he thought it his duty to publish the unfortunate facts of his original case, in the hope that catastrophes of this nature might be avoided in the future.

Dr. Pernet said that in 1901* he showed two cases of undetected tinea unguium in sisters. One patient, aged 41 years, had had the complaint for twenty years. Scrapings showed *Trichophyton megalosporon endothrix* mycelia, and he confirmed this by a culture. In the other patient, aged 44 years, the nails had been affected for twenty to thirty years. The same fungus was demonstrated in scrapings, but culture failed. The former patient did well on Harrison's treatment. Both cases and the culture, etc., were shown at the old Dermatological Society of London. In the case of a girl, aged 15 years, with ringworm of the scalp and nails, Dr. Pernet had obtained cultures of *Trichophyton megalosporon endothrix* from both hair and nails. That from stumps was of a delicate, pale, lilac-pink.†

Dr. W. K. Sibley considered that the proper treatment for these cases was ionisation by zinc or copper salts, the whole of the affected finger-nail being submerged in a beaker containing the solution to be applied, together with the positive electrode, the negative or inert one being applied to the opposite hand. He had never evulsed a nail for this disease.

Dr. George Pernet showed a case of *lichen planus annulatus, with atrophy and a herald patch*. Patient, a housewife, aged 46 years. Duration of rash, two months. It was distributed about the trunk and limbs, presenting a number of ringed areas; some had coalesced. The centres of most of the larger ones were depressed and atrophic in appearance. Smaller ones had a very fine border. Here and there characteristic discrete lichen planus papules were present. The mouth was not affected. A small ring, $\frac{1}{2}$ in. across, with a delicate border, in

* Pernet, *Brit. Journ. Derm.*, xiii, 1901, p. 268, and xiv, 1902, p. 16.

† Pernet, *Brit. Journ. Derm.*, xviii, 1906, p. 252.

the centre of the upper part of the chest over the manubrium sterni, appeared first, and was present a month before the rash became generalised. This might be compared with the herald patch of pityriasis rosea, and also with the primary patch of psoriasis, in which latter condition a single patch only might be present for some time before generalisation occurred. There was some pruritus when the patient was first seen, due to a great extent to sulphur ointment, which had been applied on the advice of a chemist. The patient was improving and doing well on mist. hydrarg. biniodidi.

Dr. Haldin Davis showed a case of *epidermolysis bullosa*. The patient, a young man, aged 26 years, was an example of a mild degree of the condition. His mother noticed it in his early infancy soon after he had been vaccinated, and it had persisted ever since. Any slight trauma, such as that produced by lying on a crumpled portion of the sheet of his bed or by a slight knock on the limbs causes the appearance of a blister. Notwithstanding this serious diability the patient for some years persisted in playing football and in consequence his shins had suffered very severely, and still were frequently the seat of bullæ of large size. He also succeeded in doing two years' service in the R.A.M.C. during the war, most of which he spent on a hospital ship, where he had opportunities of dressing his legs and concealing his condition from those in higher authority. Ultimately, however, it was discovered, and he was discharged from the Service, but he was now on the staff of the Ministry of Pensions. Unlike most cases of this disease his teeth were good, and his nails, although affected, were not very badly formed. Since taking quinine regularly he appeared to have shown some improvement.

Mr. J. Jackson Clarke read a paper entitled "A Note on Molluscum Contagiosum," which will be published in full in an early number of the Journal.

Meeting held on July 20th, 1922, Dr. H. G. Adamson, President of the Section, in the Chair.

Dr. H. C. Semon showed, for Dr. J. B. Christopherson, a case of *leishmaniasis of the skin*. The patient was a military nursing sister, single, aged 28 years, and the disease was first manifested in

December, 1920, as an indolent raised pustule on the left cheek, three months after a fly-bite, received while she was nursing at Baghdad. Leishman-Donovan bodies were demonstrated at Netley at the end of February, 1921. By the middle of June the small ulcer had healed under application of antimony ointment, boric ointment and X-rays, and she was discharged apparently cured, although "a small raised lump, neither yellow nor red," was still present. In November, five months later, the "raised spot seemed to grow larger, and since then other spots had come out, one by one."

She was first seen by Dr. Christopherson on June 9th. There were about twenty-five little vesicular infiltrations, of a yellowish colour, quite soft on palpation. The skin was not ulcerated; a scar marked the site of the original "oriental" sore. There was no complaint of pain, and the lymphatic glands did not show any enlargement. No typical Leishman-Donovan bodies were found, but two atypical, probably degenerated forms were demonstrated in a scraping by Dr. Christopherson.

Treatment by intravenous injections of sodium antimony tartrate was begun on June 12th, and by June 28th, when $8\frac{3}{4}$ gr. had been injected, the nodules appeared to have become flatter, more solid, and scaly on the surface. At the present time they were almost on a level with the surrounding skin, and practically indistinguishable from lupus vulgaris, which was the diagnosis made by Dr. Semon when he was first consulted some three weeks ago. Eighteen grains in all of the sodium antimony tartrate had been given up to the present date, and the treatment would be continued so long as improvement was maintained.

A photograph of a very similar case (under Dr. Christopherson's care), also in a nursing sister, who had had the disease on the cheek for a year, supported the view that they were dealing with a new and hitherto undescribed form of dermal leishmaniasis resembling lupus vulgaris in its clinical appearances. This patient had refused intravenous sodium-tartrate treatment, but her condition was clearing up very gradually in the country under applications of methylene-blue paint.

Dr. A. Whitfield agreed with the diagnosis. He said that a little more than a year ago a case occurring in an officer had been shown by Dr. Graham Little. The Leishman sore had been excised, and was followed by an eruption indistinguishable from lupus. At that time he (Dr. Whitfield) thought the clinical

appearances were deceptive, and that it was really relapsing leishmaniasis. He had talked with those who had had a large experience of Leishman sores, and they said these sores did sometimes relapse. This was the third case which had been seen at the Section, and what they had to decide was whether it was likely that the cases constituted a form of leishmaniasis with which members were so far not familiar. Or was it likely that in the three cases named the curious coincidence had occurred of leishmaniasis setting up tuberculous lupus? The former idea seemed to be so much the more likely that he thought it must be considered that on rare occasions this kind of tropical sore did develop.

Dr. W. Dyson said that when the slow development of lupus was taken into account he did not think that, without examination, one could exclude the likelihood of lupus having been engrafted on to a sore which had been caused by Leishman's infection. Clinically this case was indistinguishable from a case of lupus. Lupus could often be seen developing on so-called septic sores of a chronic and stubborn character.

Dr. Graham Little said that in the case to which Dr. Whitfield had referred there was never any convincing evidence of leishmaniasis; the Leishman-Donovan bodies were never demonstrated in the skin in that instance. He agreed with Dr. Dyson that these patients might subsequently develop tuberculosis. He had shown several times the case of a young girl who had both syphilis and tubercle; she first had a gumma, and on the gumma there developed a typical tuberculous sore, which did not heal. One must be very sure of a diagnosis before accepting a new classification. It was remarkable that such a thing should not have been noticed before. Sir William Willcox, whose patient this was, and who had had a large experience in Mesopotamia, was convinced that the condition was not leishmaniasis.

Dr. J. H. Sequeira commented on the fact that the two cases described were in women, in whom tuberculous lupus was commoner than in men. He did not regard the present case as complete; a portion of the lesion should be removed and examined microscopically.

Dr. Arthur Powell said he had been twelve years in Assam, the home of kala-azar, but had never seen any eruption of this kind associated with it. During a further period of twenty years he had seen many cases of Delhi boil arising in India and Irak, but nothing like Dr. Christopherson's case. It seemed to him a case of lupus arising on the scar of the Delhi sore.

Dr. J. M. H. MacLeod considered that the lesion was tubercle which had probably been grafted on to the original disease.

Dr. H. G. Adamson (President) said that without knowledge of the history one would not hesitate to diagnose lupus vulgaris in this case. The cheek was a very common site for lupus. He was in the habit of teaching that the disease was common in that situation because of the infection from the nostril along the course of the lymphatics. He did not think there was conclusive evidence that this case was leishmaniasis. He had seen cases of Delhi boil which in the later stages had presented the appearance of lupus nodules, but none so apparently typical of lupus as the present case, and he thought it important that a further attempt should be made definitely to prove it to be a leishmaniasis if it were so.

Dr. Semon (in reply) said that the case as it stood was admittedly incomplete and would be submitted to further investigations, but he was of opinion that considerable improvement had taken place already since the treatment had

begun. If the patient should refuse to have a biopsy done, a complement-deviation test would be carried out for tubercle. If that should prove negative, it would be against the diagnosis of lupus vulgaris, and therefore in favour of leishmaniasis. It was hoped that the case would be shown again at the October meeting.

Dr. H. MacCormac showed *two cases of chronic erythema of the legs.* The two patients presented closely similar appearances, viz. chronic erythema of the legs, and as this condition appeared to have been more commonly seen of recent years, they had been brought for demonstration. It would be remembered that Dr. Dore* recently exhibited a similar case, and that some discussion took place as to the nature and cause of the eruption. The first of the two patients was a woman, aged 42 years. She gave a history of tubercular glands, and had recently suffered from acute pleurisy, possibly of a tubercular nature. About two years ago she developed a patch of erythema on the leg in the region of the ankle. There was a remarkable freedom from subjective sensations except some aching. It was noted that the erythema increased and became more obvious when the leg was in the dependent position, and it lessened when the leg was kept elevated. Thus it almost entirely disappeared when the patient was confined to bed during the recent attack of pleurisy. The second patient was a young woman, aged 29 years. There was no history or evidence of tuberculosis in any form, and her general health was good. In her case the erythema, which was limited to the lower aspect of both legs, began some three years ago. She complained of burning sensations in the affected area, but otherwise the eruption did not cause any discomfort.

In these two cases the objective condition was similar. It was more superficial than the type met with in some forms of Bazin's disease, and it did not appear to be directly related to alterations in temperature, as it remained unchanged throughout the year. A number of examples of this form of erythema had recently come under the exhibitor's observation in hospital, and it would seem now to be relatively common.

Dr. H. W. Barber said that he had recently met with a case of this kind—that of a nurse who was rendered incapable of doing her work owing to œdema of her legs accompanied by erythema. In his experience the clotting-time of the blood was notably prolonged in these cases, and this suggested the probability of some abnormality in calcium metabolism.

* *Proceedings*, 1922, xv (Sect. Derm.), p. 43.

Dr. Semon said that he had at present under his care a similar case in a young woman, in whom the chief trouble was constipation. Since the constipation had been relieved the skin condition had improved. Galvanisation had been useful in that case. He regarded it as a sort of vascular paralysis due to intestinal toxæmia.

Dr. E. G. Graham Little showed a case of *parapsoriasis*. Patient was a lady, aged 45 years. She had lesions over a large part of the body, which commenced to appear five years ago; they had increased in size, in the characteristic way of parapsoriasis, and he had little doubt that the condition was parapsoriasis *en plaque*. The largest lesion was round the left breast, and it was entirely devoid of infiltration; that was the most important criterion in the decision between mycosis patches, which were like this, and parapsoriasis.

Dr. W. Knowsley Sibley showed a *case for diagnosis* (*? leukæmia cutis*). W. N—, a shop assistant, aged 41 years, was sent to him by Dr. Harkness on March 21st of this year. He was more or less covered by a macular eruption which had been present for a month. There was nothing to note in his family history; he had served in the war and been twice wounded, and never had any illnesses before. The rash first appeared on the forehead, and at that time was very abundant on the face, arms, legs and chest. There was slight irritation at night. The rash had been diagnosed as a secondary syphilitic eruption, and certainly in many respects was very suggestive of that disease. There were, however, no lesions of the mucous membranes, enlarged glands or any other symptoms. The Wassermann reaction was found negative, and again negative after a provocative injection. After a short time the eruption in many parts became papular, and this was especially noticeable about the scalp and forehead.

April 12th: Differential blood-count showed moderate eosinophilia, but no other abnormality. Total leucocyte count normal, but total red blood-corpuscle count showed slight polycythæmic condition. No obvious abnormality in size, shape or hæmoglobin content of red cells.

Blood examination: Total leucocytes, 11,120 per cubic millimetre; total red cells, 6,880,000 per cubic millimetre. Differential count: Polymorphonuclear cells, 62 per cent.; small lymphocytes, 24 per cent.; large lymphocytes, 2 per cent.; eosinophils, 5 per cent.;

basophils, *nil*; large hyaline cells, 4 per cent.; transitional cells, 3 per cent.

After a few weeks the rash disappeared from the whole body for a time, and then reappeared on the forehead, and gradually over the whole face and scalp, and more or less over the rest of the body. The eruption was now distinctly papular, and in places nodular, often of a peculiar purplish coloration, especially about the forehead and tip of the nose, and many of the lesions were painful to the touch. Papules then appeared on the limbs, especially about the legs; these were also of a purplish colour. There was also at this time an extensive eruption inside the mouth, affecting especially the hard and soft palate, and the patient complained of sore throat. Lymphatic glands, especially about neck and groins, now generally much enlarged, and the supratrochlear glands stood out very prominently. The glands were isolated, hard and firm, with no signs of breaking down. From time to time a rise of temperature to 101° and 102° F., lasting three or four days, accompanied by a pulse of 120, again becoming normal. Liver considerably enlarged, some four fingers' breadth below costal arch; spleen slightly so. Neither albumin nor sugar in the urine. The patient was obviously ill, and also complained of rheumatic pains about legs, and of progressive weakness and loss of flesh. Wassermann and sigma tests again both negative.

Differential leucocyte count, June 9th: Polymorphonuclear cells, 51 per cent.; large lymphocytes, 5 per cent.; small lymphocytes, 33 per cent.; eosinophils, 5 per cent.; basophils, *nil*; large hyaline cells, 5 per cent.; transitional cells, 1 per cent.

Clinically the case rather resembles rapidly progressive Hodgkin's disease (pseudo-leukæmia), with very extensive adenitis, enlargement of spleen and notably so of the liver; attacks of intermittent fever and pains in the limbs. On the other hand itching has been almost absent, and this is usually a prominent symptom of Hodgkin's disease.

The following is the *microscopical report on the case* by Dr. W. Arthur Young.

"(1) *Section of large nodule* (July 6th, 1922) *from scalp.*—(*a*) Epidermis very much stretched and thinned to a layer or two, three or four cells in thickness. In one or two places where the subjacent infiltration reaches it, the infiltration is passing through the epidermis

and the initial stage of ulceration is shown. (*b*) Corium and hypoderm: This is entirely filled by an infiltration which reaches up to the epidermis in places and extends down into the subcutaneous fat. It completely surrounds the sebaceous glands, sweat-ducts, lymphatics and capillaries, passes between the alveoli of the sweat-glands and the lobules of the subcutaneous fatty tissue. The glands, capillaries, etc., appear normal and not involved in any way by the surrounding process, but there is almost a complete absence of collagen bundles. The characteristic cell of the infiltrated area is a polygonal cell with a rather large pale irregularly-shaped nucleus showing a very distinct nuclear membrane, a nucleolus, but otherwise little chromatin. There are a few small round-cells and fibroblasts also present. Mitotic figures are very rare, and the method of infiltration of the subjacent fat alone is suggestive of a diffuse sarcomatosis. The general histological picture is one suggestive of mycosis fungoides in the pre-myotic stage, but examination of lymphatic glands should be made before an exact diagnosis can be arrived at.

"(2) *Section of small nodule* (July 6th, 1922) *from forehead.*—Shows similar appearances to that of large nodule, but there is more infiltration of epidermis with the characteristic cells.

"(3) *Previous section* (March 21st, 1922) *from lesion on right chest* showed similar appearances to above."

July 19th, 1922: Wassermann and sigma reactions both negative.

Dr. T. C. Gilchrist (Baltimore) said it reminded him of a case of myeloid leukæmia which Dr. Kettering worked up at the Johns Hopkins Hospital. When the patient first came to the hospital the case looked like typical leprosy, but no bacilli were found. As in the case now shown the eruption disappeared. On the section of the first eruption no one would commit himself, not even Dr. Welch. But it was very definite now, and it was probably myeloid leukæmia.

Dr. W. Dyson said that his colleague, Dr. Savatard, had a case with very similar lesions on the face, in which he diagnosed leukæmia cutis. Apparently the blood in that case was normal, but large numbers of lymphocytes were found in the tumours themselves.

Dr. Wilfrid Fox remarked that nearly all cases of leukæmia of the skin had characteristic slaty-blue plum-coloured nodules, which this patient did not show.

Dr. Whitfield thought members should consider whether this was an atypical case of Kaposi's disease. The sections were obviously inflammatory, not true sarcoma, and they showed none of the lymphoid follicle architecture which was seen in true leukæmia of the skin, but rather blocks of pigment, which he considered homogeneous in origin. In the later stages of some cases of Kaposi's disease there was glandular enlargement.

Dr. Gilchrist said this section did not suggest Kaposi's disease to him. A

case of myeloid leukæmia showed nothing abnormal in the blood, and the other lesions could not be recognised. In a myeloid case the cells were of mixed shape, as they had not had time to form a true cell. In the case of which he had been specially thinking, there was the typical blood-picture before the patient died.

Dr. MacLeod said that in Hodgkin's disease the eruption frequently consisted of itchy papules. He had had two such cases which turned out to be Hodgkin's disease, one being diagnosed at the examination, the other by biopsy of a gland. The eruption in the first of these cases looked like scabies.

Dr. Sibley (in reply) said the question of the case being one of multiple hæmorrhagic sarcoma occurred to him, especially considering the condition inside the mouth, which, seen by the naked eye, was very similar to that of a case he had shown before the Section some time ago of multiple hæmorrhagic sarcoma with lesions of the buccal mucosa.* The great rapidity of the course of this case, however, was against that idea.

Postscript.—Note, the patient died a week later.

Dr. H. C. Semon showed a *case for diagnosis*. Patient, a woman, aged 61 years, came to the hospital six weeks ago with this eruption, which began in the summer of 1919. She stated that it came on after a walk, when she became very hot, and the eruption had continued ever since. A week later it appeared on the face. It was never itchy, but there is some slight soreness. Her history threw no light on the ætiology and her Wassermann reaction was negative. She refused to have a biopsy done.

Dr. H. G. Adamson (President) thought this was an example of what had been called "the adult type of urticaria pigmentosa." Cases had been shown by Dr. Douglas Heath, Dr. Dore, and by himself, and recently Dr. Wallace Beatty had published notes and a photograph of a case in the *British Journal of Dermatology*.† These cases were of interest from the point of view as to whether they were really an adult type of urticaria pigmentosa or a disease *sui generis*, as Dr. Whitfield had at one time suggested. The lesions were small pigmentary macules, which occurred upon the trunk and limbs; they were only slightly urticarial on friction and it seemed not quite certain whether they always contained abundant mast-cells. They were often mistaken, at first, for secondary syphilis.

Dr. Whitfield said that in a case he had seen the eruption was on the arms only. All the instances of it he had seen had been in women. He did a biopsy, and there were some mast-cells, but no such aggregation of them as was found in cases occurring in children.

Dr. Graham Little said that on one occasion two cases of urticaria pigmentosa in men were shown at the Section; the disease did not seem to have a sex differentiation. He did not think the present case was urticaria pigmentosa; the lesions seemed to be too homogeneous. In adults they were entirely flat. If urticaria in adults was an entity, it differed from that in children in some important respects.

* *Proc. Roy. Soc. Med.*, 1920, xiii (Sect. Derm.), pp. 127–132.

† *Brit. Journ. Derm.*, 1921, xxxiii, p. 151.

Dr. Sibley said these lesions occurred most abundantly on the trunk; seldom, if ever, on the limbs alone.

Dr. E. G. Graham Little showed a case of *acne agminata*. Patient, a man, aged 35 years, has had the eruption for the past four months. There are numerous small waxy yellowish nodules closely aggregated, in the way Crocker had emphasised, above the eyebrow, the eyelids, the sulci below nose and cheek, and on the cheeks. There was little or no necrosis at present, but there were some pitted scars of former lesions which had necrosed. There were no other symptoms of tuberculosis and no tuberculous history.

Dr. H. MacCormac showed, for Captain Bruce, R.A.M.C., a case of *acne agminata*. The patient, a soldier, apparently in robust health, reported sick on June 7th with a rash on the face. The eruption consisted of numerous tiny red-brown nodules distributed mainly on the forehead and cheeks. These nodules underwent a necrosis, leaving behind small scars. The condition appeared to correspond with Crocker's acne agminata.

Dr. Wilfrid Fox showed a case of *syphilis in a man*. At first this appeared to be a simple straightforward case of syphilis, but one or two points made its nature doubtful. He ran the risk of infection on January 20th, he had a primary sore on the penis on February 12th, which would be about the right date. On February 22nd he was examined in Dublin, and the *Treponema pallidum* found on the sore. The Wassermann reaction was weakly positive. The diagnosis was made of a recent infection from that date. He was given four injections of novarsenobillon, and half-way through that course the Wassermann reaction was strongly positive. Each time after an injection the rash became worse, therefore the injections were stopped. He came to the speaker on July 3rd, and he then had a lichenoid rash on the arms; some of the papules were isolated, looking like lichen planus; some had run together in big solid papules. He had a diffuse syphiloma of the lips, and a typical late glossitis and leucoplakia of the tongue. In his opinion, therefore, this was an old infection, showing a chancre redux, and not a recent contamination.

Sir James Galloway and Dr. M. G. Hannay showed a case of *desquamative erythema associated with arthritic changes*. The patient was a boy, aged 15 years. Father alcoholic. Mother healthy. Patient youngest of three children, the other two physically healthy,

but one was in a mental home. He had always lived in this country and was apparently quite well until two years ago, when he had an attack of what was called influenza, lasting one week. Almost immediately afterwards it was noticed that the fingers of both hands were flexed and stiff, and that the skin of the hands and fronts of legs was reddened and in parts scaly. There was apparently no pain, but considerable itching. Desquamation followed with improvement in the skin condition, but it seemed doubtful if it entirely disappeared. The fingers remained flexed and stiff. In March, 1922, there was a recurrence of the skin trouble involving the hands, forearms, knees, back and (?) face. At the same time the elbows became fixed in a flexed position, but there was little if any pain. He was then admitted to a hospital in Richmond, where he remained about a month, having ointments rubbed into the skin, the condition apparently improving considerably. After leaving the hospital there was an immediate relapse and he was admitted to Charing Cross Hospital.

Condition on examination: Intelligence below normal. Nutrition poor. He was emaciated and looked ill. Glands in neck, axillæ and groins enlarged. Mouth dry, teeth coated; oral sepsis present. Heart normal. No enlargement or disease of any abdominal organ discovered. Urine: Specific gravity 1028, acid, no sugar; trace of albumen. Tendency to profuse perspiration in somewhat localised areas, especially over epigastrium. Lungs: Clinically no evidence of disease. X-ray report (May 3rd, 1922): Definite increase in hilum shadows, more marked on right side, and increase in peribronchial striation, suggestive of chronic infection of bronchial glands, and some fibrosis of lungs. Sella turcica, X-ray report (May 10th, 1922): Normal in appearance. Blood (May 16th, 1922): Rouleau formation normal. Red blood-cells, 4,600,000; hæmoglobin, 80 per cent.; colour index, 0·8; white blood-cells, 7800. Differential count of white blood-cells: Polymorphs, 51 per cent.; small lymphocytes, 41 per cent.; large lymphocytes, 2 per cent.; eosinophils, 3·5 per cent.; basophils, 0·5 per cent.; large hyaline, 2 per cent. No changes in stained red-cells. Joints: Joints of elbows, wrists and hands more or less stiff and flexed. There appeared to be some slight relative bony enlargement at some joints, especially those of the index fingers, metacarpo-phalangeal joint of ring, and little fingers and knee-joints; but there was no increase of free fluid, no crepitus, no thickening of

mucous membrane, no lipping nor osteophyticout growths. Very slight degree of anterior subluxation at wrist-joints. X-ray report:—Wrists and hands: Bones somewhat atrophied, and terminal phalanges distinctly so. Some increase in translucency of carpus and lower ends of radius and ulna. Marked atrophy of shaft of radius. Elbows: No marked bony changes. Wassermann reaction negative. Serum: No agglutination with members of enteric group of organisms. Fæces: No evidence of the presence of abnormal micro-organisms. Skin—face: Symmetrical areas of desquamative erythema affecting chiefly inner portion of lower lids, side of nose, and slightly so inner part of upper lids, sides of cheeks, front of ears and forehead. These areas were flat, uniform, with fairly well-defined margins. Desquamation manifested in thin soft flakes, easily removed. No evidence of special follicular involvement, and no induration. Some degree of atrophy, and tendency to ectropion. Eyebrows and lashes unaffected. Skin of body as a whole moist, thin and supple. Certain well-defined areas, chiefly, but not entirely over points of pressure, involved in scaly, erythematous condition, which in some parts, *e. g.* the back, hands, and forearms, covered almost the whole surface as a sheet. In other parts, such as the abdomen, there were only a few small scattered lesions, varying from the size of a large pin's head to that of a shilling, mostly circular, but sometimes running together and forming irregular figures.

The lesions themselves were uniform, erythematous, in parts atrophic. There was constant desquamation in large thin flakes, which fell off very easily. In parts subject to constant friction of the clothes, such as the anterior aspect of the knees, the scales were so constantly rubbed off, that smooth, dry, red, shiny surfaces were left. On scratching with a blunt curette, on parts not subject to such friction, no "tache de bougie" appearance was produced; large, delicate, thin, somewhat moist flakes were easily removed, leaving a smooth, shiny, slightly moist surface, with minute hæmorrhagic points. The lesions showed scarcely any infiltration, but they tended on the one hand to fine atrophic scarring, and on the other to continuous parakeratotic desquamation. The congestion of the individual papillary loop was in the skin papillæ. This point seemed to differentiate these lesions distinctly from the psoriasis group. The skin of the forearm and backs of hands was paler and smoother.

Instead of being supple it was tense and could not be picked up, thus showing a sclerodermic change. The patient complained of slight itching. The nails of the fingers were deformed and incurved, and showed fine parallel ridges extending over about one-third of the nail. The rest of the nail was fairly smooth, and no pits were seen. The toe-nails were affected to a less extent. There was a very marked generalised pityriasis of the scalp.

Sir James Galloway said the patient was an example of the association of psoriasiform dermatitis, with atrophy of the skin resembling certain stages of sclerodermia, and deformity and fixation of joints resembling certain forms of arthritis. The question raised by such cases was whether it was right to describe this malady as psoriasis or sclerodermia or arthritis? It seemed probable that the condition was not true psoriasis, was not true sclerodermia, and not necessarily a primary arthritis. Several cases similar to that of the patient had been under his notice during the past twelve months. In certain of these the arthritic element was the most prominent, in others the sclerodermic element was the most marked, whilst in others the desquamative dermatitis was the over-shadowing condition. In the present case the stiffness of the joints of the extremities and the inflammation of the skin seemed to occur simultaneously. The atrophy of the skin might be coincident or secondary to the dermatitis. It was a question whether true arthritis existed or whether the changes in the joints might be due to a slowly progressive inflammation of bone.

The suggestion made was that these cases were due to the same or similar general infective processes. In certain cases the scaly skin disease was most prominent; in others the sclerodermic change, whilst in still others the bony changes with deformities were most pronounced. The nature of the infection was not yet identified. It did not seem probable that the degenerative processes were associated with endocrine deficiency.

Dr. H. G. Adamson (President) said he thought that, clinically, there was no doubt about the case being one of psoriasis; he regarded it as sclerodermia with accidental psoriasis. Psoriasis, being so common, might co-exist with any skin lesion.

Dr. J. M. H. MacLeod regarded the condition as psoriasis. He was familiar with psoriasis in association with joint trouble. The occurrence of sclerodermia in this patient he thought might be a coincidence.

Dr. S. E. Dore showed a case of *lichen planus and syphilis*. The patient, a man, aged 65 years, was sent to him by Col. Harrison from the venereal disease department of the hospital with a history of syphilis. He had two hard chancres on the frænum, and the *spirochæta pallida* was found. He received ten injections of "914," equivalent to 5·55 grm. A fortnight after the last injection a copious eruption appeared on the trunk, which somewhat closely resembled pityriasis rosea. Later, however, it became progressively less œdematous, and darker in colour, the individual lesions becoming flatter and shiny on the surface. At the same time that the eruption came out on the trunk, he was said to have had bullæ on the lips and inside the mouth. When Dr. Dore first saw him, on April 21st, 1922, there were areas of denuded epithelium in these situations. There was now a severe and extensive eruption of lichen planus on the trunk and limbs, the papules in many parts having coalesced so as to form large plaques. The whole eruption was deeply pigmented, and there were well-marked and extensive patches resembling leukoplakia on the tongue and buccal mucous membranes; he also has similar patches on the glans penis.

Dr. Whitfield, remarking on the eruption having a resemblance to pityriasis rosea when it first came out, asked whether any other members had been struck by the same thing. He recalled three cases in which he was trapped in the same way, and a fortnight later it became clear the disease was lichen planus. Some acute cases of lichen planus began with almost urticarial erythematous papules, with scales in the centre, and a little ring of erythema outside.

Dr. S. E. Dore showed a case of *parakeratosis variegata in a man, aged 60 years*. The patient was shown at the British Medical Association meeting at Newcastle last summer by Dr. Wells Patterson. He then had an eruption on the trunk and limbs, quite different from the present appearance; it was much pinker in colour, and blue in parts, and was striated and retiform in character. The diagnosis made at that time was parapsoriasis, but Dr. Heath and some other members regarded it as an instance of angioma serpiginosum. The patient has since been in the Edinburgh Royal Infirmary, under Dr. Cranston Low, from January to March, 1922. Dr. Cranston Low kindly wrote to the exhibitor about him, and said he regarded the case as one of parakeratosis variegata of the type described by Radcliffe-Crocker as xantho-erythrodermia perstans, and pointed out that the yellow colour became apparent on pressing the blood out of

the skin. He had tried sulphur, salicylic acid, tar and chrysarobin without effect. X rays and the mercury vapour lamp also failed to influence the eruption. Eight injections of sterilised milk were then administered intramuscularly into the buttocks twice a week, beginning with 2·5 c.c. and increasing to 10 c.c. No rise of temperature followed, but there was a marked leucocytosis for twenty-four hours after the injection, and there seemed to be a slight improvement in the eruption. A piece of skin was excised, but showed nothing unusual. When the patient was seen at St. Thomas's Hospital in June, 1922, he stated that he had become worse during the past eight or ten months, and complained of severe itching. The eruption had lost its original distinctive characters, and had become merged in a general redness affecting the scalp and face and the upper part of the trunk, leaving only the tips of the elbows, the palms and the legs free. The skin was of a deep red, almost crimson tint, was distinctly thickened and flaccid, and showed rugosities due to keratosis and scaling, the last feature being especially developed on the front of the chest and upper abdomen, the general appearance being comparable to that of the hide of an elephant. There was also considerable tenderness of the skin on pressure, but this became less noticeable at a later date. On physical examination at the hospital nothing was found except a definite enlargement of the spleen, which could be palpated beneath the costal margin. The differential blood-count since submitted was as follows :

Red cells	6,352,000 per c.mm.
White cells	8,400 ,,
Hæmoglobin	90 per cent.
Colour index	0·9 ,,
Differential Count of White Cells.	
Polymorphonuclear neutrophils	46 per cent.
Polymorphonuclear eosinophils	—
Polymorphonuclear basophils	—
Lymphocytes, small	36 per cent.
Lymphocytes, large	14 ,,
Large mononuclears	3 ,,
Myelocyte neutrophils	1 ,,

Dr. J. J. Pringle asked whether any member could say what happened to cases of parakeratosis variegata in the later stages of the disease. He had an impression that they did very badly, probably finding their way eventually into the workhouses to die there. He had not been able to follow up any such cases and did not know of anyone who had done so.

Dr. Graham Little said the case recalled one he had been puzzled over for three or four years. He had shown the case before the Section twice without receiving much help. There was the same general infiltration and the curious pigmentation. When he showed his own case the suggestion was that it was probably one of abnormal mycosis fungoides, but the patient had got a little better rather than worse. He at first thought it might be like Dr. Sequeira's erythrodermia, but in his own case there had been no change in the blood picture.

Dr. J. H. Sequeira said he did not think this form of erythrodermia could be distinguished from the type Dr. Panton and he had described without a differential blood-count. The essential feature in that condition was the persistent high percentage of small lymphocytes.

Dr. S. E. Dore showed a case of *atrophic lichen planus in a woman, aged* 40 *years.* The interest of this case he thought lay in its similarity to white spot disease or morphœa guttata, several cases of which had been shown there. In that disease, however, the lesions chiefly affected the supraclavicular regions and back of the neck and shoulders. In this case they were situated on the front of the chest and in the suprapubic region, where there were small, flat, hard papules, some of which had a slightly erythematous border. There were also a few typical lichen planus papules scattered over the back and shoulders.

This appears to him to be an example of one of those cases of lichen planus atrophicus or sclerosis which had been confused with morphœa guttata.

Dr. J. H. Sequeira showed a *case showing results of treatment by trepol.* He had brought the case to show the purplish pigmentation in the mouth in a patient who had been treated by trepol—Levaditi's bismuth compound introduced for the treatment of syphilis. There was a blue staining of the buccal and gingival mucosa. Its intensity depended on the degree of sepsis in the mouth. The coloration was due to a deposition of sulphide of bismuth. The discoloration appeared about a week after the first injection, and very soon after the first injection the patient complained of pain in the mouth, and there was some stomatitis. Trepol seemed to have an earlier effect on the blood reaction than on the clinical signs of syphilis.

Dr. William Dyson showed a case of *lymphoblastic erythrodermia.* Patient, H. M—, a male, aged 23 years, admitted as an in-patient to the Manchester Hospital for Diseases of the Skin on June 13th, 1922.

History.—In June, 1919, whilst in France, an erythematous eruption appeared on the front of the chest. The eruption gradually spread,

involving the whole of the trunk, face and legs. It reached a maximum eighteen months ago, and since that date had remained stationary. When on leave he was isolated in the Grove Military Hospital for (?) German measles, and at the depôt at Shrewsbury was under observation for suspected scarlet fever.

His general health was good, but he complained of intense pruritus, which was worse when he became warm and caused him to have sleepless nights. Appetite good; bowels constipated. In October, 1918, he suffered from trench fever. He was invalided out of the army for neurasthenia.

Family history.—Good, with no history of a similar condition in any of his relatives.

Condition on admission.—Fair, red-haired, freckled, of good physique: had a general erythema, most intense over a band-like area surrounding the body, extending from just below the nipple line to the lower costal margin. Over the area the skin had the appearance of being slightly swollen and œdematous. In the groin and on the inner side of the upper arm and in the region of the axillæ the rash was mottled in appearance and purpuric. There was no desquamation, nor had there been any whilst he had been under his observation. There was marked dermographia before admission, but this had now disappeared.

The lymphatic glands, both in the groins and axillæ, distinctly enlarged, equalling the size of a hazel-nut. Liver and spleen normal. Heart, lungs, and urine normal. Teeth good. Tonsils not enlarged nor showing evidence of sepsis. Knee-jerks and abdominal reflexes exaggerated.

The patient was of a nervous temperament.

Blood-count (July 5th, 1922): Red blood-cells, 4,800,000; white blood-cells, 8800. Differential blood-count: Polymorphs, 43 per cent.; small lymphocytes, 46 per cent.; large lymphocytes, 11 per cent. July 13th, 1922: Red blood-cells, 4,800,000; white blood-cells, 13,000. Differential blood-count: Polymorphs, 32 per cent.; small lymphocytes, 6 per cent.; large lymphocytes, 8 per cent.

Sections of the skin showed only the ordinary signs of inflammation.

At a Special Meeting of the Section held July 20th, 1922, Dr. T. C. Gilchrist (Johns Hopkins University, Baltimore, U.S.A.) read a paper on "Some Problems in Dermatology" (illustrated by lantern-slides).

CURRENT LITERATURE.

SYPHILIS.

THE ACTION OF MERCURY COMPARED WITH THAT OF SALVARSAN ON THE BODY-WEIGHT. Johan Almkvist. (*Acta Dermato-Venereologica*, ii, 1, p. 91.)

Observations of cases (*a*) treated by either mercury or salvarsan alone, and (*b*) of combined mercury and salvarsan treatment, revealed, as a general rule, a loss of weight during a course of mercurial and a gain in weight during a course of salvarsan treatment. Although no general agreement between the loss of weight and the dosage of mercury was established, there was a comparable agreement in individual cases. Again, while some contradictory results were not unnaturally observed during the period of salvarsan treatment, in some cases these exceptions were associated with signs of arsenical intoxication. The author lays stress on the question of visceral idiosyncrasy. W. J. O.

SYPHILIS CARCINOMA. James Strandberg. (*Acta Dermato-Venereologica*, ii, 1, p. 8.)

Three cases are reported of carcinoma developing on tertiary syphilitic lesions. The contrast in the frequency of syphilis and lupus carcinoma is noted. W. J. O.

STUDIES ON BLOOD CHOLESTEROL IN SYPHILIS. Albert R. McFarland. (*Arch. of Derm. and Syph.*, 1922, vi, p. 39.)

This study was undertaken to determine, if possible, any relation between the blood cholesterol and the serologic and clinical manifestations of syphilitic infections.

The method of determining the blood cholesterol was by what is known as the Bloor I and Bloor II methods:

Two determinations were made on each specimen, one designated Bloor I and the other Bloor II. The chief difference between the two is that in the Bloor I method, sodium ethylate is added to the ether-alcohol extract in order to obtain the proper colour for colorimetric determinations. In the Bloor II method sodium ethylate is not used, and the proper colorimetric qualities are maintained by the use of more care in heating the extract. The Bloor II values are, as a rule, higher than the Bloor I.

The conclusions arrived at were:

(1) A positive Wassermann reaction on the blood apparently does not depend on a high cholesterol value.

(2) Blood cholesterol values in syphilitic patients, in general, tend to be medium and low rather than high.

(3) The amount of arsphenamin given and the time between injections do not obviously affect the blood cholesterol values.

(4) There is, apparently, no relation between the cholesterol values and the clinical and serologic response of the patient.

(5) The only recognisable relation between the clinical type of syphilis and blood cholesterol values is the large proportion of high cholesterol estimations in syphilis of the central nervous system. J. M. H. M.

SYPHILIS OF THE NERVOUS SYSTEM IN CHILDREN. E. L. Hunt. (*Amer. Journ. of Syph.*, 1921, v, No. 2, p. 259.)

The author considers that the nervous system is more often involved in syphilis in children than is generally supposed. He believes that the brain is more frequently attacked than the spinal cord in congenital syphilis, and that paralysis, mental symptoms and optic atrophy are the usual symptoms. The usual stigmata need not be present. He advocates more frequent examination of the cerebro-spinal fluid in cases with nervous symptoms. A. M. H. G.

TREATMENT OF SYPHILIS. S. Feldman. (*Amer. Journ. of Syph.*, 1921, v, No. 2, p. 268.)

The author gives statistics of the treatment of cases of syphilis under his care during the period 1914–1918. Of 998 cases, 742 discontinued treatment before one course was completed, but details of the remaining 256 are given. A. M. H. G.

CONJUGAL SYPHILIS OF THE NERVOUS SYSTEM. A. Gordon. (*Amer. Journ. of Syph.*, 1921, v, No. 2, p. 248.)

After noting previous records, Gordon gives, in tabulated form, a description of thirty-two cases of conjugal syphilis of the nervous system. From these he is able to show that not only classical tabes and general paresis were present, as found by most observers, but also other forms of central nervous syphilis. He also endeavours to show that nervous syphilis may be transmitted not only to individuals who lead an intimate conjugal life, but also to persons who live constantly together in the same dwelling, such as close relations who may come in daily contact with each other for years. His observations tend to show that the condition is commoner than is generally supposed. A. M. H. G.

SYPHILIS OF THE HEART. H. Brooks. (*Amer. Journ. of Syph.*, 1921, v, No. 2, p. 217.)

The author points out that syphilis involves the heart with great frequency both in early and in its later stages of the infection. Syphilitic lesions of the heart may involve the pericardium, the myocardium, the endocardium, and the conus arteriosus. The most frequent lesions apparently originate or progress about the terminals of the coronary arteries, and are located for the greater part in the myocardium. Any form or stage of syphilitic lesion except chancre may be found in the heart. Cardiac involvement may appear very early in the infection, when it may terminate fatally, or it may long remain quiescent or first become apparent late in the disease. The signs and symptoms of syphilis of the heart are simply those resulting from the particular lesion present, and often develop few or no definite clinical characteristics apart from their association with a history of infection, the Wassermann reaction, and the relief of symptoms and signs under specific treatment. Ordinary methods of cardiac treatment fail to give relief unless combined with specific medication. Syphilis of the heart may in most early cases be cured by specific treatment. Late cases can be much improved, entirely relieved or perhaps cured by specific treatment.

Diagnosis rests chiefly on a history of infection, concomitant signs of it in other tissues, the positive Wassermann reaction, and notably on relief under specific treatment. Successful treatment in any case rests on the recognition of the cause of the disease. A. M. H. G.

THE RESPONSIBILITY OF INTENSIVE TREATMENT METHODS WITH REGARD TO THE INCIDENCE OF EARLY NEURO-SYPHILIS. A. R. Fraser. (*Amer. Journ. of Syph.*, 1921, v, No. 2, p. 201.)

The author, in a fully reasoned article, endeavours to demonstrate that there is an increase in early neuro-syphilis, and that it is due to the tendency to treat primary syphilitics *en masse*, to the working to a mechanical time-table, to the blindfold method of working to and for a negative Wassermann reaction, and to the failure to appreciate early involvement of the central nervous system. He considers that too rapid sterilisation of the systemic circulation prevents the formation of antibodies which are required to cope with infection of the central nervous system. Treatment should aim at conserving sufficient antibody for the requirements and protection of the central nervous system instead of defeating one's object by rapid sterilisation of the systemic circulation; this is best carried out by intramuscular or subcutaneous injections of sulfarsenol over a long period, accompanied by mercurial medication and intramine. A. M. H. G.

YAWS: ITS MANIFESTATIONS AND TREATMENT BY NEO-ARSPHENAMIN. Perpetuo D. Gutierrez. (*Arch. of Derm. and Syph.*, 1922, vi, p. 265.)

In this well-illustrated paper the writer describes yaws as it occurs in Paranaque, a small village south of Manila. The special interest of the paper consists in his references to the so-called tertiary lesions of yaws. These consisted of bone lesions, such as chronic periostitis, or nodules under the periosteum, which were especially common in the long bones, and were painful and disabling. Ulcerations, like those in syphilitic gummata, with clear-cut edges, were also described, but the commonest tertiary lesion found was a pitted keratosis of the palms and soles.

The disease yielded readily to neoarsphenamin, a clinical cure being obtained in 94 per cent. of the cases. The secondary eruptions yielded better to the drug than the primary or tertiary keratotic lesions. J. M. H. M.

REVIEWS.

Skin-Diseases and Syphilis in Infants and Children.*

This work is an atlas of the skin diseases to which infants and children are liable and is quite unique. The coloured plates are very faithful reproductions of the conditions illustrated, and the explanatory text, though not by any means long, is in itself a complete treatise on the subject. The authors are thoroughly up-to-date in their description of the diseases and in the treatment advised. It is rather surprising that eight out of fourteen of the illustrations included under

* *Hautkrankheiten und Syphilis im Säuglings- und Kindesalter* By Prof. Dr. H. Finkelstein, Prof. Dr. E. Galewsky and Dr. L. Halberstaedter. 123 coloured plates from wax models by F. Kolbow, A. Tempelhoff and M. Landsberg. Berlin: Julius Springer, 1922. Price M. 260.

the heading of "eczema" should be labelled "seborrhœic," especially in view of the statement made in the text that "seborrhœic eczema" is rare in children. Apart from this the writer can find nothing but praise for the publication. It is a book that should be in the hands of all who have to deal with children.

The Wassermann Reaction.*

This is the third edition of a work originally issued in 1910. Boas holds the position of Chief Physician at the Copenhagen Polyclinic for Skin and Venereal Diseases, and is also Assistant in the State Serum Institute. The combination of clinical knowledge along with experience of laboratory methods has led to the production of a book which is authoritative. Thus it has come about that Copenhagen methods have made a very considerable impression on workers in this country, and that the views of the Danish observers have obtained wide currency here. Boas recognises, as all must do who possess the requisite opportunity for judging, that the performance and interpretation of the Wassermann reaction should only be entrusted to investigators who have a thorough training in the principles of serology. It is they alone who can appreciate the need for adequate controls Therefore Boas approves of the performance of the tests in special laboratories, and he regards as a great step in advance the State control of antigens and hæmolytic immune bodies put into force in Germany. Especially in regard to the antigen, the reviewer agrees that the use of standardised reagents is most desirable. The necessity for this will be even greater if the precipitation test becomes widely used. In the present edition a bibliography has been omitted in view of the enormous dimensions which the literature has attained. It is to be regretted, however, that the author so greatly restricts his citations to the publications of particular nationalities. C. H. B.

BOOKS RECEIVED.

Diseases of the Skin. By H. H. Hazen, A.B., M.D., Professor of Dermatology in the Georgetown University. 2nd Edition. 1922. Pp. 608. 241 illustrations, including 2 coloured plates. London: Henry Kimpton. Price 37*s.* 6*d.* net.

Diseases of the Skin and Eruptive Fevers. By Jay F. Schamberg, A.B., M.D., Professor of Dermatology and Syphilis, Graduate School of Medicine, University of Pennsylvania. 4th Edition. 1921. Pp. 626. Illustrated. Philadelphia and London: W. B. Saunders Co., Ltd. Price 25*s.* net.

Cancer: Its Cause, Treatment, and Prevention. By A. T. Brand, M.D., C.M., Physician, Driffield Poor Law Infirmary. 1922. London: John Bale, Sons & Danielsson, Ltd. Price 8*s.* 6*d.* net.

Dermatologische Vorträge für Praktiker. Heft 10. *Bartflechten und Flechten im Barte.* By Dr. S. Jessner. 4th Edition. 1922. Leipzig: Curt Kabitzsch.

Proceedings of the Second South American Congress of Dermatology and Syphilology in Montevideo, October, 1921.

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* *Die Wassermannsche Reaktion mit besonderer Berücksichtigung ihrer klinischen Verwertbarkeit.*" By Dr. Harald Boas. Berlin: Published by S. Karger, 1922. Price not stated.

[*Russell, London.*

Sir James Galloway.

THE BRITISH JOURNAL
OF
DERMATOLOGY AND SYPHILIS
DECEMBER, 1922.

OBITUARY.

SIR JAMES GALLOWAY, K.B.E., C.B.,

M.A., M.D.Aberd., F.R.C.P.Lond., F.R.C.S.Eng., LL.D.Aberd.,
Consulting Physician to Charing Cross Hospital.

By the death of Sir James Galloway the medical profession as a whole loses a prominent member and a great gap is left in the ranks of British dermatologists, for although his interest in this special branch of medicine had been less active in recent years than in pre-war days, his influence amongst his dermatological colleagues had in no way diminished up to the time of his death. After a short illness, due to renal calculus, in which acute complications developed, he passed away, practically at the height of his activities, only a few days after having resigned his position as Senior Physician at Charing Cross Hospital as he had reached the age-limit of 60.

Born at Calcutta in 1862, but of Scots descent, he was educated at the Chanonry School, Aberdeen, and afterwards at the University of Aberdeen, where he graduated M.A. (1883), M.B. (1886), and M.D. with highest honours (1892), and received the honorary degree of LL.D. (1919). In 1889 he took the F.R.C.S.Eng., and in 1897 obtained the F.R.C.P.Lond.

On coming to England he became attached to the London Hospital Medical School as Demonstrator of Materia Medica. He was attracted to the study of dermatology very early in his career, when he came under the teaching and guidance of the late Sir Stephen Mackenzie at the London Hospital. At this time skin diseases in this

country were just beginning to be regarded as a special branch of medicine, the majority of them being looked upon as symptoms of some general morbid condition, and the influence of this early teaching remained during the whole of his career and can be traced throughout his writings.

About this time he laid a sure foundation to his subsequent dermatological work by the interest he took in pathology, one of his earliest appointments being that of Assistant Physician and Pathologist to the Great Northern Hospital. In 1893 he was appointed to give the Morton Lecture on Cancer at the Royal College of Surgeons, choosing as his subject "Parasitism of Protozoa in Carcinoma," and about this time contributed several important papers to the Pathological Society. In 1894 he was appointed Physician to the Skin Department at Charing Cross Hospital, and thus began his long connection with that institution.

His interests were not confined to dermatology, however, for in 1901 he was appointed also Assistant Physician to that Hospital, becoming full Physician in 1906.

During his tenure of office in the Skin Department he was an indefatigable worker, a painstaking teacher, beloved alike by students and patients. He retired from the Department when he became Senior Physician, but in the position of Consultant continued to interest himself in it and to benefit it by the wealth of his experience.

Outside the hospital he was an active member at first of the Dermatological Society of London, and, later, of the Dermatological Section of the Royal Society of Medicine, and was honoured by being elected President of the Section in 1917. Previous to this he had been Secretary of the Section of Dermatology at the British Medical Association meeting in Montreal in 1897, and President of that section at the meeting in Birmingham in 1911. He also held the appointment of Consultant Physician for Skin Diseases to the Metropolitan Asylums Board.

In his earlier days he was a prolific writer on dermatological subjects. From 1896 to 1904 he edited the *British Journal of Dermatology,* and during his *régime* the Journal achieved a success which has not been surpassed since, not only with regard to the form and the matter, but to the care which was taken over the reports of the Societies and the abstracts of current literature.

Though not responsible for a text-book, he contributed numerous articles to systems and dictionaries of medicine and to the contemporary journals. His earlier papers were notable for their detailed pathological descriptions—for example, his papers on "Granuloma pudendi," "Granuloma annulare," "Porokeratosis" and "Mycosis fungoides"; his later writings were concerned mostly with the relation of cutaneous manifestations to general derangements, such as "The Nature of the Skin-lesions in Nervous Diseases," "Erythematous Indications of Disease," "The Cutaneous Manifestations of Gout and Rheumatism," and subjects of a kindred nature. The leading characteristics of these contributions were a careful marshalling of known facts, a thoughtful commentary on them, and the avoidance of unproved theories or hypotheses. He approached the subject of skin diseases from the general medical standpoint, and invariably insisted that the proper education for a specialist was to become a general physician first.

Galloway, however, had much wider interests than the ordinary routine of general medicine or dermatology. He had essentially a judicial mind, and his admirable tact, wide outlook and capacity for work made his services greatly sought after in public medical life. He was a member of the Advisory Committee of the Army Medical Service which was appointed after the South African War to reorganise the education of the Royal Army Medical Corps. He was Consulting Physician to the armies in France during the recent war, and, later, Chief Commissioner of Medical Services in the Ministry of National Service. He was an active member of the British Medical Association, and was chairman of the successive conferences of representatives of the medical staffs of voluntary hospitals held under the auspices of the Association in London during the last three years.

He was exceptionally well-informed on subjects outside medicine. A geologist of some note, he had in view the making of a geological survey of Essex as a holiday recreation, and, keenly interested in antiquarian studies, he had published several important brochures, such as *The Story of St. Roncevall*, and *Eleanor of Castile, Queen of England, and the Monuments erected in her Memory*, etc., and was planning a book on the relation of the English hospitals to the monasteries. He was a collector of old prints, of which he had a

considerable knowledge, and as a student he was a keen musician and an accomplished pianist.

This brief sketch of his life and work would be incomplete without some reference to the man himself.

Those of us who knew Galloway intimately, who worked with him in hospital or on committee, found him always to be courteous and dignified, kindly in his judgment of others, and with an intense human interest in everyone, and his great power of expressing himself logically, and the moderation of his counsels, made him a valued colleague. He was punctual in all his doings, never in an obvious hurry, and always managed to do his work calmly and thoroughly, however arduous and pressing it might be.

He was universally liked, and his very presence at a meeting tended to produce an atmosphere of geniality and kindliness. He was a past-master in the art of pouring oil on troubled waters, and many are the instances where the little frictions of young enthusiasms have been turned to advantage through his tactful intervention. His loss is great, but his influence will remain as an example of strenuous service and generous desire to help those with whom he came in contact.

He was married in 1898, and is survived by his widow, two sons and two daughters, to whom we extend our deepest sympathy.

J. M. H. MacLeod.

EPITHELIOMA ADENOIDES CYSTICUM.*

LOUIS SAVATARD,
Physician, Manchester and Salford Skin Hospital

Under the title of "Epithelioma Adenoides Cysticum," Brooke ([3]), in 1891, described benign growths of the skin which till then had not been properly appreciated by dermatologists. His paper was communicated to the Manchester Pathological Society, and was published in the only published *Transactions* of that Society (1891–1892). Later it was published in the *British Journal of Dermatology* (September, 1892).

At about the same time Fordyce ([9]), of New York, was carrying out similar research, and communicated his results to the sixteenth Annual Meeting of the American Dermatological Association, New London, in September, 1892, under the title of "Multiple Benign Cystic Epithelioma of the Skin," and his paper was published in the *Journal of Cutaneous and Genito-Urinary Diseases* (December, 1892). Fordyce's clinical and histological descriptions were practically identical with Brooke's.

Before this, however, Perry ([17]) had published a beautiful example of this condition under the title of "Adenoma of the Sweat Glands" in the *International Atlas of Rare Skin Diseases* (No. ix), but Balzer and Ménétrier's ([2]) case of "Sebaceous Adenoma of the Face and Scalp," reported in the *Archives de Physiologie* (1885), is probably the first recorded case of Brooke's disease. Their clinical and histological pictures are identical with those of Brooke and Fordyce. Many cases have been recorded in recent years and the literature on the subject is now by no means inconsiderable. Before, however, reviewing this we will refer to Brooke's original communication, the result of investigation in four cases, a mother and her two daughters, and a young woman, aged 20 years. Brooke says:

"The affliction presents itself in the form of small tumours varying in size from a pin's head, projecting very slightly above the surface, to that of the half

* Paper read before the Section of Dermatology, Royal Society of Medicine, on October 19th, 1922.

of a small pea. They are at first of the colour of the surrounding skin or may be a little darker. In a few isolated lesions on the trunk, black dots could be seen beneath the epidermis. As the growths increase in size they become often shining and translucent, but hardly sufficiently so to suggest that they contain fluid. Some have a faint yellow or bluish tinge; nearly all contain one or more white milium-like bodies. The size of these bodies bears no marked relation to that of the lesion in which they occur. The tumours are firm without being hard, and, if taken between the fingers, can be felt to lie in the skin and to move with it. As regards their distribution, the sites of predilection were the space between the eyebrows, the root of the nose, the nostrils and neighbouring area of the cheeks, the upper lip, and to a less extent the chin. In these situations they become so thickly grouped together as to form raised lumpy patches of most disfiguring appearance. They also occurred on the back, on the scalp and on the ears. They were strewn thickly over the shoulders, on the neck and upper part of the arms and slightly on the chest. The lesions on the scalp were as copiously covered with hair as was the normal skin around them.

"The course of the affection is always slow, but may vary at times, taking on a sudden acceleration, even after many years' duration.

"It begins in youth, for the most part between the tenth and fourteenth years. In no case which has yet been recorded has there been any attempt at spontaneous involution noted; on the contrary, the lesions either persist unchanged for years, or increase until they reach the size of a small pea—a limit which they never exceed."

Fordyce's description was practically identical with that given by Brooke. He, too, notes that black pigment-spots were found intermingled with the lesions. In some he noted an apparent central depression which led them to simulate very closely the lesions in molluscum contagiosum. Perry's case also showed black dots in a few of the lesions, and histologically many of the cells of the "gland" were loaded with brown pigment. Balzer and Ménétrier make no mention of pigment.

Cases from Literature.

(I) *Brooke's cases* (3).—Mrs. E—, aged 50 years. The lesions were first observed in her youth and she had only a very few when she was married at the age of 21. Of late years they have much increased in number.

L. E—, aged 18 years, presented numerous new growths, which agglomerate in masses in the region of the face most affected in the mother, but are also scattered freely over the neck, upper part of the back, shoulders and arms, and very sparsely on the chest (Fig. 1).

L. E—, aged 14 years, presented comparatively few nodules, but the majority of these are quite well developed. They are limited to the face and neck. As was the case with her sister, they were first discovered when she was about 10 years of age, and have been gradually increasing in number and size.

Fig. 1.—Case I, aged 18 years.

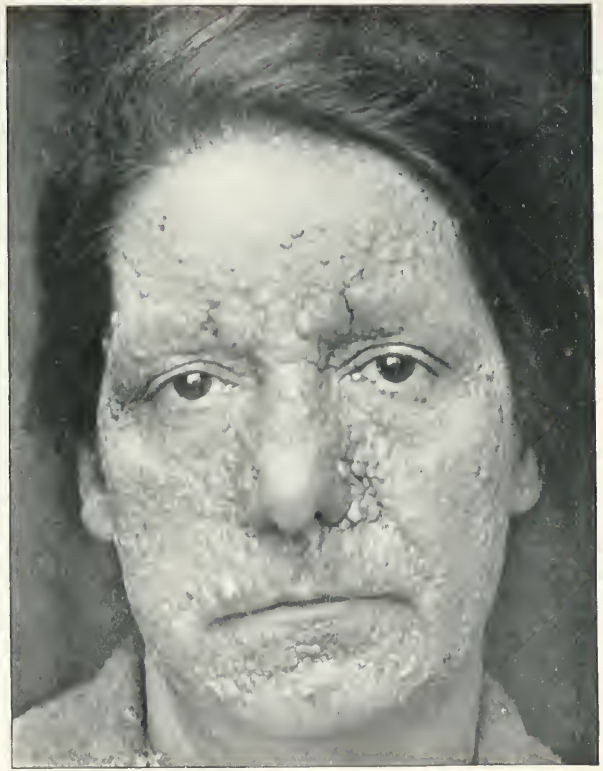

Fig. 2.—Case I, aged 49 years.

TO ILLUSTRATE DR. SAVATARD'S PAPER ON EPITHELIOMA ADENOIDES CYSTICUM.

M. C—, a girl, aged 20 years. The tumours were first noticed eight years ago between the eyebrows, and had increased very slowly until about two years ago, when a more rapid increase had taken place. They are distributed about the eyebrows, inner corner of the eyes, bridge of nose, neighbourhood of the nostrils and mouth, a few discrete lesions being scattered about the rest of the face. There are some on the neck, at the nape and sides, and a larger number on the upper third of the back and shoulders, but more especially in the space between the scapulæ. Family history negative.

(II) *Fordyce's cases* (9).—Daughter, aged 19 years. The eruption was first noticed on the left temple and forehead six years previously. During the past two years there appears to have been no increase either in the number or size of the lesions. The tumours are scattered over the forehead, temples, eyelids, cheeks, nose, behind and below the ears, back of the neck, and through the hair. In the interclavicular regions from fifteen to twenty tumours are seen, and there are a few over the upper portion of the chest.

Mother. In size, appearance and general distribution the lesions were almost the counterparts of those on the daughter's face. First noticed at the age of fifteen. (Her father had a group of tumours like these on her daughter's temple and in the same locality.) The eruption extends over the forehead, face, ears, neck and nose and over the upper portions of the back and chest, and has existed for over thirty years.

(III) *Perry's case* (17).—A woman, aged 31 years, single. The lesions were noticed on the right side of the nose at 10 years of age. At the age of 22 "pimples" were to be seen in their present situation, but had increased in number and size during the last year. There were a few on the scalp, but the rest of the body was unaffected. The family history was negative.

(IV) *Balzer and Ménétrier's case* (2).—A woman, aged 21 years. Lesions on the face, scalp and neck. Onset at 11 years of age. Her father is said to have been similarly affected.

(V) Jarisch, in 1894 (12), reported a case in a young man, aged 22 years, who presented several lesions on the face, some of which were scabbed, giving the appearance of an impetigo. The onset dated from puberty. The histological illustrations suggest that this is a true case in spite of the ulceration of some of the tumours, but this ulceration, however, does not necessarily imply malignancy, as I hope to demonstrate later.

(VI) Pick, in 1901 (18), described a case in a man, aged 45 years, who, since he was 8 years of age, had suffered from severe "acne rosacea" of the forehead, nose and cheeks, which were red and presented numerous small lesions of rosacea. Associated with those on the left malar region there was a peculiar patch about the size of a shilling over which the blood-vessels were dilated, and which had a covering of small adherent scales resembling those of lupus erythematosus. Several small lesions of a similar character were present on the right malar region, forehead, and above the right eyebrow.

(VII) Dubreuilh and Auché, in 1902 (8), reported a case of multiple benign epitheliomata of the scalp in a woman, and Adamson later demonstrated its identity with the condition under review.

(VIII) Csillag (5), in 1906, reported cases in a mother and daughter.

(IX) Pusey in his text-book (1907) (19) illustrates two typical cases of the multiform variety in father and daughter. The lesions are apparently limited to

the face, ears and neck. No history of these particular patients is given, though the author remarks with regard to the absence of malignant supervention: "My elder patient, a man well beyond seventy, in whom, regardless of his condition, an epithelioma would not have been a surprise."

(X) Heidingsfeld, in 1908 ([11]), recorded cases in a man, aged 65 years, and in all his children—two sons, aged 34 and 30 years, and two daughters, aged 38 and 36 years—and a history of the same affection in his maternal uncle and aunt, though neither his mother nor father were similarly affected. The growths in these cases were first evident between the twenty-fifth and thirtieth years.

So far in the cases under review the lesions have been multiple, but Wolters([23]), in 1901, recorded a solitary lesion in the case of a woman, aged 20 years, who presented on the right eyebrow a "yellowish red-coloured linseed-sized tumour," which had been present since birth, and which histologically was identical with Brooke's disease.

(XI) Sutton, in 1911 ([21]), cited a remarkable case in a negro woman, aged 60 years. The growths, which varied in size from "the head of a small pin to the tip of a navy bean," were darker than the normal skin, and were distributed over the face, forehead, malar regions and sides of the neck. White, of Boston, who examined the specimens, suggested that the growths were more nearly a so-called tricho-epithelioma than a typical representation of the Brooke-Fordyce type of disease. These tumours were greatly treasured by the family, in spite of the fact that the patient's mother, three of her mother's sisters, her own sisters (nine), her own brothers (two), all her own children (fourteen), her surviving sister's children and her brothers' children all showed similar lesions on the face.

One of my own cases somewhat resembles this case, but has no such remarkable family history.

(XII) Adamson ([1]) showed before this Section, in February, 1914, a most interesting series of cases in a mother, two sons and a daughter. The communication was reported in the *Proceedings of the Royal Society of Medicine* for 1914, and is accompanied by several clinical and histological illustrations, one of which is another instance of a solitary lesion. It was situated in the lower lid of a man, aged 37 years, "who now had a typical rodent ulcer of two years' duration in the nasolabial furrow."

(XIII) Miller, in 1915 ([14]), recorded three cases in a brother and his two sisters. The father and another brother were said to be similarly affected.

(XIV) Adamson, in 1918 ([1]), reported a case of multiple benign basal-cell epithelioma of the scalp. The patient, a man, aged 61 years, presented on the scalp from forty to fifty tumours which varied in size from that of a hemp-seed to that of a chestnut. They were of the colour of the skin with smooth surface devoid of hair, firm and movable on the skull. They had been noticed for twelve years, but there had been similar tumours on the back for forty years. Adamson established its identity with Dubreuilh and Auché's case and with the case of one of the sons affected with epithelioma adenoides cysticum, which he had reported previously and to which I have already referred.

(XV) Norman Paul ([16]), in his book, shows a typical example in the case of a woman, and we are informed that her grandfather, father and two brothers and a sister were similarly affected.

Withers and Coleman in 1920 ([24]) reported a case of multiple benign cystic

epithelioma associated with xeroderma pigmentosum, but I cannot accept it as a true case of epithelioma adenoides cysticum (Brooke).

Author's Cases.

I shall now show you cases which have come under my own observation, and the first to which I shall direct your attention is one of Brooke's (3) original cases, whom by chance I saw in my out-patient department last summer.

(i) She (Fig. 1) was the elder daughter of the mother and two daughters referred to previously, now aged 49 years; and here I must report that Brooke's family record was not strictly accurate—instead of "a widow and her two only children" you should read "a mother and two of her daughters." For, though the mother died two years later her husband still survives, and they had in all nine children, six daughters and three sons. None of the sons was affected, but the third, fourth, and later the fifth daughter developed well-marked evidence of the disease. The fourth daughter I have not been able to trace. She is married but has no children, and has not communicated with other members of the family for years. I understand that the growths in her case have not attained the extravagance of her elder sister's. None of the grandchildren shows any evidence of this affection. You will see from the photograph (Fig. 2) before you the great ravages the condition has made during the last thirty years. The tumours have progressed in numbers and size. Between the brows, and on either side of the alæ nasi, they have coalesced "to form raised lumpy patches of most disfiguring appearance," while several of the lesions on the back have attained the size of large cherries. This patient presented lesions all over the face and ears, numerous small ones on the scalp, neck, shoulders, and chest, several minute ones on the forearms, none on the upper arms, and one—the size of a pea—is evident below the left calf; while the central third of the back is studded with tumours of varying sizes (Fig. 3). Numerous milia can be seen in and between the tumours on the face and a few of the growths show pigmentation beneath the epidermis. None of the tumours have ulcerated and none have involuted. The affection was first noticed at the age of 10 years. In spite of her disfigurement I have been unable to persuade the patient to attend for treatment. The condition is not, however, so evident to the eye as to the camera, because the lesions for the most part are the colour of the skin.

(ii) The next case is that of this patient's younger sister, now aged 41 years, who presented no lesions till she was 20 years of age. She was the sixth child and the fifth daughter of Mrs. E—. The lesions are confined to the face. They slowly progressed up to a few years ago and seem to be stationary now. The distribution is typical of a case of moderate intensity.

(iii) The next case is that of Miss A—, aged 34 years in November, 1915, when she first consulted me. She presented numerous tumours on the face, neck, shoulders, scalp and back. They were for the most part of the colour of the skin. Some few, on the face, only included one or more milium-like bodies and some half dozen on the face and back contained sub-epidermal pigment. One on

the back was the size of a cherry. The scalp tumours were all small and bereft of hair. While some were superficial others were fairly deeply embedded in the skin, two-thirds of the growth being beneath the skin's surface. The growths for the most part were firm without being hard, and could be felt to lie in the skin and to move with it. The affection was first noticed during childhood. For the last seven years they have increased very slightly in number and size. The patient has six brothers but no other member of the family is similarly affected.

The next series of cases show a marked hereditary factor.

The mother, three daughters and a son of a family of nine were affected, and the third child (a son) of the eldest affected daughter presents an early solitary lesion.

The mother is dead, but her photograph shows the characteristic lesions in the central third of the face. They had appeared at an early age but had not progressed in number or size after her marriage. These cases I first saw this year. They are not of the extensive type and the lesions are limited to the face.

(iv) The eldest sister, aged 45 years, presents pronounced milia inclusions and a few pigmented lesions. The tumours were not evident before her twenty-fifth year and are progressing very slowly.

(v) The brother, aged 42 years, presents a similar appearance. Most of his tumours date from boyhood and they are apparently stationary.

(vi) The second sister, aged 29 years, presents smaller lesions with fewer milia and no black dots. In her case the affection has only existed for five years.

(vii) The third sister was brought to me only within the last few weeks, and her case is so slight and the lesions so small, though characteristic, that I could not have made the diagnosis without the family history. She is aged 25 years.

(viii) The eldest sister's third son, aged 12 years, presents one small tumour on the right upper lid and a few milia without tumour formation on both upper lids.

The three cases following are instances of solitary lesions:

(ix) The first, a girl, aged 11 years, whom I saw in 1912, presented on the right side of the bridge of the nose a skin-coloured, raised, translucent-looking tumour of fairly firm consistency, movable with the skin and apparently not invading the derma to any great extent: in short, a tumour which clinically was indistinguishable from a non-pigmented mole (Fig. 4). There were no milium-like bodies evident and none was present elsewhere on the face. The growth was first apparent five years previously and had progressed slowly. No other member of the family was similarly affected and no fresh lesions had appeared up to two years ago. Microscopically the section was almost identical with Brooke's [3] original drawings (Fig. 5).

(x) The second, a woman, aged 54 years, in 1917, presented a similar, though larger and more indurated, tumour in the same situation. The growth had appeared in childhood. There were no milia present. The family history was negative and no other lesions have since developed.

(xi) The third, a woman, aged 42 years, in 1916, presented in the left nasolabial furrow a small tumour which had existed since childhood. It had recently

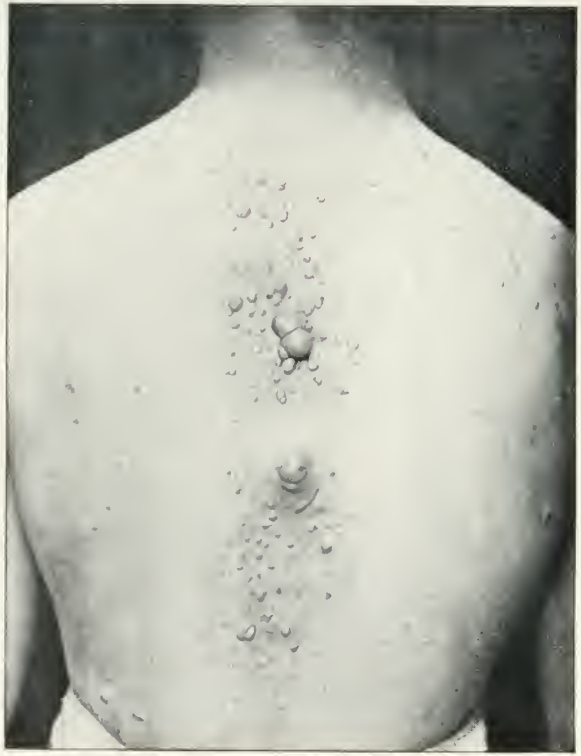

FIG. 3.—Case I: Lesions on central third of back.

FIG. 4.—Case IX: Solitary lesion.

TO ILLUSTRATE DR. SAVATARD'S PAPER ON EPITHELIOMA ADENOIDES CYSTICUM

become ulcerated. On examination I found an infective ulceration of a benign epithelioma.

(xii) My next case, which bears some resemblance to Sutton's case, is that of a girl, aged 15 years, who was sent by Dr. Horsmann McNabb this year, and who presented various small tumours on the face and neck. For the most part they did not exceed the size of a pin's head, though one, which had become ulcerated and scabbed on the right lower lid, was the size of a pea. The tumours of the upper lids were hardly raised above the surface of the skin, whilst those on the lower lids at the ala nasi and on the neck were raised above the skin, had a translucent appearance, and were the colour of the skin. The ulcerated tumour and the one beneath the left lower lid were firm to the touch whilst the others were quite soft. The right lower lid tumour was clinically indistinguishable from a rodent ulcer, and the one at the right ala nasi had a small vessel coursing over its surface and it simulated a non-pigmented mole. I thought that probably we had here different types of tumours. On histological examination I found them all apparently of basal-cell origin, though, as we shall see later, the upper lid tumours suggest a possibility of their being tricho-epithelioma. No white nor black dots were evident in the growths, though a milium was present on the left upper lid and there were some pigmented nævi on the face. The tumours were first noticed two years ago. No other member of the family was similarly affected.

Later examination of the rodent-like tumour of the right lower lid shows that it has undergone a malignant development, and a recurrent nodule, after excision of the original ulcer, shows this development more clearly. Here, then, we have evidence that these benign growths *may* exceptionally become malignant. Cranston-Low writes me of a similar case of his in which one tumour alone underwent malignant transformation.*

My last two cases are further instances of solitary tumours. They both came to my out-patient department last month for some other affection.

(xiii) Mrs. R—, aged 63 years, presented on the middle of the scalp a large lobulated tumour of the colour of the skin, its surface devoid of hair, smooth and shining. The growth, not apparently invading the deeper portion of the derma, was very constricted at its base and was nearly 7 in. in circumference. It was firm without being indurated and was movable with the skin. There were no subjective symptoms. It had first appeared twenty years ago.

(xiv) Miss B—, aged 26 years, presented a small mole-like tumour on the upper lip. Though I could not clinically make a positive diagnosis, the appearance, on close inspection, of loculi (not milia) beneath its surface suggested that the growth was not an ordinary epithelial mole. Histological examination proved that my surmise was correct. This small tumour was of the same duration as the preceding one. In both cases the family history was negative.

* *Vide* Dr. Graham Little's case ([25]).

Clinical Summary.

Summarising the clinical aspect of this condition we find that it presents itself in the form of tumours, projecting very slightly above the surface, and varying in size from a pin's head to that of a pea, though on the scalp and back they may later attain the size of a walnut or even larger, and in these situations the major part of the growth may be beneath the skin's surface. They are at first the colour of the surrounding skin or may be a little darker. Many lesions on the face present one or more milium-like bodies (white dots) within them, whilst a few lesions show pigment (black dots) beneath the epidermis. As these growths increase in size they often become shining and translucent. They may acquire a faint yellow or bluish tinge, and many of the older tumours present a dusky reddish appearance due to minute vessels coursing over their surface. The tumours are firm without being hard, and if taken between the fingers can be felt to lie in the skin and to move with it. In a case of moderate intensity the sites of predilection are between the brows, the root of the nose, the nostrils and neighbouring area of the cheeks, the upper lip and the chin, or, in other words, the central third of the face. In the more extensive cases they may cover the face; be profusely scattered over the scalp, neck, shoulders, chest and upper extremities; be thickly studded on the central third of the back to just below the waist. The older tumours of the scalp are bereft of hair.

Exceptionally the tumours may appear on the scalp alone. Or the tumours may be *solitary* when they are clinically indistinguishable from the non-pigmented moles, and I would hazard the opinion that in course of time we shall find the solitary lesion the rule and the multiple form the exception.

The growths are often associated with other tumours of congenital origin.

Though women have provided the majority of cases the lesions are not infrequently met with in men. The age of onset is usually about puberty, occasionally in early adult life and rarely in middle age. The course of the affection is slow but may vary at any time, taking on a sudden acceleration without apparent cause, even after many years' duration.

Never is there spontaneous involution, and rarely do the tumours become ulcerated. Malignancy does sometimes intervene.

Histology.

As to the histology Brooke ([3]) says:

"At the first glance, under a low power, some of the sections closely resembled an adenoma of the sweat-coils, and a careful examination with a high power was required to differentiate between the new element and the exaggerated coils of a sweat-gland. But however tempting it may seem to regard these tracts as allied in some way to sweat-ducts or glands, a careful examination shows that they really have not at all an identical formation, and that the tube-like form which they assume is only apparent. I have never been able to find a single instance of a true lumen in either the tracts or the masses. Two long parallel rows of small palisade cells almost meeting at their base seem frequently to show a clear space between them, as if they really formed the wall of a tube, but a high power has shown invariably the existence of one or more rows of elongated cells of much lighter colour filling up the supposed cavity, and only when one of these cells which has become colloid, as is frequently the case, is seen in cross-section is the illusion of a lumen at all troublesome.

"The illustration shows their rope-like tracts, or finger-like prolongations of epithelium, cut across at all angles, and evidently representing the section of an intricately convoluted mass. Lying in these tracts, but more generally in the masses, were cysts of circular or oval shape, filled with either purely colloid matter, or partly with colloid and partly with concentric layers of apparently horned epithelium (epithelial pearls). In some sections this cyst formation was elementary. In others it constituted the most striking features of the picture. The connective tissue which surrounds the epithelial growth is not the ordinary normal tissue of the corium, but a mass of much finer texture, and is, as it were, moulded round the contour of the growth to form a dense capsule. Its density and thickness both indicate the age and slowness of the rate of growth of the tumours."

Brooke found the tumour arose from the basal epithelium of the surface and of the follicles, and he epitomised its characteristics in his designation of epithelioma adenoides cysticum. Fordyce's ([9]) account substantially confirms Brooke's findings.

This adenoid character of the cell masses was responsible for Perry's ([17]) diagnosis of "adenoma of the sweat-glands," and it, together with the inclusion of sebaceous gland substance, led to Balzer and Ménétrier's ([2]) title of "Adenoma of the Sebaceous Glands," though, as Unna points out, their fig. 3 distinctly shows that what the authors had described as sebaceous cells were in reality cells which had undergone hyaline degeration, or were forming epithelial pearls. Unna ([22]) further states that the constant palisade form of the peripheral epithelia as well as the firm connection of these epithelia in general, even in their most reticular structure, indicates—though

Brooke and Fordyce did not note it—a developed system of epithelial fibrillation. He therefore suggests that the growth is a true acanthoma, but Wolters prefers the term "epithelioma" to that of "acanthoma," since the latter definitely means proliferation of prickle cells, where prickle-cell structure is maintained, which cannot be affirmed of the condition under discussion.

Jarisch ([12]) traced the origin of the tumours from the basal cells of hair-follicles.

Pick ([18]), on the other hand, found a marked proliferation at the periphery of the sebaceous acini, forming epithelial tumours similar in appearance to those of Brooke's, and suggested "adeno-epithelioma" as the most suitable name.

Csillag's ([5]) illustrations show the growth arising both from the basal cells of the surface epithelium and of the hair-follicles.

Now it is essential in investigating this subject to examine very many tumours, and tumours from all situations. We have found, clinically, that the growths vary considerably in different situations, and so, too, this variation is reflected in our histological pictures. Neither Brooke nor Fordyce appear to have examined growths from the scalp, or they would have found here a rather different picture. As I have already indicated, the milium-like bodies are not apparent in this situation, and consequently sections show only very small cysts (Fig. 6). The adenoid masses are densely packed and surrounded by a clear hyaline stratum, while numerous hyaline bodies (or rudimentary cysts) are present in the alveoli, and, according to Dubreuilh and Auché ([8]), these bodies are not present in basal-celled carcinoma. These authors also confirm the findings of Brooke ([3]) and Fordyce ([9]), showing that this hyaline degeneration is evident in the masses soon after their origin from the basal epithelium, but they erroneously describe as blood-vessels within the alveolar masses what are in reality early cysts.

With regard to the formation of the cysts, Brooke ([3]) says:

"Epithelial cells become large and translucent, the cells around them take on a like action, and a little focus of degenerated cells is thus produced. Owing apparently to the centrifugal and lateral pressure, the neighbouring cells assume a cubical shape and form a kind of wall round the central mass. The cells constituting the original focus increase in size, lose their clear contours, form translucent clumps in which the nucleus is very faintly stained, and later disappears. As the mass grows the cells at the periphery become more and more

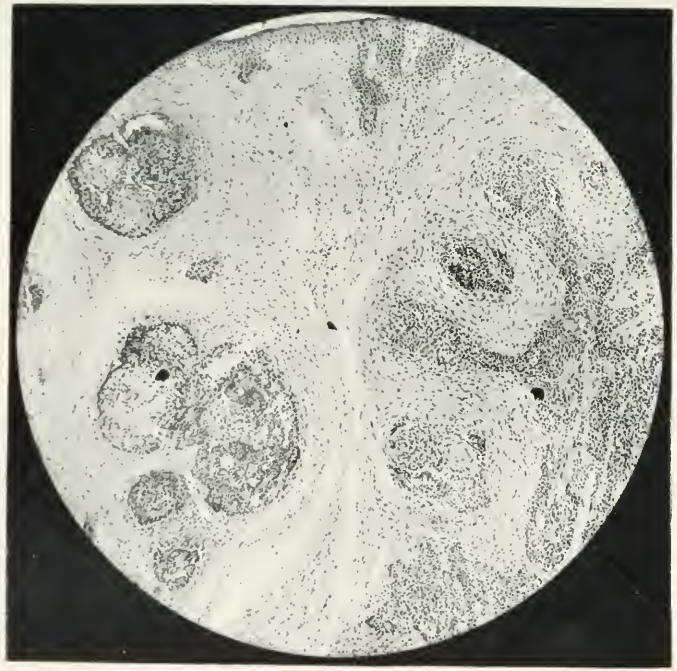

FIG. 5.—Case IX: Microscopical section.

FIG. 6.—Case III: Section of scalp tumour, showing hyalin bodies (A) and small cysts (B).

TO ILLUSTRATE DR. SAVATARD'S PAPER ON EPITHELIOMA ADENOIDES CYSTICUM.

flattened and condensed, until they at length consolidate into a solid cyst wall. The contents vary: in some of the cavities they are completely colloid, in others they are composed of concentric layers of flattened horny cells round a colloid centre; or again part of the contents may consist of a colloid mass and part of horny layers, but I have not found one cyst in which the whole of the contents was made up of horny cells." [Fordyce differs on this point, and states that some of the cysts were entirely filled with horny cells.] "The presence of colloid matter seems to be an essential factor in the origin of the cysts, even if the later additions to its circumference undergo the more normal transformation into corneous tissue. It is only when the colloid mass reaches a certain size and thus produces a corresponding amount of outward pressure that a true cyst is formed."

Brooke also points out that this degeneration is not confined to the older tumours, but seems to be an essential feature of the growth from its beginning. Large cysts may be found in small tumours, whilst the largest growth may be free from any except those of the smallest size.

The cyst grows at the expense of the neighbouring epithelium, and may absorb the cells so completely as to give the appearance of being isolated in the connective tissue, but in the other section the trace of epithelium connecting it with the body of the growth, and in which it has originally formed, may be found intact. In consequence of the apparent snaring off of the cyst Csillag [5] has suggested that there are two kinds of cysts formed—one which results from the colloid degeneration of the epithelial masses, and the other from the snaring off of the follicle and the production of a true sebaceous retention cyst, the latter corresponding to the small tumours which resemble milium.

The slide (Fig. 7) now shown demonstrates fairly clearly the formation of the cyst as described by Brooke. Csillag's view of a dual origin of the cyst cannot, I think, be maintained.

I fully agree with Brooke's explanation, except that I would substitute *hyaline* for "colloid" and *formation* for "degeneration." The slide next shown portrays very clearly the formation of hyaline bodies, and the further development from them of small cysts which Dubreuilh and Auché refer to as blood-vessels, but one finds the blood-vessels in the septa between the alveoli, and not in the cell masses. These hyaline bodies are not present in all sections. They are not so evident in the tumours on the face and trunk, nor are they always to be found in scalp tumours. The hyaline formation in the

connective tissue is far more constant in scalp tumours, but is found also in growths from other situations.

Dr. Gilchrist, who saw these sections lately, noted the similarity of these cysts to sweat-ducts, and suggested that perhaps they might be such, accidentally included in the new growth, but on further investigation I am convinced that they are not connected with the sweat apparatus, but that they result from an attempt on the part of the cell masses to produce hair-follicles.

Other slides show, too, very clearly the attempt of the formation of sebaceous glands by the adenoid masses; so that we have an attempt on the part of the new growth to reproduce the pilo-sebaceous apparatus, and this hypothesis is, I think, further supported when we consider the *rôle* of the pigment found in not a few of these tumours. A casual clinical inspection, it is true, will find black "dots" in but a few of the tumours, though many of the growths present a slight brownish or bluish tinge, and this colouring is due to the presence of a small amount of pigment in the cell masses or in the stroma *beneath* the epidermis. A careful histological examination will, however, reveal some pigment in very many unsuspected instances. This pigment is elaborated by the epithelium, and its manufacture completes the picture of an attempt on the part of the cell masses to produce a hair-follicle with its attendant gland. The pigment appears to be quite passive and does not induce malignancy (Fig. 8).

Three things are, therefore, essential in a histological picture of this condition: (*a*) Basal epithelial cells; (*b*) massed in adenoid formation; and (*c*) encapsuled by firm connective tissue.

Diagnosis.

There is no time to discuss differential diagnosis in full detail, but I would specially advocate the separation of this condition from the two other well-established varieties of so-called benign cystic epitheliomata, namely, tricho-epithelioma of the lids and syringoma of the trunk. Our modern text-books do not emphasise the distinction as did the older ones. I am aware that the fusion of what I consider distinct clinical and histological entities, into one large group of benign cystic epithelioma, reflects a large body of present-day dermatological opinion, and this opinion is largely based on the fact that these tumours all have their origin in the basal layers of the

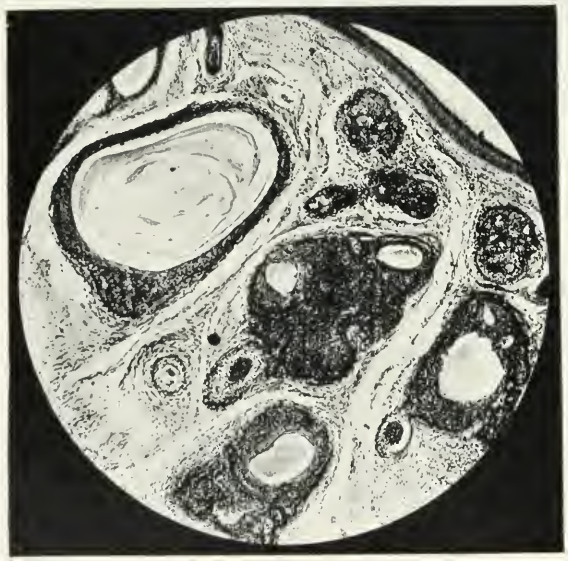

FIG. 7.—Case IV: Section showing the evolution of the cyst.

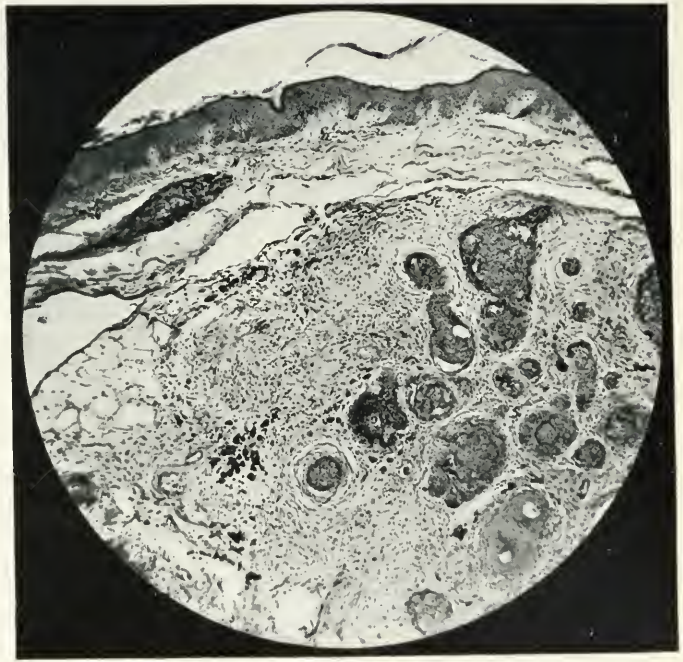

FIG. 8.—Case III: Section of lesion from back, showing pigment in the alveoli and stroma.

TO ILLUSTRATE DR. SAVATARD'S PAPER ON EPITHELIOMA ADENOIDES CYSTICUM.

epidermis, and that some few cases have been recorded which are very difficult of classification. I submit that there is as much justification for the separation of these benign epithelial tumours as there is for separating the basal-celled from the prickle-celled carcinoma; for Darier has recently emphasised the fact that we have a mixed variety—the baso-spinal epithelioma (and I would add, too, a spino-basal epithelioma). I have thrown on the screen many illustrations of Brooke's disease which are uniform in type. In the so-called tricho-epithelioma (or cystic nævi) of the lids the lesions are usually confined to the eyelids, though they may be found between and in the neighbourhood of the brows. The condition is not rare. I see a case on the average once a month. A family history of heredity is rare. Histologically the cystic element is very marked, and instead of adenoid alveoli we have epithelial strands running parallel with or at right angles to the surface. Many of these strands present a duct-like appearance.

In the syringoma, or misnamed "eruptive" hydradenoma, the distinction is even more marked. The lesions are as a rule more deeply embedded in the true skin, are firmer, and do not attain the size that it is now known many of the lesions do in Brooke's disease. These nodular tumours are usually limited to the trunk. Unna ([22]) says:

"The syringoma tends to tubular formation; is long independent of the surface epithelium; has never any connection with the hair-follicle; and never shows lobulated or branched masses, but always the duct form; or it forms isolated cysts; induces no displacing pressure on the normal elements of the cutis and is restricted to the central parts. We never find the epithelial cylinders of the syringoma encapsuled by a special connective-tissue sheath, and there is no epithelial fibrillation nor prickles in the cell."

The only thing analogous to both tumours is the formation of colloid or hyalin cysts.

Crocker([4]) and Hartzell([10]) are strong advocates for the separation of these conditions, and Dr. Adamson—our President—puts the case very clearly in his paper of 1914.

I think it is impossible to differentiate clinically with certainty between a solitary lesion of epithelioma adenoides cysticum and a non-pigmented or pigmented mole. A correct diagnosis can only be made after examining a section, and it would be equally difficult without a section to differentiate a simple ulcerated lesion from a

mole in which a rodent ulcer or epithelioma had developed. The differentiation clinically of a small solitary lesion from a non-ulcerated rodent ulcer is not easy, though in the latter a real and not an apparent depression or umbilication is often present, and on palpation there is less resistance.

With regard to the differentiation of the multiple variety from multiple rodents I think there should be little difficulty. Dr. Adamson, I am pleased to learn, no longer holds to his differentiation enunciated some years ago. The main points are: the uniformity of the lesions, the rarity of their ulceration, the absence of atrophic scarring and the hereditary transmission of the benign tumours as compared with the multiformity of the lesions, their tendency to ulceration and to atrophy and the absence of the hereditary factor in multiple rodents. There is just the possibility that some cases which have been shown before this Section may have been instances of mixed benign and malignant tumours.

With regard to their histological differentiation I cannot do better than quote the conclusions of Dr. Adamson, who says:

"In both diseases the lesion is made up of an epithelial growth derived from the basal layer of the epidermis and from that of the hair-follicles. The growth is in the form of cell masses with a marginal palisade layer and central oval cells. There is a tendency to cyst formation in both colloid cysts and epidermal cysts. In both the epithelial masses have new formed encapsulating fibrous tissue. Here, however, the resemblance ceases, and we find that while the lesion of Brooke's disease is sharply circumscribed by a highly organised fibrous tissue, there is in the rodent ulcer a more highly cellular and therefore more actively growing fibrous tissue element, a plasma-cell exudation at the advancing margin and outlying groups of epithelial cells invading the tissue beyond the main growth."

When, however, the tumours are situated on the scalp and back there should be no difficulty at all.

There is a condition for which a case of moderate distribution might be mistaken, and that is the so-called adenoma sebaceum, especially of the non-telangiectatic variety. Heidingsfeld expresses some doubt as to whether a patient whose picture he presented to Pusey and which appears in the latter's text-book may not have been a case of epithelioma adenoides cysticum.

Lastly, there is the differentiation of the cases which present multiple growths on the scalp only. I quite endorse Adamson's statement that "the majority of cases so-called *endothelioma capitis*

belong to the group of cases which are known as epithelioma adenoides cysticum (Brooke)," but I do not agree that *all* the cases he cites belong to this group, for some I consider undoubted cases of cylindroma. These latter tumours may be solitary or multiple on the scalp and neighbouring parts. They are not usually seen before middle age and may remain dormant for some years, but later may become ulcerated and invade the deeper tissues. They are of equal malignancy with rodent ulcer.

Histologically the tumour is made up of (i) cylinders of cells for the most part anastomosing to form trabeculæ and giving the appearance of glandular structures; (ii) of cellular masses which are really actively growing cylinders, in which are formed cavities, the result of degeneration. The most characteristic feature, however, is the mucoid degeneration of connective tissue which, according to Malassez ([13]), grows into these masses, but which Nicolau ([15]) has demonstrated becomes imprisoned in the network of trabeculæ formed by the cylindrical growth. The histological picture is quite distinct from that of epithelioma adenoides cysticum. The myxomatous degeneration is seen in the earliest tumour, and is quite characteristic. Dalous([6]) carefully compared sections of cylindroma with sections from Dubreuilh and Auché's case of benign epithelioma.

Treatment.

For solitary lesions "excision" is the best. For the multiple variety electrolysis or excision are indicated when the lesions are not very numerous. In the more extravagant cases X-rays clear up the tumours, but the milia remain and require expressing.

Summary.

Of the forty-three recorded cases we have just reviewed, thirty were in females and thirteen in males; thirty-five showed multiple lesions and in eight solitary tumours alone were evident. In twenty-eight there was a positive family history, while in fifteen the family history was negative. Only in one instance of a patient presenting a solitary lesion was the family history positive, and in this case (boy, aged 12 years) the tumour was probably the forerunner of others. We have noted the difficulty, if not the impossibility, of making a correct diagnosis of the solitary tumours by clinical means alone, for

they present the appearance of the common so-called "epithelial" mole. All authorities agree that these tumours, apparently of embryonic origin, belong to the large group of nævi; and though I hesitate to add to the list of titles, already too large for enumeration, I cannot conclude without suggesting that instead of benign epithelioma or acanthoma, we should adopt some such title as "nævus follicularis" or "follicular nævi of the skin."

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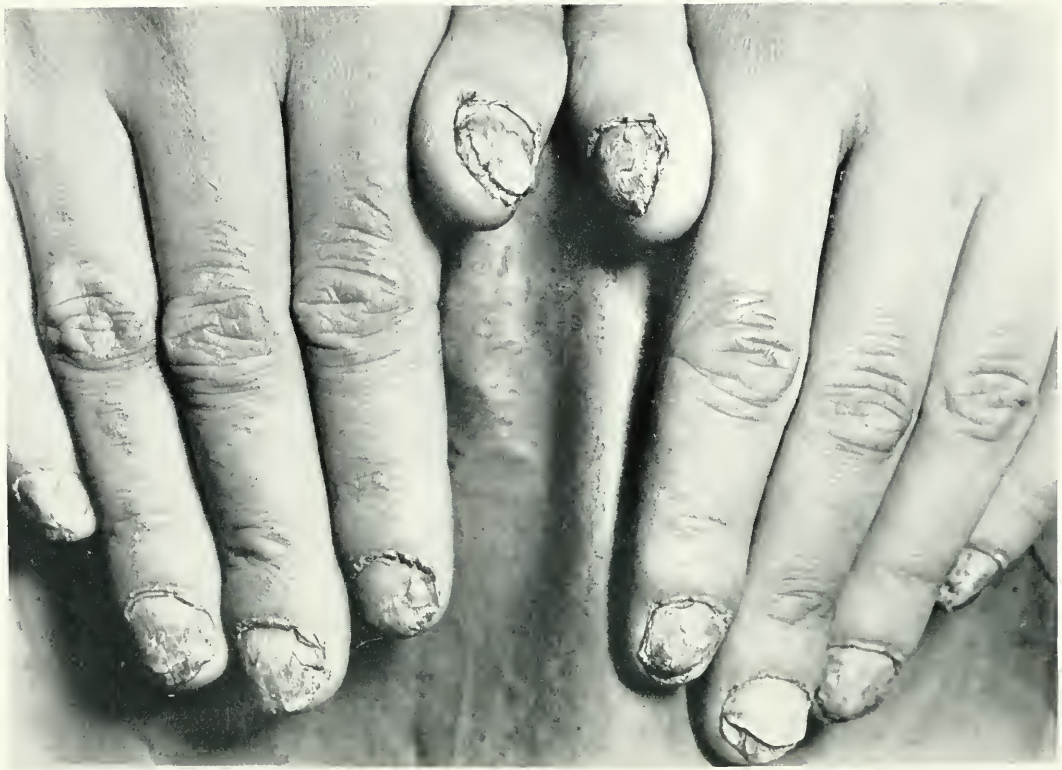


All the finger-nails involved and removed; recurrence followed.

TO ILLUSTRATE DR. H. C. SEMON'S PAPER ON TINEA UNGUIUM.

TINEA UNGUIUM.

H. C. SEMON, M.D., M.R.C.P.,
Physician to the Skin and V.D. Departments, Royal Northern Hospital, and Dermatologist to the Hampstead General Hospital, and to the Ministry of Pensions.

In February of the current year I showed a case of mycelial infection of all the finger-nails in a war pensioner (*Brit. Journ. Derm. and Syph.*, June, 1922, p. 208). In the discussion which ensued, the treatment by avulsion was agreed upon as the most rapid and generally successful, and this was duly performed under general anæsthesia on March 9th. The morbid condition of the nails before removal is well illustrated by the accompanying photograph, which clearly demonstrates how complete and disfiguring the neglected infection may become, and explains the position taken up by the American Landing Authorities in refusing a disembarkation certificate to this particular individual when he reached New York early in January. The subsequent history of the case still further justifies their action, for on March 21st the matron of the convalescent home to which he had been sent referred to me a case of glabrous ringworm of the shoulder in a wardmaid, which she (the matron) attributed to direct infection from my case of tinea unguium, as the girl had been working in his ward.

I was unwilling to credit the assumption even when another maid in the ward developed a similar infection. Attempts to cultivate the mycelial segments demonstrated microscopically in fragments of skin removed were unsuccessful, probably owing to the too liberal application of strong iodine tincture before the patients were submitted for my inspection and treatment. I therefore directed the man to attend, and was much disappointed to find that scrapings from the nail-folds and such portions of nail as had begun to grow all contained the fungus in profuse quantity. The vitality, or rather the *impregnability* of tinea in the nail substance, must be very great, for after avulsion I had applied pure phenol to the nail-bed and

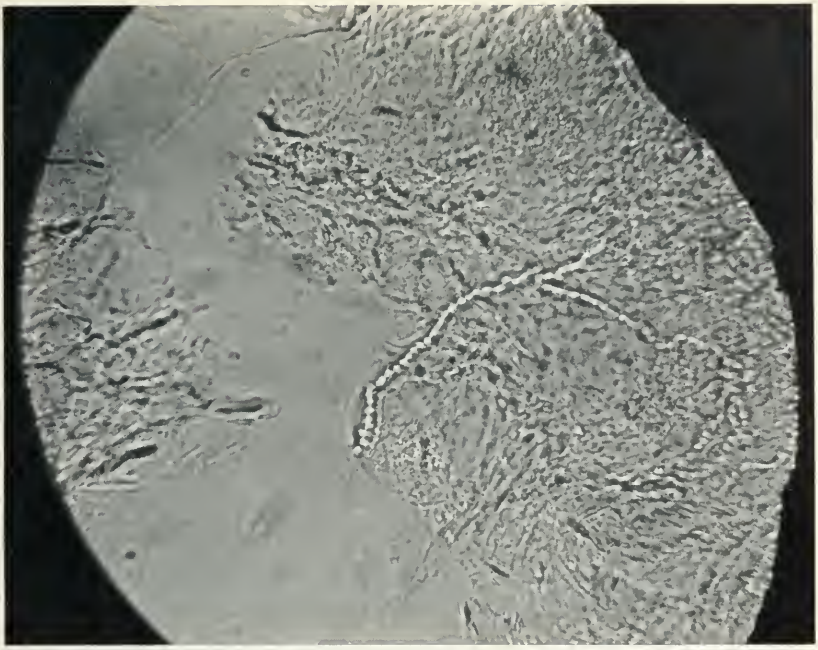
under the cuticle folds, and had ordered the continuous application of the ammoniated mercury ointment as an after-treatment.

I was still sceptical as to the source of the infection in the two women, but on May 24th I was forced to alter my opinion, for a third wardmaid, who had been acting as *locum* for one of the others, reported herself with an infection of two finger-nails of the left hand. My microscopic examination, and the subsequent cultivation of *Trichophyton rubrum* by Dr. Broughton Alcock on glucose acid agar, confirmed the identity of the responsible fungi in the two cases.

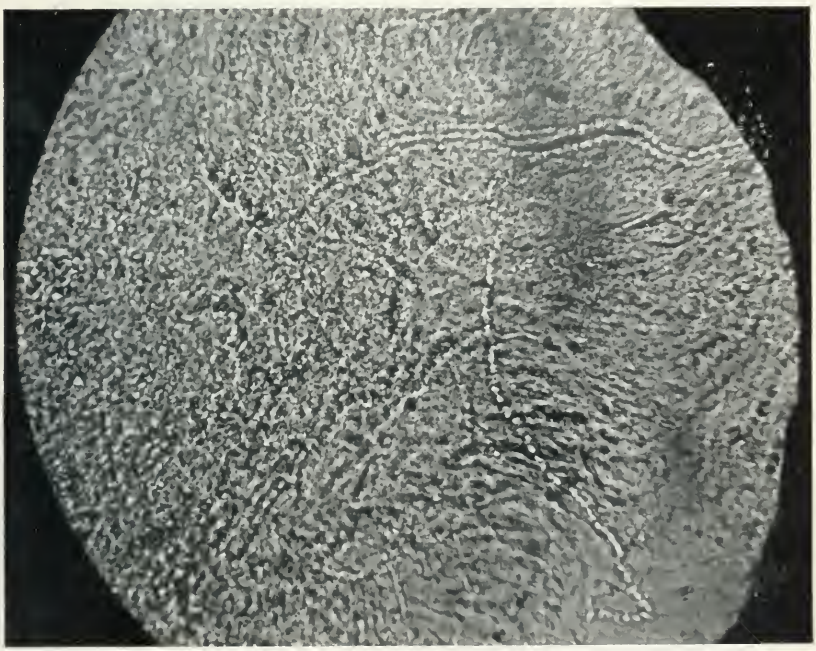
The girl was persuaded to allow avulsion, and during regrowth plaster impregnated with 20 per cent. sublimate and 5 per cent. phenol was continuously applied for two months, and she is now cured. The unfortunate American, the proven source of one infection and the suspected source of two others, was transferred for further surgical measures to a hospital under the Ministry of Pensions. The mysterious mechanism by which these three women became infected was subsequently traced to a roller-towel which was in general use in the ward service-block. The man had been in the habit (contrary to express orders) when helping with the rough work in the ward of removing his dressings, and frequently using the towel to dry his unprotected finger-tips.

On June 16th Dr. Sinclair, of Surbiton, sent me for treatment two sisters, whom he suspected of ringworm of the finger-nails. The elder, aged 37 years, had had the disease for six years, and the third, fourth and fifth finger-nails of both hands were symmetrically affected. The younger, aged 34 years, had noticed the condition in the middle and little fingers of the right hand and the little finger of the left hand for about six months, and was inclined to attribute the infection to her sister's manicure set, which she had been in the habit of using. (These cases were exhibited to the Dermatological Section at their June Session.)

The accompanying micro-photographs of the segmented and bifurcating mycelium of the fungus in the nail substance leaves no manner of doubt as to the nature of the infecting agent, and Dr. Broughton Alcock again succeeded in cultivating a very beautiful specimen of the *origo mali*, believed by him to be an example of the *Tricophyton rubrum*. Avulsion was refused by both the patients, and continuous treatment with a 20 per cent. sublimate and 5 per cent.



Invasion of the nail substance and dichotomous branching. ($\frac{1}{6}$th objective.)



Invasion of the nail substance. The parallel growth of the mycelium is characteristic for the trichophyta.

TO ILLUSTRATE DR. H. C. SEMON'S PAPER ON TINEA UNGUIUM.

carbolic plaster, firmly affixed, and kept in place over each infected nail by narrow strips of zinc strapping, is certainly improving their appearance, and is very well tolerated.

The points of interest in these cases appear to me to be in the first place their pronounced infectivity in given circumstances. It would follow that a suspected case must at once be submitted for microscopic examination of nail-cuttings in liquor potassæ. These are very readily and painlessly obtained from any part of the unprepared nail by the use of a discarded Gillette razor blade, which, mounted in a suitable holder (now obtainable for a shilling), is a valuable addition to the dermatologist's armamentarium for this and many other purposes.

If avulsion is refused, and this treatment, as my first case illustrates, may fail, the affected nail should be kept continuously and completely covered in some waterproof, adhesive and antiseptic covering. Of the three desiderata I regard the first as essential, for an impermeable covering soon leads to maceration, and this in its turn is likely to permit of the penetration of whatever antiseptic is selected as a therapeutic agent. I regard the plaster method as superior to the wearing of rubber finger-stalls—a method favoured by some authorities, for these embrace the whole phalanx and include the pulp of the finger, which is neither necessary nor agreeable for the patient. I do not agree, moreover, with those who habitually favour the application of strong and irritant applications, *e.g.* chrysarobin. The fungus is easily killed by such mild antiseptics as are contained in Whitfield's ointment, provided it can be reached by them, as in tinea of the glabrous skin. In my opinion, therefore, a cure without operation is most likely to be obtained in tinea unguium by such measures as aim at producing a slow but continuous maceration over a prolonged period.

I desire to utilise this opportunity to raise another point which concerns that wide-spread, very intractable and frequently relapsing condition—ringworm of the toes.

It most commonly affects the skin between the fourth and fifth toes, and is usually bilateral. In the chronic stage there is nothing more than exfoliation, and the patient rarely seeks advice; but in the summer an acute plantar dermatitis may develop, and render walking impossible. In other cases the clinical picture is the sudden and

obscure occurrence of deep, indolent and painful cracks between the two or three outer toes, or in the normal transverse fissures on their plantar aspects. In one such case which has relapsed time and again after apparent cure, I have recently been able to demonstrate a mycelial growth in parings from the little toe-nail itself. I am convinced that in this case the source of constant reinfection has been, not the socks or bath-mats, so commonly suspected, but mycelial outgrowths from the infected nail substance.

The little toe-nail is frequently a deformed, yellow and opaque structure, I may add, even in people who never manifest clinical evidence of the inter-digital type, and it may be that a large number of them are really harbouring the fungus in the nail, which has then become a potential source of infection of the skin.

If the nail infection prove to be the rule in such cases—and this is a question which is undergoing investigation—the explanation of relapses and the almost insuperable difficulty of cure is immediately forthcoming, and may help our therapy along more scientific and radical lines in the near future.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Meeting held on October 19th, 1922, Dr. H. G. Adamson, President of the Section, in the Chair.

Dr. J. H. Sequeira showed *two cases of multiple carcinoma.*

Case 1.—A woman, aged 57 years, single, had been under Dr. Sequeira's care at intervals since 1912, when she was sent to him with a rodent ulcer of the left frontal region of the ordinary type, rather superficial, and tending to cicatrise. Although he had seen her at intervals and her doctor had seen her very often, she had never mentioned that she had any other lesion, except patches of psoriasis on her elbows and knees; but for twenty-five years she has had, on the left upper abdomen, a patch which she herself thought to be psoriasis, and which at one time was covered with a considerable scale. Under treatment by X-rays and ointment much of this scaling had been removed, and now she had an irregular, lobulated area, without much infiltration, with a red, rather vascular surface, though there had been no hæmorrhage, and practically no discharge from the surface for a long time. It was a condition which he originally described in his notes as "Pagetoid," *i.e.* resembling Paget's disease of the nipple. He had no sections of it.

Case 2.—An old man, aged 74 years. His present lesions had, as far as he knew, been in existence for thirteen years. In August, 1921, he had radium treatment applied to a rodent ulcer above his right eye, which was now soundly scarred. He presented eight lesions; the largest was mid-sacral, measured 2 in. by 1¼ in., and was irregularly shaped, of purplish-red colour, having fine silvery scales on its surface and showing small brownish crusts of dried blood, varying in size from that of a pin-head to that of a millet-seed. Above and to the left of this was a small similar lesion, the size of a pea; 1½ in. higher and to the left of the mid-line was a well-defined purplish smooth lesion about the size of a shilling, its edge not appearing to be raised. This and all the lesions were freely movable,

not tender, thin and easily pinched up. There was a fourth patch in the mid-dorsal region to the left of the spine similar to that last described, and a fifth smaller lesion the size of a threepenny-piece to the right of the second dorsal spine. In front of the chest were three patches, one in the middle of the sternum, the size of a florin, with a pink scaly surface, a similar slightly scaling area over the xiphisternum, and two small pale patches, one over the second left costal cartilage and two below the middle line of the left clavicle. This last patch was yellowish-brown in colour, oval in shape, and consisting of confluent, finely scaling, palpable, small papules. The whole area was slightly raised, 1·2 c.c. in diameter, and had a faintly pink tinge in its middle. This was entirely excised for microscopical sections, and showed marginal downgrowths of basal cells with flesh-like buttons with a perfectly regular border. A second section taken from a brownish oval nodule on the front of the chest showed a definite, typical appearance of basal-celled carcinoma.

He showed these cases of multiple carcinomatous lesions of the skin in order to initiate a discussion as to whether Bowen's carcinoma was a clinical entity, or whether it was to be recognised as one of the many appearances of pre-cancerous conditions found in cases of multiple carcinoma cutis.

Dr. H. G. Adamson showed a case of *multiple superficial rodent ulcer: possible embryonic sweat-duct origin.* The patient presented a type of superficial multiple rodent ulcer to which the attention of this Section had lately been called by the exhibition of several similar cases. Three such cases were shown at three consecutive meetings in 1920 by Dr. Graham Little, Dr. Agnes Savill and Dr. Gray,* and Dr. Little more recently brought up three cases to the meeting in March when Dr. Darier was present.† Dr. Darier identified them with a baso-cellular superficial epithelioma which he had described as "Pagetoid" and distinguished them from Bowen's carcinoma.

The patient now shown had five lesions, one on the back and three on the abdomen and one on the front of the left thigh. They showed the usual irregularly circular discoid patches, with scarcely any depth or infiltration, covered with fine scale-crusts, and with a very

* *Brit. Journ. Derm. and Syph.*, 1920, xxxii, pp. 42, 135, 233.
† *Ibid.*, 1922, xxxiv, p. 246.

narrow waxy rim or "rolled edge," and a tendency to resolve by fine atrophic scarring.

The particular interest of the case, and his reason for exhibiting it, consisted in the microscopical appearances. The microscopical sections showed the flattened button-like masses of basal cells springing from the basal cell-layer of the epidermis. A feature to which he particularly wished to call attention was the fact that several of these bud-like processes were continued into long narrow tubules of basal-cell structure which were indistinguishable from sweat-ducts. This feature seemed to him to confirm an opinion which he had previously expressed—that while rodent ulcers were usually embryonic, pilo-sebaceous follicles or basal-cell growths from the epidermis which were destined to become pilo-sebaceous follicles but have lost their power of differentiation, they might be sometimes of embryonic sweat-duct origin, that was to say, they were buddings from the basal-cell layer of the epidermis which, if they had occurred in the embryo, would have become sweat apparatus, but which occurring at a later period had lost their power of differentiation and retained only that of proliferation. In other words they were buddings from the basal layer which were trying to become sweat-apparatus.

Dr. Graham Little said he thought these three cases must be placed in one group; equally certain, he thought, they were of the same type as the series of cases to which the President had alluded. He thought he (Dr. Little) was the first to show this type, in a case he exhibited about two years ago, the patient having a very large number of lesions, almost all of the flat type, but one, on the neck, of the large warty rodent ulcer type. When he showed the case, most of the members present were inclined to question the diagnosis until they saw sections, and the view that it was lupus erythematosus was largely expressed. That was of great interest because the cases of this type were almost uniformly of an erythematoid surface-colour, and the erythematoid aspect of all these cases was, clinically, a very remarkable differentiating feature of the group. He thought the term "erythematoid" should be added to the group, to distinguish it in that way from other varieties of growth. He had been able to see Dr. Fordyce a few weeks ago, and had a talk with him on this subject. Dr. Fordyce had interested him very much by saying that he had had a series of these cases which he (Dr. Fordyce) had also diagnosed as lupus erythematosus, and that the rodent histology had astonished him very much. He (Dr. Little) agreed with the President that there was always clinical evidence of a rodent ulcer in the edge of the rodent patch; in these cases now present a very minute but definite edge was discernible. It was a special character of this group that the lesions showed little or no malignancy, and that was borne out in his first case,

for several of the lesions had undergone spontaneous atrophy. This was also supported by Dr. Pringle's statement at the meeting at which Dr. Darier was present, in which Dr. Pringle described a case he had seen of a gentleman, aged 83 years, who had had one or more lesions of that type since boyhood. With regard to identification with Bowen's disease, Dr. Darier saw the three cases which were brought up, of this variety, when he was here, and when asked the question he very definitely said they were not Bowen's disease. Another very interesting feature about one of his (Dr. Little's) personal cases was that psoriasis was noticed during the eruption of rodents. That was present also in both Dr. Gray's cases. In Dr. Agnes Savill's case the eruption of rodents had apparently followed on the site of extensive seborrhœa of the skin. It was remarkable that in so many of these rare cases there had been some preliminary disease such as psoriasis or seborrhœa before the rodent ulcers appeared.

Dr. Arthur Whitfield said that many years ago he had shown, before the Dermatological Society of London, a case of rodent ulcer of the shoulder, which he had observed developing in a patch of psoriasis. That patient had generalised psoriasis, and he saw it before the rodent ulcer came. But that was not of this type now shown: it was typical rodent ulcer. At that meeting he raised the question whether, in view of the well-known fact that prolonged arsenical medication would set up epitheliomatous changes in the skin, it was possibly one of the reasons why it occurred in this patient, who, to his knowledge, had for a long time been taking large doses of arsenic, at several periods of her life.

Dr. W. J. O'Donovan said this could not be a new disease, and it would be a pity if dermatologists were pinned down to a label of multiple rodent ulcer, because in Dr. Sequeira's case there were conditions of pre-carcinoma, multiple rodent ulcer, and squamous carcinoma present together. He did not think they could recognise these as rodent ulcers by their appearance.

Dr. A. M. H. Gray did not agree with what Dr. O'Donovan had just said; he regarded the condition under discussion as a definite one, both clinically and microscopically. That one of the lesions of Dr. Sequeira's published case showed changes of squamous epithelioma type did not alter the main features of the cases, because sometimes lesions of the rodent ulcer underwent changes indistinguishable from squamous-celled epithelioma. Most of these cases had been microscoped, and had shown a uniformity in microscopical appearance. With regard to Bowen's disease, he agreed with Dr. Graham Little. He did not think there had yet been seen in this country a case which was identical with the type described by Bowen, whereas Darier certainly had seen such cases and had also examined them microscopically. This gave great value to the opinion of Darier on this matter. He thought it was high time that this disease was properly described and published, as there existed considerable confusion of thought about it.

Dr. Savatard said he had hoped to show a patient whom, on Darier's authority, he regarded as a case of Bowen's disease. The type was so different from those shown that afternoon that he thought dermatologists were justified in dogmatically differentiating one from the other. Several members had already emphasised the fact that the cases seen that day had a decided edge; he did not think a decided edge had been demonstrated in Bowen's disease, nor in Paget's disease. The real differential diagnosis was as between Bowen's disease

and Paget's disease. He would have diagnosed this case as extra-mammary Paget's disease rather than as a Bowen's if he had not looked up to see what Darier said on the subject. That authority pointed out how similar histologically the two conditions were, but he stated, with great clearness, that there was an important histological difference—namely, that the hyperkeratosis so characteristic of Bowen's disease was made possible by the retention of the filaments of union between the rete cells, whereas in Paget's disease the dissolution of these filaments prevented the formation of coherent horny layers. In his case of which he showed photographs, he first diagnosed verrucose lupus because of the keratosis. He therefore scraped it. It remained sound for two or three years, after which there was a recurrence, and the patient returned last month. He then excised it, and found what he regarded as Bowen's disease. Bowen and others had emphasised the difficulty of differentiating this disease from tertiary syphilis. The photograph he handed round suggested tertiary syphilis, but the man had no syphilitic history, and his Wassermann reaction was negative. The lesion had already become malignant. He agreed with Dr. Gray that these cases of superficial rodent ulcer should be grouped together and some distinctive name applied to them. He did not like the name "superficial rodent."

Dr. MacLeod said that he thought the superficial type of rodent ulcer, of which several cases had been shown, was different from Bowen's disease. He did not think he had ever seen a case of Bowen's disease except one which had been diagnosed as Paget's disease. Bowen made a definite point of the presence of dyskeratosis, and he (Dr. MacLeod) submitted that some of the cases which had been described as Paget's disease, elsewhere than on the nipples, might probably have been Bowen's precancerous condition.

Dr. George Pernet showed a case of *lupus erythematosus associated with lichen planus*. The patient was a woman, aged 64 years. She had two patches of lupus erythematosus on the left side of the face, and a small recent patch on the bridge of the nose. They began to appear seven years ago. But it must be noted that the rims of both ears were atrophied and irregular. On the left side of the neck there were some old scars of tuberculous glands dating from childhood. In addition there was a palm-sized area of lichen planus verrucosus on the right leg, also dating from seven years back. The points of interest in this case were: (1) The association of the two conditions of about the same duration; (2) their unilaterality, especially in the case of the lupus erythematosus.

(*To be continued.*)

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

A CASE OF QUINCKE'S ŒDEMA. Horiuchi. (*Jap. Zeitschr. f. Dermat. and Urol.*, April, 1922, xxii, No. 4.)

The malady first developed at the age of seven, and the patient, a soldier, aged 22 years, had fifty-one attacks during his stay in hospital (May–September). In eleven of these there was associated acute gastritis and diarrhœa, for which morphia injections were found necessary. Beyond some eosinophilia (10 per cent.) and leucocytosis (11,000) there was nothing striking in the blood-count. The blood-pressure was somewhat raised (155). The urine was free of sugar and albumen, but always gave a positive indican reaction. The gastric juice showed a total acidity of 41 and good digestive power. The sympathetic system was sensitive to atropine, pilocarpin and adrenalin, and gave clinical evidence of vagotonia. There was no abnormal response to mechanical or other cutaneous stimulation, while running and heavy work appeared to initiate attacks both of the œdema and gastro-intestinal disturbances. There was no demonstrable dietetic idiosyncrasy.

Therapeutically there was no effective result with calcium chlorate, pepsin, extract of scopolamine, quinine hydrochloride, pot. iodide, bromide, etc.

Magnesium sulphate appeared to be beneficial, but owing to consequent loss of weight and fatigue could not be long continued. The most effective remedy was thyroid extract, which appeared to control and reduce the attacks both of cutaneous œdema and gastritis, and to be followed by a diminution of the blood-pressure and disappearance of the eosinophilia. H. C. S.

RHINOSCLEROMA. V. Pardo-Castello and M. Martinez Dominguez. (*Arch. of Derm. and Syph.*, 1922, v, p. 478.)

A case is here reported which occurred in a coloured woman, aged 69 years, a native of Havana, and who had never been abroad. Clinically and pathologically the condition of the nose was typical of the disease.

A microscopical examination of the tissue showed the occurrence of the vacuolated cells of Mikulicz and plasma-cells in a state of hyaline degeneration.

From the cells a bacillus was recovered which belonged to the group of the *Bacillus lactoaërogenes*. This germ produced an intense febrile reaction and inflammation when injected into guinea-pigs, but failed to produce rhinoscleroma. The bacillus did not resemble that described by Frisch as the ætiological agent of the disease. J. M. H. M.

AFFECTIONS OF THE HAIR AND SCALP.

CUTIS VERTICIS GYRATA (UNNA). Edward A. Oliver. (*Arch. of Derm. and Syph.*, 1922, vi, p. 6.)

In this case the writer describes a rare affection of the scalp named by Unna "cutis verticis gyrata," and of which about thirty cases have been reported since. The patient was a man, aged 52 years, in whom the scalp was unusually lax and easily movable, and, when the hair was short, presented distinct gyri and

furrows, as if it were too large for the skull. Pushing up the scalp accentuated the condition, and over the occipital region the scalp hung loosely. The hair was abundant, long and black. There were no subjective symptoms.

J. M. H. M.

A STUDY OF RINGED HAIR. Lee D. Cady and Mildred Trotter. (*Arch. of Derm. and Syph.*, 1922, vi, p. 301.)

The material on which this study is based was obtained from three families, in which this peculiar condition existed. It is illustrated by a striking photograph of the back of the head, showing ringed hairs. According to the writers, the appearance of rings is caused by gas-filled interstices in the cortex and medulla of the hair, and is not due to lack of pigment, or pigment atrophy. It occurs in normally pigmented hair, as well as in hair turned grey. It may vary in the degree in which it affects an individual hair, and in the number of hairs affected in different persons. It may be transmitted by heredity directly from one generation to the next. J. M. H. M.

NEW GROWTHS.

THE TISSUE REACTION IN MALIGNANT EPITHELIOMAS OF THE SKIN. Howard J. Parkhurst. (*Arch. of Derm. and Syph.*, 1922, vi, p. 401.)

In this elaborate histological study, illustrated by micro-photographs, the writer discusses the inflammatory reactions which occur in the corium in connection with the various forms of epithelioma. He finds that in the case of basal cell epitheliomas, if they are slow growing, there is only a slight inflammatory tissue reaction, but that this is always accompanied by a connective-tissue degeneration, which is of the basophilic type. In the prickle-cell epitheliomas there is a proliferation of connective-tissue cells in which plasma-cells occur, and this is associated with connective-tissue degeneration, which is of the hyaline type.

The number of plasma-cells and lymphocytes vary directly with the amount of hyaline degeneration of the connective tissues. The plasma-cells would appear to be an indication of resistance of the tissue; the more malignant the process the less the number of plasma-cells. J. M. H. M.

QUARTERLY SURVEY OF DERMATOLOGICAL LITERATURE.

ERYTHEMAS, INFLAMMATIONS, ETC.

Acnitis, Case of. H. E. Alderson. (*Arch. of Derm. and Syph.*, July, 1922, vi, No. 1, p. 35.)

Congenital Pseudo-Elephantiasis of Neck. P. Noel. (*Ann. de Derm. et de Syph.*, July, 1922, No. 7, p. 366.)

Delayed Radio-Dermatoses, The Rôle of Infection in. L. Brocq. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6 [R.S.], p. 53.)

Dermatitis due to Application of Cantharidis. Jeanselme and Blumontier. (*Ann. de Derm et de Syph.*, July, 1922, No. 7, p. 311.)

Dermatologic Training and Practice. O. S. Ormsby. (*Arch. of Derm. and Syph.*, August, 1922, vi, No. 2, p. 129.)

Dermatoscopy. J. C. Michael. (*Arch. of Derm. and Syph.*, August, 1922, vi, No. 2, p. 117.)

Elephantiasis Nostras, Case of (photo.). Hugel. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4 [r.s.], p. 46.)

Epidermolysis Bullosa, Atypical Case of. H. Mandel. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6 [r.s.], p. 95.)

Erythema Multiforme confined to Mucous Membranes. J. Butler. (*Arch. of Derm. and Syph.*, July, 1922, vi, No. 1, p. 1.)

Erythro-Keratodermia, Familial Case. E. Jeanselme. (*Bull. de la Soc. Franç. de Derm. et de Syph* , 1922, No. 4, p. 150.)

Generalised Squamous Erythrodermia of Tubercular Origin. M. Raynaud. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6, p. 281.)

Granuloma Annulare, Plate and Pathological Report. Burnier. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 5, p. 218.)

Granuloma Inguinale with Lower-Lip Lesion. B. B. Beeson. (*Arch. of Derm. and Syph.*, September, 1922, vi, No. 3, p. 342.)

Herpes, Experimental Study of. G. Blanc and J. Caminopetros. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6, p. 294.)

Herpes, Recurrent, Note on the Ætiology. Milian et Périn. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 147.)

Leukodermia in Pityriasis Lichenoides Chronica. H. F. Michelson. (*Arch. of Derm. and Syph.*, September, 1922, vi, No. 3, p. 280.)

Lichen Obtusus Corneus, Two Familial Cases. Payenneville. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6 [r.s.], p. 62.)

Lichen Planus, Spontaneous Cure of, during Diphtheria. Payenelle and Trotabas. (*Ann. de Derm. et de Syph.*, July, 1922, No. 7, p. 365.)

Lupus Erythematosus, Acutus Disseminatus, Hæmorrhagicus, Cases of. M. Scholtz. (*Arch. of Derm. and Syph.*, October, 1922, vi, No. 4, p. 466.)

Morphœa associated with Hemiatrophy of Face. E. D. Osborne. (*Arch. of Derm. and Syph.*, July, 1922, vi, No. 1, p. 27.)

Pemphigoid Eruption in a Case of Syringomyelia. Milian. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 142.)

Pemphigus Foliaceus. L. M. Pautrier. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4 [r.s.], p. 36.)

Pemphigus Vulgaris, New Findings in. K. Gawalowski. (*Arch. of Derm. and Syph.*, October, 1922, vi, No. 4, p. 476.)

Pityriasis Rubra Pilaris with Psoriasis. Hudelo. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 136.)

Ringed Hair, Study of. L. D. Cady and M. Trotter. (*Arch. of Derm. and Syph.*, September, 1922, vi, No. 3, p. 301.)

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Sclerodermia with Melanodermia and Cerebro-spinal Lymphocytosis. L. Jacob. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6, p. 258.)

Sympathetic System in the Pathogenesis of Dermatoses. J. Golaz. (*Ann. de Derm. et de Syph.*, August, 1922, No. 8, and October, 1922, No. 10, pp. 407 and 495.)

Ulcer of Leg, Localisation as a Point in Diagnosis. H. Goodman. (*Arch. of Derm. and Syph.*, August, 1922, vi, No. 2, p. 179.)

Yaws, Manifestations and Treatment by Neo-Arsphenamin. P. O. Gutierrez. (*Arch. of Derm. and Syph.*, September, 1922, vi, No. 3, p. 265.)

ANIMAL AND VEGETABLE PARASITES.

Endothrix of the Scalp in an Adult. E. Rivalier. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 128.)

Ringworm, Generalised. Louste and Laurent. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 134.)

Scabies, A Canine Human Infection. W. Dubreuilh. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, April, 1922, No. 4, p. 185.)

Trichophyton Granulosum Epidemic of 100 Cases. (Plates.) L. M. Pautrier. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6 [R.S.], p. 98.)

NEW GROWTHS AND PATHOLOGY.

Acanthosis Nigricans, Case of Generalised Lesions. (Plates.) L. M. Pautrier. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6 [R.S.], p. 81.)

Acanthosis Nigricans with Cancer of the Stomach (Laparotomy). L. M. Pautrier. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4 [R.S.], p. 50.)

Adenoma Sebaceum and Tuberose Sclerosis of Brain. G. Manghill. (*Arch. of Derm. and Syph.*, July, 1922, vi, No. 1, p. 21.)

Carcinoma of Lip treated by Electro-Coagulation and Radium. G. E. Penhler. (*Arch. of Derm. and Syph.*, October, 1922, vi, No. 4, p. 428.)

Carcinoma of Tongue treated by Radium. G. Pfahler. (*Arch. of Derm. and Syph.*, October, 1922, vi, No. 4, p. 424.)

Congenital Follicular Dyskeratoses (Darier's Disease). Louste and G. Barbier (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 130.)

Cutis Verticis Gyrata. E. A. Oliver. (*Arch. of Derm. and Syph.*, July, 1922, vi, No. 1, p. 6.)

Cutis Verticis Gyrata, Case of. H. E. Alderson. (*Arch. of Derm. and Syph.*, October, 1922, vi, No. 4, p. 448.)

Dermatitis Herpetiformis with Cerebro-spinal Fluid Changes, Case of. L. M. Pautrier. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4 [R.S.], p. 41.)

Epithelioma, Metatypical. J. Darier and M. Ferrand. (*Ann. de Derm. et de Syph.*, August, 1922, No. 8, p. 385.)

Hæmangio-Sarcoma of Skin. A. N. Greenwood and T. K. Lawless. (*Arch. of Derm. and Syph.*, July, 1922, vi, No. 1, p. 10.)

Malignant Disease, Present Position of Radio-Therapy in the Treatment of. Reginald A. Morrell. (*Med. Press*, August 30th, 1922, p. 177.)

Nævus, Linear, a Cervical Case. A. Léri and A. Tzanck. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 157.)

Nail Tumour, Unusual Type of. R. L. Sutton. (*Arch. of Derm. and Syph.*, September, 1922, vi, No. 3, p. 351.)

Precancerous Dermatitis of Bowen. L. M. Pautrier. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6 [R.S.], p. 57.)

Precancerous Dermatitis of the Vulval Mucosa. HUDELO. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 139.)

v. Recklinghausen's Disease, Case of. H. BEHDGET. (*Ann. de Derm. et de Syph.*, August, 1922, No. 8, p. 430.)

v. Recklinghausen's Disease with Atrophic Skin-Areas. HUDELO. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6, p. 237.)

v. Recklinghausen's Disease with Sarcomatous Degeneration, Case of. R. SIMON. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6 [R.S.], p. 66.)

Tissue Reaction in Epitheliomas of the Skin: Its Value and Prognosis. H. J. PARKHURST. (*Arch. of Derm. and Syph.*, October, 1922, vi, No. 4, p. 401.)

TREATMENT.

Expectancy in X-Ray Treatment of Skin-Lesions from the Pathologic Standpoint. W. J. HIGHMAN and R. H. RULISON. (*Arch. of Derm. and Syph.*, October, 1922, vi, No. 4, p. 413.)

Carbonic Acid Freezing, An Instrument for. L. JACOB. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 138.)

Granuloma Annulare, Case cured by Carbonic Acid Snow. M. L. DANEL. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6, p. 292.)

High-Voltage X-Ray Apparatus. C. N. MOORE. (*Arch. of Derm. and Syph.*, October, 1922, vi, No. 4, p. 455.)

Leprosy treated by Salts of Rare Elements. NOEL. (*Ann. de Derm. et de Syph.*, October, 1922, No. 10, p. 475.)

Potassium Permanganate as Curative Agent in Dermatologic Diseases. S. FELDMAN and B. F. OCHS. (*Arch. of Derm. and Syph.*, August, 1922, vi, No. 2, p. 163.)

Psoriasis treated by Intravenous Salicylate of Soda. R. LUTEMBACHER. (*Ann. de Derm. et de Syph.*, July, 1922, No. 7, p. 363.)

Scars, Adherent and Cheloidal, treated by Ionisation. G. BOURGUIGNON. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6, p. 239.)

Sclerodermia treated by Ionisation of Potassium Iodide. JEANSELME. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6, p. 217.)

Smallpox, Salol in. J. A. K. BIRCHETT and S. R. LUSTBERG. (*Arch. of Derm. and Syph.*, July, 1922, vi, No. 1, p. 55.)

SYPHILIS.

GENERAL.

African Natives, Syphilis in: Visceral and Sense Organs. (Plates.) LACAPÈRE. (*Ann. des Mal. Ven.*, October, 1922, No. 10, p. 737.)

Auto-Inoculation around a Sinus in a Case of Scarring Syphilis of the Penis. S. NICOLAU. (*Ann. des Mal. Ven.*, September, 1922, No. 9, p. 641.)

Corpus Cavernosum, Plastic Induration of. J. MONTPELLIER. (*Ann. des Mal. Ven.*, July, 1922, No. 7, p. 523.)

Delayed Congenital Syphilis, Ten Cases of. E. D. SPACKMAN. (*Lancet*, July 8th, 1922, p. 65.)

Extra-Genital Thoracic Chancres, Two Cases. G. BELGODÈRE. (*Ann. des Mal. Ven.*, October, 1922, No. 10, p. 788.)

Face, Gummatous Destruction, Plastic Surgery of. E. DE W. HIGHSMITH. (*Ann. of Surg.*, August, 1922, No. 365, p. 129.)

L'os Incisif, Syphilitic Syndrome of. J. NICOLAS, G. MASSIA and D. DUPASQUIER. (*Ann. de Derm. et de Syph.*, July, 1922, No. 7, p. 323.)

Salivary Glands, Syphilis of. J. E. KEMP and J. E. MOORE. (*Arch. of Derm. and Syph.*, July, 1922, vi, No. 1, p. 57.)

Serbian Army, Venereal Diseases in. D. KOPCHA. (*Ann. des Mal. Ven.*, September, 1922, No. 9, p. 649.)

Soft Chancre treated by Injections of Milk. BERNOT. (*Ann. des Mal. Ven.*, August, 1922, No. 8, p. 635.)

Subcutaneous Peri-articular Nodes, Ætiology of. P. NOEL. (*Ann. des Mal. Ven.*, October, 1922, No. 10, p. 721.)

Superior Maxilla, Tertiary Congenital Syphilis of. J. NICOLAS. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4 [R.S.], p. 36.)

Syphilis, Is it Curable? V. G. VECKI. (*Arch. of Derm. and Syph.*, September, 1922, vi, No. 3, p. 318.)

Syphilitic Gangrene, Case of. E. ORPHANIDÈS. (*Ann. de Derm. et de Syph.*, July, 1922, No. 7, p. 516.)

PATHOLOGY.

Blood Cholesterol in Syphilis. A. R. MCFARLAND. (*Arch. of Derm. and Syph.*, July, 1922, vi, No. 1, p. 39.)

Flocculation, Serum Diagnosis of Syphilis. RUBINSTEIN. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 5, p. 200.)

Formalin Test for Syphilis. A. G. HOLBOROW. (*Lancet*, August 5th, 1922, p. 274.)

Kolmer Complement-Fixation Test for Syphilis, Value of. C. H. DE T. SHIRERS. (*Arch. of Derm. and Syph.*, September, 1922, vi, No. 3, p. 344.)

Precipitation Reaction for Syphilis. R. L. KAHN. (*Arch. of Derm. and Syph.*, September, 1922, vi, No. 3, p. 332.)

Serologic Studies on Exudate of Syphilitic Chancres. C. FUENTES. (*Arch. of Derm. and Syph.*, August, 1922, vi, No. 2, p. 136.)

Wassermann and Sigma Tests compared in 569 Cases. W. T. COLLIER. (*Lancet*, August 5th, 1922, p. 274.)

Wassermann-Fast Syphilis treated by Intravenous Mercuric Chloride. A. H. CONRAD and C. H. MCCANN. (*Arch. of Derm. and Syph.*, July, 1922, vi, No. 1, p. 50.)

Wassermann Reaction, Clinical Evaluation of. R. A. KILDUFFE. (*Arch. of Derm. and Syph.*, August, 1922, vi, No. 2, p. 147.)

TREATMENT.

Amino-Arseno-Phenol (132): Therapeutic Results. E. JEANSELME. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 182.)

Arsenical Dermatitis, The Treatment of. J. E. R. MCDONAGH. (*Medical Press*, September 20th, 1922, p. 241.)

Bismuth, Results of Intra-venous. LACAPÈRE. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 5, p. 210.)

Bismuth in Treatment of Neuro-Syphilis. EVRARD. (*Ann. des Mal. Ven.*, July, 1922, No. 7, p. 525.)

Buboes treated by Milk Injections. Fanti. (*Ann. des Mal. Ven.*, August, 1922, No. 8, p. 636.)

Leucoplakia, Treatment of. Vignay. (*Ann. de Derm. et de Syph.*, August, 1922, No. 8, p. 637.)

Lichen Planus following Novarsenobenzol Treatment. J. Montpellier. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 186.)

Mercurial Erythrodermia, Fatal Case of. H. Laborde. (*Ann. de Derm. et de Syph.*, August, 1922, No. 8, p. 425.)

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Nitritoid Crises and Endocrine Affections. G. Lévy. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 6, p. 287.)

Nitritoid Crises, The Sympathetic Factor in. E. Jastu. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 4, p. 168.)

Radiographic Plate of Persistent Deposits Years after Injection of Mercury. Cl. Simon. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 5, p. 199.)

Syphilis treated by Amino-arseno-phenol of Pomaret. M. E. Lepinay. (*Bull. de la Soc. Franç. de Derm. et de Syph.*, 1922, No. 5, p. 222.)

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CONGRESS OF FRENCH-SPEAKING DERMATOLOGISTS AND SYPHILOLOGISTS, 1923.

A Congress of French-Speaking Dermatologists and Syphilologists will be held at Strasbourg, July 26th to 28th, 1923, on the occasion of the centenary celebrations of Pasteur. The following subjects will be discussed:

(1) Desensitisation in skin diseases. Opened by M. Ravaut (Paris) and M. Spillman (Nancy).

(2) Nævo-carcinoma. Opened by M. P. Masson (Strasbourg) and M. Bruno Bloch (Zurich).

(3) Treatment of syphilis in the pre-humoral period. Opened by M. Queyrat (Paris) and M. Malvoz (Liège).

(4) The importance of the methods of introduction of the medicaments in the treatment of syphilis. Opened by M. Milian (Paris) and M. Bodin (Rennes).

All communications should be addressed to Prof. Pautrier, President of the Organisation Bureau of the Congress, 2, Quai St. Nicolas, Strasbourg.

INDEX OF CONTENTS.

AUTHORS.

SUBJECTS.