SKIN AND VENEREAL DISEASES.

DERMATOSES.

Trichophytosis of the Hands and Feet. Kaufman-Wolff[1] reports the frequent occurrence of trichophyton infections of the interdigital and volar surfaces of the hands and feet, appearing as dysidrotic lesions. The essential lesion is a deep-seated vesicle, grouped, with some tendency to become pustular, but with very little toward weeping.

Histologically, the organisms can be found in the roof of the vesicle. For clinical demonstration the roof should be carefully removed with a razor, inverted on a slide, a drop of sodium hydrate solution added, and a cover-slip placed over the preparation.

The fluid contents rarely contain visible organisms, but cultures made from them will usually grow the trichophyton.

Congenital Alopecia in a Family. A very interesting and rare condition is reported by F. Balzer and R. Barthélemy.[2]

A man 42 years of age consulted the authors for an insignificant ulceration. He was found to have only a few rudimentary hairs in the brows and no eyelashes. Over the scalp there were only two or three hairs to the square cm. These hairs were normal in color and shape and grew with the usual rapidity. The hairs of the bearded region were equally sparse in distribution, but they had not grown any for years. The body was not completely denuded: over the chest there were a few short, but normally pigmented, hairs. There were practically no hairs in the pubic and axillary regions. The

(1) Arch. Derm. Syph., May, 1914.
(2) Bull. Soc. fran. Derm. Syph., June, 1914.

arms were completely denuded. The skin was soft and of the appearance of that of a young man of twenty years. The external genitals were normally developed, but erection had not occurred for two years. The nails were markedly striated, thin, and irregular.

The grandparents of the patient, as well as the father, were normal, but the mother had less hair than the patient. One sister had a similar agenesis, but two sisters were normal. The only daughter of the patient had scarcely any more hair than he.

Summary of Research Studies in Psoriasis. During the past two years, J. F. Schamberg, A. I. Ringer, G. W. Raiziss, and J. A. Kolmer,[1] through the generosity of a benefactor, have had the opportunity of prosecuting an inquiry into the cause and nature of psoriasis.

Psoriasis is a disease that has been known since the days of the early Greeks, who characterized it by the name of "lepra." Despite the fact that it constitutes from 4 to 5 per cent. of all skin diseases, the nature of the disease has remained thus far an enigma. Many theories have been advanced to explain its pathogenicity, but none has been satisfactorily demonstrated to be true. The three most prevailing views with regard to psoriasis are: (1) psoriasis is due to a parasite, (2) it is a disease resulting from disturbed metabolism, and (3) it is a disease of neuropathic origin. The last view referred to, while advocated by some men of prominence, has relatively little to commend it.

Two particular lines of inquiry—bacteriologic and metabolic—were pursued. Twenty-two different microbes were isolated from psoriasis scales and were individually studied in an attempt to determine their special characteristics. Complement-fixation tests were carried out with groups of these organisms with entirely negative results. Up to the present time it may be said that no germ has been found which could be regarded as bearing a causative relation to the disease.

Metabolic Investigations. The metabolism of about a dozen patients suffering from psoriasis was investigated. The nitrogen balance was studied in patients for

(1) Trans. Sec. on Derm., A. M. A., 1914, p. 271.

long periods of time under the most rigid conditions. The food received by patients was analyzed and weighed, and the nitrogen in the urine and feces was carefully determined. The scales were collected with as much care as possible and their nitrogen content likewise determined. In one instance, the perspiration was collected for certain periods of time and subjected to analysis. The patients were housed in private rooms and were under the care of a special trained nurse. The patients were studied for periods varying between forty and 168 days.

In all the studies of the protein metabolism, attention was paid to possible qualitative disturbances as well as quantitative. The distribution of the urinary nitrogen was therefore studied in most of the cases. The patients were kept on diets containing definite quantities of nitrogen and a definite caloric value. The total nitrogen intake was compared with the total nitrogen output and balances established.

It was soon observed that the patients suffered from a peculiar disturbance in protein metabolism, namely, the retention of rather large quantities of nitrogen on diets on which normal persons would just maintain equilibrium. The giving of a diet containing large quantities of nitrogen (about 20 gm. a day) was followed by an enormous retention of nitrogen. And on a very low-nitrogen diet, that is, a diet containing about 4 gm. of nitrogen a day, on which a normal person can hardly contain equilibrium or at best do so with great difficulty, the psoriatic patient has the power of so altering his protein catabolism as to maintain equilibrium with perfect ease. The psoriatic patent possesses the power of reducing the urinary nitrogen output to a level lower than has ever been recorded in the studies of protein metabolism.

Clinically they noted a very definite relationship between the protein metabolism and the course of the eruption. In the active stages of the disease, a high-protein diet brings about a spread of the eruption; conversely, a low-protein diet is followed by improvement even when no local remedies are applied.

Two questions presented themselves as soon as these facts were recognized.

1. What is the nature of the relationship between the protein metabolism and the psoriatic processes of the skin?

2. What is the cause of the nitrogen retention observed in psoriatic patients?

One of the most prominent features of the psoriatic lesion is the rapid proliferation of the epithelial cells. These cells become cornified and are thrown off as scales. Repeated analysis demonstrated that these scales are composed almost entirely of pure protein; in severe forms of psoriasis very large quantities of scales may be exfoliated, entailing the loss of considerable amounts of protein material. The epithelial cells for their life and growth require large quantities of building material in the form of protein, which can come from only one source, the blood and lymph.

It is a well-established fact that the growth and multiplication of cells depends directly on their growth impulse, and that the velocity of their growth can be regulated entirely by the amount and character of "building material" placed at the disposal of these cells.

It became evident, therefore, that any diet which will tend to increase the concentration of amino-acids in the blood and lymph will tend to accelerate the growth and multiplication of these rapidly growing cells. A high-protein diet strongly favors the spread of the psoriatic lesions, because it causes an increase in the concentration in the blood of the various building materials, and places at the disposal of the psoriatic cells a plentiful supply of nutrient material.

A low diet, on the other hand, appears to influence the psoriatic lesion in just the opposite way. The concentration of amino-acids does not rise above the normal and the protein catabolism is reduced to the lowest level possible.

Many dermatologists have tried dietary restriction in psoriasis, but have failed to observe the beneficial results claimed for this method of treatment; but they found

that the more severe and wide-spread the eruption the more readily will it be influenced by appropriate diet; and, on the contrary, the more limited the eruption the more difficult will it be to influence it by diet alone.

The authors claim that they did not fail in a single instance to bring about marked improvement in the research patients by diet alone. They admit that outside of the hospital the results have been much inferior to those obtained with hospital patients, for the latter are supplied with the exact kind of food in measured quantities.

One of the patients who had a universal psoriasis remained practically free for a year by adherence to a diet similar to that on which she subsisted in the hospital.

In psoriasis, dermatitis exfoliativa and allied conditions in which there is a great multiplication and a casting off of the epithelial cells, the low-protein diet seems to quiet down the condition by a process of epithelial cell starvation. Sweet, Corson-White and Saxon have shown that inoculation-tumors of mice and rats may be similarly influenced by a very low-protein diet.

The Germicidal Properties of Chrysarobin and Certain Other Remedies. Chrysarobin is a remarkable substance, which exerts a powerfully beneficial and rapid influence on the patches of psoriasis. No other drug can be compared with it in its rapidity of effect. In many cases it acts almost as a local specific. The drug is derived from the woody fiber of the *Andira araroba* tree, the crude product being known as Goa powder. It was thought profitable to investigate the germicidal activity of chrysarobin and certain other medicaments employed in psoriasis. It is obvious that if chrysarobin proved to be powerfully germicidal this fact would aid in interpreting its effect on psoriasis patches. If, on the other hand, chrysarobin possessed only feeble or no germicidal power, such facts would likewise be helpful in offering a solution of its mode of action. In the investigations, difficulty was experienced at the outset in determining the germicidal power of chrysarobin because this drug is insoluble in water. The Rideal-Walker and the Hygienic Laboratory methods of determining the

germicidal power of drugs apply only to substances which are soluble. The authors were therefore obliged to devise a method of determining the germ-killing power of insoluble substances. They selected calomel as a standard. J. F. Schamberg and J. A. Kolmer[2] have already published a note on the germicidal activity of calomel. They found that calomel, as well as other mercurials, possessed, *in vitro,* the most powerful germ-destroying influence of any known drugs. Weight for weight, calomel was found to be just as germicidal as mercuric chlorid. This is all the more remarkable when one considers the insolubility of the former. Having determined that insoluble substances were capable of destroying bacterial life in solid mediums in the Petri dish, the authors were enabled to test out the activity of chrysarobin and certain allied substances. Chrysarobin in the highest amount used (120 mg. or 2 grains in 10 c.c. of bouillon) failed to restrain bacterial growth. They furthermore incorporated chrysarobin in various culture-mediums in such excess that the powdered drug floated on the surface of the medium, and yet staphylococci and the ringworm fungus were capable of producing a flourishing growth on such mediums. Their conclusion is that chrysarobin possesses but feeble or no germicidal action. Calomel, on the other hand, which they found to be highly germicidal and capable of destroying the cocci in the skin, has but a feeble effect on the patches of psoriasis.

The Biochemical Action and Chemo-Therapeutic Studies of Chrysarobin and Allied Substances. The authors endeavored to determine the changes which take place in the skin when chrysarobin and certain allied products are applied. It is a well-known fact that chrysarobin produces a curious mahogany-colored discoloration of the skin, which lasts until an exfoliation of the stained horny cells takes place. It would appear that the greater the degree of staining, the more beneficial is the effect of the drug on the disease. It was found that chrysarobin has a powerful affinity for certain elements of protein. Indeed, the staining of the scales

(2) Jour. Amer. Med. Ass'n., June 20, 1914.

by chrysarobin produces a firmer union than the staining of the scales by any known anilin dyes. The staining of the skin appears to be intimately associated with the process of oxidation. Chrysarobin is powerfully reducing, and in undergoing oxidation abstracts oxygen from the protein of cells, for the authors have demonstrated that the oxidation can go on in the absence of air in a hydrogen atmosphere. They believe that the effect of chrysarobin is in large part due to two influences: (1) the firm union of the protein with the epithelial cells, and (2) the abstraction of oxygen. It is quite possible that this may explain the favorable influence of the drug in psoriasis, for the action referred to may restrain the great proliferative activity of the epidermal cells which characterizes this disease.

Some investigators, chief among whom was Unna, maintained some years ago that chrysarobin produced its favorable influence in psoriasis by abstraction of oxygen, the drug being oxidized into chrysophanic acid, a reddish-brown substance. These investigations seem to support the view that the reducing power of chrysarobin is of great importance in influencing its therapeutic efficacy. This action and the remarkable chemical affinity of chrysarobin for protein, particularly for the keratins of the skin, appear to be in large part responsible for the beneficial influence of this drug. Psoriasis scales which are incubated with a watery suspension of chrysarobin at 37° C. (98.6° F.) are deeply stained by the drug. The chemical combination is so firm that it is impossible to remove its coloration even by prolonged boiling with glacial acetic acid. The chemical combination of chrysarobin with protein is apparently stronger than that of any known anilin dye.

Recent investigations into the chemical constitution of chrysarobin have revealed the fact that it consists of a number of chemically allied substances. Following the work of certain other chemists, the authors isolated the two important ingredients of chrysarobin, chrysophanol-anthranol and emodinol. They tried out these substances clinically and found that emodinol exerts no therapeutic effect whatsoever, while chrysophanol-anthranol has a

favorable influence, but inferior to that of crude chrysarobin. They then tried to isolate by fractional extraction the therapeutically active parts of chrysarobin; the fractions, however, were always inferior to the whole drug. Compounds of chrysarobin in which the hydroxyl group was combined with the acetyl radical, acetylchrysarobins, were prepared and tested out therapeutically. They found these compounds likewise inferior to chrysarobin. A number of other compounds prepared by them in which the hydroxyl groups of chrysarobin were partially or completely oxidized were therapeutically of little or no value. In general, it can be stated that any change in the chrysarobin molecule affecting the hydroxyl groups diminishes the therapeutic activity on the skin. They produced a certain derivative of chrysarobin in which the hydroxyl groups appear to remain unaltered, which is of great interest. This new drug was tried out by themselves and other dermatologists to whom it has been supplied, and the general feeling is that it is superior to chrysarobin. It is also preferable to chrysarobin in that it is much cleaner and freer of disagreeable staining qualities. The mode of standardizing the preparation of this drug has not been satisfactorily concluded.

Organisms in Psoriasis. Serkowski and Wisniewski[3] found ultramicroscopic organisms in psoriatic lesions. These passed through a Berkefeld filter and resembled the Paschen corpuscles of variola. Inoculation by scarification produced typical lesions in three psoriatic patients after an incubation period of ten to fourteen days. Heating the material to 56° C., or diluting with sodium chlorid solution, gave negative results. Auto-vaccination gave excellent results in 3 cases.

Acanthosis Nigricans Associated With Pulmonary Carcinoma. The etiology of this rare disease is still obscure, although about twenty cases have been carefully studied and reported in detail. The first case was described by Pollitzer, in 1884, and the term *acanthosis nigricans* was applied. Darier, however, describing a case about the same time, used the term *dystrophie*

(3) Arch. Derm. Syph., Jan., 1914.

papillaire et pigmentaire, which has since become accepted by many authors in preference to the other. Crocker gave it the name of *keratosis nigricans,* whereas Hallopeau chose *dystrophié papillo-pigmentaire.*

In most of the cases, particularly those reported by Darier, gastro-intestinal disturbances preceded the cutaneous changes by many years. Ianowsky's patient, 42 years of age, had suffered from digestive trouble since the age of 25.

Darier was the first to call attention to the association of the dermatosis with a visceral carcinoma. In fact, this association is such a common one that, given a case of acanthosis nigricans, one can make a diagnosis of a probable neoplasm. However, Darier pointed out that a juvenile form of the disease occurs in which the carcinoma is wanting.

Burmeister, analyzing the cases, says that fourteen occurred before the age of 20; one in the third decade, three in the fourth, five in the fifth, and one each in the sixth and seventh.

The case reported by Petrini de Galatz[3] was a man of 47, living in Bucarest. About a year before he was first seen by the author he developed a pain in the left upper thorax. About the same time his wife observed that his skin had become darker. He lost strength and weight and coughed constantly. At times the sputum was blood-stained.

Upon entrance to the hospital there were unmistakable signs of a thoracic neoplasm. The hair and nails were dry and dead in appearance. The skin of the ears was dark gray, and felt dry to the touch. The skin of the forehead was dark, with an appearance of pigmentary incrustation; the folds were much augmented. This condition prevailed over the face and neck, with the addition, however, of many pock-marks. The trunk had variously sized plaques of pigment deposit. The skin of the arms was dark and ichthyotic.

At autopsy, the tumor, about 10 cm. in diameter, was found in the left anterior superior thorax, beneath the second and third ribs. It had invaded the pleura and

(3) Ann. de Derm. et de Syph., Vol. 5, 1914, p. 321.

the lung. There were mediastinal but no abdominal metastases. Nothing abnormal was discovered about the solar plexus.

The microscopic picture of the lungs was that of a malignant epithelial neoplasm. Mitotic figures were numerous, and pigmentation of the cells was marked. In the epidermis the basal cells were crowded with pigment. The stratum granulosum contained one layer of much flattened cells. The derma was lacking in any indication of inflammatory reaction. The elastic tissue was normal. The papillae were numerous and of great length, with ramifications, but inasmuch as there was no proliferation of the Malpighian layer the author can see no justification for the term *acanthosis nigricans.*

Darier conceived the pigmentation and the hypertrophy of the papillae to be the result of the autointoxication by the toxins formed in the carcinoma, in a manner similar to arsenical pigmentation.

The commonly accepted hypothesis is, however, that the cutaneous changes occur secondarily to a compression of the abdominal sympathetic by an abdominal neoplasm.

Darier explained the juvenile form by saying that perhaps a teratoma pressed on the solar plexus, but as yet no such teratoma has been encountered.

The present case demonstrates the fact that a *dystrophie papillaire et pigmentaire* may occur with no abdominal involvement. Furthermore, if pressure on the abdominal sympathetic were the cause of the integumentary changes, we should expect to find the disease in a certain percentage of the large number of cases of abdominal neoplasms. There may be some relation existing between the marked pigmentation of the cells of the neoplasm and those of the cutaneous epithelium.

Sarcoid of Boeck. S. E. Sweitzer[4] reviews the literature of this interesting disease, and reports a new case.

Kaposi first grouped mycosis fungoides, lymphodermia perniciosa, sarcomatosis cutis and the real sarcomas of the skin in a class which he called sarcoid. Spiegler and Max Joseph did some early work on the subject. Fendt classed as sarcoid, "tumors of benign prognosis, having

(4) Trans. Sec. on Derm., A. M. A., 1914, p. 262.

only a limited growth, frequently healing with arsenic, composed of groups of round cells, which are circumscribed, divided by septa and encapsulated."

Boeck, in 1899, reported as multiple benign sarcoid a new disease of characteristic clinical and histologic appearance. In later articles Boeck reported a series of cases, and added a new type of the disease, the diffuse infiltrating type.

The work of Boeck caused many cases to be reported in the European literature, but in America the only cases are those of Gottheil, Pollitzer and Sutton. G. H. Fox and U. Wile reported an atypical case and Howard Fox reported one composed histologically of round cells, so that it is not a sarcoid of Boeck. Darier and Roussy, in 1904, described a subcutaneous sarcoid closely resembling Boeck's sarcoid. Darier, in 1910, made an extensive study of the entire group of sarcoids. He divided the group into four types, as follows: (1) Multiple benign sarcoid of Boeck; (2) subcutaneous sarcoid of Darier-Roussy; (3) erythema induratum-like sarcoid of the extremities; (4) Spiegler-Fendt type: non-tuberculous, is composed of round cells, and resembles neoplastic lymphoderma.

Boeck's sarcoid or miliary lupoid, as he later called it, has three forms: (1) Large nodular; (2) small nodular or papular; (3) diffuse infiltrating. The lesions may vary in number from one only, as in the cases of Kreibich and Kraus and Urban, or run into many thousands, as in the case of Hallopeau and Eck. The lesions are located on the face, back, shoulders and extensor surfaces of the arms, but can occur on the scalp and lower extremities. Boeck asserted that the soles of the feet were not involved. Wolfheim reported a case where the soles were involved.

The disease may begin suddenly with a diffuse edematous redding and after from eight to fourteen days disappear and leave one or more circumscribed infiltrated areas. More often it begins as a little round nodule, deep in the cutis, and as it approaches the epidermis, it lifts it up. The nodules grow very slowly, come out in crops and last months and even years. They feel larger than

they look, according to Unna. They are red at first, later red-violet, then yellowish and finally brownish. They feel hard, and often, on pressure with glass, show minute yellow foci. This led to the name "miliary lupoid." This is seen at the time of retrogression. As retrogression occurs, the nodules become depressed in the center and a fine network of telangiectatic vessels run over the edge; sometimes a fine scale forms. The nodule or papule may completely disappear and leave a pigmented spot or an atrophic scar with telangiectatic vessels over it. It never softens nor ulcerates. The mucous membrane is sometimes affected. The lymphatic glands may or may not be enlarged. The general condition is not influenced by the disease, and the urine and blood are normal. It occurs more often in women than in men (Fox and Wile). It may occur, according to Boeck, from the thirteenth to the forty-fifth year, but cases have been reported earlier (Sutton and later Mazza). Rather typical in the disease is the involution of the nodules under prolonged arsenical medication.

The histologic picture is characteristic: According to Darier, "One look in the microscope suffices to make a diagnosis." Sections show sharply circumscribed, deep-seated nodules, separated by connective-tissue septa which seem to have been pushed aside by the growing tumor. The cells are epithelioid, with pale-staining nuclei. At the edges are seen a few lymphocytes, giant-cells and rarely giant-cells of the true Langhans type.

The elastic tissue is absent in the nodules, but present in the septa. There are no leukocytes present, as a rule, and there is never any evidence of caseation. Blood-vessels can be seen in the nodules.

The Darier-Roussy type of subcutaneous sarcoid is very rare. Three cases were recorded by Darier in 1910. They consist of round or oval, subcutaneous, nodules from the size of a hazelnut to a walnut. They are few and are located on the back of the trunk. There is no tendency to ulceration and no influence on the general system. Histologically, they are situated in the subcutis, are composed of epithelioid cells and new connective tissue cells and lymphocytes; numerous giant-cells

are seen and a few plasma cells, mast cells and leukocytes. It differs from Boeck's in its appearance, its size, its subcutaneous location, and also looks more tuberculous. It is less sharply defined and more infiltrating.

The third group of Darier, the sarcoid of the extremities resembling erythema induratum, is more frequent, and occurs mostly in women. It consists of nodules with circumscribed thickening and hardening of the cutis and subcutis. They are painless, seldom soften and ulcerate and are generally located on the extensor surfaces of the extremities. They are from the size of a pea to that of a hazelnut.

Pelagatti, Thibierge and Bord, and Darier himself reported cases of this type. Many authors look on this as erythema induratum on account of the occasional ulceration, the positive tuberculin reaction and the few cases of Carle, Thibierge and Ravaut, Colcott Fox and Schidachi, in which tuberculosis was demonstrated in inoculated animals. Philippson demonstrated tubercle bacilli in the sections.

The fourth type, or sarcoid of Spiegler-Fendt, shows no relationship to tuberculosis, but is composed of round cells, and is probably related to the neoplastic lymphoderma. This type shows nodules in the cutis, the skin is rose, lilac or dark-red in color. It is located on the body, is chronic in course, and has no tendency to ulceration. It is usually affected by arsenical medication. Histologically, the lesions are composed of round cells more or less circumscribed and sometimes encapsulated. Epithelioid and giant-cells are either absent or very scanty. Probably many cases of sarcoma of the skin reported as cured belong to this group.

In regard to Darier's classification, Nobl asserts that the subcutaneous sarcoid and erythema induratum are identical. Volk, in a recent article, says that Type 4 can be dropped, as this class belongs to the neoplastic lymphoderma. Type 3, Volk, in agreement with others, classes as erythema induratum. This leaves only Types 1 and 2, and he asserts that the cases reported by Darier and Roussy and one of his own are the only cases reported so far of Type 2, and questions if this type really

does not belong to erythema induratum. Volk reports a case of subcutaneous sarcoid in which he obtained the tubercle bacillus in a guinea-pig, and produced tuberculous iritis in rabbits' eyes.

The case reported by Sweitzer was in a woman, aged 53; large and well-nourished. The eruption had existed for three years. It first appeared in the scalp, then the face was affected, and finally the back and arms. The scalp showed no new lesions, but eight areas of irregular shape and size, somewhat depressed and slightly scaly. The face and forehead showed about thirty lesions, some new, some old. They begin as a small, round, freely movable tumor deep in the skin and eventually involve the epidermis, lifting it up in a nodule, red at first, later red-violet, and as they get older more of a brownish-yellow. Finally the nodule becomes depressed in the center and shows a small white scale. Over the edges of many of the old lesions is a fine network of telangiectatic vessels; some of these old lesions are small, singular and of the size of a grain of wheat; others seem to be formed of a group of these small lesions, and are, therefore, polycyclic in shape. At the nasolabial fold are a few younger lesions, lighter in color, and not depressed. There is no evidence of any pus or caseation in any of these lesions. On pressure with a glass it is possible to make out minute round yellowish foci. On the back there are about fifty lesions, most of them evidently having undergone resolution. The new ones start as round hard nodules, very deep in the subcutaneous fat. As they grow older they flatten out and lift up the epidermis in a hard, firm, elevated, flat, brownish-red lesion. Evidently an atrophy finally takes place and the lesions heal, leaving a soft depressed bluish area, covered with dilated capillaries. There are no scales present on the back. The breast and upper arms show a few isolated lesions, one or two of which show a fine scale. The mucous membrane of the nose and mouth is not involved. The glands are not enlarged.

Two subcutaneous injections of tuberculin gave neither local nor general reaction. The Wassermann reaction was negative. Blood and urine were normal. A small

section was cut from a lesion on the face for microscopic study. Two large pieces were cut from the back to obtain more material for histologic study and animal and cultural experiments.

Histologically, the tumors on the face and back were identical, with the exception that the one from the back showed more giant-cells. The epidermis was normal. The papillary layer was unchanged except where the tumor encroached on it in some sections; there it was flattened a little. The tumor was situated deep in the dermis and consisted of a number of round or rounded areas separated by connective tissue septa. The cells of the tumor were epithelioid, with pale-staining nuclei. A few lymphocytes were seen at the edges. In the tumor from the back were giant cells of the true Langhans type. Elastic tissue was absent from the tumor, but present in the septa. No tubercle bacilli were found in any of the sections, and no evidence of caseation or necrosis was seen.

Two rabbits and four guinea-pigs were inoculated intraperitoneally with pieces of tissue from the tumor. One guinea-pig which died of some intercurrent disease ten weeks after inoculation showed at post-mortem several small firm nodules in the omentum. No parasitic diseases were found to account for these nodules. The structure strongly suggested healed tubercles. While these lesions could not be taken as positive proof of healed tuberculosis, they are best explained by this interpretation. They are about the type of lesions one would expect to see as the result of infection with tubercle bacille of low virulence. All the ordinary media were inoculated with material from the tumor on the back. No growth was obtained either aerobically or anaerobically.

The etiology of Boeck's sarcoid is of interest. Boeck himself thought it to be an infectious bacillary disease which is identical or closely allied to tuberculosis. Darier classed it as a tuberculid. Winkler analyzed seventeen cases and found that six patients had sure signs of tuberculosis, seven had swollen glands and four no signs of tuberculosis at all. Darier, Kreibich and Kraus, Opificius and Stümpke had cases in which a local reaction

was produced by tuberculin. Kren and Weidenfeld inoculated twelve guinea-pigs, and had no successful results, and none of the guinea-pigs reacted to tuberculin given one or two months later. Morawetz, in 1909, reported a case of Boeck's sarcoid in which Boeck personally confirmed the diagnosis. There was no local or general reaction to tuberculin. A guinea-pig inoculated, however, was dead in ten days from tuberculosis and tubercle bacilli were recovered. Kyrle, in 1910, reported a case of Boeck's sarcoid in which animal inoculation was successful in one guinea-pig after ten months. Kyrle even goes so far as to suggest the name of *tuberculosis cutis typus Boeck*, considering all cases of Boeck's sarcoid as due to tubercle bacilli. Pohlmann inclines to the belief in the tuberculous nature of the disease. Oppenheim, in 1913, reported three cases of tumors deep in the skin. These tumors appeared after hypodermic injections and gave a histologic picture that was identical with sarcoid of Boeck. He thinks that not all cases of sarcoid are due to tuberculosis, but that some other organism may occasionally cause it. Urban agrees with Kreibach and Kraus in considering that there are two varieties of the disease, one related to tuberculosis, the other group having nothing whatever to do with it. Kren, in a recent communication, considers Boeck's sarcoid a tuberculosis of low virulence, but says that as yet this view has not been generally accepted in the literature. With regard to the scant results of so many investigators on inoculation of guinea-pigs, it is true that a bacterium of low virulence often may not take in a guinea-pig, and at times may take and later become fibrosed, as apparently happened in the author's case.

A clinical diagnosis must always be confirmed by the microscope. Clinically, leprosy, lupus vulgaris, lupus erythematosis, leukemia cutis, syphilis, erythema induratum and lupus pernio must all be considered.

The prognosis as regards life is good. Recurrences are common, however.

Therapeutically, arsenic has given good results in many cases. Sweitzer's patient improved very much

while taking Fowler's solution. Darier recommended calomel and tuberculin.

Sarcoids and Syphilis. Pautrier[5] is convinced that there should be a revision of the classification of the sarcoids. Formerly tuberculosis was denied any part in the pathology, but later it became the fashion to explain them all on that basis.

Ravaut has recently shown that salvarsan exerts a rapid action in certain cases of papulo-necrotic tuberculides, lupus erythematosus, *érythème induré*, angiolupoid, and sarcoid. The clinical diagnoses in these cases were first made, and then confirmed by laboratory findings. It has long been observed that a combined tuberculous and luetic lesion would improve under calomel, but in such cases the tuberculous lesion remains. With salvarsan, however, the cure has been complete.

Pautrier reports the case of a young woman of 24 completely cured by intravenous injections of salvarsan. A clinical and histologic diagnosis of sarcoid of Boeck was made before the positive Wassermann reaction was discovered. After the first injection of 0.20 mg. the sarcoid on the nose was greatly improved, but somewhat changed in appearance. Later circinate, typical luetic lesions appeared on the extremities. Further injections led to an involution of all the lesions. The patient then admitted a primary lesion six years previously.

Pautrier also reports another case in a man of 35, with two hypodermic sarcoids of the Darier-Roussy type on the arm. Stethoscopic findings led to a diagnosis of a subclavicular pulmonary focus of tuberculosis. The clinical diagnosis was confirmed by Brocq, Darier and Thibierge. A biopsy showed the typical picture of the Darier-Roussy type of sarcoid. Cultures were negative, but the Wassermann reaction was strongly positive, much to their surprise, because of the absence of any other luetic signs. Complete healing occurred with salvarsan and calomel.

While admitting the existence of subcutaneous sar-

(5) Ann. Derm. et de Syph., Vol. 5, 1914, p. 344.

coids, Pautrier emphasizes the fact that some of these may be the seat of a gummatous lesion. In the absence of a positive Wassermann reaction, no benefit is to be expected from salvarsan or mercury. He believes the etiology to be multiple: some lesions owe their origin to tuberculosis, others to syphilis, and still others to neither of these infections. The Boeck and the Darier types are merely syndromes and should be recognized as such. The tuberculoid structure of the sarcoids thus loses all specificity and becomes further evidence of the complete analogy that may be presented by syphilitic and tuberculous lesions.

White-Spot Disease. The designation "white-spot," as applied to a definite clinical entity referable to the skin, was first employed by Westberg in 1901. He used the term "white-spot" merely as a descriptive adjective, qualifying a supposedly unknown dermatosis. In 1903, Johnston and Sherwell published the second paper on the subject, giving it the title of "White-Spot Disease." In this paper reference was made to Westberg's case and to Montgomery's case of white-spot disease which was exhibited before the American Dermatological Association in 1901, a report of which case was later published in full. Sherwell subsequently exhibited another case of this disease before the New York Dermatological Society in 1904. By that time a number of dermatoses, characterized by the presence of white spots of one kind or another, were reported in the dermatologic literature of America and Europe.

G. M. MacKee and F. Wise[6] exclude all but three groups of cases. These three groups consist of the unclassified group, consisting mainly of the cases of Westberg, Johnston and Sherwell, Hazen and Riecke; the scleroderma group, and the lichen planus sclerosus group. Following the lead of Montgomery and Ormsby, Petges, and others, they believe that lichen planus sclerosus, which is the same disease as lichen albus, while having clinical and pathologic features resembling, to a certain extent, localized scleroderma, can be clearly differentiated. They, therefore, exclude the lichen planus group.

(6) Trans. Sec. on Derm., A. M. A., 1914, p. 319.

This leaves for consideration the four or five unidentified cases and the cases that have been clearly shown to belong to scleroderma. They believe the term "white-spot disease" should be retained, but limited to cases that can be grouped with scleroderma, accepting Unna's card-like scleroderma as the type. In other words, their conception of scleroderma is a broad one, and in a way may be likened to that of syphilis, in which there are a number of different cutaneous eruptions. In this way they would have white-spot disease represent a distinct type of scleroderma just as morphea is a distinct type of scleroderma.

The clinical findings in the reported cases have varied to a considerable degree. This is merely an expression of the various stages of evolution. They present a composite clinical picture of the affection.

White-spot disease occurs mostly in females, especially in those of a neurotic temperament. It may occur in childhood and in early and late adult life. Most of the reported cases were in the third and fourth decades. The disease is essentially chronic in its course; the lesions make their appearance insidiously and develop slowly. Aside from moderate pruritus at the beginning, subjective symptoms are rare. The sites of predilection are at the base of the neck, in front and behind, the upper portion of the chest and back, but the lesions may appear on the extremities, various portions of the trunk, and on the genitals.

The essential lesion is a small white spot. The color may be snow-white, ivory-white, or bluish white. The lesions may vary in size from a pin-head to a dime. They may be isolated, sparse and widely scattered, or they may be numerous, grouped and confluent. The surface may be smooth or wrinkled, glistening or dull, depressed or slightly elevated, or level with the surrounding skin. There may be slight telangiectasia. The center of the lesion may appear depressed. There may be a violaceous areola. They may contain horny plugs and they may be scaly.

To the palpating finger the lesions may be imperceptible, or they may impart a sense of resistance.

It is far more difficult to give a composite picture of the histo-pathology because most of the cases differ, especially with regard to details. In the majority of instances there was a thickening of the horny layer. In a few cases there were dilated follicles filled with keratin. The granular layer and the rete were thinned, the basal layer irregular and the interpapillary prolongations lost. There were usually a number of spaces directly under the epidermis which were probably dilated lymph vessels. This fact is rather interesting because Unna considers these spaces partly responsible for the white color.

The chief changes in the derma consist, in the early stages, of a more or less circumscribed area of perivascular round-cell infiltration, edema and other signs of inflammation. Later, there is a marked increase of connective tissue, the infiltrate, except at the periphery, disappears and the blood-vessels and lymph spaces diminish in number and size. Elastic tissue is usually lost or greatly diminished. In other words, the general picture is that of scleroderma.

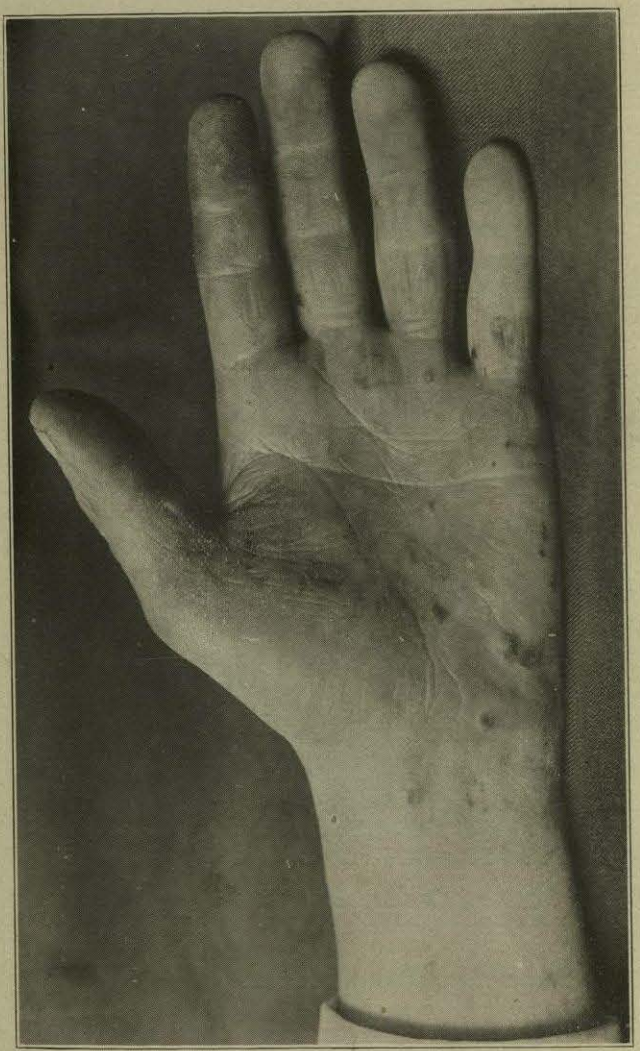
Erythema Nodosum With Scarlet Fever. Eichhorst[7] has encountered two cases in which erythema nodosum developed during convalescence from scarlet fever, and a third in which the erythema was accompanied by diphtheria. In the first two cases the tuberculin skin reaction was positive. In all the cases the erythema gradually subsided. Craig, Perigal and Pollak have recently reported a case each of erythema nodosum following measles.

Etiology of Erythema Nodosum. In an unpublished paper,[4] E. C. Rosenow gave a demonstration of the pathogenicity for experimental animals of the organisms which he had isolated, by an original method, from 6 typical cases of erythema nodosum. The lesions produced were similar to the nodular lesions in man.

From the subcutaneous nodes, a barred diplo-bacillus was isolated, usually in pure culture, from 6 cases; from a cervical gland in one case, from the tonsil in two cases,

(7) Med. Klinik, June 24, 1914.
(4) Read before the American Dermat. Soc., at Chicago, May 15, 1914.

PLATE I.



Epidermolysis bullosa of four years duration in a man 32 years old.—*Dr. Oliver S. Ormsby's patient.*