

but, whatever the cause may be, the cases which develop at any season go to argue that the cause does not hibernate.

The zeistic theory of pellagra is not yet out of the debate, for there is still the open question as to where the starting point of pellagra may be in the human being.

Sambon has strongly advanced the *Simulium* as the transmitter of pellagra, but the breed is unknown in many sections of America where pellagra is present and on the increase. This suggests that Sambon may be right, but that the sand-fly may be only one of the agents of transmission and that other insects may serve the same end.

The cutaneous evidences of pellagra are consistently progressive in their organized method of appearance, and argue some profound systemic, toxic cause. The associated membrane involvement, moving on to the meninges, argues more than a simple inflammation.

Meantime, experimental research has developed in the matter of the possible contagiousness of pellagra, beginning with the theory that the disease is due to an organism. The most decisive work so far published has been presented by W. H. Harris, from the Department of Pathology at Tulane University. He has employed a filtered virus derived from the human subject and inoculated in monkeys. The virus has been successively recovered from two monkeys and transmitted to the third monkey; each of the three developed all of the intestinal, dermatologic, and nerve evidences of pellagra, without any especial attention having been paid to the diet.

The organism is, so far, elusive, and the element of error constant, for monkeys are prone to dermatologic affections, often misleading, as suggested by the observations of the Illinois Commission, which at one time believed some of their monkeys were developing pellagra. The while subject is one of keen interest, and the dermatologist especially has the opportunity to bring about some of the evolution of ideas in the disease.

The therapy in pellagra still remains chaotic, with

salvarsan vaunted, arsenic in common use, a large number of other remedies suggested, and with a customary prognosis of a large mortality. The wider the disease areas grow, however, the milder the disease appears, and therefore the more persons are cured. The likelihood of any specific treatment will be uncertain until the causal factor is apprehended, and it is hoped that American genius may find the way to add this discovery to its many achievements in recent years.

Intermittent Attacks of Arsenical Dermatitis. The occurrence of an eezematous or erythematous dermatitis as a result of continued contact with arsenic is a common observation. Pustular lesions, however, are exceedingly rare. Harding⁹ reports some interesting cases of this type, which were referred to him for alopecia. Among these, a mother and daughter were in rather poor physical condition, and their hair had the dry, lifeless appearance that one sees after a prolonged illness. Both had had persistent attacks of furunculosis during the past year and a half, and, furthermore, all the members of the household had suffered from attacks of a similar nature.

Five physicians were consulted at different times, but they were unable to find any positive cause for the trouble, and no treatment had any noticeable effect. The possibility of arsenic as a cause was suggested, and the urine was examined for that substance. The examination was made and positive findings were obtained in five members of the household.

It then occurred to the mother that before these attacks began, some powder had been applied for the destruction of insects about the kitchen and somewhat in other parts of the apartment which they were occupying. A specimen of the powder could not be obtained, but scrapings of dust from different parts of the apartment were examined and found to contain arsenic, one specimen showing 1.44 per cent. arsenous trioxid.

Another family, consisting of father, mother, a daughter of 12 years, and a baby, with a nurse and housemaid as servants, had been living in ordinary conditions of

(9) Jour. Cut. Dis., 1914, p. 113.

health for about a year and a half in a moderate sized apartment. Suddenly the housemaid developed an eczematous condition of the hands and paronychia, and later a furuncle on the arm. Eczematous condition of the hands, with recurrent paronychia and an occasional small furuncle, continued for eight months, in spite of varied treatment. At the end of that time she left and obtained a situation elsewhere. The condition cleared up shortly after this, although she was doing the same sort of work, and there was no subsequent recurrence.

Her place was filled by an accommodator, who came in from time to time, and she developed the same type of eczematous dermatitis of the hands.

Soon after the housemaid's attack, the daughter developed a furuncle on the thigh and one on the elbow, and a little later a good many small pustulo-follicular lesions. Next, the mother had a large furuncle on the arm, one on the hand, and one on the thigh. A little later she had a small pustular eruption between the fingers. The baby within a month, after an intestinal upset, began to develop furuncles. Later he had a more or less general pustular dermatitis, and at one time an unusual type of acneiform dermatitis over the abdomen.

The nurse, a German woman about 60 years of age, was more virulently affected than any of the others. She had a general furunculosis, which appeared about the time the baby was attacked, and later her condition became so serious that she was sent to a neighboring hospital. Here everything cleared up, only to recur when she returned to the apartment. She also developed enlarged cervical glands, which after some months broke down.

The husband had occasional furuncles, mostly about the head and neck. He was less about the apartment than the rest of the household. On two occasions, when he went away on fishing trips, the furuncles cleared up, but recurred when he returned home. The daughter went with him on one of these trips, and while away was free from any trouble, but on returning had recurrence of eruptions.

Eruptions of the type mentioned, mostly furuncular, continued to occur as long as the family remained in the apartment. They moved after the finding of the arsenic, and a marked difference in their condition was soon noticed.

The whole duration of the trouble covered a period of about eighteen months, and during this time treatment of various kinds was tried, with no more than slight temporary benefit. The matter of sewage and other details of hygiene were gone into, but with negative results. Unfortunately, arsenic was not thought of. At one time it was thought that the condition might be due to contagion or infection of one member from another. Cultures were taken from lesions on the mother, daughter and baby, and showed in each case the *Staphylococcus aureus*. Autogenous vaccines were tried, but discontinued, as the treatment was unsuccessful.

Constitutional disturbances of one sort or another were more or less marked in all members, and all had rather marked alopecia.

Plantar Warts. Richard L. Sutton¹ reports an extensive case of plantar warts, calling attention to the fact that the symptomatology of verruca plantaris presents a puzzling but comparatively common disease of the skin, first described by Gorju. of Paris, over half a century ago, and more recently the disorder carefully studied by Dubreuilh, D. W. Montgomery, Bowen, and others, but, despite the publicity given it by these contributors, the true nature of the condition is seldom recognized even to-day.

For this reason he thinks that the following example, which is one of the most extensive he has seen, may be of general interest:

The patient was a young woman 20 years of age. Four years previously she had been troubled with a "soft corn" on the sole of her left foot, and at one time since then a college room-mate had had several growths on the bottoms of her feet, similar to those from which the patient sought relief.

At first glance the lesions resembled large, oval cal-

(1) Jour. Amer. Med. Ass'n., April 25, 1914.

losities. The most troublesome one was situated near the inner border of the left heel, and measured 2 by 6 cm. The overlying epidermis was smooth and translucent, and a superficial examination revealed no hint of the presence of verrucae. On deep pressure, however, the tumor was found to be exceedingly tender at several different points. Just posterior to the fifth metatarsophalangeal articulation was a similar but somewhat smaller growth, which also was very sensitive to pressure, and near the inner side of the ball of the foot was a third. The right sole presented a single group of three lesions, arranged in a row, near the base of the great toe.

The middle and oldest of the three was simply a yellowish, callus-like mass, but the other two were smaller and sharply circumscribed, with slightly elevated borders and brownish, tender centers.

When the outer layers of epidermis, covering the lesions, was removed by means of salicylic acid plaster, the typical, well-like cavities, partially filled with tough, stringy, opaque masses of transformed epithelium, were exposed. For laboratory study one of the lesions on the right foot and a portion of the large one on the left heel were excised with a sharp cutaneous punch. The histologic characteristics of the growths could best be studied in the specimen from the right foot. The larger portion of the tumor consisted of imperfectly keratinized horny material. With the exception of a pronounced degree of papillary hypertrophy in the vicinity of the growth, the corium was little changed. The border of the lesion was acanthotic, and many of the cells here and in the center of the area contained vacuoles. Both granular and horny layers were much thickened. The peculiar, small, round, highly refractile, protozoa-like, intercellular bodies, which Bowen first described, were present in considerable numbers. As he has stated, they probably represent some form of nuclear degeneration or alteration.

Plantar warts are notoriously resistant to treatment. The therapeutic measures usually employed in combating the disease elsewhere on the body often prove in-

effectual here, and recurrence occasionally takes place even after excision.

Of all the methods tried, he places carbon dioxide snow first in value, with fulguration second, and the Roentgen rays third. Before the snow or the electric current is applied the epidermal "lids" of the little tumors should be removed by means of a 10 per cent. salicylic acid plaster. Roentgenotherapy is particularly applicable in those cases presenting numerous lesions, and often following its use the growths disappear as if by magic.

In the present instance the patient was exceedingly anxious to recover as quickly as possible, and all three methods were tried, the result being an apparently complete cure at the end of about four weeks.

Lichenoid Trichophytie. In 1911 Jadassohn first described an exanthem to which he applied this term. The disease occurs in children affected with kerion celsi, and resembles lichen scrofulosorum. Arthur Guth⁸ reports 15 cases, which were carefully studied.

All but two of the patients were boys, and all had deep trichophyton infections of the scalp. The eruption appeared usually at the height, or during the involution, of the kerion as small papular, for the most part follicular, bright, or bluish, and at times pale red lesions, situated chiefly on the trunk and legs below the knees. The face was usually spared. There was marked variation in the distribution of the lesions. No definite connection was determined as existing between the extent of the exanthem and the severity of the kerion. Aside from mild itching, there appeared to be no subjective disturbances. The duration varied from a few days to several weeks. Scaling usually began soon after onset. Some of the lesions were merely erythematous; others were flat-topped, shiny papules. In a few cases small vesicles or even pustules occurred.

Two types were encountered: the (1) *spinulosa* and the (2) *psoriasiform*, or *seborrhoic-dermatitis-like* type. In the first, instead of the scaling, there appeared a rapid formation of spicules in the center of the lesions. These

(8) Arch. Derm. Syph., March, 1914.

horny spines were of various sizes, and remained for a variable time, usually disappearing with the involution of the lesion. The second form consisted of fairly well-defined, irregular or rounded areas of different sizes, with a tendency toward confluence and central involution, superficial, scarcely at all infiltrated, bluish-red, and covered with scales.

All the forms subsided without local applications. The effect of treatment was not determined.

Clinically, the exanthem can be differentiated from *lichen scrofulosorum* by its rapid onset and involution, its lesser tendency toward grouping, and its greater tendency for spicule-formation, and by the absence of tuberculous foci. Moreover, the child, instead of reacting to tuberculin, reacts to trichophytin. The resemblance to *eczema seborrhoica* may be strong, and offers some difficulty in the differentiation. The absence of characteristic "medaillons" prevents its confusion with *pityriasis rosea*.

Histologically, the changes were found to be chiefly follicular. The sweat-glands, however, were not involved, and the follicles in some of the lesions were without demonstrable changes. In the eczematous type, there were the papulo-vesicular, pustular changes of an eczema. In all the cases there were flattened nodules of perivascular, papillary and subpapillary round-cell infiltration present. Mast-cells varied in number, but plasma-cells were not found. The connective and elastic tissues were unchanged.

Etiologically, the exanthem was found to be dependent upon the presence of a deep trichophyton infection. The organisms, usually *Trichophyton gypseum*, were demonstrated in all the lesions. The disease seems to be limited to childhood. All the children reacted strongly to intradermal injections of trichophytin, and five reacted to its application by the Pirquet method. Most of the cases developed an immunity to the living organisms when rubbed into the skin. It was found in these experiments that a typical exanthem could be thus induced. The pathogeneity of the exanthem remains to be determined.

Favus and Ringworm of the Nails, says Milton H. Foster,² of the U. S. Public Health Service, are supposed to be rather rare conditions. The finding of 101 such cases among the aliens arriving at Ellis Island during the first eight months of the present fiscal year goes to show that these disorders are probably more common, at least among our foreign-born population, than is generally believed.

Clinically, both diseases present practically the same symptoms. The affected nail is thickened, brittle, and sometimes even caseous. The natural color and transparency of the involved portion is lost and it becomes opaque and yellow or dirty-white in appearance. The process generally starts at the distal end and slowly infiltrates the nail toward the base, the diseased portion crumbling away gradually, because of the trauma to which the part is naturally exposed in the ordinary vocations of life.

The side or base of the nail, however, may occasionally be first involved. Rarely the whole nail appears to be simultaneously attacked, and there is a more or less universal involvement of the whole horny substance. If the nail does not flake and break away, leaving a rough, uneven, diseased surface, it is very much thickened and deformed. Only one nail may be involved, or several, or all. The thumb, index-finger and middle fingers are the ones most commonly attacked, and as the nails are generally infected from scratching the scalp, this distribution would be expected.

The disease does not appear to be painful, nor does it seem to predispose toward setting up any acute inflammatory conditions of the surrounding soft parts.

The process is essentially chronic, and if untreated continues indefinitely. The youngest patient encountered was 3 years old, the oldest 72. Reliable histories were hard to obtain, but one unfortunate asserted that this condition had been present for fifty-two years.

While the mottled, yellow, thickened, and crumbly condition of the nails affected is highly characteristic, there are other conditions, besides an infiltration of these

(2) Jour. Amer. Med. Ass'n., August 22, 1914.

specific fungi, which resemble it very closely. These are syphilis, psoriasis, eczema, simple atrophy and hypertrophy, grave constitutional disorders, and some other skin diseases. When the nails are affected by some general constitutional process, it is usual to find all of them involved. In ringworm and favus one or more or more often escape. Hypertrophic and atrophic conditions of the nails likewise involve all of them and the entire nail substance. Fortunately, it is not necessary to endeavor to find clinical points of difference, as a microscopic examination enables one to make the diagnosis with certainty.

Several drops of a 20 per cent. solution of potassium hydroxid in water are placed on a slide and a few fine scrapings from the suspected areas dropped into the solution. The slide is moderately heated once or twice and allowed to stand a few minutes, and a cover-slip placed over all. The slip is gently pressed down so as to make a fairly thin preparation.

Examined with a No. 4 eye-piece and a No. 7 objective with subdued light, the fungi appear as highly refractive, slightly greenish, transparent, branching threads among the partly disintegrated elements of the nail. Generally the organism of both favus and ringworm when obtained from the nails appears as plain, hyaline, branching threads, which here and there show faintly the separation into spores or which contain at more or less regular intervals a small, round, highly refractive spore.

In a number of these cases it was observed that the skin of the palm and palmar surface of the fingers was usually hard, horny, calloused, and had a tendency to crack and peel off in flakes. While this condition is generally observed to a moderate degree in laborers, yet it is unusual to see it to the extent present in many of these nail cases. Scrapings from these hands show the organism to be generally present in the skin, presenting practically the same appearance as in the nails.

While ringworm and favus, of course, frequently attack the glabrous skin, the clinical symptoms when involving the thickened horny epiderm of the palm and

fingers is so different that there is no similarity to ringworm elsewhere. The lesions are not red or circular, but merely what would ordinarily be considered as an extreme degree of callosity with a marked tendency to peeling; and it would appear that the disease in this location has been frequently overlooked.

As stated above, both favus and ringworm present clinically practically the same symptoms, and the fungi of ringworm and favus when obtained from the nails resemble each other so closely when examined microscopically that a separation of the two diseases on these findings alone is generally impracticable. If there be favus of the scalp or elsewhere on the body, or if the scalp bear the scars of old favus, it is proper to assume that the condition of the nails is also due to the same organism. Similarly, if other parts are involved with ringworm, it is likely that this is also the cause of the onychomycosis. If neither active favus nor ringworm is present elsewhere, and there is no evidence of old favus, it is customary to make a diagnosis of ringworm, as ringworm of the scalp often disappears spontaneously after puberty and leaves no scars, and it is likely that the disease was transferred to the nails when it was active in the scalp.

In the series of 101 cases, eighty-four were ringworm and seventeen favus. This would indicate that ringworm is encountered about five times as often as favus. These 101 cases were discovered among 521,366 aliens who were examined. Roughly speaking, the ratio of cases was about 1 to 5,000 of these foreigners.

Onychomycoses are extremely stubborn and resistive to all forms of treatment. The organism grows into the nail substance and down into the matrix, where it cannot be reached by any local applications. Any form of treatment must be preceded by curetting and scraping away the diseased part of the nail so as to apply the antiseptic to the denuded surface. Continuous application of the desired remedy may be obtained by pulling rubber finger-cots over the infected fingers and placing the medicine inside of them. Care must be taken to avoid setting up a general inflammation of the part by

too severe or too prolonged treatment. In the treatment of the scalp and nail lesions Foster found local applications of very little value. Apparently, he did not make use of radiotherapy, but he inclines to the belief that it is of slight efficiency. In the hands of others, however, the Roentgen ray has given excellent results. In two cases he tried the avulsion of the nail with subsequent local applications.

When the hands and nails are involved by either of these fungi, the likelihood of their transmission to others is probably much greater than in cases of the same disorder occurring in the scalp. The sufferer is constantly scattering far and wide, particles of disintegrated nail substance and flakes of skin which are loaded with the organism. His hands are continually in contact with objects of common use and very often directly with the persons of others.

Favus of the scalp and nails is a severe and loathsome disease. Unless energetically and carefully treated from the start for a very long period, it always results in permanent loss of the hair and scarring of the scalp in the areas involved, with great disfigurement. Fortunately, the disease is rather infrequent in America and our strict immigration inspection prevents new cases being introduced from those foreign countries in which it is prevalent.

Ringworm of the Scalp in an Adult. The literature of ringworm of the scalp contains mention of so few adult cases, that the case reported by Rothwell³ is of interest.

The patient, who was a colored laborer, 20 years of age, had noticed the appearance of small patches of baldness on the scalp, varying in size from $\frac{1}{4}$ to $\frac{3}{4}$ inch in diameter. With the exception of very slight pruritus, there was no subjective symptom. Objectively, the patient, a robust young negro, with the short, "kinky" black hair of his race, presented a number of slightly scaly areas of thinned hair scattered over the scalp, two being located on the vertex and five over the occipital region. The borders were fairly well-defined; and the

(3) Jour. Cut. Dis., October, 1914.

patches were generally circular or oval in shape, and resembled the dry seborrhea so frequently encountered. Microscopic examination of extracted hairs revealed the presence of mycelia and small spores.

Fatal Purpura as a Complication of Scarlatina. It is not an uncommon occurrence to see a benign purpura of the extremities following scarlatina. It is, however, rare to see a generalized eruption such as reported by Biernacki and Dykes.⁴ The purpuric eruption appeared eight days after the onset of the disease in a child of 6 years. The lesions rapidly assumed an inflammatory aspect, but death supervened before gangrenous changes occurred.

Diphtheria of the Skin. A review of the literature and a study of two cases was made by F. C. Knowles and L. D. Freese.⁵ Diphtheritic infection of the skin may occur in several forms in addition to the false-membrane type. These other types are: the ulcerative, gangrenous, eczematous, impetiginous eczema-like, pustular, impetigo-like, ecthymatous, vesicular and varicella-like, bullous, dermatitis herpetiformis-like, carbuncular and the tumors and abscesses. The two cases reported were of the bullous impetigo type, one terminating fatally.

Inoculation of the skin occurs by auto-inoculation, by means of infected articles, and from one person to another. It may occur primarily on the integument, remain limited to it, spread to the mucous membranes or, more commonly, is secondary to throat, nasal, or laryngeal diphtheria.

In cases of diphtheria of the skin, the Klebs-Loeffler bacillus always has to be distinguished from the pseudo-diphtheria bacillus (Hofmann's bacillus). These two organisms differ somewhat morphologically, culturally, and in animal inoculations. The diphtheria bacillus is particularly distinguished by the metachromatic granules (polar bodies), as shown best with the Neisser stain, by the acid-producing qualities, and by the fatal results on inoculating animals. Diphtheria bacilli are grouped

(4) Brit. Med. Jour., October, 1913.

(5) Trans. Sec. on Derm., A. M. A., 1914, p. 88.

according to the Wesbrook, Wilson and McDaniel classification.

These diphtheritic skin-lesions are a constant source of contagion, because they are frequently unrecognized for a considerable period. They may last over a long period or run a rapidly fatal course.

Elephantiasis. In temperate latitudes, elephantiasis is rare enough to deserve more than passing notice. Most cases reported are due to repeated erysipeloid attacks, tumors, granuloma, or extensive operative interference with the lymphatics of the affected area. Shattuck, in 1910, reported three cases of lymphatic elephantiasis in which repeated attacks of inflammation were the chief cause of the condition. Then Brault, in 1911, while emphasizing the general causes suggested above, reported one case of this disease due to paratuberculosis, microscopic examination failing to reveal giant-cells or tubercle bacilli. Again, Thompson, also in 1911, recorded four cases, from one of which microscopic sections were made and studied by Professor James Ewing. This study showed the usual picture of chronic edema; some hyperplasia of the Malpighian layer, hypertrophy of the sweat-glands, and an atrophy of the hair-follicles. In 1912, Hunter published the history of a woman who had never been outside the British Isles and whose condition followed repeated attacks of cellulitis. Here again the microscope showed nothing but chronic edema. The same is true of the cases reported by Van der Veer and Coenen, in 1912. All these men are of the opinion that elephantiasis outside the tropics is due to recurrent attacks of cellulitis, tuberculosis, syphilis, tumors, or extensive operative interference with the lymph drainage.

Patterson⁶ reports the occurrence of elephantiasis in a woman who had never been in the tropics. The patient, Mrs. M. K., aged 32, was born in Austria and lived there until 1903, when she and her husband moved to Minnesota. Shortly after her arrival, the patient noticed a swelling of both legs and the abdomen, beginning in 1904, which gradually grew worse until she was prac-

(6) Jour. Amer. Med. Ass'n., March 21, 1914.

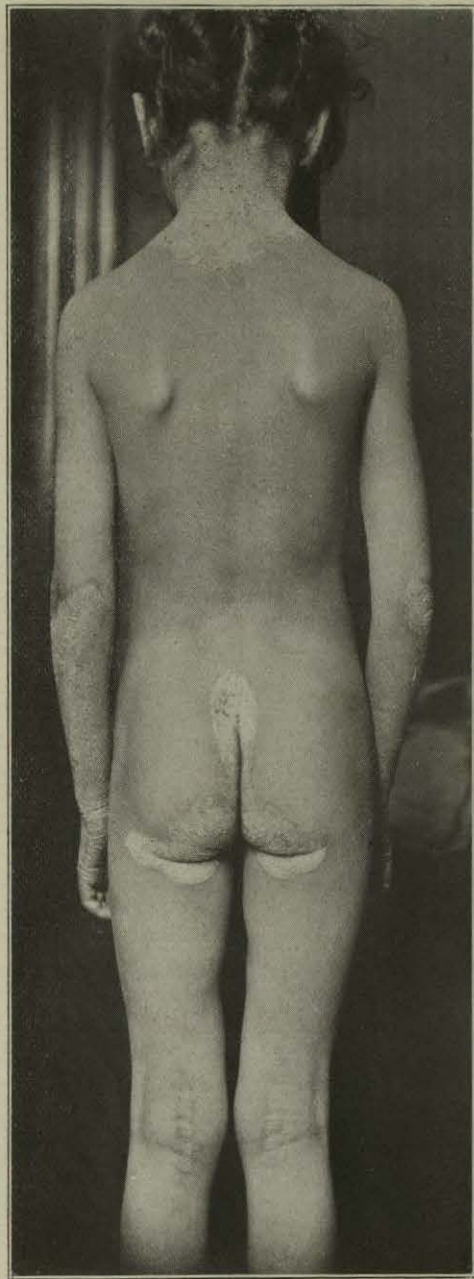


Mullusca contagiosa in a young man. Duration of disease two weeks.—From the Dermatologic Clinic, Post-Graduate Medical School, Chicago.

PLATE III.



Tinea cruris (eczema marginatum). Condition present for three months in a man 26 years of age.—From the Dermatologic Clinic, Post-Graduate Medical School, Chicago.



Pityriasis rubra pilaris in a girl aged 6 years.—Dr. Oliver S. Ormsby's patient.

tically completely disabled in 1909. There was no history of cellulitis preceding this condition, nor of any fever such as usually precedes a true tropical elephantiasis. The blood was not examined for filaria at any time.

The patient had no living children. Three pregnancies resulted in a still-born, full-term fetus in 1904, still-born seven-months' fetus in 1906, abortion of a four-months' pregnancy in 1908. The history is negative otherwise. No cases of a similar nature are known by her husband and friends in that part of Austria from which they came. The patient died in the spring of 1913.

A partial necropsy showed a thickening of the abdominal wall, becoming greater from the umbilicus down to the pubes, where it measured $3\frac{1}{2}$ inches from skin to peritoneum. There was a marked hypertrophic cirrhosis of the liver and a large quantity of ascitic fluid. Sections of the liver were not obtained, but sections from the thickened abdominal wall showed an encapsulated filarial organism distributed throughout the deeper tissues. Many of them were calcified. The variety of organism present was not determined, but it was thought to be the filaria of Bancroft. How this infection was acquired is a matter of speculation, but filariae have been found in the blood of the horse, in camels, and in dogs. Dogs have also been inoculated with the filaria by means of the mosquito. It is possible that the definite relation between the incidence of filariasis and elephantiasis of which Daniels speaks is not entirely confined to the tropics, and that some cases of elephantiasis in temperate climates are due to filariae.

A Suspected Case of Foot and Mouth Disease in Man. Foot and mouth disease is so rare in man that the following case reported by Whitby⁷ is of interest: The patient was a soldier, aged 19, who gave no history of any previous illness. While carrying some boiling water he fell and scalded his left wrist; later an open, septic wound developed. Nine days after the injury, he became aware of a burning sensation in the mouth and on

(7) Brit. Med. Jour., July 4, 1914.

his hands, quickly followed by the formation of blisters. On the following day his face was flushed and rather congested, the temperature was 101° F., the pulse 100, the lips were swollen, and there was a marked vesicular eruption, rapidly becoming pustular, all over the buccal mucous membrane. There was difficulty and pain on protrusion of the tongue, which was coated, and on which a few vesicles were seen. The breath was very fetid, salivation free, and the speech thick; the nasal and conjunctival mucous membranes were clear. There was a well-marked vesicular eruption on both forearms, wrists, and hands, extending between the fingers and to the sides of the nails; the palms were most affected; the feet were also implicated, but not to such a marked degree. The eruption was primarily vesicular; the vesicles varied in size from that of a mustard seed to a sixpenny piece, were situated on a hyperemic base about $\frac{1}{8}$ inch in width, showing no tendency to coalesce; they were larger on the forearms than elsewhere. They caused a burning sensation, and were tender on pressure; there was no itching. The bowels were constipated; there were no other gastro-intestinal symptoms. The heart, lungs, and abdomen were normal. All superficial reflexes were very brisk. During the next three days the rash became more pronounced; a few isolated vesicles appeared on the face, neck, abdomen, and thighs. The mouth was very sore, the vesicles having coalesced, ruptured, and given rise to shallow ulcers, with yellow sloughy bases; the mucous membrane of the lips had the appearance of one continuous yellow slough; the margins of the lips were crusty and dry; there was no excessive secretion of saliva. There was great difficulty in taking fluid nourishment, but no pain on swallowing. The vesicles on the extremities showed no tendency to pustulate, and there was no involvement of lymphatic glands. Serum from vesicles revealed no organisms; a few polymorphs were found. There was no leukocytosis; eosinophilia was present to the extent of 10 per cent. The urine was normal except for slight amount of albumin. The temperature, which had remained at 101° F, fell on the sixth day to normal. Convalescence was unevent-

ful. The serum in the vesicles became absorbed, and the skin scaled, leaving faintly pigmented areas. The albuminuria disappeared.

The reasons for suspecting this case to be one of foot and mouth disease were:

1. The disease followed the course of an acute specific fever; its toxemic origin is shown by the distribution of the rash, the presence of albumin in the urine, and the temperature.
2. It did not resemble the other hydroa.
3. There was an open wound on the wrist.
4. Foot and mouth disease was prevalent in the district.

A stray collie had frequented the patient's hut. The dog had been drowned, because it was suffering from mange of the left ear, and was so thin and weak that it could hardly walk.

Specimens of serum from vesicles and saliva were sent to the laboratory at Millbank, where a rabbit and guinea-pig were inoculated with negative results.

Purpura With Bacillus Mucosus in Blood. Clinically, the case studied by Weil and McMeans⁸ was a progressively severe bacteriemia, in which cultures of the *Bacillus lactis aërogenes* were obtained during life from the blood, urine and prostatic secretion. Purpura, although a late manifestation, was the result of this infection. On account of the systemic reactions after each surgical interference (passing sounds) of the urethra, the authors feel convinced that this was the point of entrance of the infection into the blood-stream. The authors suggest that probably infection of the genito-urinary tract by bacteria of the *B. mucosus* group is commoner than is realized.

Eczema Marginatum of the Toes. This interesting article is by D. W. Montgomery, and G. D. Culver⁹.

Sabouraud has shown that a number of cases that used to be regarded as eczema of the toes are not eczema, but a dermatitis caused by the same cryptogam that causes eczema marginatum of the crotch. This cryptogam,

(8) Jour. Inf. Dis., Vol. 15, pp. 1-243.

(9) Jour. Amer. Med. Ass'n., April 4, 1914.

called by Sabouraud the *Epidermophyton inguinale*, is, as its name indicates, a fungus, and resembles but is not identical with the ordinary ringworm fungi. It, however, does not attack the hair, but lives exclusively on the epidermis. The locality in which it at least gives rise to its most characteristic skin disease is the inner side of the thighs of the male, especially the left side, against which the scrotum rests. The disease may spread farther down the thigh, and it may also occur in the arm-pits, and in women under the breasts; but Sabouraud has shown that a frequent situation is the region of the toes and forepart of the foot, where it gives rise to a disease resembling intertrigo or eczema of the toes, and it is usually so diagnosed. Rarely, also, the plant may grow on or between the fingers.

The precise diagnosis of this disease has more than a purely scientific interest; it lends precision to the therapy. In fact, these patients formerly went from physician to physician seeking relief and finding none; even with an accurate diagnosis and an efficiently worked-out treatment it sometimes is difficult to cure the affection.

Montgomery and Culver report a case, as follows:

A draftsman presented himself with an eczema-like affection of the toes of the right foot. The skin between and under the toes was reddened and scaly, but not moist. Along the ball of the foot the skin was roughened and slightly reddened, and in this rough area there were a few bright-red dots which he said itched, and out of which he had the previous evening squeezed a little serum. The margin of this area on the inner edge of the great toe was wavy, red and desquamating. As this margin ran backward along the ball of the great toe and around across the sole to the outer side of the little toe, it was not wavy, but was rough and corneous. On the outer surface of the little toe the marginal line was rough and red. On account of this marginal line, and because only one foot was affected, the authors suspected a parasite. The value of noting this margin in arriving at a diagnosis can not be overestimated; the shrewd Hebra called the disease *eczema marginatum*, and both

Sabouraud and Dudumi speak of the margin as a special feature. On observing the condition of the patient, he was asked if he had any trouble in the crotch. He then gave the following history:

He roomed with a man who had been a patient of Montgomery and Culver for an affection of the crotch and axilla due to the *Epidermophyton inguinale*, which he had acquired, presumably in an athletic club. This young man's trouble cleared up under a salicylic acid-sulphur salve. At about this time the present patient also acquired a dermatitis of the crotch, which cleared up under the same ointment as that used by his roommate. About this time also the present eczema of the toes of the right foot appeared, and this absolutely refused to budge with the treatment that had cured the affection in the crotch.

Culture of the Epidermophyton Inguinale. The rough margin on the sole was curetted, and the deeper scales were boiled in liquor potassii hydroxidi in a watch-glass, and were then examined with the one-sixth objective. The thick-branched spore-bearing mycelium of the epidermophyton was demonstrated. Other curettings from the deeper lesions were placed in 95 per cent. alcohol in order to kill associated bacteria and fungi and then placed on 2 per cent. glucose agar. These curettings gave rise, at room temperature, to a typical growth of the epidermophyton. This culture had a dark-colored center and a citron-colored border, and was umbilicated. After about a month the growth apparently stopped spreading. About two weeks later a new growth, of a perfectly white cottony appearance, sprang up quickly and nearly covered the original culture. A portion of this very tenacious mold showed the many branching club-shaped or fruit-like bodies characteristic of the *Epidermophyton inguinale*.

The fungus most frequently occurs in the crotch, especially in men in the left scrotal-thigh fold, where the scrotum lies against the thigh, and in women under the breasts, and in the axilla or in any other cutaneous fold, and between the toes in both sexes. It has even been found in the retro-auricular fold. *Eczema marginatum*