CHAPTER XVIII

THE SKIN

THE skin is not merely a covering, possessing glands and appendages, which protects the body and develops disease when irritated by internal and external causes. It plays a part in immunity, and can fix and form antibodies. It is a vital organ, with an internal as well as an external secretion. Sunshine, changes of temperature and movement of air have a profound influence upon the metabolism and hence upon the general health. The skin reacts to these natural agents through their effect upon the sympathetic nervous system, blood-vessels and endocrine glands; this is especially useful in connection with the regulation of heat. It has a respiratory function and can be penetrated by certain drugs, fats and hormones. Under the influence of ultra-violet light the endocrine function is stimulated, the ergosterol in the skin is activated and vitamin D is formed. Light clothing, adequate exposure to wind and sunlight, permit that ready response of the skin to changes of climate, humidity and temperature which is essential for the health of the circulation and the organs.

Simple observation of the skin gives information concerning the health. Many diseases which attack the organs produce changes on the skin. These reactions may record the condition of the stomach, liver and intestinal canal, sometimes of the kidneys and the endocrine glands; and of the arterial, venous and capillary circulation. Several external and internal irritants arouse different cutaneous reactions in different individuals, and even in the same persons at different times of life. Certain eruptions inform us of the existence of a deep-seated infection; of such are the trichophytides, the tuberculides and the streptococcides (Barber); the last show several forms of cutaneous reaction to streptococcal infection. Skin diseases used to be treated chiefly by external applications; to-day, we realise that their cause can often be traced only after a complete medical investigation.

PART A. SYMPTOMATOLOGY

The cardinal symptom of skin affections consists of an ERUPTION with or without SUBJECTIVE SYMPTOMS. The subjective symptoms are relatively less important, because the morbid process itself is visible. One subjective symptom attends many skin diseases—namely, PRURITUS.

§ **605. Pruritus** is the Latin word for itching. Itching may be mild and intermittent, coming on with changes of temperature, a bath, or after food or drink, or it may be continuous, with severe exacerbations, rendering sleep impossible and the patient suicidal. There are three groups of causes:

(*a*) Pruritus may be *secondary* to some visible skin disease, when the itching is localised to the neighbourhood of the eruption. Some eruptions are invariably attended by itching, such as urticaria, eczema and most acute conditions which progress rapidly. Other diseases are generally unattended by itching, such as syphilis, psoriasis, and most chronic conditions which evolve their course slowly.

(*b*) Various *local conditions* may produce more or less localised itching: (1) *Discharges* or secretions from nasal, aural, buccal, vaginal or anal orifices. Many of these cases develop later a localised dermatitis. (2) A *rough garment*, such as a flannel and certain dyed articles, may produce intolerable itching in delicate skins. (3) *Parasites*, such as *scabies* and *phtheiriasis*. The *flea*, the *harvest-bug*, *pediculus of head* or *body* and other parasites cause intense itching. *Thread-worms*, leaking *mucus* or liquid *paraffin*, and *hæmorrhoids* often cause perianal itching.

(*c*) With *idiopathic* or *internal* causes the itching is generalised. Among the causes may be mentioned certain articles of food (*e.g.*, shell-fish, eggs, milk, cheese), jaundice, digestive disorders, diabetes, leukæmia, Hodgkin's disease, a septic focus, kidney and liver disease, constipation, pregnancy, the menopause, and old age. In PRURITUS SENILIS the skin of the aged looks dry and atrophic, slightly scaly or glossy. Pruritus, with congestion of the nasal mucous membrane, also occurs with the allergic state; see § 609. In some cases itching is due to neurosis; itching may be complained of long after the cause has been removed. For *Treatment*, see § 620.

PART B. PHYSICAL EXAMINATION

The APPARATUS required for the local investigation of skin diseases is simple—a good lens, a microscope with accessories, and the means of histological examination. A pair of fine forceps is useful for removing scales, hair, or parasites. Stretch the skin firmly or use a flat glass slide to find if the lesions disappear on pressure (diascopy).

HISTOLOGICAL EXAMINATION (biopsy) frequently aids diagnosis; a small piece is removed without appreciable pain under local anæsthesia.

Sometimes one must carry out BLOOD tests (especially Wassermann), URINE examination, sugar tolerance and other BIOCHEMICAL and CULTURE tests. Scrapings soaked in 10 per cent. potassium hydroxide are required for the microscopic examination of FUNGI. PATCH TESTS are made for various organisms, drugs and external irritants. The suspected substance is strapped on the skin and left for 24 hours. Use a control dressing, lest the subject be sensitive to fixing plaster. If the patient is sensitive, on removal of the dressing, the skin is seen to be erythematous, swollen, or vesicular. A modified test for contact dermatitis due to external irritants is made with the allergen dissolved in collodion. Irritants can also be tested for by INTRADERMAL INJECTION or by SCRATCHING the skin with the suspected cause.

§ 606. The points to investigate in any given case of skin eruption are: I. The size and appearance of the prevailing elements; II. What it feels like, and whether it disappears under pressure; III. The distribution

and symmetry of the eruption; IV. Subjective symptoms; V. The duration and evolution of the eruption; and VI. Its etiology.

I. The **Character and Size of the Prevailing Elements.**—The spots are *never all quite alike*, being modified by the age of each spot, the locality affected, and the conditions to which it has been subjected (*e.g.*, scratching, pressure, or local applications). It is therefore most important to *examine every part* of the eruption. Patients may object to undress and the physician may grudge the time, but these considerations should never be allowed to weigh.

§ **607.** The principal **elementary lesions** which appear on the skin consist of three varieties of PRIMARY lesions, and three which arise secondarily to these.

1. A *macule* (or macula) is a small area of congestion not elevated above the surface of the skin; *roseola* is a generalised eruption of macules; *erythema* is a larger area of congestion with fading edges. A *wheal* is an area of congestion accompanied by slight exudation beneath the skin; it is due to transient local œdema. A generalised eruption of wheals is called *urticaria* or "nettle-rash," because it resembles nettle stings. When large, the wheal is white in the centre and red around.

2. A *papule* (or pimple) is a small solid elevation of skin, conical, round-topped, or flat and easily palpable. A *lenticular* papule is a large flat-topped papule. A *nodule* is larger than a papule, but not as large as a *tumour*.

3. A *vesicle* is a collection of serous fluid in or beneath the skin. A *bulla* is a large vesicle. A *pustule* is a collection of purulent fluid beneath the cuticle.

The SECONDARY lesions are:

1. A *scale* or squame is the exfoliation of cuticle which occurs after congestion or inflammation of the skin, or it may be the product of pathological processes special to the skin, such as cornification, or *hyperkeratosis*, in which the horny layer is thickened. In a sense a scale may be a primary lesion.

2. A *crust* or scab is dried serum, blood or pus.

3. *Fissures*, ulcers, cracks, excoriations are breaches of the surface. They may extend to and involve part of the dermis. *Cicatrices* or scars may follow when a sufficient extent or depth of skin is involved.

PIGMENTARY ALTERATIONS: *Melanoderma* indicates excessive pigmentation, due to a deposit of melanin, which is brought about by many causes. It may be diffuse or localised. *Chloasma* is a broad patch of excessive pigment; *leucoderma* is an area of skin devoid of normal pigment. *Ephelis* is a freckle. *Nævus* is a mole or birthmark, either pigmented, hairy, or vascular. A dilatation of the superficial vessels of the skin is known as *telangiectasis*. *Petechiæ* are small spots of hæmorrhage into the skin; they do not fade on pressure. *Ecchymoses* are larger patches of extravasated blood which go through the changes of colour characteristic of a bruise. Both forms of hæmorrhage occur with

purpura (§ 653). A *comedo* or " blackhead " is a little plug of sebum and horny cells in a pilo-sebaceous follicle.

The fundamental **histological changes** of the skin are congestion (hyperæmia) with or without exudation, inflammation, and infiltration. If the lesion consists of *congestion*, such as roseola, or urticaria, or simple *inflammation* without infiltration, such as eczema, it disappears on pressure. If, on the other hand, there be definite *infiltration* or neoplastic deposit, as in lupus and syphilis, or if there be *hæmorrhage* into the skin, the colour does not disappear when the skin is pressed by the finger or a glass slide, or stretched. This is a point of much significance in the diagnosis of skin diseases. There are three secondary consequences of inflammation in the skin. If resolution does not occur, there may be (1) *suppuration*, leading to pustules, ulcers, etc.; (2) *necrosis*, as in the centre of boils and carbuncles; or (3) *organisation*, as in the case of the various scars, hypertrophies, or scleroderma. In addition to the primary lesions—congestion, inflammation, and infiltration and their consequences —which occur in the skin as elsewhere, there are at least three processes special to the skin. 1. *Hyperkeratosis* is an increased deposit of kerato-hyaline material leading to an increased cornification of the surface cells of the epidermis. 2. *Parakeratosis* is the irregular or deficient cornification best exemplified by psoriasis. The prickle cells, instead of going through the regular process of cornification by the deposit of kerato-hyaline granules in their interior, and gradual conversion into dry, horny, non-nuclear cells, remain moist (though dry on their exterior), and retain their nuclei. They adhere to one another and are shed in masses of crusts and scales instead of being shed singly and imperceptibly. 3. *Acanthosis* is a term applied to the increased proliferation of the prickle cells by increased mitosis (karyokinesis), resulting in thickening of the stratum germinativum. 2 and 3 are found in all kinds of eczema; 2 chiefly in dry eczema and 3 in moist eczema.

II. What does the **eruption feel like,** and does it **disappear on pressure ?** Infiltrating lesions feel hard, and do not entirely disappear on pressure, as is evident from the histological characters (*vide supra*). A faint purpuric eruption may thus be diagnosed from an erythema.

III. The **distribution, position** and **symmetry of the eruption** is important for purposes of diagnosis, and it is therefore essential to examine the whole of the eruption. Many diseases may be recognised by the positions where the lesions are most numerous. Figs. 141 and 142 aid the student to remember the parts most frequently affected by certain eruptions. Some diseases are always more or less generalised—*e.g.*, urticaria and the exanthemata; this distribution usually indicates a toxæmic cause. Others, while sometimes affecting the whole body, have a preference for certain parts—*e.g.*, psoriasis for the knees and elbows, acne for the face and shoulders. Various terms are used to describe the distribution: thus, *punctate* when the eruption is dotted about, *discrete* when the elements are separate, *confluent* when they run together, *serpiginous*, *gyrate* or crescentic when arranged in wavy lines or segments of circles, *circinate* or annular when in circles, *corymbose* when grouped in clusters.

Any **symmetry** of arrangement on the two sides of the body should be carefully observed, though its significance must not be overrated. It may indicate the presence of some circulating toxin, as in the earlier lesions of syphilis and certain erythematous eruptions, or it may be due

to the fact that both sides are exposed to the same external conditions, as in occupational or contact dermatitis.

IV. **Subjective Symptoms** must be inquired into, such as itching, burning, smarting, etc. Syphilitic eruptions do not usually itch, a feature which helps to distinguish them. The majority of skin diseases are *unattended by obvious constitutional symptoms.*

V. The **Duration of the Eruption** and the history of its **Evolution.** The rate at which a disease has developed is a most important aid to diagnosis. For instance, lupus vulgaris will not produce so extensive a lesion in the course of years as a facial syphilide, which resembles it, will produce in the course of weeks or months. During its progress a skin disease may alter its appearance considerably; a lesion which starts as a papule may become a vesicle and then a pustule, as in small-pox.

VI. **Etiology.**—PREDISPOSING CAUSES: 1. The *age.* Lupus vulgaris usually starts in early life, lupus erythematosus after twenty-five. 2. *Sex* does not aid much in diagnosis. 3. *Heredity:* psoriasis, alopecia areata, allergic and other eruptions often run in families. 4. The *occupation* may provide an important clue as to external irritants, and 5, the *habits* of life, as to diet, drink or drugs. 6. See remarks above on symmetrical distribution.

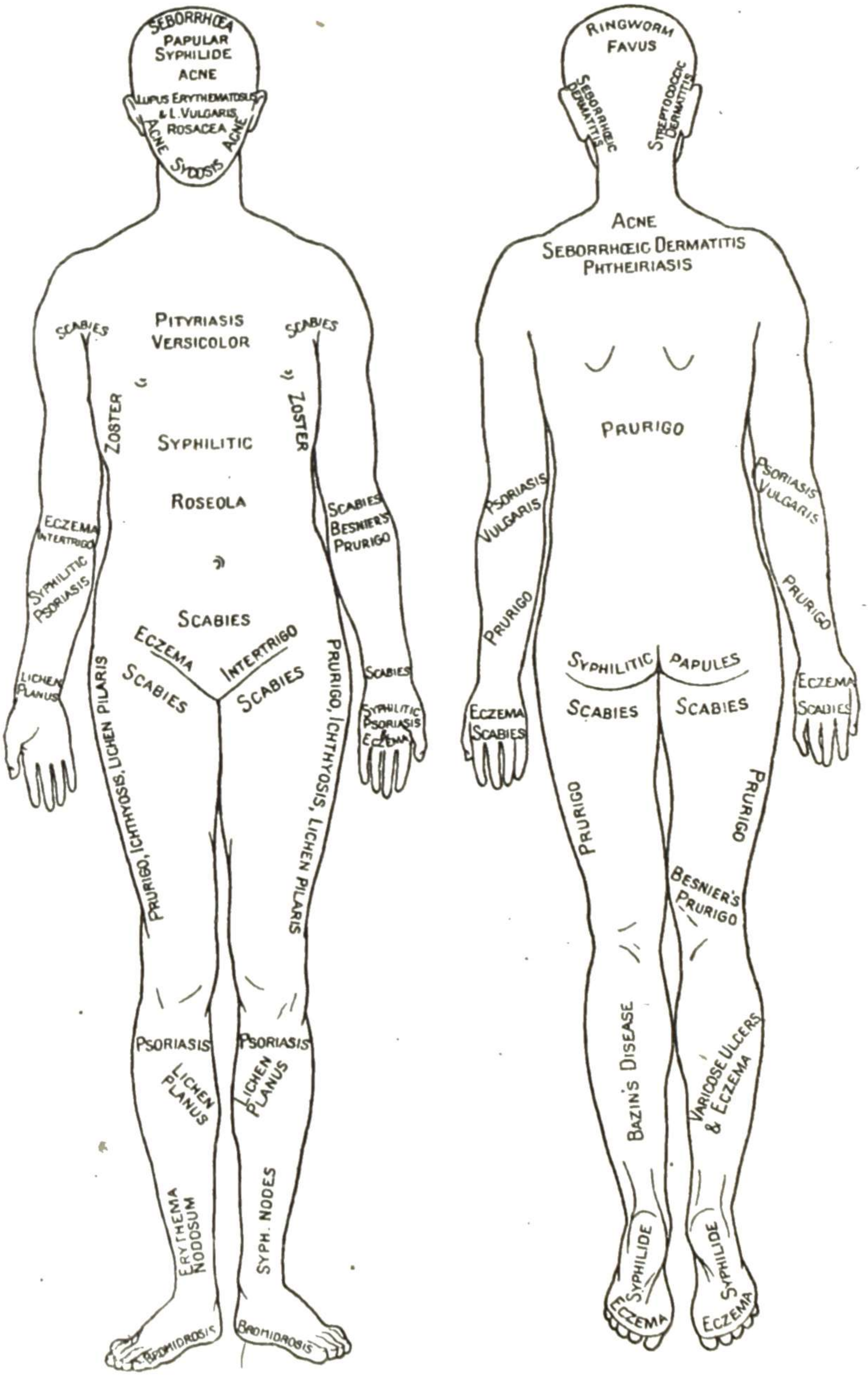
EXCITING CAUSES.—1. A dermatitis indistinguishable from that due to internal causes can be produced by external or traumatic causes, such as soap, dyes, chemicals and plants. Friction, as from clothing, and scratching greatly modify any eruption. 2. *Parasites* produce characteristic eruptions. 3. *Micro-organisms* (*e.g.*, staphylococci and streptococci, B. coli, diphtheria, tubercle, etc.). In the eruptive fevers the organisms reach the skin *via* the circulation. 4. *Fungi, yeasts* and *monilia.* 5. Certain *drugs* cause characteristic eruptions (§ 612). 6. *Sensitisation* to certain organisms and fungi, to foods and chemical substances, induces different types of eruption, *e.g.*, urticaria, erythema, eczema or papules. 7. *Diseases of the internal organs,* especially digestive disturbances (urticaria), disease of the peripheral nerves and their ganglia (herpes, glossy skin, and other trophic changes), acute and chronic renal disease, diseases of the liver, and other abdominal diseases. 8. *Vascular changes.*

§ 608. **Dermatitis Artefacta** is a self-inflicted lesion of the skin. It may be single or multiple, and may vary from erythema to deep ulceration, as it is caused by the application of strong acids or alkalies, blistering fluids or heat. The differentiating features are (1) its usually linear form and angular outline, and (2) its appearance on areas easily reached by the hand. Sir Norman Walker pointed out that if the physician remarked in the presence of the patient that a fresh lesion would probably develop in a certain region, this would appear within a day or two. It occurs in hysterical or otherwise neurotic cases and malingerers, and is dealt with by occlusive dressings and psychotherapy. (See § 888.)

PART C. DIAGNOSIS, PROGNOSIS, AND TREATMENT OF SKIN DISEASES

Routine Procedure and Classification.—The LEADING SYMPTOM is generally before our eyes. The HISTORY, DURATION, and MODE OF EVOLUTION can be inquired into while the patient undresses. Then we proceed to the PHYSICAL EXAMINATION as described in Part B.

If the eruption is QUITE DRY, and consists of (*a*) *wheals,* turn to .. .. § 609
(*b*) *macules* or *erythema,* turn to § 610
(*c*) *papules,* turn to .. .. § 619
(*d*) *scales,* turn to .. .. § 626
If the eruption is MOIST, or consists of serous exudation, vesicles, bullæ or crusts, turn first to .. .. § 634
If the eruption consists of *pustules,* turn first to .. .. § 640



FIGS. 141 and 142.—DIAGRAMS showing the parts most frequently affected by certain eruptions.

If it is *multiform* .. .. § 645
If it is *nodular* .. .. § 646
If there is *ulceration* .. .. § 649
If there are *warts* or *excrescences* .. .. § 650
If there are *scars* or *atrophies* .. .. § 651
If there are *vascular* or *pigmentary* alterations .. .. § 652
If there is disorder of the *sweat* .. .. § 654
If the *hair* or *scalp* is affected .. .. § 655

GROUP I. ERUPTIONS USUALLY DRY

(a) Wheals

§ **609. Urticaria** (" nettle-rash ") is a generalised eruption which consists of firm round or oval, pink swellings, white in the centre when scratched. These typical wheals are of more or less evanescent character, rarely lasting more than a few hours. The rapid onset and disappearance of the individual lesions is characteristic. Patients come complaining of the *history* of such an eruption preceded and accompanied by intolerable itching. Sometimes, although there are no wheals visible, these can readily be produced by drawing a point across the skin (dermatographia or urticaria factitia).

Varieties.—(1) There is an acute and chronic form ; the first-named lasts a few hours or days ; in the chronic or *recurrent* form there are constantly recurring attacks. (2) Lichen urticatus or papular urticaria affects infants and young children. Red transient blotches appear with a central papule, very itchy, which lasts several days. Occasionally it has a vesicle or a bulla on the top (bullous urticaria). (3) Angioneurotic œdema or giant urticaria (Quincke's disease) has very large swellings involving the loose subcutaneous tissue. Each lesion may last a few hours or days. There may be danger to life, especially when the mucous membrane of the tongue or larynx is involved. It may occur in association with purpura. (4) *Urticaria pigmentosa* ; see § 653. (5) "*Serum Disease.*" This form may appear after serum injections, and is associated with a group of symptoms which are dealt with in § 521.

Etiology.—A wheal is the neuro-vascular cutaneous reaction to injury ; the skin reacts to irritants of external and internal origin. Histamine is freed from the cells by trauma, infection or a toxin, or from a chemical, thermal or electrical irritant ; the skin reacts with Lewis' " triple response " : (i.) local and direct dilatation of the minute skin vessels ; (ii.) dilatation of the larger vessels, by nervous reflex, with flushing of the adjacent skin ; (iii.) local increased permeability of the vessel walls, leading to exudation of serum. Common causes are : (1) Insect bites : bugs, mosquitoes, the stings of nettle or jelly-fish. (2) Nervous or emotional causes : some persons develop urticaria on meeting a stranger or before addressing a public gathering. (3) The state of allergy, *i.e.*, an inborn sensitiveness which in certain people and families is associated with hay fever, asthma and eczema or prurigo. Common foods to cause urticaria

in sensitive subjects are eggs, shell-fish, pork, acid fruits or wines. Rarer causes are intestinal worms and hydatid cysts ; suspect these in the tropics ; eosinophilia is usually present. (4) Gastro-intestinal toxins : bad fish, tinned foods, etc. (5) Intestinal or liver dysfunction and after enemata. (6) Bacterial causes : urticaria has disappeared on removal of septic teeth, appendix or a discharge. (7) Susceptibility to certain drugs (see § 612). (8) In rare cases urticaria follows exposure to a blow, heat, light, cold, or a bath. (9) Excess of nicotinic acid.

The subject of ALLERGY has received attention of recent years. The " allergic state " includes hay fever, asthma, many forms of urticaria, pruritus and eczema, migraine, paroxysmal hydrarthrosis and epilepsy. When a patient is sensitised to a certain substance his cells react violently towards it ; to him it is poison. There is some similarity between anaphylaxis and allergy. Anaphylaxis is an acquired sensitiveness ; allergy in some cases is inborn and runs in families. Anaphylaxis appears after serum injections given to one who is sensitised to serum. In anaphylaxis the date of entry of the serum is known ; in allergy the time and portal of entry of the offending substance are unknown. Other factors complicate the problem ; the digestion in allergic subjects is often defective, the liver fails to deal with the imperfect products of digestion and these enter the circulation. The manifestations of allergy can be produced by histamine. It is difficult to track down the allergen in operation in the individual case ; Langdon Brown suggested an inborn deficiency of histaminase, which normally destroys histamine.

Cutaneous allergy. The individual becomes sensitised by repeated external or internal contact with various antigens. Even normal people can be rendered sensitive to certain substances when a large enough dose is administered. The sensitised skin reacts in several ways : erythema (dilated vessels) ; urticaria and œdema ; vesicles and bullæ (serous exudation). When the cells of the epidermis are sensitised, there results eczema and dermatitis ; when the cells of the dermis, urticaria and œdema.

Prognosis and Treatment.—Locally, use 2 per cent. phenol in calamine lotion, 1 to 3 per cent. liq. carb. deterg. or 1 per cent. menthol or camphor in lotions or powders ; avoid ointments, hot baths and rough garments. Many cases subside in a few days, with a saline purge and milk diet. Glucose is valuable because it aids the antitoxic function of the liver. In recurrent types the cause may be difficult to trace ; the patch test may assist. First consider the diet : give milk alone for several days ; add various articles and note which are followed by urticaria. Elimination diet tables are used for obstinate cases (Rowe). Desensitisation may be effected by giving a minute quantity of the offending article of food an hour before the meal in which it figures ; for non-specific desensitisation give peptone (0·5 G.) three-quarters of an hour before meals, or inject it intramuscularly twice a week. Autohæmotherapy may be required (§ 656). Calcium salts in large doses can be given by mouth, or by daily intramuscular or intravenous injection. If the gastric digestion is at fault, give hydrochloric acid and pepsin ; if the colon is unhealthy, kaolin, charcoal, lavage and B. acidophilus therapy, or antiseptics such as salol and ichthyol. With lichen urticatus, Hallam found that the child recovers if it sleeps in hospital, which suggests an underlying emotional cause ; bromides, calcium lactophosph. and hyd. c̄. cret. aid most cases. Urticaria can be aborted by 5 to 10 drops of adrenalin in one ounce of water, or

ephedrine gr. $\frac{1}{3}$ to $\frac{1}{2}$ twice daily. Serious forms of angioneurotic œdema require adrenalin injections ($\frac{1}{2}$ c.c. of 1 in 1000 solution). Certain antihistamine agents are phenolic ethers, effective during the period of administration. This does not exempt one from search for and removal of the allergen, or desensitisation of the patient. Of these drugs may be mentioned benadryl (50 mgm., t.d.s., followed by a course of injections of lertigon), antistin, anthisan and phenergan. After a time these drugs become less effective. When side reactions follow (drowsiness, lassitude, nausea, dizziness), give small doses of ephedrine, caffeine or benzedrine.

(*b*) *Eruptions which usually consist of Macules or Erythema*

Generalised.	*Localised.*
I. Exanthemata.	I. Rosacea.
II. Roseola (simplex and syphilitica).	II. Lupus erythematosus.
III. Erythema scarlatiniforme.	III. Erythema nodosum.
IV. Drug eruptions.	IV. Erythematous eczema, X-ray dermatitis, Bedsores, E. faciei, E. traumaticum, E. caloricum, E. pernio, and other varieties of Erythema, Livedo; Macular Leprosy; and Pellagra.
V. Erythema multiforme.	

The early stages of eczema and of other eruptions may appear as erythema.

I. The **Exanthemata** or eruptive fevers are fully described in Chapter XV, where they form Group I of the acute specific fevers.

§ **610.** II. **Roseola** is a term employed to designate a generalised eruption consisting of patches of congestion, more or less marginated, varying in size from a pin's head to a lentil. Two main varieties are described.

Roseola Simplex may resemble measles; its chief importance is in connection with the diagnosis from this disease: it gives rise to itching, with slight constitutional disturbance. It may occur in childhood under the same conditions as urticaria, due to gastro-intestinal toxins. Its occurrence when small-pox is prevalent should make one suspect the initial eruptions of that disease. It is one of the commonest rashes associated with vaccination. Drugs may cause it (see § 612).

Roseola Syphilitica is the earliest of the syphilitic eruptions, occurring three to six weeks after infection upon the trunk, chiefly its anterior aspect, the chest, the flexures of the limbs and the palms and soles, as rosy macules becoming dusky red in a few days, disappearing on pressure, rounded, oval or irregular in shape with fading edges, varying in size from a pea to a shilling. It may last a few days to a few weeks, leaving behind it some pigmentation. Sometimes the eruption is so faint that it is overlooked; prominence of the hair follicles may be noted first, and the rash becomes better marked after a bath or when the skin is exposed to cold. It is *diagnosed* by the history, other signs of syphilis and absence of itching. *Non-syphilitic roseola* undergoes rapid changes in size and shape; *pityriasis*

versicolor can be scraped off and is fawn-coloured; *pityriasis rosea*, *seborrhœic dermatitis*, *eczema* and *parapsoriasis* have scales or crusts.

§ 611. III. **Erythema Scarlatiniforme**, as its name implies, consists of a widespread rash, resembling scarlet fever, preceded and accompanied by fever and constitutional disturbance, and followed by desquamation. So-called "surgical scarlatina" is probably identical with this condition. The chief causes are intestinal disorders, enemata, focal infection, streptococcal tonsillitis, sensitiveness to a foreign protein, food poisoning, certain drugs (see below), rheumatism and gonorrhœa. The *Diagnosis* from scarlet fever is difficult only in severe cases. In erythema there is less constitutional disturbance, no strawberry tongue, and there is a tendency to relapse.

§ 612. IV. **Drug Eruptions.**—An idiosyncrasy with regard to certain drugs, whether taken by mouth or applied externally, is shown in some individuals by a rash, which disappears on the withdrawal of the drug. Iodides and bromides often produce eruptions; they may even cause a *frambœsial* eruption resembling gumma. The chief eruptions produced by the internal administration of drugs are:

Morbilliform: antipyrin, copaiba, the sulphonamide group, penicillin, the barbiturates (sometimes with itching and fever).

Papulo-Pustules: Bromide and iodide of potassium (chiefly on the face), occasionally sulphide of calcium, antimony, arsenic, and mercury.

Papules: Bromide and iodides (chiefly on the face); penicillin; arsenic, gold salts and other metallic injections (lichenoid papules especially).

Erythema: Antipyrin (in round, raised patches recurring on the same site), antitoxins, cinchophen (atophan), atropine, belladonna (sometimes with fever), boracic acid, chloral hydrate, copaiba, cubebs, ephedrine, gold and other metallic injections, phenobarbitone, mercury, morphia, phenolphthalein (oval patches becoming deep red or purple, then pigmented), quinine, santal, the sulphonamide group, salicylic acid and sodium salicylate. Turpentine, iodoform and phenol by absorption from wound dressings.

Urticaria: Arsenic, atophan, chloral hydrate, copaiba, nicotinic acid, phenobarbitone, mercury, phenacetin, phenolphthalein, quinine, santonin, salicylates, turpentine, penicillin.

Erysipelatoid: (erythema with infiltration or œdema of the skin). Antipyrin, atophan, boracic acid and phenol, bromides and iodides, iodoform, mercury, phenolphthalein, quinine, the sulphonamide group. Aconite, oil of cade, chrysarobin, and phenol applied externally.

Herpes: Arsenic and other metallic injections.

Bullæ: Antipyrin, arsenic, the barbiturates, bromide, chloral hydrate, gold, iodides, opium, quinine.

Purpura: Iodide of potassium, chlorate of potash, chloral hydrate, chloroform, urea compounds, copaiba, T.N.T., sulphadiazine, adalin.

Pigmentation: Silver nitrate, arsenic, antipyrin, phenolphthalein.

Epidermic Thickening: Borax, boracic acid, injections of arsenic, the arsenobenzol group and gold.

Exfoliative dermatitis: Boracic acid, metallic injections, chiefly arsenic, gold and bismuth.

§ 613. V. **Erythema Multiforme** is an erythematous rash chiefly localised to the backs of the hands, forearms, feet or legs, sometimes the face, neck and trunk, and associated with lassitude or ill-health. The lesions vary in size from a lentil to the palm of the hand, are slightly raised, with fading edges. The centre is highest, usually livid, even hæmorrhagic. Varieties: *E. Iris*, with a central vesicle (Fig. 143); *E. Bullosum*, with central bulla; *E. Gyrata*, when adjoining patches coalesce and form wavy outlines; *E. Annulare*, with ring-like edges; *E. Centrifugum annulare*, which lasts long. A virus may be responsible when the mouth and throat are affected, as in a rare serous syndrome. *E. nodosum* is described in § 616. Erythema is known

from urticaria by its deep red coloration, more localised distribution, the larger size and more permanent character of the lesions, less itching, and more marked constitutional symptoms. Young people and males are chiefly affected. It is commoner in the spring and autumn. The *course* of the disease varies from eight to ten days, and lesions continue to appear for two to six weeks. Each may leave temporary brown pigmentation, and desquamation may occur as they fade. Complications are rare.

Etiology.—A history of food poisoning is often found. In many obstinate cases there is a septic focus in the naso-pharynx, mouth or sinuses. *E. Annulare centrifugum* is usually due to sensitisation of the vessels to streptococci or to other obscure toxic or allergic forming substances.

Treatment.—Locally, cooling lotions and powders alone are required. Rest is indicated lest any generalised infection attack the organs. The digestive system must

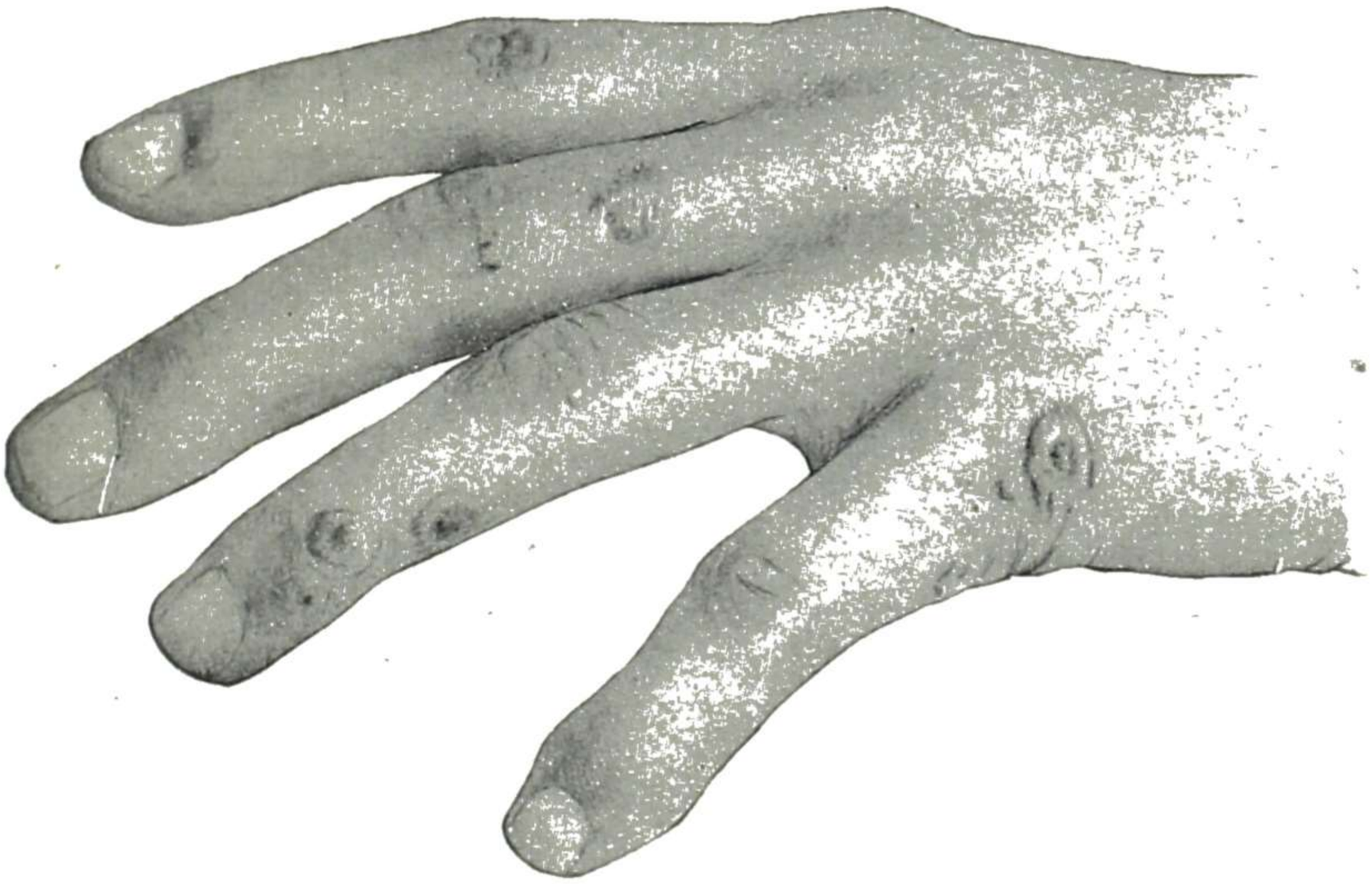


FIG. 143.—ERYTHEMA IRIS on the hand of a single woman twenty-three years of age.

be regulated. Internally, give quinine gr. 5 t.i.d. and calcium lactate gr. 10 or gluconate gr. 25 after meals. Salicylate of soda with sodium bicarbonate aids other cases. The cause should be sought for and removed between the attacks. Vaccine and sulphonamide or penicillin therapy is indicated when due to streptococcal sensitisation.

Erythema of more or less LOCALISED *distribution.*

§ 614. I. **Rosacea** (Synonym: Acne Rosacea) presents three stages: (1) Simple congestion or erythema of the nose and adjacent parts of the cheeks, often worse after meals or exposure to heat. (2) Dilated vessels (telangiectases). Persistent erythematous patches may develop, and in certain cases, especially when there is dandruff on the scalp, papules, small pustules and enlarged sebaceous glands. (3) In severe cases hypertrophy, with nodules of great size (rhinophyma). Rosacea runs a prolonged course; the first stage alone may extend over many years.

The *Diagnosis* is not difficult, except in its early stage, when the erythema may be mistaken for lupus erythematosus and other kinds of erythema of the face (§ 617). The former, however, is recognised when

a lens reveals the presence of a fine "tissue-paper" scarring. The absence of comedones distinguishes it from acne vulgaris.

Etiology.—Rosacea affects both sexes, but is more common in women. It also affects cabmen, coachmen, mariners, and others exposed to the weather. Alcoholism is a frequent cause, but total abstainers may have rosacea. Dyspepsia is a common cause; test meals have often revealed deficient hydrochloric acid. Severe cases usually have liver or intestinal trouble. In other subjects it is associated with catarrhal conditions of the nose and throat, sinuses, or infection from obscure foci, *e.g.*, teeth, cervix or gall-bladder.

Treatment.—In the first stage apply soothing remedies such as calamine lotion; later, ichthammol. Add weak sulphur when the scalp has dandruff. Alkalies with gentian before meals aid many; where the acid secretion is at fault give hydrochloric acid after meals. Farinaceous and sweet foods should be restricted and fluid taken between meals. Many benefit with calcium; others require endocrine therapy. Treat dilated veins with the galvanic current. Some use small doses of X-ray. For rhinophyma, diathermy fulguration or cautery and cosmetic surgery are required.

§ 615. II. **Lupus Erythematosus** is the most chronic of the erythemata. The eruption has a spreading erythematous border, which as it spreads leaves a very thin permanent scar in the centre. In the first stage the disease begins with one or more small, red, slightly raised spots. By spreading at the margin and increasing in number the little patches form, in the course of many months, an irregular bluish-red area, with thin cicatricial centre and erythematous margin covered with scales, and sometimes with crusts. In another variety there is a marginated erythema with numerous black specks, or large gaping openings of the sebaceous glands; the central part of the skin appearing depressed, and covered with adherent dry scales, interspersed with venules. The favourite sites of the eruption are the cheeks and bridge of the nose (butterfly distribution); then other parts of the face and forehead, the lips, ears, scalp, the extensor surfaces of the hands, fingers and toes, and more rarely on other parts of the body. The patches are generally symmetrical. In rare cases the erythematous patches become rapidly widespread over the body, and severe constitutional symptoms are present.

Etiology.—The disease is more frequent in women than men, and rarely occurs under twenty, an important fact in the diagnosis from *lupus vulgaris*. Direct sunlight and reflection from snow and water can excite new lesions. The disease can be caused both by tubercle and by streptococci; the acute form is probably streptococcal.

The *Diagnosis* from *lupus vulgaris* is given in tabular form (§.646). Before cicatrices appear it may be hard to distinguish from *Rosacea*. The acute disseminated type may be confused with *Erythema Multiforme*.

Prognosis.—The chronic or discoid type of L. erythematosus extends over ten or twenty years, always terminates in cicatricial changes in the skin, and permanent baldness of a hairy part. Beyond the disfigurement the chronic form of the disease is not serious. The acute disseminate variety usually terminates fatally.

Treatment.—In the early stage employ soothing remedies (*vide* acute eczema). Painting with pure carbolic or carbol-camphor, linear scarification, diathermy and carbon dioxide snow have all given satisfactory results. Internally quinine, salicylic acid and intestinal disinfectants have cured mild cases. Cure has sometimes followed an autogenous vaccine after removal of a septic focus. Bismuth and gold therapy are the mainstay in treatment. Once a week bismuth is given intramuscularly.

Gold is used in afebrile and tuberculous types of the disease; myocrisin (0·05 G.) in aqueous solution can be injected weekly, for ten weeks or longer. Sulphonamide drugs should be used cautiously, lest latent foci become active. Penicillin, in acute disseminated cases, has been disappointing; relapse follows initial improvement.

§ 616. III. **Erythema Nodosum** is an eruption with an acute onset, consisting of erythematous lumps about the size of a pigeon's egg, occurring most frequently over both shins or just above the knees, round or oval, raised, non-marginated, painful and tender. The centre is deeply coloured, whence the purplish tint gradually fades to the margin. There is usually some malaise and pyrexia; sometimes joint pains and other rheumatic symptoms. Each nodule lasts one to two weeks, and successive crops may continue for a month or two. They never ulcerate. Patients are usually young women with a rheumatic or tuberculous tendency. The condition is *diagnosed* by the position of the lesions and the acute pain and tenderness. In periostitis the lesion is usually single. The disease, in streptococcal cases, usually recovers in a month or two, but may recur. *Treatment.*—Give salicylates, saline aperients, and after the acute symptoms have subsided, iron and quinine. Lead and opium lotion allays the pain. As certain cases appear to be due to latent tuberculous infection one must make careful search for the cause; when of streptococcal origin seek to eradicate any septic focus.

§ 617. IV. Other forms of erythema to be borne in mind are:

Erythematous Eczema may run its course without presenting any vesicles. The skin is red, dry, and rough, with slight scaling. It frequently attacks the face, when the eyes may be almost closed, and is attended by burning and itching. See Eczema (§ 634).

Dermatitis due to **dyes,** hair and fur dyes, especially those containing para-phenyldiamin, or work with **munition** products such as trinitrotoluol, may cause a blotchy erythema which may pass on to acute vesiculation. Certain **plants,** *e.g.*, primula obconica and rhus toxicodendron, bulbs and citrus fruit skins, may be the cause of recurrent dermatitis in susceptible persons (dermatitis venenata). The causes of contact and traumatic dermatitis are legion and demand patient investigation (§ 634).

X-ray Dermatitis may be acute, consequent on a single large dose, or chronic, after repeated small doses of X-rays. In the acute form there is erythema, swelling, sometimes bullæ, and sensations of burning or intense pain, according to the severity of the reaction. In mild chronic cases there is temporary loss of hair and pigmentation. Years later, telangiectases develop; atrophy, fissures, warts, ulcers and malignant disease may follow. Treatment is prevention by ensuring greater protection to X-ray workers. Sedative lotions and pastes hasten the recovery of acute dermatitis; antiseptics should not be employed. For chronic forms forbid further X-ray work.

Bedsores are due to pressure over bony parts, such as the sacrum, trochanters, heels, or ankles of the bedridden, or to the pressure of a badly adjusted splint or plaster. A local patch of erythema appears, then ulceration and slough form. Bedsores have three causes: pressure, perspiration and excretions in cases of incontinence, the lowered vitality of the sick and aged. In certain nerve diseases, especially myelitis, the sloughs form rapidly. Necrosis may lead to emaciation and septicæmia.

Treatment.—Good nursing prevents postural bedsores, by cleanliness, dryness, and relief of pressure. (i.) The parts should be cleansed night and morning and the draw-sheet pulled through immediately when soiled. (ii.) After washing, the skin should be dried, gently massaged, rubbed over with surgical spirit and powder. (iii.) Relieve pressure by a water-bed, ring pads, and by changing the patient's position every one or two hours. If an ulcer or slough forms, when not near bone and the infection is not virulent, cover with adhesive plaster overlapping an inch on the healthy skin. Excise necrosed tissue; give sulphathiazole or penicillin as indicated.

Erythema Faciei is a flushing of the face which occurs chiefly in association with dyspepsia. It may follow exposure to bright sunlight; too long exposure

may cause dermatitis. Treat with soothing creams. Prevent by applying calamine paste or lotion containing 2 per cent. quinine, 10 per cent. tannic acid in vaseline or in 25 per cent. spirit or *p*-aminobenzioc acid in vanishing cream or in spirit. *E. traumaticum* develops on any part subject to long-continued pressure—*e.g.*, the garters and tight waist-bands. *E. lœve* is found on the legs of dropsical persons. *E. caloricum* appears on the shins, due to sitting close to a fire. *E. intertrigo* is found in opposite parts, such as the thighs and armpits, in infants and corpulent people. It may become infected with monilia or streptococci. *E. pernio* (Synonyms : dermatitis congelationis, frostbite, chilblain) is a painful inflammatory condition of the skin of the fingers, toes, heels, or other portions of the feet or hands, caused by exposure to cold and damp, and attended with itching and tenderness, sometimes by vesication, ulceration, or gangrene. Children and old people frequently suffer from this complaint during successive winters. *Livedo annularis* is the purplish mottling seen on the extremities of chilly people when it has reached the stage of resembling a permanent network. *Treatment :* Use stimulating liniments, iodine and camphor, the sinusoidal current and paraffin wax applications. Itching is relieved by bathing in very hot water. Give calcium (especially with high potency calciferol), thyroid, iron and arsenic, and ultra violet to the whole body.

Other forms of chronic Erythema due to a toxæmia appear to be closely allied ; sensitivity to a streptococcus is suspected. *E. Annulare* : circinate and gyrate lesions appear on the neck, trunk and limbs. They last some days ; fresh crops may appear for months. Especially is this type seen in children with acute rheumatism, when it may be overlooked. *E. Annulare centrifugum* begins as papules and extends to form circinate and gyrate patches with raised hard margins. It may last for months, and recurrence is usual. *E. perstans* has large lesions, very persistent. *E. elevatam diutinum* has symmetrical elevated flat dark plaques over pressure points. It is thought to be due to rheumatism.

§ **618. Pellagra** is a deficiency disease occurring commonly, but by no means only, in maize eaters.

Symptoms.—The classical clinical syndrome of dermatitis, diarrhœa and dementia is encountered only in advanced cases ; many patients first consult their doctor on account of *prodromal symptoms :* anorexia, asthenia, loss of weight, dyspepsia, insomnia, nervousness, palpitation, mental depression, forgetfulness and mental confusion. According to Wood, the seasonal incidence is important, prodromal symptoms occurring late in the winter, alimentary features in the early spring, and pellagrous dermatitis in the early summer. (i.) The *skin* lesions appear on areas of the body exposed to mechanical irritation or the sun, such as the dorsum of the hands, wrists, elbows, face, neck, knees, feet, perineal region, and under the breasts. The rash begins as an erythema, resembling severe sunburn, accompanied by burning, itching and sometimes vesiculation. Gradually the acute phase subsides, the skin becomes thickened, reddish-brown and itchy. Desquamation follows. The rash is symmetrical, with a sharply demarcated, often pigmented, border. Sometimes skin lesions never appear : "pellagra sine pellagra." (ii.) Involvement of the *qastro-intestinal tract* shows in the later stages by glossitis and stomatitis. At first the tongue is red and swollen only at the tip and margin ; later it is all involved ("beet" tongue). Burning pain in the tongue, pharynx, œsophagus and stomach aggravated by condiments and hot and acid foods may cause bitter complaint. Other alimentary features include nausea, vomiting, ptyalism, abdominal pain, discomfort and distension after food, and severe persistent diarrhœa. Some 60 per cent. of cases show achylia gastrica ; anæmia, in some cases of the megalocytic type, is not uncommon. Other mucous membrane lesions are vaginitis, proctitis and urethritis. (iii.) *Nervous* symptoms : early depression, apprehension, increased irritability, insomnia, headache and burning sensations in the extremities. Later, tremor, jerky movements, altered reflexes and a spastic or ataxic gait may develop. Insanity often supervenes ; many patients die in mental hospitals.

Prognosis.—The disease runs a chronic course, is subject to remissions and seasonal fluctuation, and, if untreated, leads to death in from 3 to 15 years.

Etiology.—Pellagra may occur at any age, in both sexes, in any race ; it is endemic in lower Egypt, Turkey, Spain, Italy and parts of the Southern United States. It is related in part to deficiency of nicotinic acid in the diet, and is often associated with increased porphyrinuria. According to Spies, it is found in three groups of people : (1) The indigent and those with erroneous dietetic habits and idiosyncrasy. As a rule there is a history of a long period of diet high in carbohydrates and fats and relatively low in protein, minerals and vitamins. Lean meat, eggs, milk, fish, fresh fruits and vegetables, which are of value in preventing and treating pellagra, are generally lacking. (2) Chronic alcoholics who take an inadequate diet, substituting alcohol for food. (3) People with organic disease involving the gastro-intestinal tract, cirrhosis of the liver and the like, which interfere with the normal utilisation of food.

Treatment.—Pellagra is prevented by foods rich in the pellagra-preventing factor, such as yeast, marmite and wheat germ. The minimal preventive dosage is 8 to 10 mgm. nicotinic acid daily. Once the disease has developed the patient should go to bed on a high calorie diet, rich in protein and low in carbohydrate. Fresh milk, lean meat, liver, marmite, tomato juice and vegetables are of special value. Nicotinic acid in adequate dosage heals the alimentary and mucous membrane lesions, induces blanching of the erythema, reduces the porphyrinuria to normal, and is followed by improvement of the mental symptoms. Give 500 mgm., one tablet (50 mgm.) every 2 hours for 10 doses for 10 days, then gradually reduce. With children and infants hog's stomach has proved more effective than liver. Co-existing diseases must be treated ; for associated polyneuritis give vitamin B_1 parenterally, as nicotinic acid does not cure this complication.

Macular Leprosy appears as brownish or mahogany-red patches of erythema of various sizes (§ 647).

LEUKÆMIA and MYCOSIS FUNGOIDES show large areas of infiltrated dusky erythema with intense itching (§ 647).

With DERMATOMYOSITIS there may occur a widespread erythema, often accompanied by telangiectases and recurrent œdema, especially of the face (§ 594). It is usually associated with some degree of scleroderma.

(c) *Eruptions which usually consist of Papular Elements*

Common.

I. Acne vulgaris.
II. Prurigo.
III. Scabies.
IV. Skin diseases sometimes papular at *one stage :* (i.) Papular eczema.
(ii.) Psoriasis and other scaly eruptions.
(iii.) Exanthemata.
(iv.) Pustular and vesicular eruptions.
(v.) Nodular eruptions.
V. Milium.
VI. Keratosis pilaris.
VII. Lichen planus.
VIII. Papular syphilide.

Rare.

IX. Lichen scrofulosorum.
X. Adenoma sebaceum.
XI. Granuloma annulare.
XII. Trichophytides.
XIII. Keratosis follicularis.
XIV. Fox-Fordyce disease.

§ 619. I. **Acne vulgaris** is a common disease, with comedones and papules which are very persistent, and often pass on to pustules, with discharge and resulting scars. The skin of the acne patient is usually oily, coarse and dusky. The eruption affects chiefly the face, and often the back, shoulders and chest, parts where the sebaceous glands are active.

The comedo is characteristic, with its black point at the mouth of the follicles. This so-called "blackhead" is due to a chemical change in the hyperkeratosis which blocks the gland and leads to retention of sebum and subsequent inflammation around.

Etiology.—Acne usually starts at puberty, when the pilo-sebaceous glands become active; both sexes are affected. There is excessive oily secretion of the skin, often also of the scalp; the enlarged follicles contain overgrowth of the horny cells and masses of Sabouraud's micro-bacillus. The work of Darier, Barber and others suggests that there is a definite "seborrhœic state," with altered secretion and composition of the cutaneous fat, which permits the growth of certain micro-organisms more readily than in normal skins. There is usually excessive acidity of the urine, often constipation and dyspepsia. The underlying cause is endocrine imbalance, especially excess of the male hormone, combined with dietetic errors, such as excess of carbohydrate and fat in the diet, defective oxidation processes and too little exercise. The blood sugar may be high. Fresh crops of papules often follow over-eating, especially of chocolates and fatty foods, and also of sweets and wines.

Varieties.—(1) *Acne punctata*, *A. indurata*, and *A. pustulosa* are stages, not true varieties. (2) *Bromide* and *iodide acne* are indistinguishable; the individual spots closely resemble acne vulgaris, but comedones are absent; they affect chiefly the chest and back, and the face is always first affected. (3) Working with *tar* and *mineral oils* can produce acne with close-set comedones, then pustules on the areas exposed to these agents. Friction with camphorated oil has produced groups of comedones on the chest. (4) *Acne excoriée des jeunes filles* shows much disfigurement because the patient continually picks at the lesions. (5) *Acne varioliformis* has indurated papules, chiefly affecting the brow and adjacent scalp, but also sometimes the face and chest, rarely other parts. Itching is usual. Slowly a vesico-pustule forms and leaves a pitted scar.

The *Diagnosis* of acne is simple on account of its characteristic position and the presence of comedones. Papular, pustular, and tubercular *syphilides* affecting the face are usually copper-coloured, and grouped in a serpiginous manner. *Acne Rosacea* may accompany acne vulgaris: there is hyperæmia after meals, between the papules. *Lupus vulgaris* has characteristic apple-jelly nodules, and no comedones.

Treatment.—The local treatment of acne consists in employing soothing calamine lotions when there is much inflammation, and following up with sulphur ointment or lotion. Comedones must be gently pressed out daily with a comedo extractor. When comedones and hard, small papules predominate, the skin must be frequently washed with warm water and soap, followed by hard friction with a rough towel. When acne is not complicated by internal causes, it responds to sulphur externally. A sulphur ointment (20 to 40 grains to the ounce) should be rubbed on night and morning, or a sulphur lotion (*e.g.*, pot. sulphuret, zinc sulphat, āā gr. xx.; industrial spirit 120♏, Aq. ad. fl. oz. 1) or resorcin in strength varying

according to the individual skin. In some cases strong exfoliating remedies succeed ; they are applied at night and the patient remains indoors during the peeling stage. For pustular acne give mercury (in ointment or lotion) as in all suppurating affections ; in some cases try penicillin or sulphonamide therapy. Boracic compresses are used when the pustules are tender ; lance later. Diet is important ; in obstinate cases investigate the urine and the stools. Chocolates and alcohol should be forbidden ; fats and carbohydrates cut down. In some cases bacon fat, in others the fats of butter, milk or cheese, are harmful. Treat constipation and dyspepsia, and remove any septic focus present. Fresh air, exercise and sunlight often work wonders. Large doses of alkalies are useful for many ; for others use endocrine therapy, especially thyroid. Recently œstrin therapy has had success with men, and with women when the menstrual period is associated with exacerbation of the acne. Vaccines in small doses often aid pustular acne. Ultra-violet light, high frequency and massage all have their advocates. When the acne bacillus predominates, small repeated doses of X-ray benefit ; care must be taken to avoid after-effects.

§ **620.** II. **Prurigo** is a disease in which the leading and sometimes the only symptom is generalised itching (pruritus), but it is frequently accompanied by an eruption of papules, urticarial patches, and scratch-marks. The papules are hard, shotty, acuminate, pale red, frequently better felt than seen (giving the sensation of a nutmeg-grater), appearing in crops

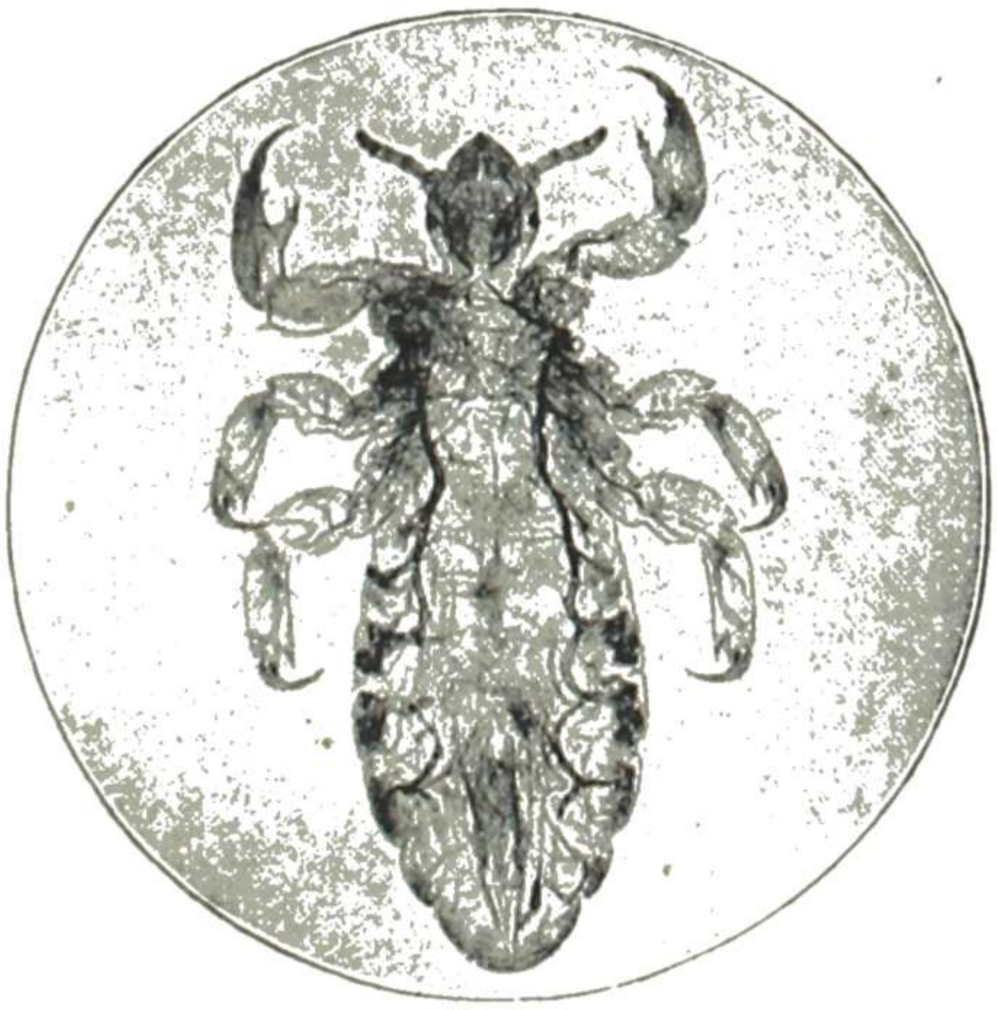


FIG. 144.—PEDICULUS CORPORIS, magnified about ten times.

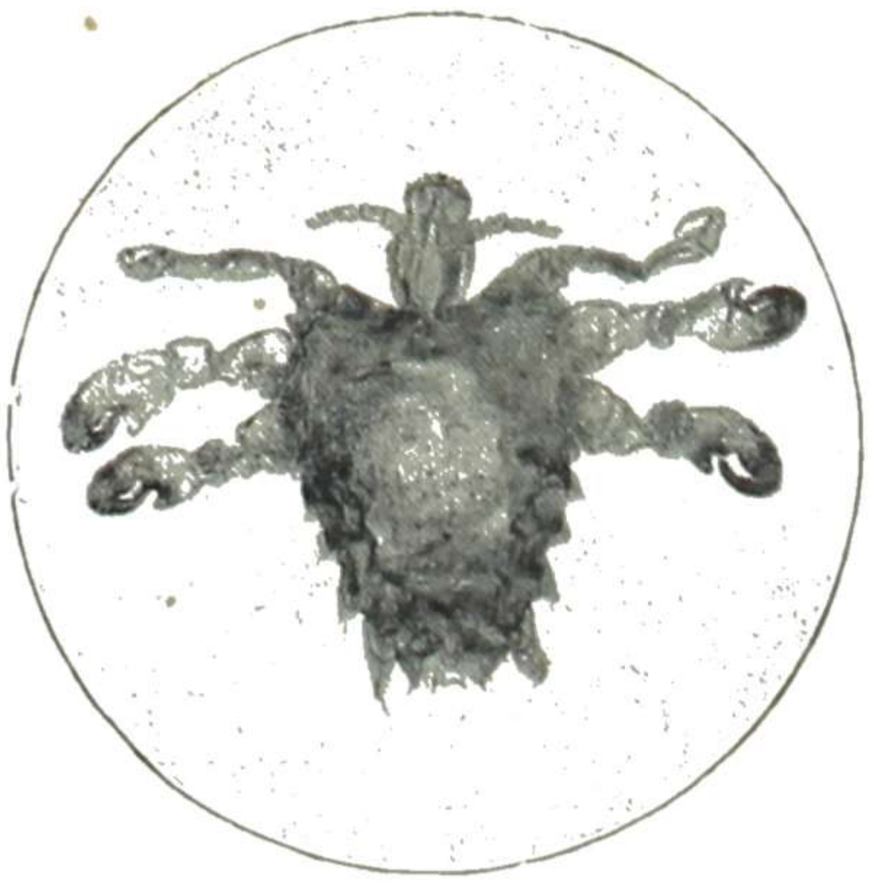


FIG. 145.—PEDICULUS PUBIS, magnified about ten times.

on the extensor surfaces of the thighs and arms, the trunk, especially the back and buttocks, and only occasionally the face. Each crop lasts a week or two, and is sometimes accompanied by urticarial blotches ; dermatographia can generally be elicited. The intense itching leads to scratch-marks. In time prurigo is followed by a dry, rough, thickened, pigmented skin (lichenification).

Varieties.—Lichen Urticatus (Synonym: Urticaria Papulosa; see § 609). The papules are small, chiefly on the back, and the urticarial element moderate. It starts about the fourth month of life, and recurs until about the fourth year. In very young children lichen urticatus sometimes shows vesicles or bullæ, chiefly where the horny layer is thick (palms and soles). In *P. senilis* (Synonym: Pruritus Senilis) the eruption may be insignificant or absent, and the irritation intractable, with a tendency to induration and purpuric complications. *Besnier's prurigo* is usually an allergic manifestation; the patient or his relatives have had infantile eczema or asthma (§ 609); the eruption affects the flexures of the knees and elbows, parts of the face, dorsum of hands, wrists and ankles; it may become eczematised. In *P. ferox*, the prurigo of Hebra, all the lesions are on a larger scale, the inguinal glands involved, and the general health deteriorated. *P. hiemalis* occurs in cold countries or in the winter only.

The *Diagnosis* is simple in well-marked cases because of the intense itching and the thickened skin, with exaggeration of the natural grooves, like a mozaic (lichenification). The prolonged course of the disease is distinctive. In scabies the papules are almost confined to the *flexures of the joints* instead of the extensor surfaces; in pediculosis, to the *back* and *shoulders*, where are seen typical long scratch marks and pigmentation. The diagnosis from *papular eczema* is not always easy; especially as the areas in time, with scratching, often become eczematised, even secondarily infected. Lichen urticatus, when bullous, has been mistaken for *varicella*; in the latter the vesicles are superficial and the lesions occur in crops (often on the head and face, sometimes on the palate), so that several stages (papules, vesicles and crusts) are visible at once.

Etiology.—Prurigo tends to occur at the two extremes of life. The causes are the same as those of pruritus (§ 605). Some hereditary defect in digestion or the liver, leading to an allergic reaction to certain proteins, is probably the cause of the severe chronic type. Sources of toxæmia and sepsis may also cause it. See also urticaria and the allergic state, §§ 521, 609.

The *prognosis* depends upon the variety and the cause. Papular urticaria in childhood may respond quickly to treatment with diet and rest from nervous strain. Some types decline at puberty or about twenty-five. Besnier's prurigo tends to relapse throughout life. The severe forms of prurigo, which depend upon metabolic errors of assimilation, may last a lifetime.

Treatment.—The first indication is to discover the cause, for without carefully sifting this question no treatment can be successful. For Lichen urticatus, see § 609. Seek carefully for pediculosis, scabies or other parasites. For pediculi Ung. hyd. ammon. chlor. has been replaced by 10 per cent. D.D.T. powder. The seams of the clothing must be cleansed from the ova. For scabies, see § 621. Then seek for other sources of local irritation, as in the garments, or a discharge; and finally turn to the internal causes. The correct treatment may depend upon the findings

after investigation of the blood and excreta. Glycosuria, jaundice, leukæmia and renal insufficiency give clear indications. Potassium iodide has helped senile pruritus. Treatment is difficult when there is an obscure intestinal infection or septic focus. Raising the resistance with rest, good food and change of air is often successful. Arsenic and cod-liver oil do good, especially in children. In Besnier's prurigo, success has been gained with an open-air life, ultra-violet light, intestinal antiseptics, a lacto-vegetarian diet and antihistamine agents (§ 609). Calcium salts in large doses by mouth, or by intramuscular or intravenous injection are useful; calcium lactophosphate with bromide is a favourite remedy. In obstinate cases autohæmotherapy, autoserotherapy, and other methods of desensitisation (see §§ 521, 609) may be required. X-rays, locally and over the spinal roots, lumbar puncture and intravenous injections of bromides, all have their advocates. Drugs acting upon the sympathetic and parasympathetic play their part—pilocarpine and belladonna. For itching, use phenol 1 in 80, menthol ½ per cent., alkaline lotions, vinegar, chloral and camphor (60 gr. of each liquefied and added to 1 oz. starch powder). White's coal tar ointment is a good local dressing. Cocaine preparations must be used only for short periods.

§ **621.** III. **Scabies** is the eruption produced by the acarus scabiei. It consists of papules and vesicles of varying sizes; the latter often become infected and pustular. In addition to its multiform character, it is diagnosed in its typical form by (1) short white or black burrows due to the insect tunnelling in the stratum corneum; (2) scratch-marks; (3) severe itching, always worse at night when the patient is warm in bed; (4) its distribution—Scabies may extend over the trunk and limbs; it commences and predominates where the skin is thinnest—*i.e.*, between the fingers or toes, the flexures of the wrists and elbows and on the point of the elbows, the breasts and lower abdomen, the anterior borders of the axillæ, the penis, the inner side of the feet, ankles, thighs, and below the buttocks; in young children and infants the lesions can occur on the face, soles of the feet, and back of the neck; (5) the discovery of the insect or its eggs (Fig. 146); (6) other members of the family are often infected.

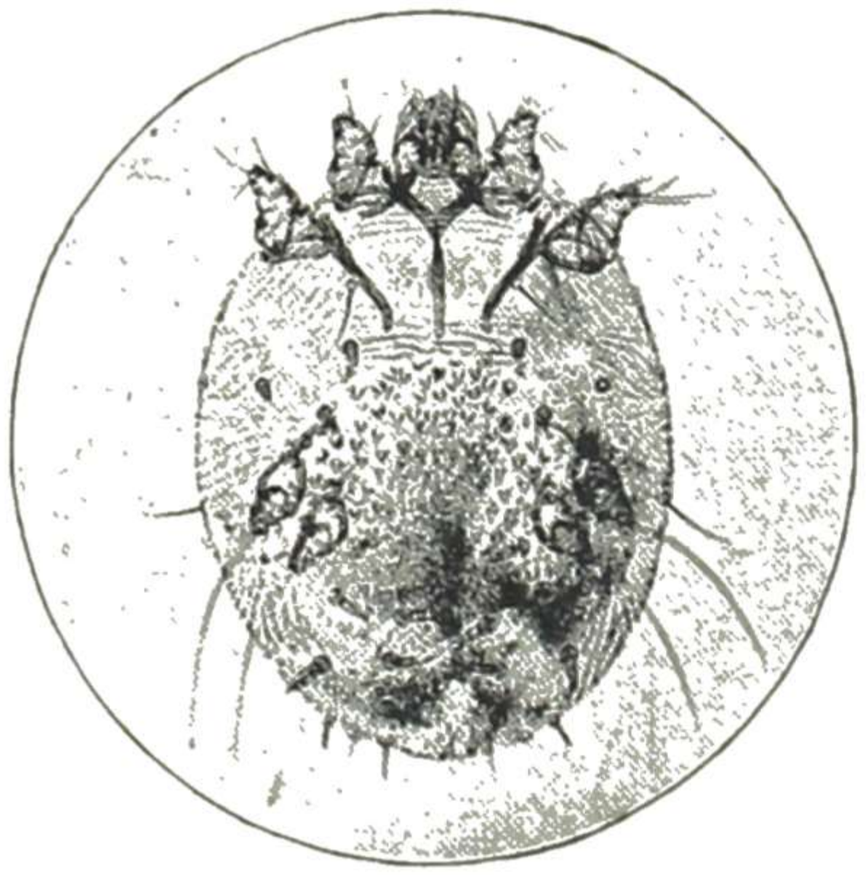


FIG. 146.—ACARUS SCABIEI (female), magnified about twenty times. The female burrows in the horny layer to lay her eggs, the burrows thus formed being typical and most frequent on the wrist and finger webs. The male roams over the body and clothes, and is rarely captured.

Etiology.—Scabies is usually acquired by sleeping with an infected person. It is disputed whether it can be contracted from clothing, towels and bedding, except when clothing is worn continuously and washing is rare. When caught from an *animal*, burrows are absent; the eruption may

be limited to the area with which the animal comes in contact; it tends to spontaneous cure. In *Norwegian scabies* there is excessive crusting, with pus and burrows; the face, neck, hands and nails may be infected.

The *diagnosis* is clear when a burrow is found; it forms a sinuous line, often black; at the end is a white speck, the acarus, which may be lifted out with a needle point. When no burrow is seen, the history of itching on going to bed, others of the household similarly affected, and the characteristic sites aid diagnosis. Sensitisation papules may be so extensive over the body, that scabies has been mistaken for gouty eczema by experienced physicians.

Treatment must be thorough, or reinfection persists. The remedy must be rubbed over the whole body. Ung. Sulph. B.P., two-thirds strength, and Ung. Sulph. polysulphidi (B.P.C.) are effective. Stronger applications may cause itching dermatitis which is often mistaken for fresh infection. Soak in a hot bath, rub with coarse flannel and soap to open up the burrows. The ointment is rubbed over the entire body, from the neck down, on three successive days. Two ounces and twenty minutes are required for each application. Then another hot bath and clean underclothing and bedding should complete the cure. The 1942 Advisory Committee on scabies recommended benzyl benzoate emulsion (25 per cent. in lanette wax SX 50 per cent. and water to 100), when it can be applied by a trained person. The patient cannot carry out this procedure alone. After a hot bath and drying, the emulsion is painted on with a flat brush over the whole body from the neck down. Allow to dry; then have clean clothing. Give two such applications on two successive days or within eight days. D.D.T. is also effective. It is now believed that a hot iron provides sufficient disinfection for clothes and bedding.

IV. **Skin Diseases sometimes Papular.**—In PAPULAR ECZEMA the papules rapidly pass on to vesiculation, or are associated with definite patches of eczema. Papules frequently form a stage, generally an early stage, in PSORIASIS, SEBORRHŒIC DERMATITIS, PITYRIASIS RUBRA PILARIS, the EXANTHEMATA and ERYTHEMATA, SYCOSIS, and in XANTHOMA and URTICARIA PIGMENTOSA. Papules of a lichenoid type may follow injections of gold, arsenic and bismuth salts.

§ 622. V. **Milium** is an eruption of small whitish or yellowish pearly pin-point to pinhead sized granules, which affect chiefly the delicate skin under the eyes, the eyelids, cheeks, temples, scrotum, and labia, due to a horny cyst formation in the sebaceous follicles. *Treatment:* make a small incision and squeeze out the contents. Or destroy by electrolysis or diathermy.

VI. **Keratosis Pilaris** (Synonym: Pityriasis Pilaris) affects generally young adults. The orifices of the hair follicles of the thicker portions of the skin—*i.e.*, on the extensor and outer surfaces of the limbs—are occluded with corneous plugs. Hard friction with 2 per cent. salicylic ointment at night, and a rough towel in the morning, generally cure in a few weeks. It is sometimes associated with vitamin A or with thyroid

deficiency. The plugs may be surrounded by a red papule—*lichen pilaris*. In *lichen spinulosus* the plugs stand out like spines ; in a child one may see the buttocks covered with fine spines. Sometimes both conditions are associated with lichen planus—*lichen planopilaris*—or other skin disease.

§ **623.** VII. **Lichen Planus** (Synonym : Lichen Ruber Planus) is an eruption consisting of flattened, angular, shiny, dull red papules, often presenting a central depression, and a greyish striation on the surface. These tend to coalesce and form irregular patches of a peculiar purplish hue. Occasionally rings are formed (*lichen annularis*). There is no exudation. When the papules disappear much pigmentation may be left and occasionally atrophy (*lichen atrophicus*). The eruption is frequently symmetrical ; the characteristic sites are the flexor aspect of the wrists and forearms, and the inner side of the knees. Sometimes the distribution becomes rapidly widespread. Lesions also develop along scratch marks. The mucous membrane of the mouth is often affected and may be so for long before any lesion appears on the skin. Itching may be slight or severe. By the fusion of several papules large plaques may be formed, and when these take on a raised growth, as about the ankles, the condition, which is very intractable, is known as *l. hypertrophicus*, and when warty, *l. verrucosus*. *Lichen planopilaris* shows follicular spines together with ordinary lichen planus lesions. In *lichen spinulosus* horny spines protrude from the follicles. In *lichen nitidus* the papules are very small and pale, and do not itch. Lichen occurs in youth and middle-age, and chiefly in women. The cause is unknown ; a virus is suspected. It is aggravated by nervous states, septic foci and intestinal toxæmia. There should be no difficulty in *diagnosing* lichen planus from a *papular syphilide* or *eczema*, on account of its typical position, angular shape, purple colour, and flat waxy surface. The *Prognosis* is good under treatment, although this may have to be extended over many months and even years in some cases. Fresh crops may appear from time to time.

Treatment.—Locally, give soothing lotions, powders and pastes, such as F.36 and 75 ; and see also § 656. For chronic hypertrophic areas use salicylic acid (gr. 30 to 60 to the ounce of paraff. moll.) or in a paint of equal parts of ether and alcohol, and when dry, cover with plaster. Treat the general health. Give full doses of liq. hyd. perchlor. for two months. Arsenic and mercury can be injected intramuscularly twice a week for eight to twelve weeks. Useful also is X-ray, locally as for psoriasis, and also applied in small doses over the nerve roots at the exits of the brachial and lumbar plexuses.

§ **624.** VIII. **Papular Syphilide.**—Syphilitic eruptions are often multiform, but papules generally form the most prominent feature of all syphilitic rashes, especially in the secondary stage. The papule, indeed, forms the prototype of all syphilitic eruptions. These papules are firm, glistening, and project above the surface of the skin with a hard, infiltrated margin, and *vary in size* from a pin's head to a bean. They are of a brownish-red colour (like copper or raw ham) which does not entirely disappear on

pressure. The wide variability in the size of the papules is a feature distinguishing this from other papular diseases. As they increase in size the centres often becomes depressed, or cupped. The distribution is more or less generalised, often symmetrical, but the favourite sites are the forehead, around the mouth, the *flexor aspects* of the arms, and the trunk. When near the corners of the mouth or the anus their surface may be moist, and the *exudation is highly infectious.* Itching is rare—a point of great importance in diagnosis. Other constitutional signs of syphilis may be present. Shotty glands in the groin and neck and elsewhere give valuable aid in the diagnosis of all syphilitic eruptions; they are present even when no other signs are found, and may last throughout the patient's life. Two *varieties* of papular syphilide are described: *papular syphilide* if the spots are small and numerous, *lenticular syphilide* if large and few. The former is met with more in the early, the latter in the later stages of the disease. Large, moist, flat papules, usually seen near the anus, are called *condylomata.* Rarer forms are the *corymbose syphilide*, in which there are clusters of very small papules surrounding a central larger papule; and the *follicular syphilide*, which shows small papules resembling lichen pilaris (see also §§ 552 and 645).

Rare Papular Diseases

§ 625. IX. **Lichen Scrofulosorum** consists of minute yellowish red papules, flat, or conical when around a follicle. Itching is rare. It is seen chiefly on the trunk, sometimes on the limbs, occasionally on the face; usually before the age of twenty. The disease may last for years, hardly noticed by the patient, and disappear when some tuberculous lesion in the body becomes cured. It is one of the **tuberculides,** a term which denotes certain eruptions which occur in persons suffering from some manifest or latent tuberculous focus and denote sensitisation. Tuberculides are more or less symmetrical, usually livid, firm, involving skin and subcutaneous tissue; they tend to slow but spontaneous cure. **Acne agminata** is a rare tuberculide, appearing chiefly on the face, as indolent dark red papules which involute with or without pustulation and leave a scar. It is akin to **Folliclis,** which affects the body and arms, and to other papulo-necrotic scarring tuberculides.

X. **Adenoma Sebaceum** consists of numerous small hemispherical elevations, discrete, grouped usually about the middle of the face. In size they vary from a pinhead to a split pea. Their surface is crimson or pinkish yellow, and associated frequently with telangiectases. They have no visible orifice. Some disappear spontaneously, leaving a small scar. The disease is almost always congenital, though it may not be observed till puberty, when it takes on fresh activity. Occasionally it shows nævi similar to those met with in Von Recklinghausen's disease. It has been associated with intellectual inferiority in some cases, when lesions affect the brain (Tuberose Sclerosis, §§ 829, 907*c*). The knife, cautery or electrolysis destroys the skin growths.

XI. **Granuloma Annulare** is occasionally seen in young people and children. especially on the hands. Flattened papules, white or pink, appear in ring-shaped patches, a shilling to half a crown in size, and with a depressed centre. They appear to be associated with latent tuberculous or streptococcal infection. The lesions last long, but may disappear spontaneously or with electrolysis or salicylic acid ointment.

XII. **Trichophytides, Epidermophytides.** With suppurating forms of ringworm and with epidermophytosis certain patients develop an eruption over the trunk and limbs, not unlike Lichen Scrofulosorum, showing red or brown papules, often acuminate,

follicular, with a scale or tiny pustule. The rash is due to sensitisation of the skin to the antigen of the fungi, and to the entry into the circulation of the fungal elements. It vanishes when the original focus is cured. A special vesicular reaction on the hands is described in § 635. Erythematous and other forms of reaction are rare.

XIII. **Keratosis Follicularis** (Synonym: Darier's Disease) is a very rare disease, due to overgrowth and degeneration of cells in the mouths of the pilo-sebaceous follicles. The papules are at first pin-head size, resembling keratosis pilaris. They contain in the centre a horny plug, which is difficult to remove. Some become enlarged and hyperæmic; others become confluent, presenting a papillomatous surface covered by hard yellowish crusts. These may ulcerate, and the area may be covered with a mucopurulent discharge. The disease affects first the face and head, and after the gradual development of years, appears over the sternum, spine, loins, hypogastric and inguinal regions and the extremities, with symmetrical distribution. The *Diagnosis* is difficult, in the early stages, from keratosis pilaris and ichthyosis, and later from acanthosis nigricans. *Treatment* consists in the use of salicylic acid, sulphur, or other keratolytic applications, but the disease is resistant. Cure has followed X-ray, Grenz ray and large doses of Vitamin A.

XIV. **Fox-Fordyce disease** affects a few women, usually after middle age. Close set, tiny papules, red, brownish, or skin coloured, occur in groups in the axillæ, pubis, areolæ of the nipples, umbilicus, less often the sternal region. Itching is severe, X-ray does good, but the disease is obstinate.

(*d*) *Eruptions usually Scaly or Scurfy*

Common.

I. Psoriasis.
II. Seborrhœic dermatitis.
III. Tinea circinata.
IV. Squamous syphilide.
V. Skin diseases sometimes scaly at one stage—*e.g.*, eczema, lichen, erythematous diseases.

Rare.

VI. Exfoliative dermatitis.
VII. Pityriasis rosea.
VIII. Pityriasis rubra pilaris.
IX. Ichthyosis.
X. Erythrasma.
XI. Parapsoriasis.

§ **626.** I. **Psoriasis** is a common disease, occurring as irregular patches slightly raised, covered with copious silvery scales, unattended by any exudation, and situated chiefly on the elbows and knees. The lesion starts as a tiny papule (P. punctata) which from the first has on the top a scale, which, however, may not be visible till scratched. The papule gradually enlarges (P. guttata). In a short time it reaches the size of a coin (P. nummularis). The disease generally then remains stationary for some weeks or months, and may tend to undergo spontaneous involution. The healing process usually starts at or near the centre, without scar or atrophy, and gives to the eruption a circular or serpiginous appearance (P. circinata, P. gyrata). The lesions are usually few and develop slowly; sometimes, especially in young people, many lesions appear rapidly over the body. The rash is scaly and elevated from the first, and always dry, and when the top scales are scratched off, bleeding hyperæmic papillæ are exposed. The distribution is characteristic, affecting the knees and elbows, frequently the scalp, trunk, and other parts of the limbs, especially the extensor aspects, and only rarely the face, palms, or soles. There is little or no itching, unless complicated by streptococcal invasion. Psoriasis of the nails causes pitting, ridging, and elevation of the free border.

Etiology.—The disease is most frequent in early life, though rare under seven, and affects both sexes. There is a hereditary predisposition in some families. The seasonal influence varies; many say that it recurs each winter or spring. It often attacks rheumatic and arthritic subjects, and may alternate with arthritic and other types of rheumatism and gout. In some cases septic foci play a part, perhaps contributory; examine the teeth, tonsils, sinuses and cervix. Psoriasis in children and young adults is often associated with septic tonsils. Acute widespread attacks are often preceded by tonsillitis. *B. coli* infection appears to influence older patients.

Diagnosis.—It is important to distinguish psoriasis from *scaly syphilide.* The syphilide has more infiltration; rarely affects the elbows and knees, and generally prefers the flexor aspects, and palms and soles; the centre of the patches are usually depressed, stained, and healing; the scales are scantier, less silvery, and on being scraped off, do not leave bleeding points. There may be difficulty in diagnosing acute and extensive psoriasis from *seborrhœic dermatitis*, in which the patches are less crimson, the scales scantier, greasier, more orange coloured; they occur chiefly along the middle of the chest, back and front, and if on the limbs usually the flexor aspects. The patches are often surrounded by satellites. The scalp may be affected in both diseases.

Prognosis.—Psoriasis disappears and recurs spontaneously for many years. In severe cases, after over-vigorous treatment, and when complicated by streptococcal infection, it may spread over the whole body and cause exfoliative dermatitis. A streptococcal focus in the body may be the cause of sterile pustules amongst the scaly lesions on the palms and soles (pustular psoriasis).

Treatment.—For acute and widespread cases, order rest in bed, baths and soothing applications, with salicylate of soda internally. For the usual chronic, localised cases, frequent bathing, followed by removal of the scales, is necessary. Chrysarobin gr. 15–60 in one ounce is the time-honoured remedy, but it stains the linen purple and may set up dermatitis; hence it cannot be applied to the face or scalp. Chrysarobin—20 per cent. in chloroform—may be painted on once a week, and covered with collodion. Tar, oil of cade, and salicylic acid, are also efficacious. Scales on the scalp must be removed, then use hyd. ammon, chlor. gr. 20 in one ounce of vaseline. Reports on the results of special diets are conflicting. Treatment directed to the colon sometimes cures; hence probably the success in certain cases of the Danysz entero-vaccines. The removal of septic foci benefits when followed by an autogenous vaccine. For extensive types Goeckerman's method is advised: apply 2 to 4 per cent. crude coal tar, 2 per cent. zinc oxide, 60 per cent. corn starch in paraff. moll. Leave on all night; next day remove with a mineral oil, leaving on a film during exposure to increasing doses of ultra-violet light. Every second day give autohæmotherapy 10 c.c. Treat rheumatism and gout when present. Shock and desensitisation therapy rarely help. Thyroid and pituitary aid

when indicated. Arsenic is valuable in some chronic cases. X-ray may be used for chronic patches, never for extensive areas. It does not prevent recurrence; the after-effects must be remembered.

§ **627.** II. **Seborrhœic Dermatitis** (Synonym: Pityriasis Circinata) shows several types of eruption. In young people it usually appears as small, brick-red, soft papules round the pilo-sebaceous follicles. As inflammation extends, these coalesce and form circular, ovoid or gyrate patches with fawn centres, sloping margins and greasy yellow scales. At this stage there is slight serous exudation beneath the scales. This type of seborrhœic dermatitis affects chiefly the scalp, brow (*corona seborrhœica*), and the median line of the face, chest and back, where the sebaceous glands are most active. Sometimes it becomes widespread, with scales so profuse that the condition can be mistaken for acute psoriasis.

In older and less healthy individuals the patches often become eczematised, with itching, serous exudation and crusts. This is usually associated with secondary streptococcal and staphylococcal infection; it has been described as streptococcal dermatitis. The chief sites are the scalp, behind the ears, the axillæ, under the breasts and the groins; this eruption may become widespread.

Etiology.—The name seborrhœic dermatitis is a mistaken one; it used to be thought that the malady affected chiefly those with oily skin. Sabouraud found that the disease originated with infection by the pityrosporon of Molassez, see § 655. III. Staphylococci and streptococci are found with the extensive reaction associated with constitutional factors.

Diagnosis.—The scales of psoriasis are more silvery, and on removing them hyperæmic bleeding papillæ are seen; in extensive seborrhœic dermatitis minute points of oozing serum are seen on removing the scales.

The *Treatment* must be directed to the scalp as well as the body; or the disease will recur. Frequent washing is necessary. A pomade of hyd. ox. rub. (gr. 4 to the ounce) should be rubbed in twice a week, or a lotion of hyd. perchlor. (gr. 1 to the ounce of spirit and water, equal parts). On the smooth skin ichthyol or sulphur are better. A good prescription is sulph. præcip. gr. 4., acid carbol. ℥2, to the ounce of vaseline. When the malady tends to recur, treat the colon, give much fruit and vegetable in the diet, and restrict fats and carbohydrates. Alkalies aid many of these cases.

Dry Impetigo occurs chiefly in children with fine skins; it affects the face, less often the neck, "*dartres volantes.*" White or slightly pink patches with delicate scales appear in circular or ovoid shapes. They may become eczematised. Sabouraud classed it as a dry impetigo due to streptococci; it is often associated with streptococcal fissures of the nose or mouth. A rare eczematoid tuberculide resembles it, but more often attacks the trunk and limbs. Resorcin 2 per cent. is usually curative.

III. **Tinea Circinata** may appear as small red patches, of an oval or ringed shape, slightly scaly. When the head is affected with the small-spored ringworm, these patches may often be seen on brow, neck, and shoulders. The large-spored fungus usually causes a ringed scaly eruption;

see § 636. Epidermophyton infections have become very common in recent years. *Tinea cruris* (dhobie itch), due to the *Epidermophyton inguinale*, grows in the horny layer of the skin, forming very irritable red patches which join and may extend over a wide area, with a polycyclical margin, scaly or even vesicular, on the genitals, perineum, natal cleft, sometimes the thighs, axillæ, and under the breasts. The epidermophyton also causes several varieties of infection of the feet and hands: (1) the so-called interdigital eczema between the toes, especially the fourth and fifth, is often seen. Below the sodden white skin fissures may develop, leading to recurrent attacks of streptococcal lymphangitis spreading up the leg; (2) deep-set vesicles on the soles and palms, resembling cheiro-pompholyx; (3) hyperkeratosis of the soles and palms, especially of the heels; and (4) scaly patches on the feet and hands.

Treatment.—The fungus is attacked by liq. iod. fort. 1 in 10 of alcohol, by carbol fuchsin paint (10 per cent.), and by Whitfield's ointment, salicylic and benzoic acid āā 3 to 6 per cent. in vaseline. Other fungicides are on trial, *e.g.*, undecylenic acid or phenylmercuric nitrate in ointment and powder. The marginal vesicle tops and scales should be rubbed off with 3 per cent. argent. nit. The sodden skin between the toes should be softened with salicylic acid ointment, then removed with forceps and destroyed; the parts must be kept dry, with wool or muslin and a powder of talc, with salicylic acid of strength varying according to the thickness of skin to be detached. Recurrence is common: boil the infected underlinen or stockings, or soak for an hour in 1 per cent. thymol in spirit. Boots and shoes are disinfected with a 2 per cent. formalin swab or are placed at night in a closed tin containing a receptacle with two ounces of pure formalin.

Tinea Imbricata occurs in the tropics. The fungus causes a characteristic scaly eruption with a watered-silk appearance.

§ **628.** IV. **Squamous Syphilide.**—The squamous syphilide occurs as a later stage of the papular or the tubercular syphilitic eruptions (*q.v.*). The scales are thin, scanty, and greyish, lying upon patches of stained and infiltrated skin (*i.e.*, the syphilitic papules) which are deep brown or copper coloured, usually round, or in *segments of circles*, having raised serpiginous scaly borders. It may occur on any part of the body, but the flexor aspects and the palms or soles are particularly characteristic situations, the converse of *psoriasis*. A scaly syphilide of the palms is diagnosed from dry *eczema* by its raised serpiginous border, with sometimes an area of normal, atrophied, or pigmented skin in its centre.

V. **Skin Diseases Scaly at one Stage.**—A *scaly* or scurfy condition of the skin, especially of the face, is produced by hard water and exposure, in certain states of ill-health, after scarlet fever, measles, and other *eruptive fevers*. In *eczema*, scales and crusts form, but the presence of exudation is its differentiating feature. Most *erythematous* lesions develop some degree of scaling. In several varieties of *lichen*, a thin silvery scale is found, but lichen is chiefly a papular eruption. *Lupus erythematosus* has adherent scales and crusts.

§ **629.** VI. **Exfoliative Dermatitis.**—The term Exfoliative Dermatitis implies any chronic or sub-acute generalised inflammatory disease of the skin, whether primary or supervening upon other cutaneous disturbance of long standing, which is characterised by vivid hyperæmia of the entire surface, and *abundant and repeated exfoliation*, accompanied usually by shedding of the hair and nails. There is usually associated constitutional disturbance, and the itching may be severe.

Etiology.—Occasionally, as a *secondary* affection, it may follow psoriasis, leukæmia, lichen planus, mycosis fungoides, pityriasis rubra pilaris, pemphigus foliaceus, and arsenic, gold or bismuth medication. As a *primary* condition the disease is serious. It starts in several ways; a rapidly spreading hyperæmia of the skin is common to all. Varieties which have been described as separate diseases only differ in their mode of onset and etiology.

An **epidemic exfoliative dermatitis** (Synonym: Savill's disease) was observed in 1891. One hundred and sixty-three cases occurred among the patients in the Paddington Infirmary, with a case mortality of 12·5 per cent. It was traced to milk treated with a formalin preservative.

Treatment.—Rest in bed with local soothing applications or inert powders is essential. Care for the general health, and eradicate septic foci. Quinine, ox-gall and hexamine have cured some cases; autohæmotherapy and colonic lavage have cured others. Of soothing creams, zinc in olive or castor oil, glycerin amyli, subacetate of lead in glycerin, are all of value. Cod-liver oil in paraff. liq. and vaseline has advocates. For the exfoliative dermatitis of infants (see Ritter's disease, below) attack the organism with 5 per cent. sulphathiazole ointment, or pigment. tinctorium (N.F.). Some infants have responded to vitamin B complex together with riboflavin 2 mg. t.d.s.; some to sulphonamide therapy.

Ritter's disease is probably the exfoliative stage of epidemic pemphigus neonatorum, such as occurs in Institutions and used always to be fatal.

§ **630.** VII. **Pityriasis Rosea** consists of numerous pink patches, slightly raised and pea-sized, and oval-shaped rings, with slight scaling on the pink margins, and a fawn-coloured centre. A "herald patch" usually appears on the trunk some days or weeks before the generalised eruption, which comes out in successive crops, starting usually on the sides of the trunk, spreading to the neck, upper arms and thighs, rarely to the face. Itching may be absent or severe. Pityriasis rosea runs a course of a few weeks to a few months, and disappears spontaneously. The disease occurs in both sexes, and at any age, but is most frequent in young adults. Many cases occur in early spring. Its importance lies in the fact that it may be mistaken for *syphilitic roseola*, which has a darker colour (§ 610). *Seborrhœic dermatitis* has greasy scales and appears on different sites. *Tinea circinata* is rarely so widespread, and the fungus can be found. *Psoriasis* has more infiltration and silvery scales.

Treatment.—Baths with weak Condy's fluid do good. One per cent. cignolin in vaseline is curative. Use soothing lotions when itching is marked.

§ **631.** VIII. **Pityriasis Rubra Pilaris** (Devergie), Lichen Acuminatus or Lichen Ruber (Hebra). The eruption commences as tiny hard papules of hyperkeratosis involving the hair follicles; gradually these become fused together into one reddened patch which exfoliates. The distribution is symmetrical and starts where the lanugo hairs are found—on the backs of the hands and forearms; thus it often presents a glove-like distribution on the upper and lower extremities. The scalp has thick scales; the hair does not fall until the secondary stage of erythrodermia sets in. The disease may spread over the whole body. The progressive margin is always marked by the same tiny scale-capped papules. General erythrodermia with pyrexia may appear at intervals, then disappear, except from such regions as the face, palms and soles, which usually remain red, tense and scaly. Ectropion is common, due to the stretched condition of the cheeks.

Diagnosis.—The disease is differentiated from *psoriasis* by its distribution and by the characteristic marginal papules with a central hair, but is indistinguishable from *dermatitis exfoliativa* over the whole body. In the earlier stages dermatitis

exfoliativa does not present the small acuminate papules which constitute the elementary lesion of P. rubra pilaris.

The *Causes* are obscure; the disease usually occurs before the age of twenty-one. Recent evidence points to deficiency of Vitamin A. The disease lasts, with remissions, for months or years, but recovery is usual.

Treatment is symptomatic. Give abundant food. Thyroid benefits mild cases; in chronic cases try arsenic. Cures have been reported with gold injections, shock therapy and vitamin A in large doses. Locally, apply vaseline and lanolin, equal parts, with salicylic acid varied in strength according to the degree of thickening.

§ **632.** IX. **Ichthyosis** (Synonym: Xeroderma) is a congenital condition of the skin, characterised by dryness and scaliness of the epidermis, and in some cases by wart-like outgrowths. It is sometimes not diagnosed till the child is some years old.

There are three *clinical types* or degrees of the affection. In the first or mild type (*Xeroderma*) there is simply an undue harshness or roughness of the skin, and consequently throughout life a tendency to the supervention of "chaps," eczema, and other skin affections. It is more marked on the extensor aspects. In a second type (*I. vera*) the superficial layers of the epidermis are thickened, and appear stretched; the hardened cuticle presents fissures and cracks which, bounding polygonal areas, give the patient the appearance of having a fish or crocodile skin. The everted eyelids and nostrils, the atrophied hair and nails, and the hardened, scale-like condition of the skin are characteristic. The third variety is described in § 650. IV.

The *Diagnosis* is not difficult, owing to the congenital nature of the malady.

Prognosis.—Apart from the inconvenience and the liability to eczema, the first type is not serious. In the second type the disease progresses to the age of puberty, and then remains stationary.

Treatment.—No remedy influences the severe forms of this disease. Resorcin 2 per cent. in glycerin. amyli, vasolanolin (vaseline and lanolin āā), baths with superfatted soap followed by inunction with paraff. moll. alb. soften the skin. Thyroid often controls mild cases and sun and ultra-violet light are beneficial.

§ **633.** X. **Erythrasma** consists of defined scaly discs with a serpiginous border, pale red, yellow, or dark brown in colour. The scales can be scraped off, and contain a fungus; the *Microsporon Minutissimum.* The patches are extremely chronic, and are found on the opposed surfaces of the scrotum, groins, and adjacent surface of the thighs, axillæ, and mammæ. They itch when perspiration is excessive. Treat as for pityriasis versicolor (§ 652).

XI. **Parapsoriasis** consists of brownish red patches, with slight or no infiltration, and fine scales; in one form delicate papules occur. It may be localised or widespread. Itching is usually absent. The *cause* is unknown, and it is resistant to treatment. Xantho-erythrodermia Perstans is one form with little scaling.

GROUP II. VESICULAR AND BULLOUS ERUPTIONS

Eruptions in which the elements are usually vesicular and the exudation serous, are commonly classed into those with small vesicles, and those with vesicles of larger size, bullæ.

I. Eczema.
II. Cheiro-pompholyx.
III. Streptococcal skin infections.
IV. Herpes.
V. Varicella.
VI. Scabies.
VII. Tinea circinata (sometimes).
VIII. Sudamina.
IX. Hydrocystoma.

X. Dermatitis herpetiformis.
XI. Pemphigus.
XII. Epidermolysis Bullosa.

XIII. Hydroa Aestivale.
XIV. Lymphangioma circumscriptum.
XV. Anthrax.
XVI. Pustular and other diseases in which vesicles and bullæ may occur at some stage.

NOTE.—Syphilides are practically never vesicular.

§ 634. I. Eczema is a catarrhal inflammation of the skin, running sometimes an acute, sometimes a chronic course. There has been much discussion as to the differentiation of eczema and dermatitis ("contact" dermatitis). Some held that eczema had its origin in causes arising from within the body, whereas dermatitis was due to external irritants. The same inflammatory reaction of the skin occurs, and the clinical problem is to track down the cause in the individual case.

Eczema is chiefly a vesicular condition, but at different stages of its course it may show most of the primary and secondary lesions of the skin. In acute *erythematous eczema* there is swelling and redness, and the palpating finger feels a roughness which is not present in simple erythemas. This stage may subside, leaving fine desquamation till the skin heals, or it may pass on to form small *papules* or *vesicles*, or these may arise in groups without preliminary erythema. At a still later stage the vesicles rupture and serum exudes, sometimes drying to form yellow crusts, sometimes flowing profusely, the so-called "weeping eczema." In the subacute stage crusts, scales and excoriations due to scratching are seen on a slightly swollen base. *Pustules* indicate secondary infections. In chronic stages there is no exudation, but the horny layer flakes off in fine or large scales, whilst in some cases there remains so much thickening of the skin that the part is described as "lichenified." Eczema occurs on any part of the body, and is accompanied by throbbing and burning, or with marked itching, in proportion to the degree of inflammation present.

The *Diagnosis* of eczema or dermatitis is simple; the diagnosis of the cause is difficult. *Seborrhœic dermatitis* is covered by greasy yellow scales. *Syphilides* never resemble acute or subacute eczema, or, indeed, any vesicular disease, a fact of considerable value in diagnosis. It is difficult sometimes to distinguish patches of dry chronic eczema from *psoriasis*, but the latter affects the extensor aspects, and is covered with silvery white scales. *Paget's disease* has a defined margin and hard infiltration.

Varieties of eczema have been named according to the position of the lesions: eczema palmaris, ani or vulvæ, etc., or according to the predominant lesion: erythematous, papular, vesicular, squamous, rubrum (raw), or rimosum (fissured). When the skin becomes sensitised to staphylococci the resulting dermatitis shows large vesicles or vesicopustules with yellow crusts; the condition is known as *dermatitis infectiosa eczematoides*. This form frequently occurs in the vicinity of an infective discharge, from the ear, nose, vagina, anus, a sinus or wound; in underfed or unhealthy subjects, with lowered resistance to the infecting organisms, it may last, with remissions, for years. When streptococci invade an eczematous region there is often an acute exacerbation; the area becomes swollen, red, oozes profusely, and fissures form in any adjacent folds. This variety (*intertrigo*) is often seen in the groins, the intergluteal fold, under the breasts, and spreading from the margin of the scalp behind the ears, at the corners of the eyes, nose and mouth (*perlèche*). Eczema of the face in *infancy* may be followed in later life by eczema of the flexures

stipation, too little or too much exercise or food, all play a causal part. Eczema may occur with diabetes, gout, inefficient gastro-intestinal digestion, defective detoxicating function of the liver; it may accompany albuminuria and kidney disease; appear with every pregnancy and after lactation. A septic focus may cause eczema, just as it may precipitate diabetes or urticaria in other individuals. The dermatitis caused by exposure to sunlight is usually associated with abnormal intestinal flora, vitamin and hepatic deficiency, sometimes also infective foci. Mental states such as grief, worry or over-strain always reduce the power of resistance of the body. Sometimes eczema is an allergic manifestation, hay fever and asthma alternating with it. It then usually occurs in several members of a family—the "asthma, eczema, prurigo complex." In such cases there may be a history of infantile eczema of the face. This type is often due to sensitiveness to a protein found in oatmeal, wheat, milk, beef, pork, oranges or other foods.

The *Treatment* of eczema differs according to the stage of the disease. First of all, the cause, internal or external, must be patiently sought for and, if possible, removed. In an obscure case the *patch test* (§ 605) enables us to discover the cause. The principles of local treatment are those underlying the treatment of all skin diseases (see § 656). Washing is forbidden in the acute stages, especially the use of soap of any kind; but soaking in warm normal saline is refreshing. In chronic cases, baths (F. 1 and 2) are soothing, and thorough washing is permitted for dry, thickened patches. For acute erythematous eczema, give powders of talc and zinc oxide, and lotions of calamine, zinc and lead (F. 36 and 42). For vesicular and for weeping eczema, give lotions and pastes which absorb the exudation. Pastes are spread on gauze or butter muslin, and kept in contact. Ointments at this stage would confine the exudation beneath the oily basis. An excellent paste is Lassar's paste (F. 75). In the early stage a saline aperient with vin. antimonialis ℿ10 t.i.d. is a time-honoured remedy, and may cut short an acute outbreak. In subacute eczema add a little mercury and weak tar to the soothing paste or lotion. For chronic eczema give ointments containing a higher proportion of the stimulating remedies, mercury, tar and salicylic acid, in vaseline, and rub the ointment in thoroughly. The strength can be gradually increased; it is well to go cautiously, because the eczema can be aggravated by the use of too strong remedies. For chronic, infiltrated patches I find it useful to paint with pure alcohol and seal up the part with Unna's gelatine. For lichenified patches strong salicylic and phenol (āā gr. 20 in one ounce) is useful; in such cases X-ray in small doses, at weekly or fortnightly intervals, is often the quickest method of cure.

As regards diet, the individual case must be carefully considered. In the average simple case mild aperients and restriction of strong tea, coffee, sugar and alcohol bring about rapid improvement. For acute widespread cases Duncan Bulkley's method is good: he gave for five days a strict diet, with only boiled rice, cream or butter, water, and salt and pepper

to taste. Elimination diet tables should be consulted in chronic cases. In recurring types, with defective intestinal digestion and marked indicanuria, the method which aids many sufferers is one with lacto-vegetarian menus, glucose or lactose, raw oatmeal with B. acidophilus milk, and sometimes hydrochloric acid and pancreatic extract (see § 656). This method of diet and medication is especially useful in the eczema complicating Besnier's prurigo ; it often also aids eczema due to light sensitisation. In other cases restricting fluid to two pints a day, and reducing the carbohydrate intake is effective. High colonic irrigation may be necessary in cases with a loaded cæcum, or colonic spasm and tenderness over the region of the sigmoid. In some patients vaccines made from the stool organisms may determine a cure after all else has failed. Calcium salts, Vitamin B and dilute hydrochloric acid aid eczema with much swelling and oozing. Desensitisation methods, especially autohæmotherapy, succeed with allergic cases (§§ 609 and 656).

Treatment of Varieties.—For *streptococcal* eczema Sabouraud advised painting twice a week with silver nitrate (gr. 4 in spt. aeth. nit. fl. oz. 1) or 1 per cent. iodine in 90 per cent. alcohol. Some prefer 2 per cent. aqueous gentian violet, and later a paste of ichthyol 2, zinc oxide 6, hydrous lanolin 4, and vaseline 10 parts. When there is profuse oozing a simple calamine lotion is more comforting. When eczema becomes *pustular* from infection by a discharge, etc., mercury in paste or lotion is indicated, never tar. In both these types of eczema, ultra-violet light is beneficial, in local as well as general doses. Use penicillin when the organism is penicillin sensitive. Autogenous vaccine may be required and every possible measure for building up the health.

Eczema of special regions : behind the ears, with fissures, see streptococcal eczema (above). Eczema of the vulva and anus may be obstinate. To prevent relapses the cause must be removed. The chief causes are : discharge from the cervix or vagina, *B. coli* or sugar in the urine, worms (especially in anal cases), diarrhœa, colitis, leakage of paraffin, frequent use of irritating suppositories, pessaries or douches, piles, fungus or monilia infections. When perianal eczema is an allergic manifestation treat with antihistamine drugs and remove the allergen (§ 609). Ensure sleep without barbiturates. In all cases see that scratching or friction is prevented. Enjoin cleanliness, and protection before passage of excreta. Use a soothing calamine cream or paste at night, and a dusting powder by day. For infiltrated cases give U.V. light and fractional doses of X-ray. Many of the local anæsthetics aid, but must be *used only to tide over crises—e.g.*, nestosyl, anethane, benzocaine and percainal. Menthol 1 per cent., phenol 1 in 60, liq. carb. deterg. 1 in 20, or cyllin m. 30 in one pint is a useful lotion.

§ 635. II. **Cheiro-pompholyx** is a deep-seated vesicular and bullous eruption affecting the hands *symmetrically*, and sometimes the feet. Vesicles appear in the clefts between the fingers and toes, like boiled sago grains, and creep on to the palmar and dorsal surfaces—an important diagnostic feature from a scaly syphilide of the palms. Some of the vesicles coalesce into bullæ; these rarely rupture, but their contents become absorbed, and exfoliation occurs. It often occurs in hot weather and was believed to be due to sweat irritation. Recurrences are usual. Use soothing lotions, pastes and powders, and attend to the general health. A similar eruption is an allergic reaction to epidermophytosis, and vanishes when that is cured. Monilial infection of the vagina has caused the same rash on the hands.

III. **Streptococcal** skin infections cause vesicular eruptions, which may be mistaken for eczema or herpes on the one hand, and pemphigus or urticaria bullosa on the other. They also may cause intertrigo and fissures (see varieties of eczema). The bullæ are situated on an inflamed base; streptococci are found in the bullæ. *Impetigo Contagiosa* has vesicles which soon crust over; and in severe cases, bullæ (§ 640). The so-called **pemphigus neonatorum** is due to an infection soon after birth. Streptococci have been found in the bullæ in many epidemics; recent work incriminates the staphylococcus aureus.

IV. Herpes Zoster consists of one or more *clusters of vesicles* on a crimson base, associated with neuralgic pain. It commences with a red patch or a group of flat papules, on which vesicles rapidly appear, larger than those of eczema, round, hemispherical, and uniform in size; and as there is no tendency to spontaneous rupture there is usually no oozing. They smart or burn, rather than itch. The vesicles contain clear serum, and after a few days, dry up and form little crusts which fall off, often leaving a scar. See § 826.

Herpes simplex (Syn.: Herpes febrilis) is entirely distinct from Herpes Zoster. It shows a small group of tiny vesicles, preceded by a burning sensation, which affects the face, chiefly the nose, lips, mouth, cheeks, and less often the genitals.

Etiology.—Herpes zoster is dealt with in § 826. It has been noted to precede or follow varicella in contact cases. There is considerable evidence that some cases of herpes zoster are caused by the same virus as varicella (§ 476); but an individual who has had varicella is not protected against herpes zoster. *Herpes simplex* may be primary, or may accompany a "cold," pneumonia or other respiratory disease, certain fevers, such as malaria and cerebrospinal meningitis, and occasionally it occurs with drugs (arsenic, bismuth) such as may produce H. zoster. It may follow an alcohol injection of the Gasserian ganglion. It is due to a filterable virus. Subjects of recurrent herpes are permanent carriers of the virus; their serum contains the specific antibody.

Diagnosis.—Herpes is distinguished from all other vesicular conditions by its distribution, its limited duration, and the occurrence of the vesicles in *clusters*, on an erythematous base.

Prognosis.—Herpes simplex tends to spontaneous recovery in the course of a week. It is apt to recur, sometimes at periodic intervals.

Treatment of *herpes simplex.*—Protect the vesicles by starch or zinc powder, or paint with collodion, or use some soothing ointment. The vesicles may be aborted with aspirin by mouth, and by frequent applications of surgical spirit or boracic powder. Remove the contributory cause in recurrent cases; sometimes this is due to a chill and a septic focus in the teeth, tonsils, nose or colon. A vaccine of the virus and intradermal small-pox vaccination have given good results.

V. Varicella is described in §§ 476 and 479. The points of distinction between varicella and small-pox are conveniently tabulated thus:—

Varicella.	*Small-pox.*
No symptoms before rash.	Three days before rash, sudden onset of illness with backache.
Soft pink papules becoming vesicular.	Shotty papules becoming vesicular or pustular.
Chest, neck, and trunk, fewer on face and limbs. Rash is centripetal.	First on face and wrists; more on limbs than on trunk. Rash centrifugal.
Successive crops, and thus find small papules beside vesicles of various sizes.	**All one stage** (papular or vesicular, or pustular) at one place.

VI. SCABIES is chiefly a papular eruption (§ 621); but in children the vesicular element often predominates; it may then be mistaken for eczema or varicella. The burrows, the itching, worse at night, and the position of the lesions, aid the diagnosis.

§ **636**. VII. **Tinea Circinata,** or ringworm of the body, is vesicular; the fungus is usually of animal origin; the arrangement of the vesicles in the form of a definite ring is so characteristic as to be unmistakable (Fig. 147). When originating from the horse or cattle, there may be suppuration. When associated with scalp infection the lesions are usually dis-

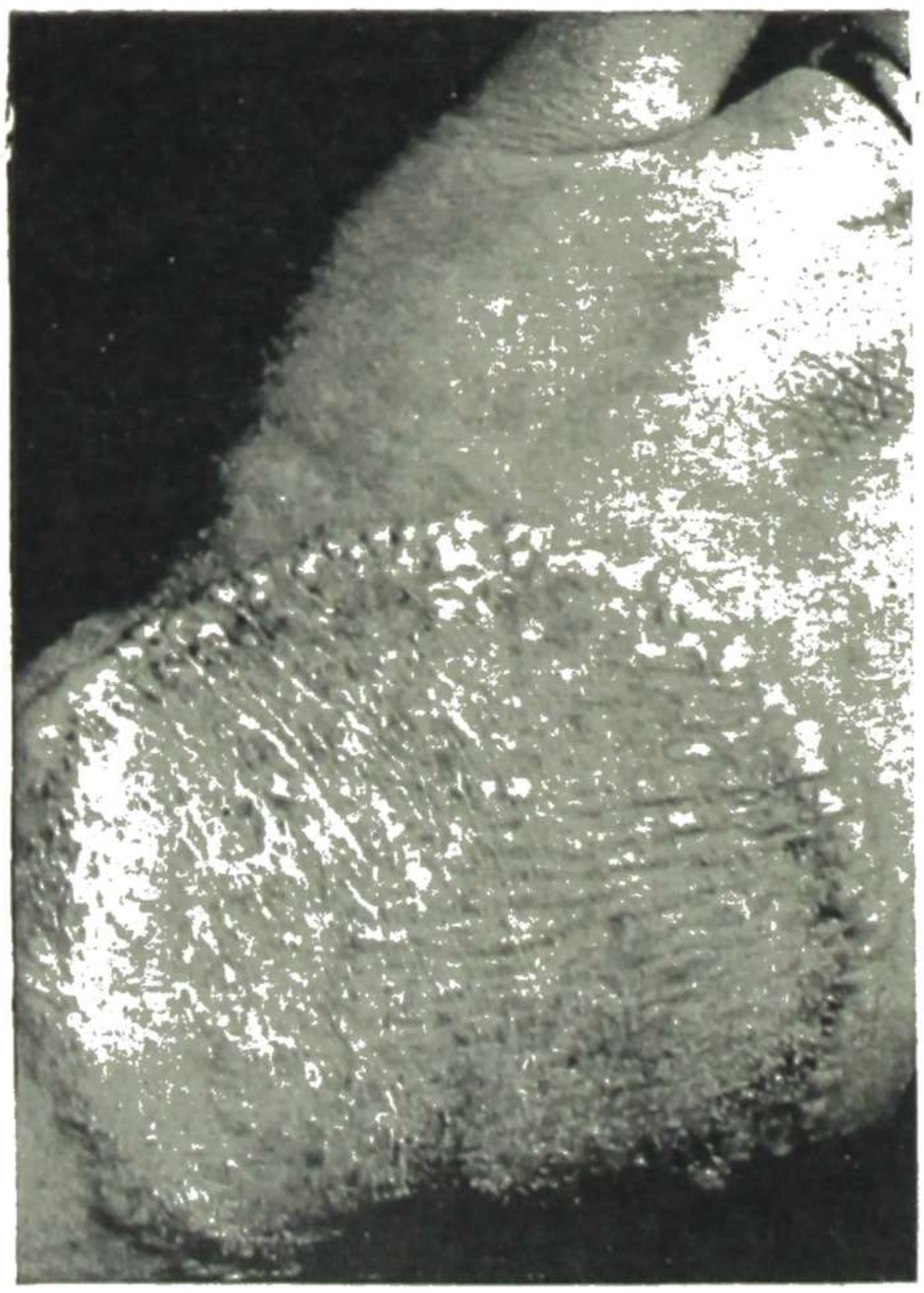


FIG. 147.—Hand of a woman suffering from TINEA CIRCINATA, in which the vesicular element is unusually prominent. A large ring of vesicles encloses a scaly area. Verified by microscopic examination.

FIG. 148.—Mycelium of TINEA CIRCINATA (ringworm of the body).—A scraping from the skin, stained by Gram's method. Mycelium of equal segments having truncated ends bifurcating in places; spores almost absent. Compare figures in § 655.

coid or annular, with a slightly raised scaly margin, and with minute papules or vesicles. The favourite localities are the face, neck, and hands. The Epidermophyton infections are described in § 627. Under the microscope,

the mycelium (Fig. 148), and perhaps a few spores, can be seen on scraping under the roof of the vesicles or the scales from the margin.

Treatment.—Rub thoroughly with ung. hyd. amm. chlor., or Whitfield's combination of salicylic and benzoic acid, iodine (1 per cent. in 90 per cent. alcohol), ung. iodi. denigrescens or the new fungicide, undecylenic acid.

§ **637.** VIII. **Sudamina** are clear, scattered, non-inflammatory vesicles, about the size of a pin's head, occurring chiefly on the trunk, in conditions of violent exercise, high temperature and fevers such as acute rheumatism, which are attended by profuse perspiration. They disappear in a few days. They are a non-inflammatory disorder of the sweat glands, whereas in *miliaria* (commonly called prickly heat) a mild inflammatory condition at the mouths of these glands causes similar papules and vesicles on a red base. *Treat* with dusting powder.

IX. **Hydrocystoma** shows deep-seated, tense, translucent vesicles on the face, pin-head to a pea in size, lasting for months. They are formed by a cystic swelling of the duct of the sweat-gland, and never become purulent. They disappear spontaneously, chiefly in cold weather. They chiefly affect middle-aged women whose lives are spent in a warm, moist atmosphere, or who perspire much, especially when warm weather sets in. *Treatment.*—Puncture the vesicles, and use dusting powder.

§ **638.** X. **Dermatitis Herpetiformis** (Synonym: Duhring's disease) may be defined as a relapsing disorder of prolonged duration, characterised by the appearance of successive crops of erythematous or papular elements, always in clusters, which usually go on to the formation of vesicles, pustules, or bullæ, are always attended by intense irritation, and sometimes by pigmentation. Different varieties are described according to the element which predominates. Sometimes this consists of circumscribed patches of bright red erythematous or semi-urticarial inflammation, which spread by raised edges, and leave a pigmented centre. In the usual *papulo-vesicular* variety vesicles predominate, varying in size from a pin's head to a split pea, and many become large bullæ. The fluid in the bullæ and also the blood contain eosinophil cells in great excess. Sometimes papules predominate, and become scratched and covered with blood-stained scabs. Intense itching accompanies all varieties. Scars and temporary pigmentation may ensue. In many cases the general health seems undisturbed, but often the appearance of each crop is attended by pyrexia, and occasionally gastro-intestinal disturbance. The distribution tends to be symmetrical, and to favour the flexor surface of the wrists, the axillæ, groins, abdomen, sacral region, and buttocks. The head, face, palms and soles may escape. The mucous membrane of the mouth and pharynx may also be involved. Each successive crop lasts from one to four weeks; between the attacks are longer or shorter intervals of comparative freedom. The disease may last months or years. *Herpes gestationis* appears to be the same malady occurring during pregnancy; the outlook is serious for both mother and child.

Diagnosis.—The disease differs from pemphigus vulgaris in the following respects: (1) The smaller size of the vesicles or bullæ, which are (2) constantly arranged in clusters; (3) the presence of erythematous patches beneath the vesicles and elsewhere, and the multiform character of the eruption; and (4) itching is usually severe. From *eczema*, *urticaria bullosa*, and *erythema multiforme* the disease is distinguished by consideration of the above features.

Etiology.—The disorder is more common in men, and between the ages of sixteen and thirty. It is supposed to be due to a virus.

Treatment.—Arsenic is of great service; it should be given in gradually increasing doses, up to the physiological limit. Andrews advises sulphapyridine G. 0·5 q.i.d. with sod. bicarb. and much fluid. Forms of "shock" treatment and autoserum injections (§ 656) have aided many cases for a time. Locally, sedative lotions, pastes, or spirit and powders may be prescribed. Duhring and H. Montgomery advise sulphur 30 grains to the ounce of paraff. moll. Lumbar puncture sometimes relieves the itching.

§ 639. XI. **Pemphigus** is one of the rarer diseases of the skin, characterised by the presence of bullæ and constitutional symptoms. *P. chronicus* or *vulgaris* is the more common and typical variety in which the bullæ develop in crops, each bulla varying in size from a pea to a hen's egg, being tense with clear albuminous serum, which becomes turbid, purulent, and occasionally hæmorrhagic. The bulla is characterised by having at first no ring of erythema round its base. The fluid is either absorbed with formation of crusts, or the blebs burst, leaving a raw surface on which new epidermis soon develops. Any part of the skin may be affected, as well as the mucous membrane of the mouth, nose, throat, vulva and conjunctivæ. Each bulla lasts a few days; fresh crops may continue to come out for months. The constitutional disturbance depends largely upon the number of bullæ and the frequency of the crops. The outlook is grave; even after long intervals of comparative freedom the end is usually fatal. In *P. foliaceus* the bullæ are very thin and flaccid, and rupture early; but the epidermis, instead of re-forming, continues to peel off until large areas of red, raw, exuding surface are exposed, with the epidermis folded at the margins —a point which distinguishes it from eczema rubrum. This process slowly extends for a year or two until the whole body may be involved, with a fatal issue. *P. vegetans* develops papillomatous vegetations. Often starting in the mouth, the disease spreads; the bullæ remain long unhealed, and in moist positions such as the groins and axillæ vegetations develop with offensive discharge. Prostration and death usually occur in a few months.

Etiology.—The cause is unknown; a virus is suspected. *Pemphigus neonatorum* has long been supposed to be due to streptococcal infection, but recent evidence incriminates *Staphylococcus aureus*.

The *diagnosis* is clear in straightforward types of the disease; other bullous diseases and drug rashes must be passed in review. In children, *bullous impetigo* affects chiefly the face and has characteristic crusts; the *bullous syphilide* is seen in infants chiefly on the palms and soles. *Treatment* is palliative. Arsenic, in various forms, has been of great service. Give nutritious diet; add salt when there is much oozing. Local remedies: sulphathiazole 5 per cent. in glycerin, or penicillin (400 units/gramme), in wax or eucerin, are helpful. Dusting powders are more comforting than ointments. Continuous baths may be required.

XII. **Epidermolysis Bullosa** is a rare congenital disease in which slight traumatism causes the formation of bullæ. It usually runs in families. The bullæ appear on parts exposed to friction or pressure, and even the nails and scalp may be affected.

XIII. **Hydroa Aestivale** is a papulo-vesicular or bullous eruption occurring on parts exposed to light, and appears chiefly in summer in successive crops, continuing for a few weeks. The lesions are preceded by a burning sensation; they last a few days, then crusts form, and scars frequently follow. In the juvenile type it is often associated with hæmatoporphyrinuria and is due to an inborn error of metabolism. The adult type is mentioned under Varieties of Eczema (light sensitisation).

XIV. **Lymphangioma circumscriptum** is a rare nævus formed of overgrowth of lymph vessels, and shows deep-seated, thick-walled yellow vesicles.

XV. ANTHRAX begins as a papule. A ring of vesicles forms, and on an inflamed base a central gangrenous scab develops. Constitutional symptoms are present (§ 490).

XVI. Other diseases occasionally showing vesicles or bullæ—erythema multiforme, urticaria, congenital syphilis, drug eruptions, acne variolo-formis, lichen planus, leprosy, etc.—are described under their respective headings. Stings and bites of insects may cause small or large vesicles, with a central punctum which aids diagnosis in obscure cases. The external application of strong acids, liquor epispasticus, or overdoses of ultra-violet light may be unsuspected causes of bullæ.

GROUP III. PUSTULAR ERUPTIONS

Eruptions in which the elements are mainly pustular—

(*a*) *Superficial Pustules.*

I. Impetigo contagiosa.
II. Ecthyma.
III. Impetigo Herpetiformis.
IV. Cutaneous Diphtheria.

(*b*) *Pustules on an Indurated Base.*

V. Sycosis.
VI. Pustular syphilide.
VII. Pustular acne.
VIII. Pustular folliculitis (some cases).
IX. Bromide and other drug eruptions.
X. Variola.
XI. Acute glanders.
XII. Pustular tuberculide.
XIII. Dermatitis vegetans.

(*c*) *Furuncular eruptions with a Slough.*

XIV. Boils.
XV. Carbuncles.
XVI. Kerion.
XVII. Anthrax (later stages § 490).

Eczema and all the diseases mentioned in Group II may become pustular, owing to secondary infection by pyogenic cocci. Conversely, nearly all the pustular diseases just mentioned may start as vesicles. Most pustular conditions of the skin are due to invasion by various strains of staphylococci. Other organisms may cause suppuration in conditions favourable to their growth, such as tuberculosis, syphilis, fungi and yeasts. The staphylococcus albus is found in superficial and less severe lesions, the staphylococcus aureus in deep-seated severe infection of the follicles.

(*a*) *Superficial Pustules*

§ 640. I. **Impetigo Contagiosa** is a disease frequently met with on the faces of children, and is so called because it is readily conveyed from one child to another. At first the lesions are vesicular, but they become pustular in a few hours. The pustules vary in size, and are discrete, but adjacent lesions run together. In the course of a few days they dry into yellow crusts, which, falling off, leave a flat congested mark covered by new cuticle. They do not leave scars unless scratched. The favourite positions are the face, especially round the mouth, scalp, and hands of children, but they may occur on any part of the body. If untreated, fresh pustules appear in other places for a week or two; or the disease may die out spontaneously in a few weeks. It is usually trivial, without constitutional disturbance, and with only slight itching. In severe types the lesions may be circular, bullous or ulcerative. The disease is conveyed by contagion to other parts of the body or to another individual, especially with bullous impetigo.

Etiology.—Impetigo will spread through a school (*e.g.*, scrum-pox in football) or family of children, attacking weak and strong alike. Adults are comparatively immune. The usual cause is a streptococcus (often hæmolytic), soon followed by secondary staphylococcal infection. A form due to staphylococci has now become more common.

Diagnosis.—Impetigo pustules are readily distinguished from acne, sycosis, pustular syphilide, and all other pustular eruptions by (i.) their superficial character, (ii.) the crusts, and (iii.) their typical position. The bullous form may have to be distinguished from other bullous diseases.

Treatment.—The crusts must be removed before using a local application. The average case is cured with Eau d'Alibour—zinc. sulph. ; cupr. sulph. 4 ; aq. dest. ad 1000. Penicillin can be applied in spray or cream, but epidermal sensitisation occurs in some cases. If not successful within a week discontinue it and use the older remedies, especially hyd. ammon. chlor. gr. 5 in pasta zinci. Sulphathiazole cream 5 per cent. was used before penicillin became available. It must not be continued for longer than five days nor when the skin is exposed to bright sunlight.

II. **Ecthyma** is a term used to describe *large isolated and crusted pustules*, or the superficial sores which may form part of impetigo, scabies and pediculosis. Ulceration occurs beneath the heavy crusts, due to low tissue resistance, in delicate children and aged persons. In severe cases pigmentation and scarring follow. The lesions have to be distinguished from scabies and from suppurating syphilides. Treat the lesions as in impetigo ; the general health requires building up.

III. **Impetigo Herpetiformis** is a rare disease described by Hebra. It is characterised by the appearance of clusters of miliary pustules, usually starting on the inner surface of the thighs, whence they spread, generally associated with the pregnant or puerperal state, and usually terminating fatally. The mucous membranes may be severely affected. There is continuous or intermittent fever, and each fresh crop of pustules is attended by rigors and increasing prostration. It is usually connected with the later months of pregnancy and tends to recur in a subsequent pregnancy.

Treatment is as for pemphigus. Pregnancy may have to be terminated. Injections of autogenous serum or serum from healthy pregnant women have often succeeded.

IV. **Diphtheria** of the skin resembles a widespread, obstinate impetigo, with large, sometimes sanious crusts, and is usually diagnosed by the discovery of the organism after the disease has resisted ordinary treatment for impetigo. Injections and local applications of diphtheria antitoxin readily cure the lesions.

(*b*) *Pustules on an Indurated Base*

§ **641.** V. **Sycosis** is a slow pustular eruption, evidence of a deep-seated infection of the sebaceous glands and hair follicles of the beard and sometimes the moustache, by the staphylococcus aureus. Clinically, three conditions present the appearance described as sycosis. (1) *True Sycosis* (Synonym : Folliculitis Barbæ) begins round the hairs with discrete red papules ; these rapidly become yellow pustules ; inflammation may extend over the intervening area and cause nodules. In the later stage the hairs can be easily drawn out, followed by a drop of pus. The condition is due to the staphylococcus aureus ; hence it is sometimes called coccogenic sycosis. It may be contracted at the barber's, or it may be due to infection from a nasal discharge ; the eyebrows, eyelids, axilla, pubis and other hair follicles may also have pustules. (2) *Tinea Sycosis*, ringworm of the beard, is due to the trichophyton tonsurans. The large-spored ringworm, and the ringworm of horses, cows, cats, and dogs may produce its two varieties : (*a*) *Superficial*, characterised by scaly red rings, in which the hairs are only slightly involved ; and (*b*) *deep-seated*, showing hard nodules and purple red lumps. In this form the hairs are easily pulled out from the onset. Unless the invading fungus be found, it is often difficult to diagnose. (3) *Eczema barbæ* which has been secondarily in-

fected. In true sycosis the pustules predominate ; the intervening inflammation is secondary. Eczema barbæ may be a streptococcal dermatitis which has with intermissions lasted from youth ; the inflammation extends to the face and follicular involvement is rare. All three conditions may last long.

The *Treatment* of true sycosis is often lengthy. Keep the hair short ; open the pustules. Penicillin sometimes gives immediate success, but relapse is usual. Few now use sulphonamides locally. For mild cases, hydrarg. perchlor. (1 in 2000 parts of rectified spirit) can be used at night ; and by day a dusting powder of calomel gr. 10 in oz. 1 of talc powder. The part may be bathed at night with a warm solution of boracic acid followed by inunction with hydrarg. ammon. chlor. gr. 10–15 to oz. 1 and a lotion and powder by day. Quinolor ointment is often effective. In some cases vaccines, especially autogenous and intradermal, are very successful. Epilation by X-rays may cure, or be followed by relapse. Increase the vitamin C and reduce the sugar content of the diet. Remove septic foci. In Tinea sycosis, epilate ; then use a mercurial lotion and ointment.

§ **642.** VI. **Pustular Syphilides.** (1) The *Small Papulo-pustular Syphilide* shows papules about the size of a pin's head, upon a hard base, which in a week or ten days scab off, leaving the characteristic indurated lesions with depressed centres. They are arranged in groups, circles, or circular lines. (2) The *Large Pustular Syphilide* (Rupia) consists of pustules varying in size from a split pea to a halfpenny, flat or hemispherical, and surrounded by a raised brick-red infiltrated margin. They may be grouped, ringed, or isolated. The pustule bursts, the pus escapes, and crusts are formed with ulceration beneath them. The ulceration tends to spread serpiginously, and leaves permanent scars, rings, and pigmentation. Both varieties may occur on any part of the body. See § 645 for characters common to all syphilitic rashes.

Diagnosis.—The smaller pustular syphilide is distinguished from *acne* by the presence of comedones, and the slower course in *acne*. Pustular syphilide on the face may be hard to distinguish from *lupus vulgaris*, but in lupus the patient is usually younger, and the lesions grow more slowly. When pustular syphilide is diffuse, it may be mistaken for *small-pox*, but in the latter there is a history of a vesicular stage, of backache, and constitutional symptoms (§ 479).

§ **643.** Various other pustular eruptions may be mentioned :

VII. **Pustular Acne** is recognised at once by the presence of comedones, papules, and pustules on the face, and sometimes the upper part of the back. **Acne variolo-formis** has no comedones, but a central depression with crust and resulting scar.

VIII. **Pustular Folliculitis** is a papulo-pustular condition of the hair follicles, due to infection by the staphylococcus aureus. It affects the hairy parts, especially the legs in men. It is diagnosed by the fact that each pustule involves a single hair follicle. In **Bockhardt's impetigo** only the upper third of the pilo-sebaceous follicle is involved ; hence these pustules are not always situated on an indurated base. It affects chiefly the scalps of infants or young children, or sites where an irritant has been rubbed into the skin.

IX. **Iodides, Bromides** and other drugs are mentioned in § 612.

X. VARIOLA (Small-pox).—The concluding stage of the eruption in this infectious fever is another illustration of pustules forming upon an indurated base (§ 479).

XI. The eruption of **Acute Glanders** when it has reached a pustular stage is so much like small-pox that it may very pardonably be mistaken for it (§ 491).

XII. A pustular **Tuberculide** may appear as small or large pustules arising on a hard papular base. These may coalesce, and under the scab an ulcerating surface develops.

XIII. **Dermatitis vegetans** may develop upon other diseases, especially in the groins and axillæ. Profuse dark-red granulations occur, with pus or crusts.

(c) *Pustular Eruptions prone to become Furuncular, or Sloughing: viz., Boil, Carbuncle, and Kerion*

§ **644.** XIV. A **Furuncle,** or boil, shows an acute, red, tender and very painful nodule in the skin, varying in size from a pin's head to a bean. Sometimes the inflammation slowly subsides (blind boil); usually it increases and involves the surface; in a few days pus forms, the skin breaks, and the central necrosed portion or core is discharged. The cavity fills with granulation tissue and heals with a scar. Boils are often multiple, or fresh crops may continue for months (furunculosis). A boil may be a comparatively mild malady, running a course of 1 to 3 weeks; but on the face, especially the upper lip, it may lead to septicæmia and death.

Etiology.—Most boils are due to an inflammatory process involving the lower part of the hair follicle; the *Staphylococcus pyogenes aureus* is the usual causal organism; in mild cases, *S. albus* and *S. citreus*. Boils are seen in the obese, the over-fed and diabetic; carbuncles affect especially the aged, the underfed and debilitated. Friction with contaminated clothing is apt to infect the adjacent hair follicles and cause fresh boils; hot fomentations and ointments may act similarly. Crops of boils may also occur where there is poor resistance to various septic foci, *e.g.*, in the sinuses, the teeth and residual jaw infection.

XV. A **Carbuncle** may be regarded as a cluster of several boils, constituting an inflammatory area spreading beneath the skin, with numerous openings in the skin through which the pus pours. A leathery slough forms in the deeper layers of the dermis. It occurs most often on the neck or back, but may affect any part; on the face it is serious. The pain and constitutional disturbance are often very severe.

Treatment.—Protect from friction; apply 1 per cent. iodine in absolute alcohol or 2 per cent. gentian violet over and around the boil. If fomentations have been used to relieve pain, disinfect the neighbouring skin in the same way. Never squeeze a boil or a carbuncle, nor extract the central hair. Keep the part at rest, especially in the case of carbuncles; for this purpose use a firm occlusive dressing. Do not incise unless pus is pointing; in most cases conservative methods are better than surgical. When the skin breaks, encourage the flow of pus with dressings of gauze soaked in a saturated solution of magnesium sulphate in glycerin, changed several times daily, when the discharge is profuse. Injections of edwenil,

colloidal manganese and manganese butyrate help many cases. For severe boils and carbuncles penicillin is recommended by injection, 200,000 units in sterile water thrice daily for three to eight days. The dosage is still under revision. Local preparations may be used, but with many people there ensues sensitisation. Vaccines (especially autogenous) are often effective for boils (beginning with 30 or 50 million staphylococcus aureus) especially when given intradermally. Investigate the general health. Some require more, others less food; restrict sugar; give fresh foods. Vitamin C is especially indicated. Some advise sulphadiazine therapy. Autohæmotherapy (§ 656) and X-ray are very useful; others like short-wave diathermy and ultra-violet light. X-ray: a single suberythema dose often aborts boils and carbuncles; fractional weekly doses are used for recurrent boils. It is rarely necessary to resort to excision with a cautery or diathermy knife.

XVI. **Kerion** is a condition occurring chiefly on the heads of children suffering from ringworm of animal origin, usually a large spored ectothrix trichophyton. It is a pustular folliculitis, and resembles a carbuncle, but without induration. It shows a circular, raised, inflamed, boggy area of skin with holes discharging serum and pus (§ 655). It tends to spontaneous cure.

GROUP IV. MULTIFORM ERUPTIONS

Multiform eruptions are sometimes found in the following conditions —syphilis, scabies, eczema, erythema multiforme, varicella, leprosy, dermatitis herpetiformis and pityriasis lichenoides.

§ 645. General Characters of Syphilitic Eruptions.—(1) They are of many different *kinds*, and several forms may be present at one time (polymorphism). All varieties of elementary lesions may appear on the skin, but very rarely a vesicle; eczema and other vesicular lesions are never found as a result of syphilis—a diagnostic feature of great importance. (2) The syphilitic *papule* may be regarded as a prototype of a syphilitic skin lesion. It is the starting-point of them all. (3) The *features common* to all syphilitic rashes are their reddish-brown colour, generalised or symmetrical distribution, grouping in segments of circles, preference for the forehead and flexor aspects, polymorphism and absence of itching. The later skin lesions are usually asymmetrical, and with a marked tendency to ulceration.

The clinical features which distinguish syphilides are explained by three histological facts. (1) All syphilides are due to a deposit in the dermis or epidermis of a cellular *infiltration*. Hence the colour does not disappear on pressure, and is followed by staining. (2) The cells constituting this gummatous or granulomatous infiltration are of low vitality. They do not organise into connective tissue, but tend to undergo either *involution* by absorption or *suppuration* and pustulation. Hence the depressed cup-shaped centre, the great tendency to polymorphism and the absence of vesiculation. (3) The infiltration *spreads centrifugally*. Hence the raised peripheral edge is the newest part, the shape most frequently assumed being that of a crescent, circle, or segment of a circle, leaving a stained centre where the papule began. If these three principles be appreciated all the clinical features are explained.

SCABIES (§ 621) is usually a multiform eruption, consisting of burrows, papules, vesicles, sometimes pustules, and scratch-marks. By the presence of the burrows and the sites infected, the diagnosis is made.

PITYRIASIS LICHENOIDES ET VARIOLOFORMIS is a rare disease with, in addition to the rash of pityriasis rosea (§ 630), crops of soft papules and lesions with umbilication and central scab. It is usually widespread, lasts long, and is important in that it may be mistaken for secondary syphilis or chicken-pox.

GROUP V. NODULAR ERUPTIONS AND TUMOURS OF THE SKIN

A nodule may be defined as a solid deposit in the skin, which is larger than a papule. The *commoner forms* are: I. Lupus Vulgaris; II. Syphilitic Gummata; III. Various Benign Tumours (*e.g.*, sebaceous cyst, lipoma, rheumatic nodules, vascular nævi, etc.); and IV. Epithelioma; while the *rarer forms* include: Leprosy; Bazin's Disease; Molluscum Contagiosum; Molluscum Fibrosum; Von Recklinghausen's Disease; Sarcoma Cutis; Leukæmia; Mycosis Fungoides; Xanthoma; Sarcoid; Myoma; Delhi Boil; Yaws; Actinomycosis; Blastomycosis; Sporotrichosis; and Mycetoma.

Some papular eruptions may take on a nodular form—*e.g.*, urticaria pigmentosa and prurigo. Rodent ulcer (§ 649. IV) may in the early stage be mistaken for a nodule.

§ 646. I. **Lupus Vulgaris** is a chronic disease of the skin presenting groups of small nodules seated in the corium. These are pinhead to lentil size, reddish brown, with characteristic semi-translucent appearance, soft, due to infection with the tubercle bacillus, frequently the bovine type. A zone of inflammation occurs around them, so that the so-called "apple jelly" nodules may only be seen when the patch is firmly pressed under a watch-glass. The disease may attack any part of the body; the face and neck are frequently, the head rarely affected. After measles or other acute fevers patches may develop extensively over the body. The mucous membranes (mouth, nose and larynx) are often invaded. Lupus usually starts in early childhood, rarely after the age of twenty, and usually progresses slowly. The patch may desquamate, or may heal in the centre with cicatricial atrophy, a few typical "apple jelly" nodules in the centre or margin enabling the diagnosis to be made; or it may ulcerate, with secondary infection, pus and crusts, causing destruction and deformity when on the nose, eyelids or mouth.

The *Prognosis* depends upon early treatment and till recent years was unfavourable. For *diagnosis*, see Table XLIII.

Treatment.—General treatment is necessary, especially with sunlight and diet. The carbon arc to the whole body is best; large doses are borne when the skin is anointed with olive oil. The Gerson diet has had success—abundant vitamin content; fresh fruit and vegetable juices; raw vegetables and salads; restricted water intake; salt replaced by calcium and other minerals; high meat and fat content. Calciferol has

replaced previous methods. One high potency tablet is taken thrice daily (150,000 units daily). Stop the drug for a month when there are clinical symptoms of nausea and lassitude or when the serum calcium

TABLE XLIII.—TABLE OF DIAGNOSIS.

Nodular Syphilide.	*Lupus Vulgaris.*	*Lupus Erythematosus.*
Nodular or diffuse infiltration with raised edges. Nodules firm.	"Apple-jelly" soft nodules in dermis. Sebaceous follicles not specially involved.	Superficial erythema. Sebaceous follicle plugs attached to surface scales.
Destroys more in a month than lupus in a year. Stellate scarring.	Destroys slowly and usually leaves puckered scar.	Never ulcerates; usually leaves a superficial fine atrophy.
Sometimes symmetrical.	Asymmetrical.	Bat's - wing distribution on face. Generally symmetrical.
Adults.	First appears in childhood or before twenty.	First appears in middle life or after twenty.
Responds to Hg and KI.	Hg, no marked effect.	Hg and KI no good.

content reaches 12 mgm. per cent. *Local* treatment: (1) The Lomholt modification of Finsen light is the best ultra-violet lamp; (2) diathermy fulguration to each nodule; (3) caustics; Adamson's method of liquid acid nitrate of mercury rubbed over the part; acute reaction follows, with resulting fine scar.

II. **Syphilitic Gummata** are round or ovoid nodules in or beneath the skin. In the course of a few weeks they form an indolent abscess, which leaves a circumscribed punched-out ulcer, sometimes of considerable depth. They may occur anywhere, but especially on the legs, brow, nose and sterno-clavicular region. A gumma must not be mistaken for an abscess, and lanced.

III. There are several other relatively common **Benign Tumours** or nodules originating in the subcutaneous tissue, which may involve the skin—*e.g.*, sebaceous cyst, fatty tumour, rheumatic nodules, fibro-neuroma, subcutaneous nævi, and lymphangiectasis. **Sebaceous Cyst** (Synonyms: Steatoma, Wen) is a tense, painless, cystic tumour due to the occlusion of a sebaceous follicle, usually single. It should be dissected out *with the capsule*, or it will grow again. **Fatty Tumours** are known by their doughy feel, lobulation, the puckered depressions seen on trying to lift up the skin over them. **Rheumatic Nodules** occur in successive crops, as small, hard, or elastic nodules, sometimes adherent to the skin, usually freely movable beneath, sometimes tender on pressure. Their favourite situation is over the fibrous tissue of the superficial bones around the joints and along the spine. **Lymphangioma,** or dilatation of the lymphatics, shows white or pink vesicles, usually in groups; telangiectases may be associated. On puncture lymph exudes. It occurs in childhood and often affects the tongue.

IV. **Epithelioma,** the squamous cell type, affects the skin in several forms. The *papular* form occurs as hard, pale, flat papules, which grow very slowly, and become cracked, fissured, and ulcerated. The deep-seated form occurs as close-set, flat, or slightly raised, firm, somewhat translucent nodules. In the course of months or years it becomes a spherical or flat, hard tumour, with shining, waxy, or rosy surface, traversed by vessels. As the result of spontaneous reaction the centre is often drawn in. Later, ulceration occurs. *Papillomatous* or warty growths may be found in the same individual; the first is the most common and slow growing. In all forms the glands become involved and metastases may form. The favourite sites are the lower lip—at least 50 per cent.—the tongue, and external genitalia. The majority of cases occur in **men**. Malignant growths often develop in pigmented moles, senile keratoses, the late stage of xeroderma pigmentosum, scars of lupus and X-ray dermatitis, and the dermatitis following exposure to mineral oils, tar or arsenic. **Paget's disease** affects women over 40. It begins as a scaly patch resembling eczema, which spreads with a defined margin, becoming bright red and glazed. It usually affects the nipple and areola, but may occur on any part of the body. Later, a distinctive hard infiltration is felt under the skin. **Bowen's disease** is another rare pre-cancerous disease, which in the early stage is often mistaken for syphilis. Groups of lenticular nodules occur, with crusted tops beneath which ulcers extend.

§ 647. Certain **rarer forms** of nodule and neoplasm also affect the skin.

Leprosy (Synonyms: Lepra, Elephantiasis Græcorum, Leontiasis Satyriasis) is characterised by pigmentary, sensory, and nodular changes in the skin, due to *Mycobacterium lepræ*, discovered by Hansen in 1871. The organism is acid-fast and occurs in large clumps in skin lepromata, septic ulcers and nasal mucus. Leprosy used to be a widely prevalent disease, but mainly imported cases are now found in England. It is still endemic in Norway, parts of Southern Europe, Africa, Mexico, America, and in China, India, West Indies, etc. It is communicable from man to man, but resistance is high in adults. Children are much more susceptible and infection usually occurs in early life. The actual mode of its dissemination is unknown. There are two clinical forms in its earlier stages. (*a*) *Maculo-anæsthetic* leprosy consists of patches of anæsthesia, sometimes of pigmentation or leucoderma, usually associated with thickening of the nerve trunk connected with the part, and a widespread eruption of reddish spots and patches over the body. These signs may be preceded by pain, and followed by paralysis and atrophy of the muscles supplied by the affected nerves. (*b*) In *Nodular* leprosy are found small diffuse thickenings, sometimes pink, yellowish-brown, or without much alteration of colour of the skin and mucous membranes. These increase to form bosses which on the face give the patient a leonine aspect in course of time (facies leonis). The viscera and mucous membranes are similarly involved, and wherever the granulomatous material is formed the characteristic bacillus is found. *Mixed* forms of these two types are met with. The course of the disease is extremely prolonged, and generally fatal. The differential *Diagnosis* is from lupus vulgaris, skin tuberculosis, yaws and syphilis. The anæsthetic type has to be distinguished from progressive muscular atrophy, amyotrophic lateral sclerosis, cervical rib, neuritis, scleroderma and Raynaud's disease. In nodular leprosy the organisms may be found in the nasal mucus or in snippets of skin removed with curved scissors, but in pure nerve cases the bacilli only occur in the nerves themselves. The ulnar, peroneal, great auricular and other nerves may be palpably enlarged. *Varieties.*—*Lepromatous leprosy* indicates a poor resistance of the individual, with many bacilli in the lesions and a negative lepromin reaction. *Tuberculoid leprosy* demonstrates a high resistance, with few bacilli present and a positive lepromin reaction.

Treatment.—Good food, fresh air, exercise and the elimination of intercurrent disease are essential points. The sulphone compounds offer the best chance of success. Those commonly used are promin (1–5 G. daily intravenously), promizole (0·5–1·0 G. t.i.d. by mouth), diasone (0·3–0·9 G. daily by mouth) or sulphetrone (0·5–2·0 G. t.i.d. by mouth): anæmia, leucopenia and dermatitis may result from these drugs. Iron

and Vitamin B complex should be given concurrently, with regular blood counts. The drugs are best given in repeated courses, separated by short intervals, and treatment is prolonged for a year or more. Some success has been claimed for streptomycin, but treatment must be prolonged and loss of further response and toxic effects supervene.

Bazin's Disease (Synonym: Erythema Induratum) shows two forms. One is a tuberculide, affecting chiefly young women, characterised by chronic subcutaneous bluish-red nodules in the calves of the legs, which may ulcerate. They yield to rest and tonic treatment, also to a few injections of neoarsphenamine. They are sometimes difficult to distinguish from syphilitic gummata, but these make more rapid progress and yield to iodides. This type is especially liable to affect girls whose legs show a cyanotic condition with vascular stasis. (See §§ 576 and 617.) The second type is seen chiefly in women between thirty-five and fifty who suffer from rheumatism; it may also occur in men. The nodules are smaller but more painful. The swellings may develop rather rapidly but do not break. They subside in a few days when the patient stays in bed. A focus of infection should be sought for and dealt with.

Molluscum Contagiosum consists of rounded, pearl-like elevations, varying in size from a pin's head to a pea, with semi-translucent appearance. They are due to the reaction of the prickle cells to a minute infecting organism, which is apparently conveyed by towels and other washing materials. A tiny depression is found in the centre through which the contents can be squeezed. If left alone inflammation and suppuration may occur, with spontaneous cure, or large nodules may form. The treatment consists either in snipping them off, or in squeezing out the contents, and touching the inner surface with silver nitrate, pure phenol or iodine.

In **Molluscum Fibrosum** there is a formation of fibrous tissue in or just beneath the corium, slowly developing into tumours of varying size (up to 32 pounds), which may be sessile or pedunculated. Their favourite situation is the back. They should be removed by knife or ligature. In **Von Recklinghausen's disease** there are pedunculated growths containing nerve as well as fibrous tissue (neurofibromata); they are widely distributed and pigmentation occurs in patches. Although probably congenital, they may not develop till middle or old age. It has (rarely) been associated with adenoma sebaceum; and see § 803.

Sarcoma Cutis may be primary or secondary. It is met with in the form of purplish tumours of varying size of hard or spongy consistence. A small deposit with satellites around it is very characteristic. Sarcoma may develop on pigmented moles, a melanotic sarcoma being then reproduced elsewhere.

In both types of **Leukæmia** (§ 543), but especially in the lymphatic type, and in **lymphadenoma,** nodules in the skin may occur of the same character as those in the spleen, liver, etc. The nodules vary in colour from that of the surrounding skin to a deep red or even to a distinct grey, and are often the site of hæmorrhage. The greenish hue of an old bruise may suggest that they are chloromatous, but this is rare. They appear in any position, and are variable in size and persistence, sometimes disappearing for months at a time. If a blood examination is not made, such cases are often regarded as mycosis fungoides. Itching may be severe or absent. In some cases there is extensive infiltrated erythrodermia with severe itching.

Mycosis Fungoides is characterised by the formation, after a long preliminary period, of reddish fungoid tumours. In the preliminary stages, which may last for months or years, there is an erythema or a scaly eczema attended by itching. Later, brownish-red papules develop, leaving pigmented depressions. These are followed by smooth purple tumours, sessile or pedunculated, which ulcerate, with a typical granulomatous base. The eruption usually appears on the trunk, and leads to emaciation and death. X-rays have proved useful in retarding the progress of the disease.

Xanthoma occurs with liver disease and diabetes in the form of raised yellow patches (X. planum) or nodules (X. tuberosum). It is described in § 653. IX.

Sarcoid is a term used for several rare eruptions associated with a tuberculous

focus. (1) Darier and Roussy described deep-seated, dark-red or purple elastic nodules below the skin, which usually resolve but may have a central softening. (2) Boeck described four types of sarcoid: (i.) crops of superficial dark-red or brown, firm papules affecting symmetrically the face, scalp, shoulders, limbs or trunk, usually involuting and leaving a fine scar. The above are **tuberculides,** *i.e.*, cutaneous inflammatory reactions to tubercle bacilli; the von Pirquet is positive. (ii.) A rare superficial form, affecting face, scalp and neck, which extends with a serpiginous border; (iii.) deeper nodules, pea to bean-sized, purple or reddish-brown; and (iv.) a diffuse infiltrated type, affecting the nose, cheeks, ears, backs of hands and fingers—**lupus pernio.** Schaumann's researches proved that the last two varieties belonged to the class of chronic benign lymphogranulomata. They may be widespread, occurring in the skin, tonsils, lymphatic glands, lungs, spleen, liver, and the medulla of the bones of the extremities. X-ray reveals changes in the lungs and circular areas of rarefaction in the bones of the phalanges, metacarpals, metatarsals, sometimes in the carpus, tarsus and the ends of long bones. The von Pirquet is negative. In cases where pulmonary tuberculosis develops, the von Pirquet becomes positive and the skin lesions disappear.

The *prognosis* is usually good.

Treatment.—Cures have been obtained by intramuscular injections of gold and of sodium morrhuate, local and general ultra-violet light and X-ray. Sutton finds arsenic specific for Boeck's sarcoid.

Myoma is composed of non-striated muscle, and very rare. The nodules are small, smooth, red, often painful, usually diagnosed after biopsy. Treat by excision.

Delhi Boil (Bagdad button, Oriental sore, cutaneous Leishmaniasis) occurs in the East from the bite of a sandfly infected with *Leishmania tropica.* It begins on the exposed parts of face and hands as a hard papule, which enlarges, softens, becomes dark purple in hue, and in three or four months usually ulcerates, with a foul yellow secretion. It tends to heal, leaving a scar in about a year. The diagnosis is made by finding the Leishmania in the papule or ulcer margins. Locally, diathermy coagulation, pastille doses of X-ray, or the use, after scraping, of a 2 to 4 per cent. tartrate of antimony ointment, are all good. Cure may be obtained by intravenous injections of tartar emetic, given thrice weekly. Begin with ½ grain and work up to a maximum dose of ·2 grains; 15 to 30 grains may cure. **Espundia** is a similar condition found in S. America. It is accompanied by oropharyngeal ulceration, and is amenable to tartar emetic injections.

Frambesia or **yaws** is a tropical disease of widespread distribution affecting dark-skinned races especially in childhood. The causative agent, *Treponema pertenue*, is indistinguishable from the spirochæte of syphilis, *T. pallidum*, and is spread by direct contact. The primary lesion is extragenital and frequently not seen: the secondary eruption, 2–4 months after infection, may be accompanied by fever, headache, bone pains and arthralgia. It is symmetrical and may appear in successive crops on face, neck, arms, buttocks and genitals, occasionally the mucous membranes. Small papules form, which desquamate, produce a raw raspberry-like surface exuding yellowish serum which dries, with crusts resembling rupia. The tertiary lesions include osteitis, periostitis, arthritis, sabre tibia and chronic gummatous-like ulceration of the subcutaneous tissues. Gangosa, goundou and juxta-articular nodes are now regarded as sequelæ of yaws.

Etiology.—Yaws has been regarded as syphilis of primitive races, but it is of non-venereal origin, never congenital, and does not involve the viscera or central nervous system.

Treatment.—Neoarsphenamine, penicillin or bismuth as in syphilis. The secondary lesions rapidly clear, but the amount of treatment necessary is not yet known.

§ 648. The following diseases are rare in Britain; their lesions have to be diagnosed from each other. **Actinomycosis, Blastomycosis** and **Sporotrichosis** are due to a fungus entering through abrasions or pricks. All show nodules which ulcerate; some become verrucose or papillomatous. Before the various fungi are detected, the lesions may

be mistaken for tuberculosis, syphilis or Bazin's disease. The prognosis varies: some skin lesions yield to iodides, penicillin and X-ray; systemic and visceral involvement with fever, neutrophil leucocytosis and anæmia is very serious, often fatal.

Actinomycosis usually starts in the mouth, tonsils, tongue or jaw, and spreads to the skin of the face and neck, due to infection by the Actinomyces fungus. A hard, slow-growing tumour ulcerates, with a thin sero-purulent discharge, containing yellow granules in which the fungus is found (§ 921). Or the digestive tract, especially the cæcum and appendix, is attacked, with secondary involvement of the liver and lungs and with severe constitutional symptoms. Penicillin is effective for the anærobic, sulphadiazine for the ærobic fungus. Large doses of penicillin in repeated courses are required for a long period (Table XXX).

Blastomycosis affects chiefly the face and hands. It may attack the viscera primarily or secondarily. It responds to large doses of sod. iodide, X-ray and excision.

Sporotrichosis is due to infection with sporotrichia. Inflammatory nodules occur on the skin and mucous membranes, in subcutaneous tissue and bones; they may grow slowly or come out in rapid crops. Some ulcerate and discharge a sticky pus containing the fungus. Potassium iodide cures.

Mycetoma (Madura foot: elephant foot) is a chronic granuloma affecting especially the foot. Multiple nodular swellings suppurate and break down, forming sinuses and fistulæ. The pus contains fungoid granules. There is generally a history of trauma with thorns or sharp-grained cereals in barefooted natives, the fungi thus gaining access. Systemic manifestations are absent unless secondary infection supervenes. *Prognosis:* Complete surgical removal of the diseased tissue, or amputation is necessary when sulphonamide therapy fails.

GROUP VI. ULCERATIONS

§ 649. An **Ulcer** is a loss of substance of the whole skin; a granulating surface is exposed, with sero-purulent exudation. Certain forms of ulcer involve the deeper tissues, muscles, tendons, and periosteum. Ulcers must not be confused with ruptured vesicles or bullæ, when only the cuticle is absent. From the clinical standpoint, ulcers may be classified under six headings.

(*a*) *Indolent* inflammatory ulcers appear on the legs, especially when there is lack of vasomotor tone, with œdema and no support from boots. As this type is so often associated with varicose veins, it is usually called "varicose ulcer." It also occurs independently of varicose veins, in those whose occupation entails much standing; with defective circulation; with obstruction of the lymphatic or venous return, as in pregnancy or pelvic tumour; with disease of the veins, as after typhoid and pneumonia; or after local injury. The ulcer is usually preceded by œdema, cyanosis, even dermatitis. The ulcers associated with varicose veins vary in size from a pinpoint to the entire circumference of the leg.

Treatment.—Vitamin E and calciferol are on trial. Copper sulphate reduces redundant granulations; zinc ionisation and ultra-violet light stimulate healthy healing. Dickson Wright uses 6 metres of 3-inch adhesive plaster bandage of an elastic type, extending from the toes to the knee, binding it firmly and evenly over all, even if ulcer and dermatitis are present. The greater the œdema, the tighter must be the bandage.

In some cases with marked eczema and dermatitis, begin with a zinc gelatine bandage (varicosan, viscopaste). Varicose veins are injected with 5 per cent. sodium morrhuate, the upper parts being first dealt with (§ 569). If the ulcer is very large, skin grafts are laid upon it and the bandage is bound over all. The ulcer receives no dressing; powdered aspirin is blown over it if painful. Penicillin aids when penicillin-sensitive secondary infection is present. The bandage remains on from three to thirty days; the time of its removal depends on the amount of discharge and shrinking as the œdema diminishes. A moderate amount of exercise is encouraged.

(*b*) *Contagious Ulcers* are seen with glanders, hard and soft chancre, acute vulvar ulcers (rare and of unknown causation).

(*c*) *Ulcers due to nerve lesions: e.g.*, tabes dorsalis, trophic ulcers.

(*d*) *Neoplastic ulcers* and ulcers due to the breaking down of granulomata or infiltrations of the skin and subcutaneous tissue, such as syphilitic lesions (rupia and gumma), tuberculous lesions such as lupus vulgaris, verruca necrogenica, the skin over tuberculous glands; malignant disease, such as epithelioma and rodent ulcer; Bazin's disease, leprosy, yaws, veld sores, sporotrichosis, actinomycosis, blastomycosis, Leishmaniasis, Espundia, and other nodular and pustular conditions.

(*e*) Breaking down of cutaneous *scars*, such as occur with radiodermatitis, scleroderma, xeroderma pigmentosum.

(*f*) Two forms of ulcer frequently met with in the tropics deserve mention here: (1) The so-called *Tropical Ulcer* occurs in warm, damp climates. It begins as a bulla which ulcerates slowly through muscles and vessels to the periosteum. It is believed to be a deficiency disease, due to lack of protein and salt. It has been cured with daily injections of calcium chloride (gr. 15 in 10 c.c. aq. dest.), also by excision and skin grafting. (2) *Granuloma inguinale* occurs in negroes in the tropics and southern regions of America. It is described in § 571. VI.

An **infiltrating, ulcerating,** *and* **scarring** *eruption in a person of young or middle age is usually* due to lupus, tubercle, *or* syphilis. *If it occurs over forty or forty-five,* rodent ulcer *and* epithelioma *enter the category.*

I. Lupus Vulgaris may ulcerate when near a mucous orifice, or subjected to injury and secondary infection. The nodules around are sufficiently characteristic (§ 646).

II. **Tuberculous Ulceration** occasionally originates from tuberculous deposits in the skin, but more often spreads from a caseating gland or bone disease. It is usually chronic. The edges of the ulcer are dark purple, and undermined, never rounded and clean-cut as in syphilis. Generally other evidences of tuberculosis, or scars from past disease are seen. The patients are usually children, occasionally an old person; and see Bazin's disease (§ 647). *Treatment:* Promin is proving useful when applied locally.

III. **Syphilitic Ulceration**—other than the primary chancre—is of two kinds: (1) The large papular or lenticular syphilide *in* the skin gives rise to shallow irregular ulceration which may be covered with a scab which resembles the layers of an oyster shell (**rupia** of older authors). (2) The gumma nodule which has started *beneath* the skin produces a deep punched-out ulcer. The three characteristic signs about all syphilitic ulcerations are—(1) the peripheral ring of infiltration, (2) the punched-out edge, and (3) the comparatively rapid march.

IV. **Rodent Ulcer** is a basal-cell epithelioma affecting especially men, and chiefly the upper part of the face, usually after forty years of age.

It has several forms: the most common begins as a small nodule with a hard, pale, "rolled edge." Slowly, an ulcer develops with a scanty, viscid crust. The glands are not involved, and there are no metastases. In another variety multiple lesions are seen, resembling at first senile keratoses; they spread at the margins, with tiny, pearly nodules. They may affect any part of the body and occur chiefly in women. In another type there is rapid ulceration extending even to the bone.

TABLE XLIV.—TABLE OF DIAGNOSIS.

Syphilitic, Rupial, or Gummatous Ulceration.	*Ulcerating Lupus.*	*Rodent Ulcer.*
Anywhere.	Chiefly face.	Chiefly face.
Adult life.	Begins between ten and twenty years.	Over forty.
Progress rapid, destroying in weeks what others do in months.	Very slow.	Slow.
Sharp, clear-cut, punched-out, deep.	Edge rounded, sloping, and surrounded by apple-jelly nodules; superficial.	Edge rolled and *hard*; deep in later stages.
Discharge copious; offensive.	Scanty, inoffensive.	Scanty, and in later stages sanguineous.
KI and Hg efficacious.	Variable result.	No good.

V. **Epithelioma** in course of time undergoes ulceration. The diagnosis rests upon the character of the initial growth, which is warty or infiltrated, and hard. The ulcer has a hard margin. If a small piece of the hard growth can be examined, the microscope reveals the typical "cell-nest" growths of epithelioma which are absent in rodent ulcer.

The *treatment* of neoplastic ulcers: (1) Appropriate constitutional treatment; (2) various operative procedures—removal, diathermy, or cauterisation; and (3) expert use of X-ray or radium. Carbon dioxide snow and diathermy coagulation give beautiful results in some cases of rodent ulcer.

GROUP VII. WARTS AND EXCRESCENCES

§ **650.** This group consists of Verruca (wart); Corns; Condyloma; Papilloma lineare; Keratodermia; Rupia; Acanthosis nigricans; Porokeratosis; and Angiokeratoma.

I. **Verruca,** or wart, consists of thickened epidermis above hypertrophied, elongated papillæ. Warts may occur singly, or they may be multiple. They are frequently met with on the hands; less often on the soles of the feet, the head, face, neck, or genital organs. Warts are due to a filter-passing virus. They are auto-inoculable and sometimes contagious.

Varieties.—V. Vulgaris, the common wart, occurs chiefly on the hands, about the size of a small pea; on the soles of the feet it is often mistaken for a corn. Warts may be flat, raised, acuminate or pedunculated. The so-called *seborrhœic wart* is a flat, dark-brown elevation found on the face

or body, usually of old people; it gradually spreads. It must not be mistaken for the scaly patch, *keratosis senilis*, which may become malignant. *Juvenile flat warts* affect chiefly children; they come in groups, and are pale, smooth, flat, like lichen planus except in colour. The venereal wart (*condyloma*) affects the genital region. When moist, large foul-smelling vegetations may form. *Acuminate warts* occur where there is discharge, at the ano-genital region, armpits, folds, rarely the scalp. *V. necrogenica* is a tuberculous infection of the hand; the post-mortem wart contracted by doctors, butchers, post-mortem porters, etc., begins as a red, indurated papule, which spreads, becomes pustular, and leaves behind a stellate cicatrix.

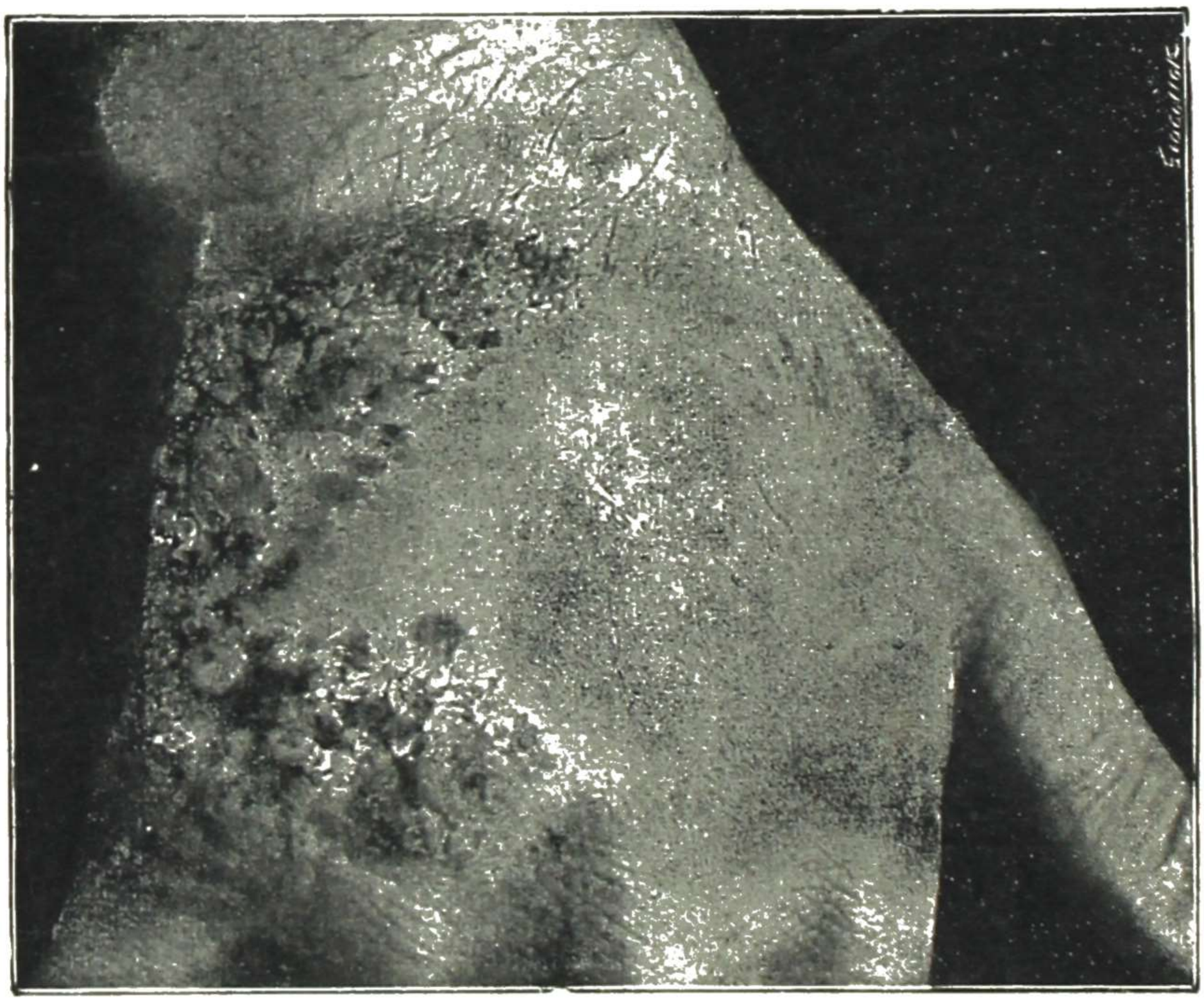


FIG. 149.—VERRUCA NECROGENICA on the hand of a gamekeeper, aged thirty-five.

Treatment.—Warts can be treated by many methods. After injecting a local anæsthetic, they can be curetted out, or destroyed by diathermy fulguration. Carbonic acid snow in a stick or a slush with acetone is preferred by some. Weekly painting with strong acids (glacial acetic, nitric) or daily application of a moistened silver nitrate stick also is effective. For patches with many flat juvenile warts, paint with 1 in 1,000 hyd. biniod. in spirit, and ionise with zinc sulphate after pricking each with a needle. The base of large warts can be transfixed in two directions with a zinc needle at the positive pole; a current of 2 ma. is passed for 2 or 3 minutes. Acuminate warts are destroyed by diathermy or podophyllin resin in oil when correctly applied. Internally, mag. sulph. gr. viii t.d. has aided some cases.

II. **Corns** are localised thickenings of the epidermis consequent on intermittent pressure. The side of the toe is a common position. They may be cured by painting with salicylic acid (20 per cent.) in collodion every night and paring off the softened horny layer. X-ray is used for obstinate corns. *Soft corns* arise between the toes, due to hard corns becoming soddened. *Treatment* consists in keeping them dry with dusting powder and the toes separate with small pads of cotton-wool. In both forms it is essential to relieve pressure.

III. **Syphilitic Condyloma** is really a papular syphilide occurring (1) on the mucous membranes; (2) near the junction of mucous membrane and skin; or (3) where opposed skin surfaces are in contact. They are common at the angles of the mouth, and between the buttocks or labia. They are slightly raised discs of various sizes, covered with greyish epithelial or soddened epidermal flakes, and exuding a highly contagious fluid.

IV. **Papilloma Lineare** shows a thickset aggregation of little horny, wart-like processes which entangle the dirt, and thus look brownish-black. These are arranged in streaks, and often described as nævus verrucosus.

V. **Keratodermia** may occur in (1) syphilis. In the tertiary stages it appears as a thickened brownish hyperkeratosis of the sole of the foot, usually associated with a thickening of the whole leg. It may also occur in the secondary stage, when it is bilateral and not usually so marked in degree. In debilitated subjects a secondary syphilitic lesion may ulcerate, with a dried blood-stained crust, like a limpet shell, and is known as **Rupia.** (2) Keratoses of the palms and soles associated with gout and with epidermophytosis have a surrounding redness and often fissures. Psoriasis of the palms or soles may simulate keratosis. (3) Gonorrhœal keratoses occur chiefly on the soles, but may affect the palms and other regions. (4) Keratosis palmaris and plantaris (tylosis) is a family and hereditary hyperkeratosis which may have marked horny excrescences on palms and soles. (5) Arsenical keratosis affects chiefly the palms and soles.

VI. **Acanthosis Nigricans** is a rare condition characterised by progressive pigmentation of the skin, with symmetrical papillary growths, often terminating fatally in a few months. The colour varies from a sallow hue to bronze and dirty brown. It is generalised, but more pronounced in the flexures. The disease may occur at any age. In most of the older patients it has been associated with abdominal (and especially gastric) cancer. In young cases the disease may last for years, no definite cause being found.

VII. **Porokeratosis** is very rare. Occurring chiefly on the backs of the hands and on the feet, it has patches of atrophic skin, surrounded by a thin horny ridge or "wall" immediately inside which are tiny grey papules, which can be picked out. It starts in childhood and progresses slowly.

VIII. **Angiokeratoma** consists of telangiectases, which develop into warty growths, occurring usually after chilblains, on the backs of the fingers, toes, hands, and feet. *Treatment:* warmth, electrolysis, diathermy coagulation or CO_2 snow.

GROUP VIII. ATROPHIES AND SCARS

§ 651. Scars, scleroderma, and atrophy of the skin may be considered together, because they not only resemble each other clinically, but fibrosis of some of the cutaneous tissues and atrophy of others occur in varying degrees in all three conditions. The disorders met with in this group are:

I. Scars. II. Atrophoderma. III. Scleroderma. IV. Sclerema neonatorum. V. Scleredema adultorum. VI. Keloid, Acne keloid and other rare conditions: Rhinoscleroma, Kraurosis and Leukoplakia Vulvæ.

I. **Scars** and atrophy may follow several skin diseases, such as lupus erythematosus, syphilis, leprosy, radio-dermatitis, lichen planus, hydroa æstivale and xeroderma pigmentosum. Scars may result from burns, wounds, or infiltrating or suppurating eruption in which there has been an ulcer or a loss of substance. If deformity or loss of mobility results, plastic operations are called for; but much can be done in young patients by means of persevering massage with oily substances.

II. **Atrophoderma** (Atrophy of the Skin) occurs as: (*a*) Atrophy of the entire cutaneous covering is common in old age. (*b*) Primary diffuse atrophy begins on the limbs and may extend to the body. The skin is shiny, wrinkled, lax; the subcutaneous tissues atrophy. The cause is unknown. (*c*) Lineæ albicantes is a term applied to the atrophic streaks found on the abdomen and breasts after pregnancy, over the hips and other parts when a stout patient has been reduced, and in obesity due to pituitary deficiency. Striæ atrophicæ may also occur after fevers, especially pneumonia and typhoid. (*d*) In macular atrophy small spots appear, with crinkled, loose skin; they may follow syphilitic or tuberculide papules. A form without known cause shows bladder-like patches, rose or white, into which the finger can be pushed, owing to the lack of elastic tissue (anetodermia). (*e*) *Unilateral atrophy* is met with in Hemiatrophy Facialis (§ 857), which is of nerve origin. (*f*) Atrophy may occur with scleroderma. (*g*) *Insulin Fat Atrophy* involves the subcutaneous fat: it is liable to occur in local areas at the site of repeated insulin injections.

III. **Scleroderma** occurs in two clinical forms: (*a*) Localised (or morphœa); (*b*) diffuse.

(*a*) Localised Scleroderma (Synonym: Morphœa) is a disease consisting of one or more localised ivory patches or bands of sclerosed skin with, in the earlier stages, a congested lilac border or telangiectases. The guttate variety may be atrophic with a rose or lilac border (*White Spot disease*). There are few or no subjective reactions, but the tactile sensation is diminished. Some cases undergo spontaneous resolution in the course of years. The favourite situations are the face, neck, and beneath the breast. There is a tendency to symmetry. The position of some patches appears to correspond with the cutaneous distribution of a posterior nerve root. Women are more often affected, and especially in the first half of life. Beyond the disfigurement and contraction the patient suffers but little inconvenience.

(*b*) Diffuse Scleroderma starts insidiously, often symmetrically, usually affecting first the upper part of the body. The skin becomes smooth, glossy, thick, like parchment or wax in its substance. This progressively increases until the parts become completely hidebound and immobile. The face in such cases wears a smooth, expressionless aspect. Pigmentation may be present and extensive. Fissures and ulcers form and rigidity of the parts involved leads to deformities. Death from some intercurrent malady usually follows. Many degrees of severity are met with. The disease may be stationary for years, and in some the condition only produces liability to cold and to various superadded skin lesions. In the form known as **sclerodactylia** the disease begins with pallor and shrinking of the extremities, as in Raynaud's disease; atrophy and stiffening follow and spread upwards.

Treatment.—Hot air baths and local massage with oily applications are very helpful. Mild generalised scleroderma often improves under thyroid and œstrin. The constant current, electrolysis, radiant heat baths, diathermy and fibrolysin aid the localised form. Vitamin D holds promise.

IV. **Sclerema neonatorum** appears at or soon after birth, as hard, shiny, sometimes livid swellings, usually symmetrical, on legs, thighs, buttocks, back, arms and cheeks. They are due to solidification of the fat, owing to unknown causes; there are also crystal deposits in the tissues. Similar swellings appear in marasmic infants some

weeks or months old. Both conditions have been confused with scleroderma. In some cases the swellings disappear spontaneously; in others there is a fatal issue.

V. **Scleredema adultorum** (Buschke) affects chiefly the skin of the face and neck, with swelling and induration, due to swollen collagenous bundles. It follows a febrile state (throat, influenza) and tends to spontaneous recovery. The disease has been mistaken for scleroderma, but the history of a preceding febrile malady is distinctive.

VI. **Keloid** consists of a fibromatous deposit in the skin occurring occasionally in unaffected skin, but chiefly in old cicatrices, especially after burns. The lesion appears as a small firm nodule, of a crimson or pinkish colour, which slowly enlarges by means of tentacle-like processes. At first it is raised above the skin level. A **hypertrophic scar** does not spread beyond the region of the original scar. If excised, keloids immediately recur. The negative pole of a mild constant current, iodine ionisation, fibrolysin injections, radium, thorium X and X-rays have succeeded in early cases. Old, hard keloids are more resistant.

Acne Keloid (Syn.: Dermatitis Papillaris Capillitii) affects the follicles of the nape of the neck, a slow pustular affection, resulting in keloid formation. Epilation, ung. hyd. ammon. and X-rays in later cases give the best result.

Rhinoscleroma is a chronic inflammatory affection characterised by the development of hard, circumscribed plaques in the skin and mucous membrane, most commonly of the nose and naso-pharynx, due to a specific bacillus. The bones and cartilage may be involved. X-ray treatment is indicated .

Kraurosis Vulvæ affects the mucous membrane of the external genitals in elderly and in castrated younger women. Gradually the parts atrophy and shrink; cracks and fissures may follow. Telangiectases form near the urethra and on the vulva; sometimes these recur, with at the same time sore patches in the mouth. Urethral infection and vaginal discharge may be partly causal. The atrophy and contraction are aided by pelvic diathermy and œstrin.

Leukoplakia vulva shows milky white raised patches. Four conditions—lichenification, chronic eczema, kraurosis and lichen planus—are often wrongly labelled leukoplakia. As leukoplakia is a precursor of malignant disease early excision or diathermy coagulation should be performed.

GROUP IX. PIGMENTARY AND VASCULAR ALTERATIONS

§ **652.** Alterations of colour depend mainly upon the condition of the vessels and the amount of pigment in the skin. In healthy persons, exposure to sunlight, direct or artificial, leads to pigmentation of the skin. Pigmentation of the buccal mucous membranes is seen chiefly in Addison's disease.

A *diminution* of pigment occurs in two conditions: (1) **Albinism,** a congenital condition in which there is deficiency or absence of pigment in the skin and its appendages, and in the iris and choroid; and (2) **Vitiligo.**

Vitiligo (Syn. Leukoderma) shows white depigmented areas surrounded by increased pigmentation. The patches are oval or round, usually of symmetrical distribution, affecting any part, but especially the face, arms and trunk. As the white regions grow and adjacent patches join, the surrounding hyperpigmented zone becomes conspicuous.

The *diagnosis* is usually simple because of the concave and polycyclical margin of the pigmented zone. *Syphilitic leukoderma* which affects the neck has a more reticular appearance. The sensory changes in *leprosy* differentiate it from vitiligo.

Etiology.—Vitiligo affects both sexes, at any age, rarely under ten, and usually begins before thirty. It has been associated with alopecia, scleroderma, syphilis, Graves' disease and various organic nervous diseases such as subacute combined degeneration, and with vertebral disease involving the nerve roots. Septic foci have sometimes appeared to be causal.

Prognosis.—The disease extends slowly for years, but often recovers eventually.

Treatment usually consists in making the whiteness less conspicuous by applying a dark colour over the patches. Good results follow painting with 10 per cent. oil of bergamot in alcohol and exposing to ultra-violet light. Mercuric chloride lotions may be tried, as for freckles (see below). Gold salts have cured some cases. The general health should be treated—remove septic foci, and give abundant nutrition, also vitamin therapy with the whole B. complex. B. Sieve had success with *p*-aminobenzoic acid.

a. Large areas or a *generalised* increase of pigment occurs in (1) arsenical and silver pigmentation ; (2) Addison's and Graves' disease ; (3) abdominal tuberculosis, cancer and other growths ; (4) cardio-vascular disease ; (5) bronzed diabetes ; (6) constipation ; (7) melanotic sarcoma ; and (8) acanthosis nigricans ; (9) pernicious anæmia. In these the pigmentation is subordinate to other symptoms.

b. A *localised* increase of pigment or alteration in colour occurs in :

I. Chloasma.
II. Lentigo (freckle).
III. Pityriasis versicolor.
IV. Telangiectases and Nævi.
V. Purpura.
VI. Urticaria pigmentosa.
VII. Carotinæmia.
VIII. Xeroderma pigmentosum.
IX. Xanthoma.
X. Morphœa alba and nigra.
XI. Ochronosis.
XII. Leprosy.
XIII. Von Recklinghausen's disease.
XIV. Mongolian spot.

I. **Chloasma** occurs in single or multiple patches of diffuse discoloration on various parts of the body, varying in shade from a light yellow to a deep brown. 1. It is met with most frequently in pregnancy or uterine disease, and its most usual position is on the face and round the nipples. 2. It occurs in association with malaria, cancer, senile atrophy, rheumatoid arthritis, hepatic and pancreatic cirrhosis, lymphadenoma, abdominal tubercle or cancer, and exophthalmic goitre. Pigmentary syphilide may take this form, usually seen on the neck. 3. *Chloasma traumatica* is the pigmentation beneath the garters, or around the waist with tight corsets, after prolonged scratching, with pediculosis and lichenification, and after sinapisms, blisters, etc. In this category may be included the pigmentation which follows chronic eczema, friction, syphilis, lichen planus, psoriasis, X-ray or other cause of long-continued dilatation of the skin capillaries. 4. *Chloasma caloricum* is the reticulated pigmentation due to sun and wind, or to heat, as on the shins of women who sit over the fire.

II. **Lentigo** (Synonyms : Freckles, Ephelides).—Freckles are multiple, circumscribed, small flat pigment spots on the portions of the body exposed to light. Hydrarg. perchlor. ½ per cent. in alcohol may be tried cautiously ; paint on twice daily till scaling ensues. Or touch with pure phenol, wiping it off with spirit when the part whitens. In old people pigmented patches of all sizes may appear, the so-called "liver spots." In pituitary deficiency, dark spots are often seen.

III. **Pityriasis Versicolor** (Synonym : Tinea Versicolor) is a fungus infection of the horny layer, due to the *Microsporon furfur* (Fig. 150). It appears upon the trunk, especially the chest and sternum, as variously sized, irregularly shaped, dry, scaly, yellow-brown coloured patches, easily scraped off.

Treatment.—Lentigo and chloasma are treated with strong mercurial lotions (see above), but are obstinate. The general health requires attention in chloasma For pityriasis versicolor cleanse vigorously with a hard brush and soap and apply ung. sulph. or a lotion of sodium hyposulphite (gr. 60 to the ounce). The underclothing must be disinfected.

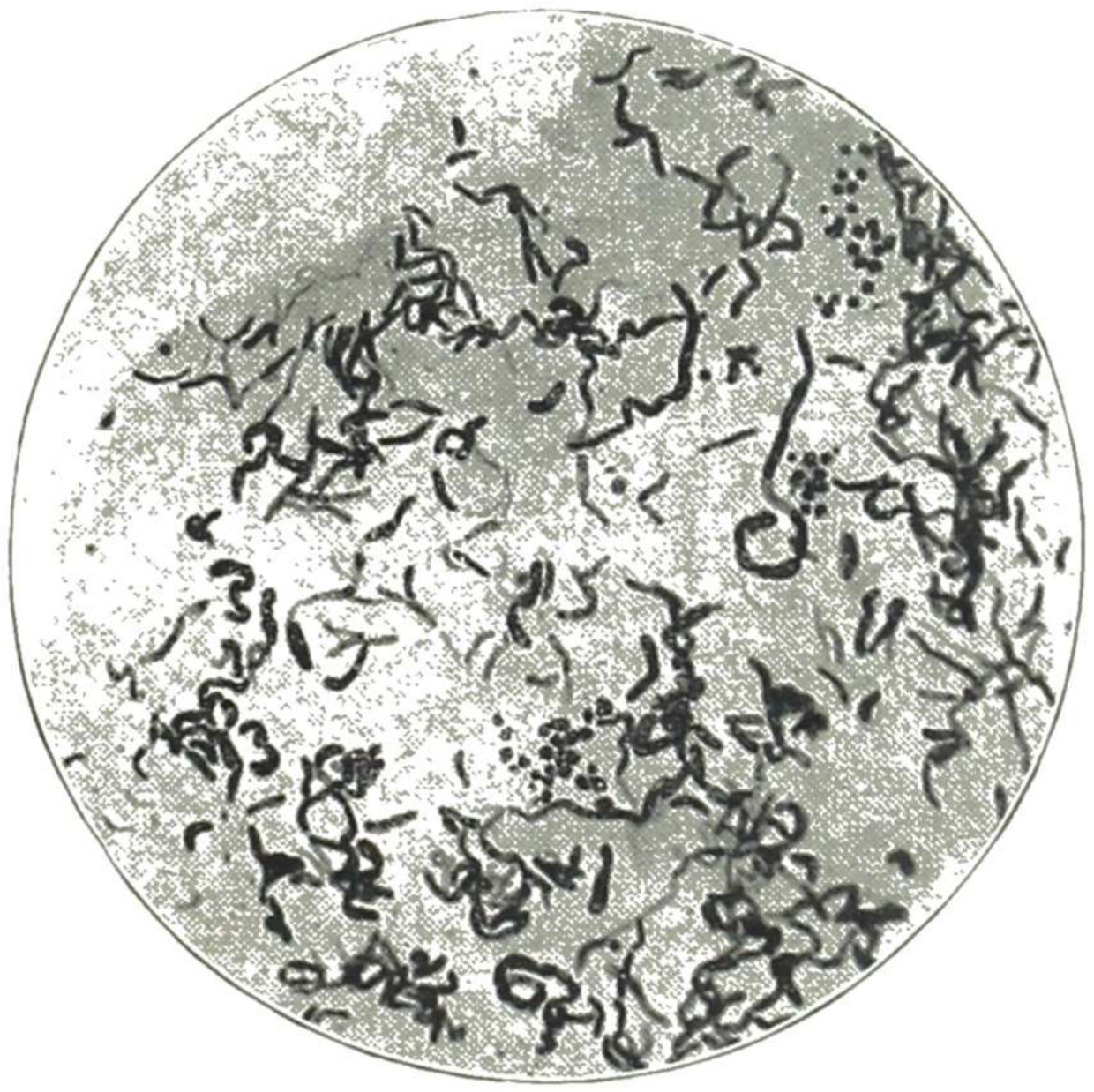


FIG. 150.—MICROSPORON FURFUR, the fungus of PITYRIASIS VERSICOLOR, × 50.—Note branching irregular mycelium and constellations of spores. Gram's Stain.

IV. **Telangiectasis** is a localised dilatation of a skin vessel. It is seen with some skin diseases, such as lupus erythematosus, rosacea, and dermatomyositis. It also occurs with certain diseases of the liver, kidney and heart. **Multiple hereditary telangiectases** occur as a familial and hereditary malady transmitted by male or female to both sexes. There are multiple small nævi which may bleed profusely from mucous membranes. **Schamberg's Disease** shows a fine network of vessels or pin-point purpuric patches, chiefly on feet and legs. The cause is unknown. Later, these are replaced by pigmentation.

Nævi or Birthmarks are congenital abnormalities in the skin and underlying tissue, in which one element is over or under developed—vessels, pigment, sebaceous glands or horny layer. They are usually seen at birth, sometimes not till childhood or puberty. (*a*) Vascular nævi (angiomata)—(i.) Capillary vessels extending in spidery superficial telangiectases from a central point (*N. Araneus*); (ii.) flat red purplish patches of varied size, due to capillary dilatation, the *Portwine* mark (*N. flammeus*); (iii.) small, slightly raised patches, the so-called "strawberry marks" which may be associated with (iv.) the *cavernous nævus*, a spongy swelling involving both the skin and the subcutaneous tissues.

(*b*) The non-vascular nævi, **Moles,** may be pigmented or non-pigmented. *N. spilus* is a soft raised swelling, usually pigmented. *N. pilosus* is covered with hairs; it may be small or extend over a large area. *N. verrucosus* is often pale, of any size, warty or papillomatous in appearance; sometimes occurring in long streaks down a limb: *N. unius lateralis.* Nævi may also be due to dilatation of the *lymphatics*

Prognosis.—Most of the vascular nævi respond to treatment; they are not pre-malignant. Moles, especially when bluish black, may become malignant when irritated by friction or by inadequate methods of destruction. One type, the nævi-carcinoma, is particularly dangerous; metastases rapidly spread, with fatal issue.

Treatment.—*N. araneus* and *telangiectases* are readily destroyed by electrolysis. The *portwine mark* has had many disappointing methods; recently Thorium X gives good promise—1200 to 2000 units to the c.c. administered in varnish once a month over a long period of time. The *strawberry mark* responds to CO_2 snow; but of recent years it is advocated that no treatment be given, as they usually go spontaneously. *Mixed* and *cavernous* types may be excised, X-rayed or injected with sclerosing agents. Ordinary moles are removed by electrolysis; large verrucose moles are best dealt with by diathermy fulguration or surgery.

§ 653. V. Purpura consists of dark, abrupt-edged purple spots due to extravasations of blood into the skin. The patch does not fade on pressure.

There is extravasation of blood through the walls of the capillaries; it is a disease of the capillaries rather than of the blood. Normally the blood platelets (thrombocytes) block any intervals in the endothelial lining of the capillaries, and so a diminished platelet count is often associated with purpura. *Causes:* Purpura used to be classified under four main groups: (*a*) *P. Simplex*, a mild and frequently recurrent type; (*b*) *P. Hæmorrhagica*, severe and often associated with a low blood platelet count (thrombocytopenia); (*c*) *P. Rheumatica*, a variety with pains in the joints, due to small hæmorrhages into them; it has no relation to acute rheumatism; (*d*) *Henoch's purpura*, with bleeding into the intestinal wall, causing swelling, melæna, and abdominal colic (§ 584). A causal grouping is (*a*) *Infective:* Associated with (i) acute specific fevers, hæmorrhagic forms of measles, scarlet fever, etc., in severe types, often fatal. (ii.) Typhus, small-pox, cerebro-spinal fever ("spotted fever") and spirochætosis ictero-hæmorrhagica. (iii.) Septicæmia, especially hæmolytic streptococcal septicæmia; other organisms can act similarly, *e.g.*, the malarial parasite and the tubercle bacillus in miliary tuberculosis. (iv.) Malignant endocarditis, partly due to infection but chiefly to minute emboli. (*b*) *Toxic:* (i.) Bacterial toxins, as with a septic focus, especially if a hæmolytic organism is present. (ii.) Endogenous toxins, such as those associated with jaundice, diabetes mellitus, chronic nephritis and gout. Any condition with defective liver function is liable to produce purpura. (iii.) Exogenous poisons, such as snake venom and antitoxic sera. (iv.) Drugs in susceptible people, especially salicylates, antipyrin, phenacetin, cubebs, quinine, iodides, phosphorus, mercury, alcohol, the arsenic, benzol and sulphonamide compounds. (*c*) *Blood diseases*, such as leukæmia, aplastic anæmia, lymphadenoma, pernicious anæmia, and primary thrombocytopenia. In these the platelets in the blood are diminished, but the tendency to purpura is not always greatest when these are lowest. The hæmorrhages may also occur from internal surfaces, and so bleeding from the kidneys, trachea, nose, alimentary tract, as well as retinal hæmorrhage, is common. In the acute forms of leukæmia purpura is marked. In aplastic anæmia the thrombocytes fail to be manufactured by the bone marrow in proportion to its failure to form red and white cells. In lymphadenoma and pernicious anæmia purpura is not a prominent symptom: as the blood regenerates with liver therapy in pernicious anæmia, the purpura ceases as the thrombocytes rise. *Primary thrombocytopenia* has a severe hæmorrhagic tendency; the hæmorrhages may be large and widespread, or may only occur spontaneously from one mucous surface at a time; patients can become exsanguinated in a few hours. A secondary anæmia occurs, proportional to the degree of bleeding, and the thrombocytes are low (*e.g.*, 10,000 as compared with normal 200,000 to 250,000). The tendency to bleeding, sometimes familial, is shown by the *capillary resistance test:* when a ligature is tied round the arm a profuse purpuric rash occurs within five or six minutes below the ligature. The bleeding time is prolonged, but the clotting time is normal. The spleen is rarely enlarged, but splenectomy causes an immediate cessation of hæmorrhage (even during the operation), with a rise in thrombocytes. In familial cases splenectomy usually fails. (*d*) *Cachectic conditions*, *e.g.*, marasmus, carcinomatosis, old age and advanced tuberculosis. Advanced disease of the liver comes under this category. (*e*) *Senile purpura*, after the age of 60, follows minor traumata: recurrent attacks affect the outer sides and extensor surfaces of the forearms, and sometimes the face. (*f*) Purpura is said also to occur in certain *nervous diseases*, syringomyelia, tabes.

The *Diagnosis* of purpura is easy, but difficulty lies in ascertaining its cause.

The *Prognosis* is extremely grave when associated with the specific fevers, or with a high temperature. P. simplex usually results in recovery in a few weeks. P. rheumatica is rarely fatal, though it may last for months or years, and may recur; its complications may be serious.

The *Treatment* is that of the cause. Rest in bed is indicated whilst the rash is still appearing. Liver extract is of value only in cases with pernicious anæmia.

Horse serum or human serum in 10-c.c. doses decreases the hæmorrhagic tendency in most cases, and blood transfusion may be of great value. Splenectomy is indicated in primary thrombocytopenia, if there is no family tendency. With liver disease, Vitamin K should be tried; ascorbic acid (40 to 150 mgms. daily) may help.

VI. **Urticaria Pigmentosa** is a chronic condition with spots of brown pigmentation; when rubbed, these develop wheals. The disease starts in early childhood; it may cease spontaneously about puberty, but it more frequently continues for many years.

VII. **Carotinæmia.**—A yellow pigment (carotin) may occur on the palms and naso-labial folds, even the whole body in marked cases, but not on the sclera (which distinguishes it from jaundice). It is caused by excess of carrots and other lipochromic foods.

VIII. **Xeroderma Pigmentosum** is a rare disease of a chronic progressive character starting on the face in early childhood, often in members of the same family, and marked by small dark freckles, with subsequent atrophy and contraction of the skin, and telangiectases. There is a tendency to malignant new growth, both in the skin and the internal organs. The distribution is universal; the contraction gives rise to eversion of the eyelids and other orifices. It usually terminates in death before the age of twenty-two. The only treatment is protection from light.

IX. **Xanthoma** (Synonym: Xanthelasma) is of gradual onset, with yellowish flattened patches which usually occur on the eyelids; or as nodular deposits widespread on limbs or trunk, varying in size from a millet-seed to a bean, or larger (cp. § 647). It is associated with disordered fat metabolism and glycosuria, hence often with cholesterol excess. *Xanthoma diabeticorum* shows a rapid onset of red papules with yellow tops, occurring chiefly on the buttocks, knees and elbows. Diathermy fulguration and electrolysis remove the lesions; or they may be excised. In diabetic cases insulin and suitable diet succeed.

X. **Morphœa Nigra** and **Morphœa Alba** are names which denote patches of localised scleroderma (§ 651), attended by excess or deficiency of pigment. With scleroderma pigmentation may be widespread.

XI. **Ochronosis** is characterised by blackening of the cartilages (visible in the ears), ligaments and fibrous tissue, and by pigmentation. The sclerotics and extensive areas of the skin may show black pigmented patches. There may be arthritis, and alkaptonuria (§ 386); in the acquired type there is carboluria, due to prolonged use of phenol.

XII. Leprosy (§ 647).—Patches of pigment and white spots may occur in the early stage of anæsthetic leprosy, and dark spots occur, especially on the face, in the early stage of nodular leprosy.

XIII. Von Recklinghausen's disease is dealt with in §§ 647 and 803.

XIV. The **Mongolian spot** is a blue nævus, a congenital condition found on the lower sacral region in dark races. It usually disappears before the age of five. **Blue Nævi** are multiple and persist to adult life.

GROUP X. DISORDERS OF THE SWEAT

§ **654. Anidrosis,** or deficient perspiration, occurs with hypothyroidism, the senile skin and scaly skin diseases. **Hyperidrosis** is an excessive secretion of the perspiration. *General* hyperidrosis occurs with excessive warmth, deficient ventilation, low vascular tone, the crisis in fevers, malaria, tuberculosis, acute rheumatism. After hot or stimulating foods it is usually more localised, on the face or brow. *Localised* hyperidrosis affects chiefly the feet, palms, axillæ and the ano-genital area; when mixed with the fatty acids of the sebaceous secretion it gives off a pungent odour. *Unilateral* hyperidrosis occurs as a reflex through cholinergic nerve fibres, and hence may be seen with pneumonia, aneurysm and such nervous conditions, as peripheral facial paralysis.

Bromidrosis is offensive sweat, due to keratin decomposing with staphylococcal growth in alkaline perspiration. When affecting the feet or axillæ the odour renders the person disagreeable to his companions.

Chromidrosis is coloured perspiration. This can be caused by an external dye; by lepothrix (Fig. 156) of the pubis or axillæ causing red or yellow discoloration; or by B. pyocyaneus producing a blue tint. Red sweat is often due to blood exuding.

The *Treatment* of hyperidrosis consists in using 10 per cent. aluminium chloride or 1 to 5 per cent. sod. hexametaphosphate in water, dabbed on several times a day. Atropin gr. $\frac{1}{120}$–$\frac{1}{60}$ may be given hypodermically. For bromidrosis, especially of the feet, the stockings should be changed several times a day, and put into a saturated solution of boracic acid before being used again. Dusting powders relieve the slighter forms. Good applications are: chromic acid (5 per cent.), pure formalin used for four successive days a month, and diachylon plaster. If glycerin or a glucose solution is painted over, an acid reaction is produced, and no odorous decomposition occurs. In severe hyperidrosis, X-rays succeed.

GROUP XI. DISEASES OF THE SCALP AND HAIR

§ 655. In a volume on general medicine it is impossible to consider in detail all the diseases of the scalp and hair.[1] Those commonly met with will be briefly summarised.

I. Ringworm.
II. Favus.
III. Pityriasis.
IV. Alopecia.
V. Canities.
VI. Pediculosis Capitis.
VII. Hypertrichosis.
VIII. Trichoptylosis.
IX. Trichorrexis Nodosa.
X. Lepothrix.
XI. Monilethrix.
XII. Trichotillomania.

I. **Ringworm** (Synonyms: Trichophytosis Capitis, Tinea Tonsurans) is due to the invasion of the hair by a fungus (see Figs. 151, 152.) The common form is a microsporon fungus of human origin, seen in children. It can spread, when untreated, over most of the scalp. It starts as an insignificant, semi-bald, pink patch, usually overlooked, and when first seen by the physician is a white, scaly, circular patch on the scalp of children, with *broken hairs*. A few patches may occur on the glabrous skin. In another common form there are usually several patches, and often discoid or annular red lesions on the smooth skin; this is of animal origin. Adults may be infected, and recurrence from domestic pets is frequent. A trichophyton animal infection shows severe inflammatory reaction: kerion on the scalp, sycosis on the beard (§ 644). A rare form, "black dot" ringworm, looks like alopecia areata, but has black dots, which are infected hairs broken off at skin level.

Diagnosis.—The broken hair stumps are characteristic. Dabbing chloroform over the part reveals the diseased hairs, looking whitened like hoar frost. The presence of fungi is seen when broken hairs and scales are placed on a slide with a drop of liquor potassæ, and examined under a microscope (see Figs. 151, 152). Choose only infected hairs; "black dots" may have to be dug out with a needle or a comedo extractor. A culture must always be made; on that report depends the choice of

[1] See *The Hair and Scalp*, by Agnes Savill. Edward Arnold. 1951.

treatment. Wood's light reveals a greenish beaded fluorescence with *M. audouini*. Trichophyton infections and animal fungi do not fluoresce. Whether large or small spored, they cause an inflammatory reaction and often invade the smooth skin.

Etiology.—Infected hairs and scales are carried by brushes, combs, pillows, linings of hats. Ringworm therefore spreads rapidly in families,

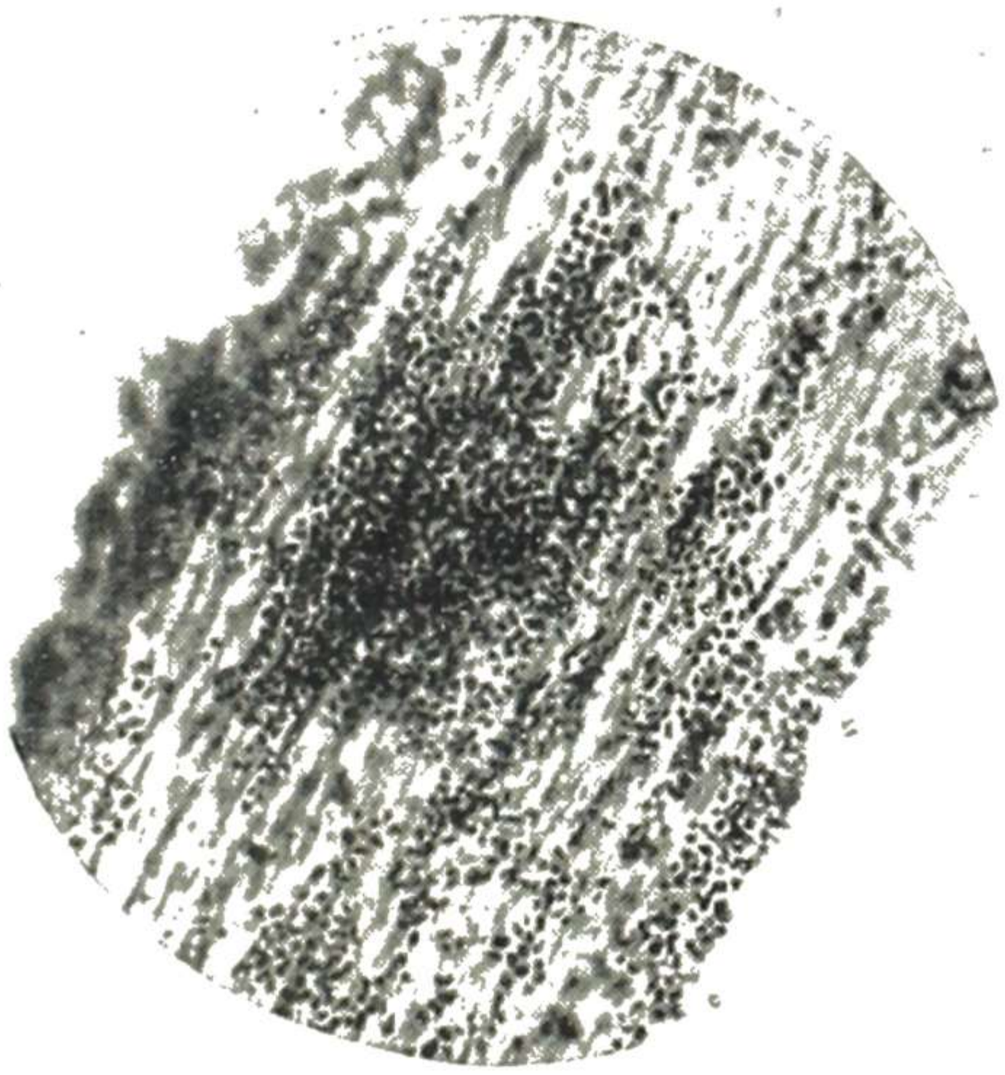


FIG. 151.—SMALL-SPORED RINGWORM (Microsporon Audouini).

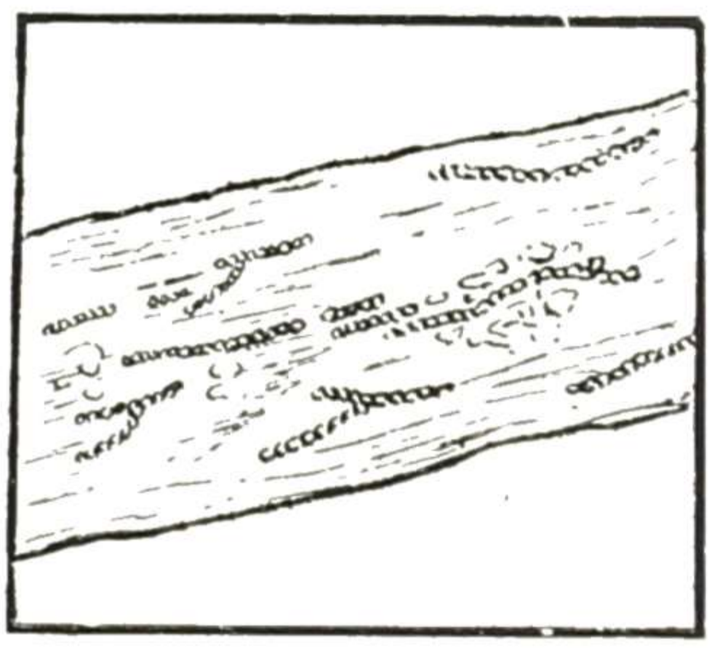


FIG. 152.—LARGE-SPORED RINGWORM (Megalosporon). — Mycelium within the hair showing dichotomous chain. Drawn by Dr. I. Muende. × 400.

schools and institutions. Dogs, cats, horses and cattle are unsuspected sources of infection in both children and adults. Sabouraud's work on fungi has recently been modified by Emmons. The main genera are microsporon and trichophyton. *M. audouini* is the chief fungus of human origin found in children under fourteen. *M. canis* is also now very common in children and adults, being couveyed from domestic pets. Trichophyton fungi may invade the hair, surround it, or be present both in and outside the shaft; endothrix, ectothrix and endo-ectothrix.

Prognosis.—*M. audouini* usually cures spontaneously at puberty. *M. canis* does not itself last long, but re-infection from apparently healthy pets is usual. Forms with severe inflammatory reactions, such as kerion, tend to spontaneous cure.

Treatment.—The head should be shaved every ten days, and a linen cap worn which can be renewed every two or three days. Epilation is necessary. When the disease is not widespread, an efficacious lotion is: picric acid, gr. 7, camphor and rectified spirit, āā fl. oz. $\frac{1}{2}$. This is painted on twice daily; after three weeks the hairs are loosened and can be gently pulled out. *M. audouini* occurring long before puberty requires epilation by X-ray if a skilled radiologist is available. For small patches near puberty and for *M. canis* infection, many kinds of fungicidal ointments are used, such as ung. hyd. ammon. chlor. 5 per cent., or iodine 1 per cent.

or sulphur 5 to 10 per cent. New fungicides are on trial, such as undecylenic acid in a base which penetrates to the root of the follicle. As inflamed lesions tend to spontaneous cure, use mild antiseptics and soothing applications; gently pull out the infected hairs. Watch and prevent re-infection from pet animals.

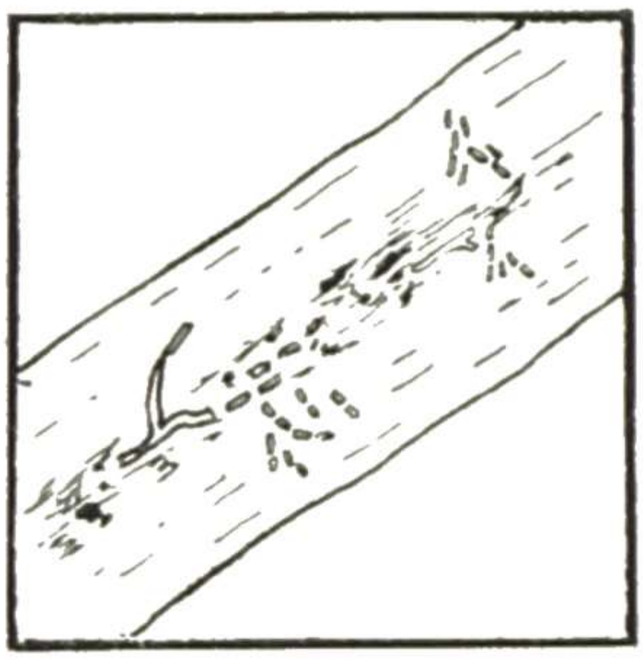


FIG. 153.—FAVUS FUNGUS.—Groups of irregular-sized spores within the hair; mycelium irregular in thickness and arrangement. Drawn by Dr. I. Muende. × 450.

Treatment by a single dose of thallium acetate is little used now. After both X-ray and thallium, till the hair falls, the scalp must be treated daily with a fungicide, such as 10 per cent. sulphur ointment, and iodine on alternate days. As the hair begins to grow again, great care must be taken that no diseased stump is left which could re-infect the new hair.

II. **Favus** occurs on the head and the body. It is rare in England. The characteristic irregular yellow crusts, with yellow, cup-shaped tops (scutula), and the mousy smell, render the diagnosis simple. The microscope reveals the spores and the mycelium of the *Trichophyton schönleinii* (Fig. 153). The culture is diagnostic. The disease develops slowly, is accompanied by redness, and leaves atrophic scars. It is less contagious than ringworm, but more intractable. It may spread to the body. Epilation is necessary.

III. **Pityriasis Sicca** (dandruff) used to be called seborrhœa sicca, from a mistaken idea that it was due to dried or altered oily secretion. Dandruff occurs in patches or generalised over the scalp, as white, dry scales between which the bottle bacillus grows freely. When this happens in those of the "seborrhœic diathesis," it is complicated by oily seborrhœa, with loss of hair, chiefly on the vertex and temples. Or there may ensue a degree of exudation, leading to the formation of yellow crusts—the *pityriasis steatoides* of Sabouraud. Or reaction occurs, a little serum exudes with staphylococcal invasion, and circinate erythema develops—*pityriasis circinata* (usually called seborrhœic dermatitis, § 627). In many cases there is a temporary loss of hair.

The *treatment* consists in washing the head once or twice a week with equal parts of soft soap and spirit, and rubbing in every night a lotion or ointment containing mercury, tar or sulphur (F. 104 to 106). Treatment must be prolonged, and recurrence is usual.

IV. **Alopecia** (Baldness) may be congenital or acquired, partial or complete, diffuse or in patches. Any bald patch should be examined to find if the skin is (A) normal or (B) atrophied.

A. The following causes should be investigated :—

1. Alopecia areata.
2. Seborrhœa oleosa, especially common in men.
3. Senile baldness in its early stage.
4. Impetigo and other superficial pustular affections.
5. Secondary syphilis.
6. Baldness over tumours, nævi, moles, etc.
7. Rare forms of ringworm.
8. Trichotillomania.
9. Monilethrix.

B. If the skin of a bald patch shows ATROPHY or SCARRING, consider :—

1. Lupus erythematosus.
2. Traumatism.
3. Folliculitis and other pustular conditions such as Kerion, Boils and Carbuncles.
4. Alopecia after the menopause.
5. Morphœa.
6. Herpes zoster.
7. Favus.
8. Pseudo-pelade.
9. Folliculitis decalvans.
10. Lichen spinulosus and plano-pilaris.
11. Ulerythema ophryogenes.
12. Lupus vulgaris and other nodular conditions.
13. Radiodermatitis.

C. If there is an EXTENSIVE area of BALDNESS, it is probably due to one of the following causes :—

1. Alopecia areata, at a late stage.
2. The advanced stage of seborrhœa oleosa, the usual baldness of men.
3. Baldness after X-ray or thallium (therapeutic epilation dose).
4. Diffuse hairfall after fevers, operation, shock, myxœdema and other causes of lowered health.
5. Congenital atrichia.
6. Ichthyosis.
7. Ichthyosis follicularis.
8. The late stage of several of the causes of baldness with atrophy.

A. *A common cause of* BALD PATCHES WITH NORMAL SKIN *is* ALOPECIA AREATA.

1. **Alopecia Areata** is a form of baldness occurring in circular patches which are smooth and white. Each patch slowly increases peripherally, and at the margin short diseased hairs may be seen, which are so characteristic as to enable us to identify the disease. The free end is of normal thickness, but presents a ragged fracture where the hair has been broken off ; from this point the shaft gradually becomes thinner towards the root, which is extremely atrophied. Thus it resembles a mark of exclamation (!). The disease runs a protracted course, lasting, especially if untreated, for years. In course of time a few downy hairs begin to grow, white at first, but gradually becoming coloured. The disease is not contagious. The sympathetic endocrine balance is disturbed and permits the effect of some causal agent, such as reflex irritation from eyestrain, the teeth or nasopharynx (Jacquet), or infective foci in the tonsils or sinuses (Barber, Leslie Roberts). Any infection, especially syphilis (Sabouraud), any shock or worry, may upset the endocrine balance and precipitate an attack. In severe cases, eyebrows, eyelashes, and all the hairs on the body may fall (Alopecia totalis et universalis).

Treatment.—The patient must be warned that perseverance is necessary for a long period of time. The cause must be sought for and removed. For mild cases sulphur ointment and a weekly painting with iodine soon restores hair growth. Local and general applications of ultra-violet light are most useful. In obstinate cases success is often obtained with liquor epispasticus, or strong erythema doses with the Kromayer lamp. Many forms of counter-irritation can be used. Thyroid aids many cases ; pituitary extracts have been disappointing.

The other causes of bald patches without atrophy may be briefly summarised:

2. *Seborrhœa oleosa* begins in young men, with thinning of the hair of the temples and vertex, accompanied often by oiliness. It is the usual cause of baldness in men. *Treatment* is difficult and must be prolonged. Alkalies should be taken when the urine is very acid. Œstrin therapy aids some, but must be carefully watched. 3. In SENILE BALDNESS the natural loss of hair on the vertex may in extreme age show some atrophy. 4. The bald patches seen after impetigo and other SUPERFICIAL PUSTULES rarely last long. The history aids the diagnosis. 5. In SECONDARY SYPHILIS there is rapid loss of hair in small patches over all the scalp, causing a characteristic moth-eaten appearance. A similar alopecia may occur with neuro-syphilis. The history and other symptoms aid diagnosis, and regrowth returns with antisyphilitic remedies.

B. *The bald patches show* ATROPHY *or* SCARRING. When the chief eruption occurs on the body, the causes are described in other sections, under the chief symptoms.

In *favus* the yellow crusts, mousy smell and reddened scars lead one to examine the hairs, when the fungus is found. *Pseudo-pelade*, *folliculitis decalvans*, *ulerythema ophryogenes* and *lichen of the scalp*, are such rare forms of atrophied bald patches that they are distinguished with difficulty even by the dermatologist. Their course is chronic and slow; when they have continued for years, the entire scalp may be bald and cicatricial. *Lupus vulgaris* is very rare on the scalp and has characteristic nodules (§ 646). *Sarcoid* is a rare disease with nodules of varying size which spread with circinate margin; they may be absorbed or ulcerate, leaving fine scars (§ 647). *Gummata:* see § 646. In all cases with atrophy the baldness is permanent.

C. The AREA of BALDNESS IS EXTENSIVE.

1. In alopecia totalis there is a history of alopecia areata, with loss of hair in patches which have joined and produced baldness over the whole scalp; the skin is smooth and glossy. 2. Seborrhœa oleosa may cause extensive baldness by the age of thirty; a rim of thick hair is left on the occiput and just over the ears. 3. In the baldness due to an epilation dose of thallium or X-ray, the history renders the diagnosis clear. The hair should begin to return in six weeks. 4. The diffuse hairfall after fevers, childbirth, operation or shock, rarely leads to complete baldness. The *prognosis* is excellent if treatment is given early and carried out with perseverance. In myxœdema and other conditions with chronic lowered health the outlook is good, provided the cause can be removed. One cause of baldness, which may be complete, is congenital syphilis. This usually begins in childhood, and owing to the absence of other signs the diagnosis may be unsuspected. 5. In congenital atrichia the patient has been born without hair, or there may have been a slight down. The prognosis is serious; the hair may be induced to grow a little, but falls again. Occasionally it grows longer at puberty. 6. Ichthyosis of the head is known by the scaliness of the body; it usually begins in childhood. Keratosis affects the hair follicles of the scalp, eyebrows and eyelashes. 7. Ichthyosis

follicularis is very rare. 8. As mentioned in Group B, various causes of cicatricial alopecia may in the course of years involve a large part of the scalp.

Treatment of hairfall.—In order to bring about regrowth of hair, whatever the cause of the baldness, the circulation must be encouraged by local stimulation such as massage, ultra-violet light, and the persevering use of lotions or ointments with pilocarpine, sulphur, or rubefacients such as cantharides, ammonia and acetic acid. Where there is atrophy of the skin and hair follicles, no hair can grow again. The general health must not be neglected; often small doses of thyroid are effective, even in the absence of hypothyroidism. There is gathering evidence that follicular keratosis and ulerythema ophryogenes respond to intensive doses of vitamin A. Antisyphilitic treatment is given when indicated.

V. **Canities,** grey or white hair, is usually an evidence of advancing years. In other cases it may arise in association with overwork, sudden or prolonged grief, defective general health, or neuralgia. *Premature* grey hair, beginning before thirty, is usually hereditary. *Treatment* is directed to the general health. The scalp should be examined for any local disease which, though not causal, may expedite the loss of colour. Thyroid when otherwise indicated, does good. Provided that there is no septic focus, and that the endocrine and intestinal functions are normal, para-aminobenzoic acid (a constituent of the vitamin B complex) restores colour. It should be taken in divided doses, 100 mg. with meals three or four times a day (B. Sieve).

VI. **Pediculosis Capitis** presents the following features: (1) The pediculi (Fig. 154); (2) white specks on the hairs (the eggs or "nits"), which cannot be pulled off, by which they are distinguished from dandruff (Fig. 155); and (3) itching of the scalp. If the condition is untreated, there results pustulation with formation of thick crusts, matting of the hair, and enlargement of the occipital and even the cervical glands. Lethane in white mineral oil (semprolia) and 5 per cent. D.D.T. have replaced earlier

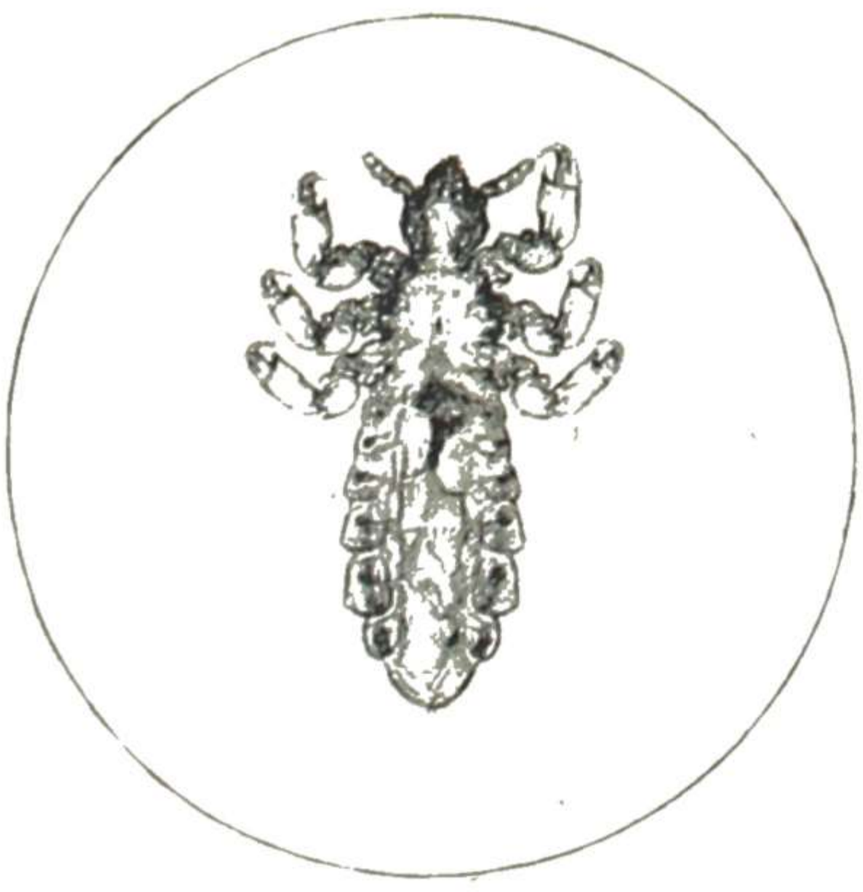


FIG. 154.—PEDICULUS CAPITIS × 10.—It differs from the pediculus corporis only in being shorter, and in its thorax and abdomen being more nearly equal in size (see § 620).

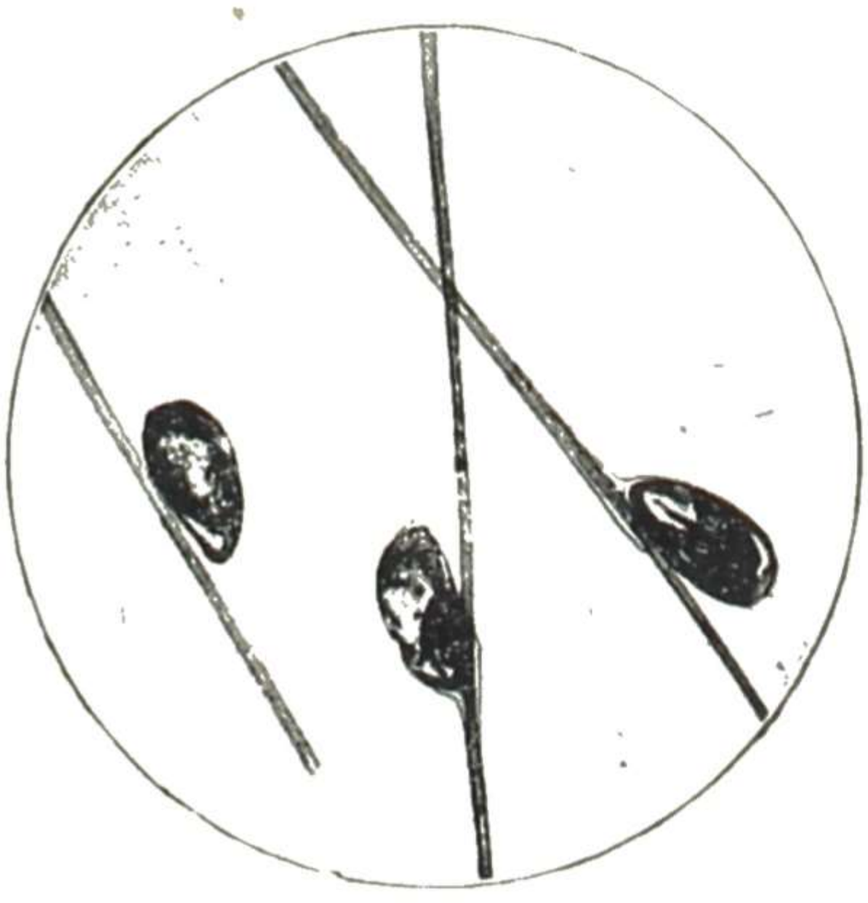


FIG. 155.—NITS (eggs) of PEDICULUS CAPITIS on hairs (magnified).

methods of treatment. Comb the hair thoroughly with a fine comb. The nits are dissolved by washing the hair with acetic acid or benzole.

VII. **Hypertrichosis** (Synonym : Hirsuties) is a growth of hair of the male type and distribution in women. It often occurs at the menopause ; earlier in life it may be associated with adrenal hyperplasia or tumour, Cushing's syndrome, or with arrhenoblastoma of the ovary (which is rare). Hair grows on the face, arms, legs, abdomen or chest. *Treatment* consists of the removal by diathermy or electrolysis ; this is expert work. Depilatory pastes, pumice stone, the razor and wax do not prevent regrowth but are valuable for extensive cases. X-ray treatment is efficacious, but is followed many years later by telangiectases and atrophy. Unilateral adrenalectomy in suitable cases of **virilism** enables the hair to be pulled out with little pain. Ovarian therapy is on trial.

VIII. **Trichoptylosis,** or splitting of the shafts, especially near the ends of the hairs, is often seen associated with deranged general health and local scalp disease.

IX. In **Trichorrhexis Nodosa** spindle-shaped grey swellings appear upon the hairs, due to localised splitting of the shafts. Microscopically, the nodes resemble two opposing brooms. It is due to traumatism, alkalies or dyes acting upon dry hair. It is often associated with trichoptylosis.

X. **Lepothrix** (Synonyms : Mycosis Axillaris, Trichomycosis Nodosa) is a disease affecting the hairs of the axillæ and genitals. The hairs are dry and knotty, due to adherent small yellowish concretions which may affect the whole length of the hair,

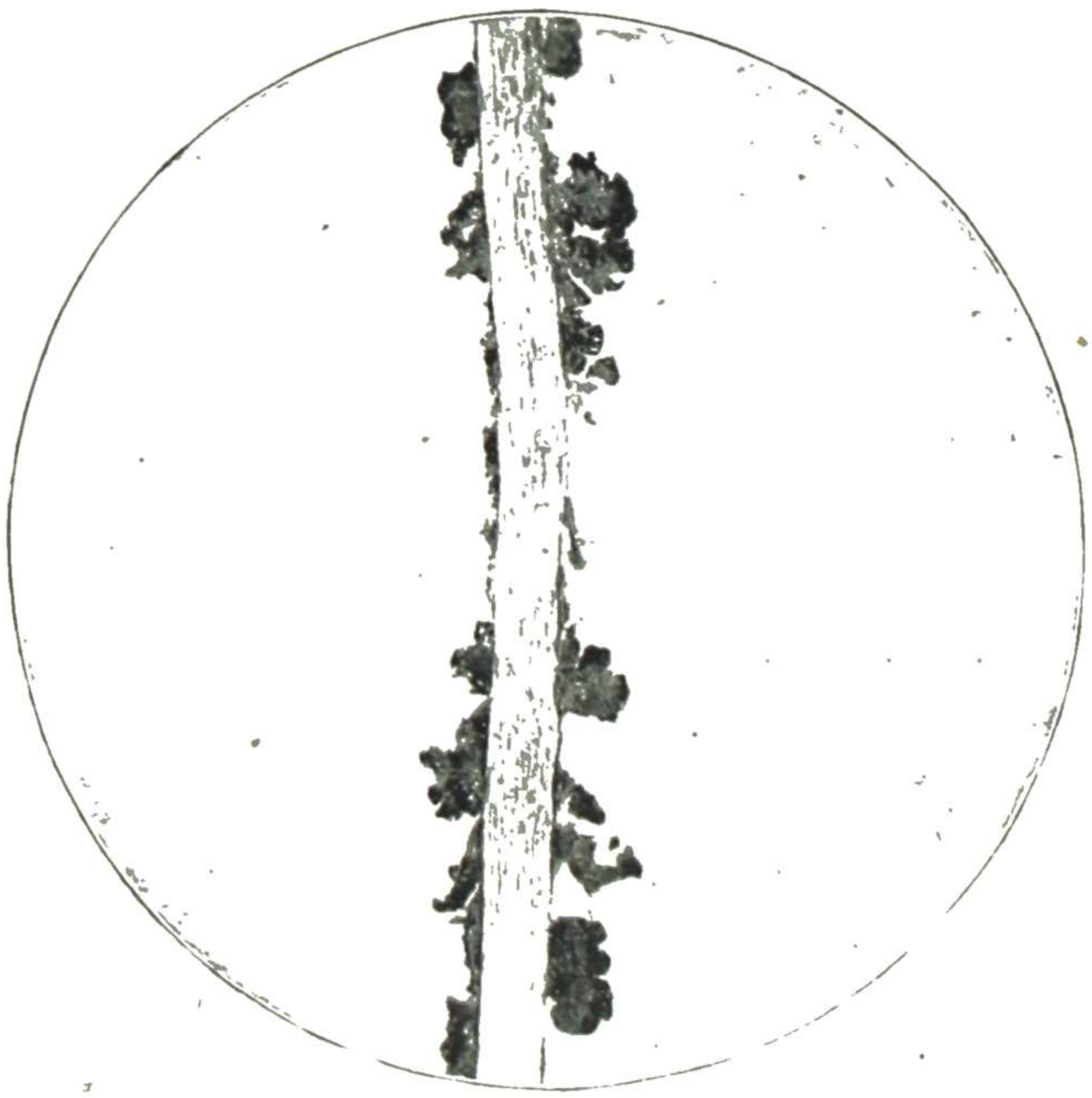


FIG. 156.—LEPOTHRIX.

but not the follicle, or may occur as separate nodules on a hair. Bacilli are found in these concretions, and the hair may be split longitudinally (Fig. 156). The sweat colours the garments yellow or brown (chromidrosis). Cleanliness and avoidance of tight-fitting clothes remedies the condition.

XI. In **Monilethrix** the hair shaft is dilated and narrowed alternately. The follicles, with short broken-off hairs, resemble Keratosis pilaris, and in a child the condition may at first sight be mistaken for ringworm. Microscopic examination shows the beaded state of the hair shaft.

XII. **Trichotillomania** is a nervous habit in which the patient continually pulls out the hairs from some region; a bald area is thus caused.

§ 656. General Remarks on Treatment.—Arsenic, bismuth, mercury and iodides in syphilis, iodides in other granulomata, antimony in leishmaniasis, and calciferol in lupus vulgaris are specific remedies. Ephedrine and adrenalin are used in acute urticarial conditions. When penicillin-sensitive staphylococci or streptococci are present, penicillin is particularly useful. The sulphonamide drugs are of use by mouth and *in situ*: severe general and cutaneous reactions have followed 0·5 G. thrice and 1 G. twice daily; in other cases an eruption has followed: erythematous, morbilliform, purpuric or œdematous, especially in parts exposed to sunlight.

It is not sufficient for purposes of treatment to diagnose a case as eczema, psoriasis, lupus, etc. For *local* treatment, we must recognise *the stage of the disease* and the *precise pathological process* before us. An ointment which would cure a chronic eczema may greatly aggravate an acute weeping one. Treatment therefore depends not so much upon the name which we give to an eruption, as upon the condition of congestion, swelling, scaling, thickening, discharge, itching, etc. The *method* of application of a remedy is of as much importance as its composition. The *idiosyncrasy* of a patient and the susceptibility of his skin to various remedies must be noted; what irritates the skin of one person is inert on that of another.

ANTIPRURITIC *lotions* are dabbed on the unbroken surface, and frequently renewed. Those commonly used are: phenol 2 to 4 per cent., liq. picis carb. 10 per cent., camphor and menthol ½ to 4 per cent., chloretone ½ per cent., chloral hydrate 2 per cent. For acute, congested and weeping surfaces, lotions with subacetate of lead, zinc and calamine are dabbed on freely, and allowed to dry. In chronic thickened eruptions, use *ointments* well rubbed in and covered with gauze or thin linen. In preference to lint and bandages, thin stockings with feet cut off can be used to keep in position dressings with ointments. Where there is oozing, lotions and *pastes* aid absorption of serum, whereas greasy ointments confine the exudation.

CRUSTS forming over regions soaked in serous exudation and pus must be removed before using remedies. Remove by applying lint soaked in oil, or a starch poultice. One teaspoonful of boric acid, four tablespoonfuls of cold-water starch (Orlando Jones's or Colman's rice starch); add cold water to make the consistency of cream. Pour on a pint of boiling water; stir constantly, until the starch bursts and a translucent jelly forms. Or pour the cream into the boiling water. When the jelly is cold, spread on cloth in a layer about half an inch thick; cover with muslin and apply to the part. The poultice can be used four times a day.

(1) *Sedatives* and *astringents* reduce hyperæmia, check exudation, and allay burning and throbbing. Those most used are zinc oxide and carbonate, lead, bismuth and ichthyol. When the acute stage has passed, add mercury and weak tar. Friar's balsam is useful for fissures near mucous orifices.

(2) *Reducing agents* are used for thickened, chronic eruptions. Named in order of strength, these are: wood and coal tar, carbolic, benzoic and salicylic acids, mercury, sulphur, resorcin and chrysarobin. Tar (strong or crude coal tar) is used in infantile eczema and certain types of thickened dermatitis; never over pustules. Over 6 per cent. salicylic acid is a keratolytic; it removes thickened horny layers and scales when used in ointment, collodion or a plaster.

(3) *Caustics* have a still more powerful action in removing thickened epidermis and scales. Liquor potassæ and soft soap are mild caustics used for this purpose before applying ointment. Strong caustics are pure carbolic, nitric and trichloracetic acids, and acid nitrate of mercury.

(4) *Dyes*, such as a 2 per cent. aqueous solution of gentian violet, are much employed, especially for staphylococcal infection, such as occurs with impetigo and eczematoid infective dermatitis. Paint over twice a week and cover with an inert powder.

(5) *Penicillin* is used for skin diseases due to penicillin-sensitive organisms, such as staphylococci and some strains of streptococci. Conditions responding to penicillin

are carbuncles, boils, the anærobic actinomycosis fungi, intertrigo, fissures and abscesses.

Superficial lesions are treated with a spray (500 units per c.c.), left uncovered, and applied thrice daily; or with a cream (200 to 1,000 units per G.) spread on with a sterilised blade two or three times a day. Most creams contain Lanette Wax SX, to which some skins are sensitive. Alternative bases are given in the British Pharmacopœia. Penicillin must be kept in a cool place, preferably a refrigerator. When lesions do not respond within a week, do not continue the application, lest penicillin resistant organisms form. *Deep-seated lesions* require large doses; the dosage is under continual revision.

Protective Measures.—The *paste*, an ointment made up with a large proportion of powder (*e.g.*, F. 75), is applied spread in a thick layer on butter muslin which is bound firmly on the part. It absorbs serous exudation. *Zinc Gelatine* melted in a warm bath, then painted over the diseased skin, gives: (i.) gentle compression and support, as in hypostatic congestion; (ii.) protection from air or friction while allowing healthy growth below; (iii.) means of applying remedies. Varieties are elastoplast, visco-paste, varicosan. Remedial drugs may also be added to a basis of gelatine, tragacanth or collodion.

Treatment by X-rays, diathermy, high-frequency current, ultra-violet rays, and carbonic acid snow requires special training in the use of the apparatus.

General Treatment.—A skin disease is an external expression of an internal disorder almost as often as it is a reaction to an external irritant. Hence certain eruptions clear up on removal of a septic focus, metabolic errors such as gout, constipation or other cause of toxæmia, or the source of protein sensitisation. Patients with acute and wide-spread eruptions should be kept in bed. When the individual's threshold of resistance is lowered, or he has (in other words) become sensitised to a poison, the removal of one septic focus may give only temporary relief, because another is soon formed. Desensitisation methods are: *Autohæmotherapy*: 5 to 10 c.c. of blood are withdrawn from the patient's vein and at once injected into the muscles of the buttock; this can be repeated every five days for five or six times. *Autoserum therapy* is used in dermatitis herpetiformis and some forms of eczema. Inject into a vein, muscle or under the skin, the patient's own serum. 40 to 200 c.c. blood are withdrawn into a centrifuge tube and allowed to clot; the serum is centrifuged and injected in doses of 20 to 60 c.c. every five to ten days. *Protein therapy* is of value, *e.g.*, cow's milk, boiled, cooled and injected intramuscularly (5 to 10 c.c.) every four to seven days: typhoid and colon bacilli and peptone are also used. Marked local and general reactions may follow. *Antihistamine treatment* is indicated for certain conditions of prurigo and urticaria; see § 609. *Vaccines* are especially valuable in cases of local staphylococcal infection; they must be given in doses which do not cause severe reaction, especially in patients who are not being kept in bed. In some cases, *e.g.*, sycosis, they are more effective when given intradermally. Sometimes a course of colonic irrigation brings about rapid improvement in a skin disease which has resisted dietetic and other measures for the restoration of a normal flora; in other cases cure follows a long course of vaccines made from extracted diseased teeth, or from the stools. The health as a whole must be considered, and all forms of treatment here have their sphere—adequate mental and physical repose, endocrine preparations, diet, mountain air, massage, heliotherapy and psychotherapy.