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ERUPTIONS INVOLVING THE EXTERNAL AUDITORY MEATUS.

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FOR not restricting my remarks entirely to the external auditory meatus, I plead dermatological licence, because from our standpoint the pinna as a whole, and the concha and retro-auricular fold in particular, are so often involved with the meatus in the various eruptions that may affect them.

I do not propose to consider all the dermatoses that may occur in the meatus. It would serve no useful purpose to discuss nævi or other congenital malformations, for example, in this situation. For clarity's sake, some classification is necessary, and I submit a tentative one, which is by no means complete and no doubt might be improved upon.

From this list I will select those that seem to me of primary importance, or of special interest. I wish first, however, to try to make clear the modern dermatological conception of that much-abused word "eczema," and would insist at the outset that a diagnosis of eczema, without a rider as to its certain or probable cause in the case under consideration, is no diagnosis at all. The majority of cases of so-called eczema of the external auditory meatus are really examples of infective meatitis.

At the present time our knowledge of the pathogenesis and significance of eczema is more exact than ever before, and the masterly review of the subject presented by Darier at the International Congress of Dermatology at Copenhagen last summer should appeal to a circle wider than that of professed dermatologists.

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Eruptions due to External Infections.

Organism.	Site of Growth.	Defence Reactions	Lesions.
Pityrosporon . . .	Stratum corneum . . .	(*a*) Exfoliation of horny cells	(*a*) Pellicle or dandruff
		(*b*) Cuticular inflammation, primarily perifollicular	(*b*) Seborrhœide or seborrhœic dermatitis
		(*c*) Eczematisation, if epidermis is sensitised	(*c*) Eczematoid pityrosporide
Acne bacillus . . .	Infundibulum of pilosebaceous follicle	(*a*) Proliferation of horny cells to enclose the bacilli	(*a*) Comedo
		(*b*) Dense leucocytic exudation	(*b*) Acne pustule
Staphylococcus albus .	Ostium of pilosebaceous follicle	Polymorphonuclear exudation	Superficial perifollicular pustule
Staphylococcus aureus .	Ostium and deeper parts of pilosebaceous follicle	(*a*) Polymorphonuclear exudation	(*a*) Porofolliculitis, boil, carbuncle, sycosis
		(*b*) Eczematisation, if epidermis is sensitised	(*b*) Staphylococcal infective eczematoid dermatitis
Streptococcus longus .	Beneath the stratum corneum, or deeper, extending to the dermis	(*a*) Serous exudation	(*a*) Subcorneal vesicle of impetigo, streptococcal fissure, ecthymatous ulcer
		(*b*) Eczematisation, if epidermis is sensitised	(*b*) Streptococcal infective eczematoid dermatitis
		(*c*) Allergic inflammatory reactions in the skin and subcutaneous tissue	(*c*) Various streptococcide eruptions from superficial lichenoid or eczematoid lesions to subcutaneous nodules (erythema nodosum; non-tubercular form of erythema induratum)
Tubercle bacillus . .	Dermis	(*a*) Lymphocytic and cellular infiltration	(*a*) Tubercular nodule, or lupoma
		(*b*) Allergic inflammatory reactions in the skin and subcutaneous tissue	(*b*) Various tuberculide eruptions, from superficial lichenoid (lichen scrofulosorum) or eczematoid lesions to subcutaneous nodules. (Bazin's erythema induratum)
Fungi (otomycosis), *e.g.*, Monilia Saccharomyces Aspergillus	Stratum corneum . . .	Exfoliation of horny cells, and cuticular inflammation	.....

Eruptions and External Auditory Meatus

Eruptions due to Infective Organisms reaching the Skin through the Blood-Stream.

Syphilides, e.g., condyloma, gumma.
Lupus vulgaris in certain cases.
Leprosy.
Exanthemata.

Eruptions of Internal Origin and Allergic in Nature.

Erythema multiforme.
Erythema scarlatiniforme.
Lupus erythematosus.
Eczema.
Psoriasis (probably).

Eruptions due to Involvement of the Cutaneous Nerves, or Nerve-Ganglia.

Herpes simplex.
Prurigo.
Herpes zoster. (Geniculate ganglion syndrome.)

Conditions not included in above List.

Congenital malformations, *e.g.*, nævi.
New growths, *e.g.*, epitheliomata.
Verruca vulgaris (due to infection with a filtrable virus).
Acanthosis nigricans.

Eczema, like urticaria, is merely a *reaction* of the skin to injury, and, like many other eruptions, including urticaria, is really a defensive reaction. It is characterised by a variety of lesions involving the epidermis and dermis, which I need not detail, but the essential one is an œdema of the Malpighian layer, due to the exudation of serous fluid from the papillary vessels, which infiltrates the inter-epithelial spaces, separating the prickle-cells, and thus producing the histological appearances that we term *spongiosis*. From this serous infiltration, the formation of intra-epidermal vesicles naturally results; these may be so small as to be visible only under the microscope, or may become by confluence so large as to form bullae.

This inflammatory reaction of the skin that we label eczematisation is always indicative of *epidermal* sensitisation; a long series of researches have shown that the essential factor in its production is an allergic state of the Malpighian cells, *i.e.*, they are the site of antibody formation. In erythema and urticaria, on the other hand, the site of the antigen-antibody reaction is in the *dermis*. To some extent certain irritants or toxic substances have an affinity for the epidermis, and therefore provoke an eczematous reaction; others have an affinity for the dermis, thereby causing erythema or urticaria. It is not uncommon, however, for both types of reaction to occur in the same person from the same toxin; thus, in some cases of

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serum-sickness the familiar erythemato-urticarial eruption is accompanied by a severe eczema with intense vesiculation, and the same association may be seen in cases of food or drug poisoning. It is of interest that, whereas the urticarial element may be controlled by injections of adrenalin, they have no apparent influence on the eczematisation.

Granted that an eczematous reaction is always indicative of epidermal sensitisation, it is obvious that it may be provoked by antigenic substances reaching the sensitised Malpighian cells either from without, or viâ the blood-stream from within; consequently the first step in diagnosis is to decide whether in a given case the eczema is of external or internal origin. In patients whose epidermis is sensitised to substances such as iodine, the eczematous reaction may be provoked both when the substance is applied to the skin or when taken internally; similarly, a formalin-sensitive subject may develop eczema after the ingestion of hexamine.

For the purpose of this discussion, however, the most important antigens to which the Malpighian cells may become sensitised are those derived from infective organisms, such as the pyogenic cocci, the pityrosporon, monilias, the ringworm fungi, and the tubercle bacillus. By the absorption of the respective toxins or antigenic substances of these organisms through the blood-stream, or by external contact, an eczematous eruption will arise if the epidermis be sensitised to them. Thus we can recognise an eczematoid staphylococcide—the so-called infective eczematoid dermatitis of Engman — an eczematoid streptococcide, an eczematoid pityrosporon, an eczematoid levuride, an eczematoid trichophytide, and an eczematoid tuberculide.

By means of intradermal injections with extracts from or emulsions of these various organisms the origin of an eczematoid dermatitis can often be confirmed; not only will a strongly positive *local* reaction with papule formation and a surrounding erythematous flare develop at the site of injection, but the area will become *eczematised* on the third or fourth day, and a *focal* reaction is likely to occur in the eczematoid patches.

By External Infection.

The Pityrosporon.—The commonest cause of an infective meatitis is undoubtedly the pityrosporon, or spore of Malassez, wrongly christened "Flaschenbacillen" by Unna. Although

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simple dandruff has long been ascribed by most dermatologists to infection of the horny layer by this organism, there has been considerable discussion as to the relative importance of it and the *Staphylococcus albus* in the cause of so-called seborrhœic dermatitis, since both organisms are found in the lesions in a state of active growth.

The pityrosporon is one of the fungi imperfecti and belongs to the class Oösporaceae. It is closely related to monilia, but differs from it in certain respects. By inoculation of cultures of the organism MacLeod and Dowling were able to produce typical figurate seborrhœic dermatitis, indistinguishable both in evolution and appearances from the natural eruption. Inoculation on normal non-seborrhœic skins produced a group of follicular papules within twenty-four hours, which lasted about ten days and then disappeared; in some seborrhœic subjects, particularly those with active seborrhœic dermatitis present, a more acute reaction developed, and a widespread figurate patch sometimes resulted.

It is thus clear that seborrhœic dermatitis, like simple dandruff, is a pure fungus infection due to the pityrosporon; the degree of inflammation produced by the organism appears to depend partly on the site infected; the scalp, though the commonest, being as a rule more resistant than the glabrous skin, and partly on the constitution and habits of the host.

As I have already indicated, the epidermis may become sensitised to the pityrosporon, so that not only may the actual infected areas be eczematised, but eczematoid patches may arise at a distance from absorption of the antigenic substance, and these can legitimately be termed pityrosporides. If, in such a case, an intradermal injection be made in a normal area of skin, either with an emulsion of the pityrosporon, or with levurine, there will result (1) a local inflammatory papule with a surrounding erythematous flare, (2) on the third or fourth day an eczematoid reaction at this site often accompanied by lichenoid papules, (3) a *focal* reaction in the actively infected lesions and the pityrosporide patches.

Clinically, the simplest form of meatitis due to the pityrosporon is a non-inflammatory scaliness comparable to ordinary dandruff of the scalp. This may be succeeded by a definitely inflammatory seborrhœic dermatitis, in which the *Staphylococcus albus* will be found actively growing with the pityrosporon. This in turn, as already stated, may become eczematised, and

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a secondary invasion with *Staphylococcus aureus* may occur, thus predisposing to meatal boils, or with a streptococcus, which is likely to produce impetiginisation with fissures at the angles of the meatal orifice.

The importance of the pityrosporon is not sufficiently appreciated even by dermatologists. Thorough treatment of the infected scalp, which is the organism's headquarters, cannot be too strongly insisted upon, and a campaign against the uncleanliness of hairdressers, who are largely responsible for the spread of the infection, is urgently needed.

The Acne Bacillus.—The acne bacillus need not detain us long. The site of election for its active growth is the infundibulum of the pilosebaceous follicle, *i.e.*, the part lying between the ostium and the opening into the follicle of the sebaceous gland. In this portion there is a virtual space between the epithelial lining and the lanugo hair which is occupied by sebum and horny débris. In seborrhœic persons there can be expressed from the infundibula of the follicles the so-called "seborrhœic cocoons," and if these be squeezed flat on a slide and suitably stained, myriads of acne bacilli will be seen, obviously in a state of active growth. The epithelial defence reaction to this organism is the comedo or "blackhead," which is a cyst composed of concentric layers of horny cells and enclosing the mass of acne bacilli in its centre. The inflammatory defence reaction to the bacillus is the acne pustule, formed by a dense leucocytic infiltration, which produces thick, caseous pus unlike that of the staphylococcal pustule.

In the seborrhœic subject the openings of the sebaceous follicles in the concha and meatus are particularly large and patulous: from them may be seen oozing drops of oily sebum, or they may be blocked by seborrhœic cocoons, and often by comedones of great size.

Staphylococci.—In the inflammatory forms of seborrhœic dermatitis, due primarily to infection with the pityrosporon, the *Staphylococcus albus* is always found in a state of active growth, and may in part be responsible for the inflammatory reaction. It is also, of course, the cause of simple superficial pustule formed around the mouth of the pilosebaceous follicle. But the important staphylococcal lesions of the meatus are due to the *Staphylococcus aureus* (rarely *citreus*), namely, the boil, and the eczematoid reaction that results from epidermal sensitisa-

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tion to this organism, the so-called staphylococcal infective eczematoid dermatitis of Engman, Sutton, and Fordyce.

I need not dwell on the meatal furuncle, or emphasise the intensity of the pain caused by it and the errors of diagnosis to which it may give rise; it is, in my experience, a frequent complication of a meatitis due to the pityrosporon or to a *Streptococcus longus*. In the former case, apart from the immediate local and general therapy of the boils, it is obviously essential to treat the primary meatitis, the scurfy scalp from which the infection spread, and the underlying seborrhœic state that usually obtains in these patients; in the latter case the primary streptococcal impetigo must be dealt with, and care taken that fissures at the angles of the meatal opening in the retro-auricular space, and beneath the lobe of the ear are persistently treated until a new and healthy horny layer is completely established.

The specific treatment of the lowered resistance of the skin to staphylococcal infection on which furunculosis depends I shall mention briefly later.

Streptococcal Infection. — Streptococci, although certain strains are normal habitants of the mucous membranes of the mouth, nose and nasopharynx, and intestine, are, like the more virulent strains of staphylococci, accidental cutaneous organisms. Under ordinary civilised conditions, however, our skins are from earliest infancy continually exposed to contamination even by virulent strains of the *Streptococcus pyogenes longus*, for example, from contact with persons having infective lesions caused by them, and by mucous membrane infection, such as rhinitis and gingivitis. Once firmly established in the skin the *Streptococcus longus* may be extremely difficult to tackle successfully, so that infective lesions due to it may persist for years, even in persons who appear to be in good health. Unlike the staphylococci and the acne bacillus, the streptococcus has no predilection for the pilosebaceous follicles, but tends to involve the natural folds of the skin and the mucocutaneous junctions. In these situations it causes an impetiginous intertrigo and fissures. Apart from these lesions it may, of course, infect the surface of the skin anywhere, obtaining entry through palpable or invisible breaches in the horny layer, and giving rise to the ordinary crusted form of impetigo contagiosa, and the dry scaly form (impetigo pityrodes), which is so often wrongly diagnosed; to ecthymatous ulceration, in which the epidermis is destroyed

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with eventual scarring; to one form of infective eczematoid dermatitis, if the epidermis become sensitised to it; and, finally, by invasion of the lymphatics to erysipelas, recurrent attacks of which are usually dependent upon persistent fissures at mucocutaneous junctions or in angles and folds.

Intertrigo is not, of course, always of streptococcal origin; it may be due to the pityrosporon, the epidermophyton species of ringworm fungus, and to the monilia group. Retro-auricular intertrigo, however, is commonly streptococcal, although, as I have said, it is often preceded by an infection with the pityrosporon, and it provides a very good example of chronic streptococcal invasion of a natural fold. Behind one or both ears is seen a moist, crusted area, and beneath the crusts the surface is bluish red; at the angle of the fold is a fissure, which divides the infected area into two halves, and is exposed on drawing the ear forward. Sometimes at the margin may be seen remains of the original streptococcal vesicle in the form of a shrivelled fragment of the raised horny layer (see Figs. 1 and 2).

Infection of the meatus with the streptococcus may occur in an acute attack of impetigo contagiosa, or, more commonly, it forms part of a widespread and chronic streptococcal invasion of the skin, natural orifices, and mucous membranes, being accompanied by retro-auricular intertrigo, impetiginous anterior rhinitis, fissures at the labial commissures (perlèche), and often intertrigo of the internatal cleft and groins. Apart from the crusted impetigo of the meatus, fissures are usually found at the angles of the meatal opening.

The following two cases illustrate some of the features of this chronic streptococcal infection:—

A lady, aged 28, had *scarlet fever* at the age of twelve, and from that time had suffered more or less continuously from so-called "eczema" of the ears. She has had five attacks of *erysipelas* of the face. Before her marriage there was some leucorrhœa, and since the birth of one of her two children there has been a thick vaginal discharge. Unless this is checked with a cotton-wool plug she develops "eczema" of her groins. She has also periodically had the "eczema" in the submammary folds.

On examination she was found to have:—

(1) Typical retro-auricular *intertrigo*, obviously of streptococcal origin, with chronic meatitis and fissures at the angles of the orifice.

(2) At the upper angles of the nostrils were the remains of *strepto-*

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Fig. 2.

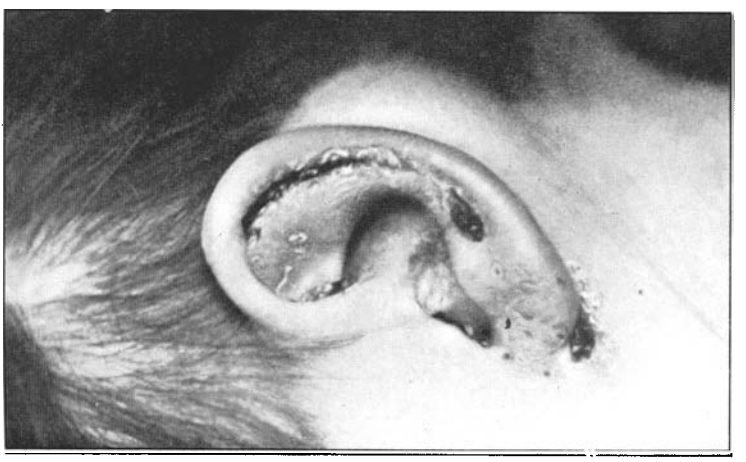


Fig. 1.

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coccal fissures, doubtless the portals of entry of infection responsible for her attacks of recurrent erysipelas.

The "eczema" of her groins and submammary regions to which she was subject were clearly also streptococcal intertrigo. The vaginal discharge was found by Mr. Cook to be due to a chronic cervical erosion.

Dr. Eyre recovered a *Staphylococcus pyogenes longus* with other organisms from the retro-auricular intertrigo and the nasal fissures.

This case, therefore, illustrates very well the persistence over a period of sixteen years of a streptococcal infection of the skin dating from an attack of scarlet fever. The patient was very lucky in that her repeated attacks of erysipelas, arising from neglected nasal fissures, did not lead to permanent blockage of the lymphatics of the malar regions and eyelids.

A boy, aged 15, was sent to me in November of last year by Mr. Woodman and Dr. Douglas Heath. Mr. Woodman kindly wrote that the boy had a mixed naso-pharyngeal infection and a seborrhœic dermatitis of the scalp, with an inflammatory reaction in the external meatus of the right ear. He also said that the infection in the ear became so bad that the drum was perforated, and the mastoid became infected. This cleared up entirely after operation, and the drum had healed; there was no discharge coming from the middle ear.

On examination I found:—

(1) A very heavy infection of the scalp with the pityrosporon.

(2) A chronic mild blepharitis, such as is common in these seborrhœic patients.

(3) A streptococcal retro-auricular intertrigo with the usual fissuring. This was, I think, clearly due to a secondary streptococcal invasion of an intertrigo primarily caused by the pityrosporon spreading from the scalp.

(4) An infective meatitis, with a tendency to angular fissuring and furunculosis. Probably the pityrosporon, a *Streptococcus longus* and a *Streptococcus aureus*, were all in a state of active growth in this situation.

(5) An impetiginous anterior rhinitis, due to the *Streptococcus longus*.

This case illustrates very well the importance of the pityrosporon, which by damaging the horny layer provides an opportunity for the *Streptococcus* and *Staphylococcus aureus* to become established.

It is with some hesitation that I now ask you to consider certain general principles involved in active infection with these surface organisms—staphylococci, streptococci, and pityrosporon, the monilia group, and the ringworm fungi. It is

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obvious that we all harbour them, with the exception, perhaps, of the last, as saprophytes on our skin or mucous membranes, and are therefore liable to active invasion by them. It is of paramount importance to study the factors affecting the host which predispose to such invasion. It is clear, I think, that we have first to consider those which favour the *saprophytic* growth or persistence of such organisms, and secondly those which are responsible for their adoption of a *parastic* mode of life with consequent detriment to their host.

With regard to the so-called seborrhœic triad of organisms, the pityrosporon, the acne bacillus and the *Staphylococcus albus*, the most important factor predisposing to their active growth is that change in the skin which we call seborrhœa, by which is meant an excessive secretion from the sebaceous glands with an alteration in the composition of the fat in the sebum and stratum corneum. The normal cholesterol fats of the skin are not favourable to the growth of these organisms, and the skin of a person in perfect health is remarkably amicrobial. Very different is that of the seborrhœic subject: the patulous sebaceous follicles swarm with the acne bacillus, the pityrosporon and *Staphylococcus albus* flourish like the proverbial green bay-tree in the horny layer of the scalp and other parts, and graver lesions, such as boils and sycosis, are likely to develop. I have dealt fully elsewhere (1) with the factors predisposing to the seborrhœic state and need not discuss them now.

With regard to the monilia group of organisms, moisture favours their growth and invasion of the skin; hence the frequency of monilia infection in the interdigital spaces and nail-folds of those who have their hands constantly wet, *e.g.* washerwomen, barmaids, and domestic servants.

These factors, however, are a matter of the soil, and we have next to consider the resistance or lack of it put up by the skin and mucous membranes. We must remember that all these are surface organisms, and that the epidermis is the first line of defence. What is it that determines the resistance of the skin and mucous membranes of some persons, and the lack of it in others? In staphylococcal sycosis, which is an epidermal infection, the epidermis is unable to deal effectively with the *Staphylococcus aureus*, and fresh pustules are formed continuously. In chronic impetigo with fissures a similar lack of epidermal resistance to the *Staphylococcus longus* is apparent. We know

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that immunity and hypersensitiveness to the trichophyton species of ringworm fungus are primarily functions of the skin alone, and I believe that this is also true, as Besredka's work suggests, for the other surface infections under consideration.

It follows from this that antibody production by the cells of the skin and mucous membranes is all-important in the prevention of and recovery from parasitic invasion by these organisms. When this is deficient it can be stimulated by the *intradermal* injection of a vaccine or extract of the organism in question in progressive dosage. Dr. Forman and I have used this method with striking success in sycosis during the last few years, whereas ordinary subcutaneous vaccination is generally admitted to be useless in this disease. We also employ the same method in streptococcal infections, and I believe that it is applicable also to chronic infection with the epidermophyton, monilias, and the pityrosporon: Dr. Muende is investigating this point.

That the efficacy of this method is due, as I have suggested, to stimulation of antibody production by the skin is, I think, shown by the following observations. A patient with staphylococcal sycosis, chronic streptococcal infection, epidermophytosis, moniliasis, or active pityrosporon infection will, when a small quantity of the antigen of the particular organism is injected intradermally, develop at the site of injection a very marked local reaction, which depends, of course, on an antibody antigen reaction. This is comparable to the inflammatory reaction that occurs in primary vaccination from the fourth to the eighth day after the vaccinal virus is inoculated into the skin. It indicates that the epidermis possesses antibodies, *i.e.*, is sensitised, but that the antibody antigen conflict is a fierce one. If further injections of the antigen in increasing dosage are given at suitable intervals, the production of antibody by the skin is progressively stimulated until it is so great that reinoculated antigen is rapidly destroyed with little or no reaction. The skin is then in a state of acquired immunity, *vis-à-vis* the antigen in question, just as it is for some time after vaccination. In our sycosis cases, for example, when the patient can tolerate 500 to 1000 million staphylococci intradermally with a negligible local reaction, we have found the sycosis is practically well.

Apart from specific intradermal vaccination, stimulation of the skin by exposure to air and sunlight, medicinal baths, etc., is obviously indicated.

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Lupus Vulgaris.—Fortunately we do not now see in London many of the ghastly cases of extensive lupus that once crowded our hospitals; nevertheless, lupus vulgaris of the ear is not very uncommon. The lobule is usually first attacked, and may become enormously hypertrophied and œdematous, hanging down like a purple plum. In the congested and œdematous tissue it is difficult to distinguish the lupoid nodules except by firm pressure with a glass slide. Angier has described the case of a woman with so great an enlargement of the lobe and lower part of the pinna that she bandaged it to her head to conceal the deformity; lupus nodules developed on the scalp at the points of contact. From the lobe, the disease spreads over the auricle, leading sometimes to its ultimate destruction with occlusion of the meatus. The diffuse, œdematous infiltration that characterises lupus of the lobe is also, of course, seen in some cases when the soft parts of the nose are involved.

Eruptions due to Infective Organisms reaching the Skin through the Blood-Stream.

Examples:—Syphilides; lupus vulgaris (some cases); leprosy; the exanthemata.

Of these I will only briefly mention syphilides. Apart from gummatous lesions, which may involve the ear and adjacent parts, it must be remembered that condylomata may occur in the meatus, causing an offensive discharge and sometimes severe pain, and may be responsible for errors of diagnosis by the unwary.

Eruptions of Internal Origin and Allergic in Nature.

Examples: Erythema multiforme; erythema scarlatiniforme; lupus erythematosus; eczema; psoriasis (probably).

Of these I will deal only with the last three.

Lupus erythematosus, since it tends to involve areas that are subject to vascular stasis, frequently attacks the auricle, affecting the helix, antihelix, lobule, concha, and meatus. Sometimes the concha and meatus are alone the site of the disease. Its chief characteristics are a persistent erythema, usually bluish-red or livid, on the ear, a network of fine capillary telangiectases, rendered visible by vitropressure, the presence of scales formed by hyperkeratosis, dilatation of the orifices of the pilosebaceous follicles, with horny plugs that fit firmly into them, and lastly a tendency to cicatricial atrophy, which may lead to noticeable deformity.

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In the concha these features are often well seen, and I would particularly emphasise the dry, dirty white scales, which are so adherent, unlike those of psoriasis or eczematoid dermatitis, that their removal with forceps causes considerable pain and is followed by bleeding. The characteristic horny plugs dipping into the patulous mouths of the follicles also occur in this situation.

As you know, the prognosis in lupus erythematosus has of recent years become much more satisfactory since the introduction of gold and bismuth therapy.

Psoriasis.—Psoriasis involving the retro-auricular fold, the pinna, and the meatus, is often met with, and in such a case the eruption is nearly always found on the scalp. There is a form of seborrhœic dermatitis, in which the patches are somewhat infiltrated and the parakeratosis very pronounced, which may at first sight closely imitate psoriasis. Useful points of differential diagnosis are as follows: (1) Psoriasis, except in rare instances, is essentially a *dry* eruption. The parakeratotic scales are dry, flaky and become silvery white when the surface of a patch is scratched. In untreated cases they become heaped up to form firm, projecting masses, giving the scalp a characteristic knobby feel when the hand is passed over it. The psoriasiform type of seborrhœic dermatitis, although it may appear dry, is really an eczematoid eruption, and therefore moist from serous exudation in the Malpighian layer. The scales have not the desiccated silvery appearance of psoriasis, but are yellowish and sticky from the dried serum that is included in the layers of parakeratotic cells which form them.

(2) If the scales are gently scraped away from a patch of psoriasis with a small curette, the underlying rete Malpighii is exposed as a bright red, dry shiny surface through which the papillae are seen as scarlet points, which bleed when the scraping is continued. *There is no serous oozing.* A similar procedure in a case of seborrhœic dermatitis will expose the intra-epidermic serous vesicles, which, when ruptured, ooze droplets of serum.

(3) The scales of psoriasis are singularly amicrobial, and are often sterile on culture. Those of seborrhœic dermatitis, on the other hand, are teeming with the pityrosporon and staphylococci, which may be easily demonstrated in suitable microscopical preparations.

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Eczema.—I have said that most so-called eczemas of the meatus are really examples of infective meatitis, but true eczema of internal origin does occur in this situation. The majority of cases fall into two groups: (1) In infancy, adolescence, and early adult life true eczema of the ears is usually part of the allergic syndrome of symptoms, viz., eczema, prurigo of Besnier, paroxysmal rhinitis, asthma, urticaria, and migraine, and about 25 per cent. of these patients are ichthyotic. (2) In later life eczema of the ears, of the type that used to be labelled "gouty," is fairly common. The patients are often plethoric and fat, or thin and arteriosclerotic; the blood-pressure is frequently raised, and there may be albuminuria. Spa treatment designed to increase elimination is usually successful in these patients.

Eruptions due to Involvement of the Cutaneous Nerves, or Nerve-Ganglia.

Examples —Herpes simplex. Prurigo. Herpes zoster.

Of these *herpes simplex* may occasionally appear on the auricle. Whatever the provoking cause of an attack in a given case, the eruption is due to the filtrable virus, which some believe to be identical with that of encephalitis lethargica.

Prurigo localised to the meatus without apparent cause is sometimes met with and, in my experience, is usually a neurosis.

Herpes zoster oticus has an interest of its own, since it may be a part of the geniculate ganglion syndrome described by Ramsey Hunt. With this you are more familiar than I, and I need hardly describe the associated symptoms. It would seem likely that the inflammation in the geniculate ganglion, upon which the syndrome depends, is the result of focal sepsis rather than due to invasion by the virus of varicella, which is apparently the cause of zoster in some cases.

Conditions not included in the above List.

Finally there are lesions of the meatus such as congenital malformation, nævi, verruca vulgaris, and new growths, which I shall ignore, but in conclusion I will refer to a patient who was brought to me by an aurist for "warts" of the external auditory meatus. These warts were really part of the papillomatous hypertrophy that occurs in certain parts of the skin in that rare condition known as acanthosis nigricans, due, as a rule but not

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invariably, it would seem to involvement of the abdominal sympathetic system by malignant disease.

The patient was an elderly woman with advanced malignant disease in the abdomen, the primary site being the stomach. From this she died shortly after I saw her.

The chief clinical features of the condition are:—

1. Increased pigmentation of the skin, which is most apparent in the natural folds, such as the joint flexures, the internatal cleft, perinæum, and umbilicus.
2. Diffuse papillomatosis, which, like the pigmentation, involves chiefly the joint flexures and other folds. This may be soft and velvety, as in the axillae, or hard and warty as in the internatal cleft, and on the scalp, in my case. The vermilion borders of the lips and the buccal mucous membrane may be similarly affected.
3. The rapid appearance of *discrete* papillomata of varying size and consistency, some of them resembling ordinary warts very closely.

In dieser Schrift behandelt der Verfasser Ausbrüche welche auf den auswendigen Ohrgang beschränkt sind, wie auch solche des Ohrblattes im allgemeinen. Zu Anfang classificirt der Verfasser tabellarisch Ausbrüche unter den ursachlichen Organismen: die Stelle des Gewuchses, widerstands Reaction und die verursachten Beschädigungen. Die Pathogenese und Bedeutung des Ekzemas wird vom Verfasser besprochen. Die ursachlichen Organismen und die durch sie verursachten Beschädigungen werden mit ziemlicher Ausfuhrlichkeit in diesem Artikel behandelt und mehrere erlaüternde Fälle beschrieben. Ausbrüche innerlichen Ursprunges und in ihrer Art "allergische" wie auch solche welche durch die Einwicklung der zur Haut gehörigen Nerven verursacht worden sind werden besprochen.

Dans cet article l'auteur traite non seulement des éruptions limitées au conduit auditif externe, mais il traite aussi de celles du pavillon dans leur ensemble. Il commence par la classification sous forme de tableau—des éruptions causées par les germes pathogénes, l'emplacement de la lésion, les réactions défensive et les lésions produites. Il discute la pathogénie et la signification de l'eczema. Les germes pathogénes et les lésions qui en resultent sont éxpliqués en détail, et il rapporte plusieurs cas significatifs. Il discute également les éruptions d'origine interne et de nature "allergique" ainsi que ceux qui ont pour origine les nerfs cutanés.

REFERENCE.—[1] Barber, H. W., "Lettsomian Lectures," Lect. 1, *The Lancet*, 1929, ii, 363.

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