There seems to be increasing dissatisfaction with the growing number of specialties—in particular, the subspecialties. It is said that a fixed training system of six to eight years inhibits the development of the specialties, and that scientific development competes with the needs of those undergoing specialist training. Perhaps the number of specialties in the future may be reduced to, say, surgery, medicine, laboratory disciplines, psychiatry, and a few others.

Continuing Postgraduate Training

Traditionally in Denmark any subsequent postgraduate

medical education has been the responsibility of the profession itself, and for decades the Danish Medical Association has provided advice and financial help through the regional medical associations. The association also organizes intensive residential courses in a course centre, "Scanticon", equipped for the purpose, and partly owned by the Danish Medical Association (see figure on p. 410).

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(To be concluded next week.)

Today's Treatment

Diseases of the Skin

The Basis of Skin Therapy

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A firm diagnosis is essential before any treatment is chosen. The accuracy of this will depend on an adequate history and examination, but in dermatology there are some special temptations which may lead to errors. Brushing over the history because the signs are so readily seen is hard to resist, particularly in a busy clinic, but should be avoided, as care here will often provide an important diagnostic clue. Often a glance at a rash may be enough to make the diagnosis, but all doctors have at some time been embarrassed by not looking closely enough at the lesions or, worse still, by not getting the patient to undress properly. Forgetting to look at the scalp, mouth, and nails is even more common; these may show important diagnostic features.

Once a diagnosis has been reached a decision about treatment can be made, but each patient must be treated as an individual. Indeed, no treatment may be the best treatment. Patients with minimal psoriasis of the elbows, for instance, may be helped more by a careful explanation and reassurance rather than by a prescription. When a diagnosis cannot be reached, the doctor should decide if the condition is severe or rare enough to justify a specialist opinion, or whether it is best observed further and perhaps treated with some bland local application (for example, oily cream *B.P.*). In either case, the indiscriminate use of local corticosteroids merely makes the final diagnosis trickier and often confuses the picture. As topical steroids are so effective in controlling many different dermatoses, their use has unfortunately become a cloak for diagnostic ignorance, and dermatologists are seeing more and more problems arising from this.

In most instances, however, a satisfactory diagnosis can be made and a course of treatment planned. Though many skin disorders, particularly tumours, are dealt with by surgical operation or other physical procedures, the scope of these will not be discussed here. Some drugs can be used only locally (for example, gamma benzene hexachloride for scabies) while

others are active only when taken systemically (for example, dapsone for dermatitis herpetiformis). When a choice exists and both possibilities are equally effective, then local treatment is preferable. For example, most cases of mild impetigo respond to an antibiotic ointment alone and a systemic antibiotic is unnecessary.

Local Therapy

ACTIVE MEDICAMENT

To help their application to the skin, drugs may be dissolved or suspended in bases (vehicles). The choice of drug and base is equally important and depends not only on the diagnosis but also on the state of the skin surface. In practice, the degree of penetration of a substance depends on the vehicle in which it is incorporated and on the method of application. For instance, occlusion of an area with polyethylene increases the hydration and the local temperature of the skin; both factors aid penetration (see last week's article).

Drugs which can be incorporated into bases include corticosteroids, tar, dithranol, salicylic acid, antibiotics, antifungal agents, and antiseptics. The choice of a particular drug depends on the action required, and the prescribing doctor ought to know the properties of the drugs he uses. As topical corticosteroids have become the mainstay of dermatological therapy, and are the drugs which dermatologists would least like to be without, table I summarizes their pharmacology.

BASE

Bases are often beneficial when used on their own. They contain one or more components of the following: water, powder, and grease.

Individual Bases

Dusting powders are used in skin folds to lessen friction between the opposing surfaces. They either repel (for example, talc)

TABLE I—*Pharmacology of Topical Steroids*

Active Constituents: Include hydrocortisone and synthetic halogenated derivatives of prednisone such as betamethasone 17-valerate, triamcinolone acetonide, and fluocinolone acetonide. Halogenation increases topical activity.

Bases: Available in lotions, creams, fatty acid propylene glycol base, and ointments. Over 100 preparations listed in *MIMS*.

Penetration: Readily penetrate skin via the horny layer and appendages. Form a reservoir in the horny layer. Polyethylene occlusion and the use of higher concentrations increase penetration.

Metabolism: Some, though probably minor, metabolism in epidermis and dermis (for example, hydrocortisone conversion to cortisone and other metabolites). Leave skin via dermal vascular plexus and enter general metabolic pool of steroids. Further metabolism in liver.

Excretion: As sulphate esters and glucuronides.

Action: Anti-inflammatory—(1) Vasoconstrict.
(2) Decrease permeability of dermal vessels.
(3) Decrease phagocytic migration and activity.
(4) Decrease fibrin deposition.
(5) Decrease kinin formation.
(6) Decrease prostaglandin synthesis
(7) Depress fibroblastic activity.
(8) Stabilize lysosomal membranes

Immunosuppressive—Antigen-antibody interaction unaffected but inflammatory consequences lessened (above mechanisms)

Decrease rate of epidermal turnover

Side effects: (1) Thinning of epidermis.
(2) Thinning of dermis.
(3) Telangiectasia and striae (due to (1) and (2)).
(4) Bruising (due to (2) and vascular wall fragility).
(5) Hirsutism.
(6) Folliculitis and acneiform eruptions.
(7) May worsen or disguise infection (bacterial, viral, and fungal).
(8) Systemic absorption (rare but for example, occurs in infants, when applied in large quantities under polyethylene pants).

Uses: Eczema. Psoriasis in a few instances (facial, flexural, and palms/soles). Many non-infective pruritic dermatoses

or absorb (for example, starch) water—though zinc oxide powder has an absorptive power midway between these extremes. They ought not to be used in areas which are too moist as they tend to cake and abrade the skin.

Watery lotions applied to the skin evaporate and cool inflamed areas. The cooling effect is hastened by adding an alcohol, while the addition of glycerol or arachis oil slows evaporation and maintains skin moisture. Substances which precipitate protein (astringents—for example, silver nitrate) may be added and exudation lessened.

Shake lotions are watery lotions to which powder has been added so that the area available for evaporation is increased. One disadvantage is that during drying the particles may clump together and become abrasive. This possibility is less likely if an oil such as glycerol is added.

Creams are emulsions used for their cooling, moisturizing, and emollient effects. They are either oil-in-water emulsions (for example, aqueous cream *B.P.C.*) or water-in-oil emulsions (for example, oily cream *B.P.C.*). The emulsifying agents used in their preparation vary and it is worthwhile remembering that wool fats and alcohols, used as oily cream emulsifying agents, may sensitize. Emulsification increases the surface area of the dispersed phase together with any therapeutic agent incorporated in it. In general, penetration of medicaments is better from aqueous creams (see last week's article) than from oily creams.

Ointments are used for their occlusive and emollient properties. They allow the skin to remain supple by preventing evaporation of water from the horny layer. They are semi-solid preparations and are of three main types: those which are water soluble (macrogols); those which emulsify with water (emulsifying ointments in which a mineral oil is emulsified with an emulsifying wax or animal fat); and those which repel water (mineral oils and animal and vegetable fats).

Pastes are used for their protective and emollient properties and usually consist of a powder added to a mineral oil. The powder lessens the occlusive effect of the latter.

Combinations of Bases

Combinations and slight variations of these bases means that there are dozens available. Rather than use them all and become thoroughly confused, most doctors should limit their choice to one from each category; table II summarizes the properties and uses of some common preparations.

Once the active medicament and base are selected it is important to make sure that there are no incompatibilities. This

TABLE II—*Bases and Their Properties*

Base	Surface Used on	Effect	Points of Note	Examples
Dusting Powders	Flexures. May be slightly moist	Lessen friction	If too wet clump and irritate	Talc. Dusting Powder <i>B.P.C.</i> Zinc, Starch, and Talc Dusting Powder <i>B.P.C.</i>
Watery and Shake Lotions	Acutely inflamed. Wet and oozing	Drying soothing, and cooling	Tedious to apply. Frequent changes (lessened by polyethylene occlusion). Powder in shake lotions may clump	Saline solution <i>B.P.C.</i> Calamine lotion <i>B.P.</i>
Creams	Both moist and dry	Cooling, emollient, and moisturizing	Short bench life. Fungal and bacterial growth in base. Sensitivities to preservatives and emulsifying agents	Oily cream <i>B.P.</i> Aqueous Cream <i>B.P.</i>
Fatty Acid Propylene Glycol	Both moist and dry	Emollient and moisturizing	May sting when applied. Occasional sensitivity to propylene glycol	FAPG Base
Ointments	Dry and scaly	Occlusive and emollient	Messy to apply and soil clothing. Removed with an oil	Soft white paraffin. Emulsifying ointment <i>B.P.</i>
Pastes	Dry, lichenified, and scaly	Protective and emollient	Messy and tedious to apply (linen or calico needed). Most protective if applied properly	Zinc Compound Paste <i>B.P.</i> Lassar's Paste <i>B.P.</i>

seems too obvious to mention, but, for example, steroids are often diluted in bases of an inappropriate pH. These preparations may appear to be helpful but any effect is unlikely to be due to the steroids, which will lose much of their activity. Dilution of proprietary steroid-antibiotic/antiseptic preparations is also unwise since the antibacterial agent may be diluted to a level which is ineffective.

It is sound practice to prescribe only those dilutions which are well understood, avoid the personal mixing of medicaments, and to limit one's prescriptions to the already embarrassingly large and well-tested lists in the *B.P.C.* and *B.N.F.*, as well as proprietary preparations of proved rather than advertised value.

Systemic Therapy

Treatment may have to be given systemically either when skin conditions are associated with systemic disease, or when the medicament of choice, if applied locally, would be inactive (for example, griseofulvin). The general principles of systemic therapy are little different from those in other branches of medicine. Systemic disease may coexist with skin disease in several ways: the two conditions may be coincidental and unrelated to one another, or the skin disease may be part of a generalized disorder—and treatment of this will in turn help the skin (for example, systemic lupus erythematosus, xanthomata in diabetes).

In some cases the skin disease may cause a systemic upset which needs to be treated. Common examples are the anxiety and depression felt by some patients who can see their disease only too clearly. More rarely a widespread skin disease, such as exfoliative dermatitis, may cause a shunt of blood through the dilated blood vessels of the skin that is sufficient to cause high output cardiac failure. The drugs used to treat these conditions are those commonly seen in any medical ward but, as they play such an important part in dermatological practice, the doctor ought to try to understand their action.

A few drugs are, however, used almost exclusively for skin diseases. Their actions may be specific and well understood (for example, griseofulvin in the treatment of dermatophyte infections) or empirical but nevertheless well established (for example, dapsone in dermatitis herpetiformis). Antihistamines are used to lessen the distress caused by the most common skin

symptom—itch—while more specific treatment is used for the underlying cause. The effect of antihistamines are palliative rather than curative, but in the absence of any effective alternative they are often prescribed.

COMMON PROBLEMS

Some problems are so frequently encountered that they should be mentioned. Most doctors agree that the use of a placebo (a substance with no known pharmacological effect) is justifiable if there is no reasonable alternative, and particularly if its use may stop patients from taking more dangerous remedies. On the other hand, some agents are particularly prone to produce rashes and these are avoided if possible. Every dermatologist has puzzled over a worsening rash before at last realizing that his treatment (systemic or otherwise) was itself responsible.

Therapeutic conservatism may be frowned on in some circles, but is perhaps more important in dermatology than most other branches of medicine. It may be tempting to start some relatively toxic and hazardous systemic therapy for a severe and apparently unremitting dermatosis. Immunosuppressive agents including corticosteroids in psoriasis and eczema are examples. In malignant or rapidly fatal conditions the indications for the

use of these agents are clear enough, but in diseases causing morbidity rather than mortality their use has to be carefully weighed up. Usually this is a decision best taken by a specialist.

The patient's plea for pills is not an index of the severity of a disease—they often have little idea of the long-term problems which may face the victim of, say, 20 mg of prednisolone daily—and the doctor's decision must be based on the whole picture, which includes factors such as the patients' age, intelligence, work (or loss of), dependents, and availability for proper follow-up. If there is no alternative to therapy such as methotrexate in psoriasis, adequate preliminary investigations must be carried out before starting treatment. Reviews should be arranged to detect dangerous side effects early and to consider regularly whether the dose can be reduced, or the drug even stopped altogether.

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Medicine in Old Age

Mental Disturbance in the Ill Old Person

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Mental disturbance is very common in ill old people and the mortality in this group is high. Management may be difficult and mismanagement can change a restless ill patient into an apathetic, dehydrated, incontinent patient with pressure sores, at grave risk of dying from pneumonia or pulmonary emboli.

Progressive mental impairment is a common accompaniment of ageing. Where this has progressed to obvious impairment of memory, the disability is labelled "dementia," but many of these old people (at least in the earlier years) remain sufficiently competent to go on living in a simpler way with their families or even by themselves. Even relatively mild physical illness or other adverse factors in such people can cause an acute confusional state, and precipitate a domestic crisis. Even when there is no obvious mental impairment the aged brain tends to have less "reserve," so that it is much more readily upset than the younger brain by drugs or illness. As a result over a third of all patients admitted directly to geriatric departments are confused.

The mental symptoms may range from delirium with hallucinations to restless, agitated, and aggressive behaviour. Many patients are obviously physically ill, but in some the psychiatric symptoms dominate the picture.

Commoner Causes of Confusional States

STROKES

Patients with strokes causing major paralysis may be confused, but in these cases the cause is clear. Nevertheless, the cerebral infarction may not affect the pyramidal tracts, and the illness may then present with acute confusion. Careful examination may detect some confirmatory signs, such as minor weakness or clumsiness of a limb or an extensor plantar response. Examination must include rough tests of the visual fields, as homonymous hemianopia is easily missed in a confused person and it may contribute to the apparent confusion.

A stroke may cause only dysphasia, or even jargon aphasia, so that the patient's speech is gibberish. The patient may be confused or may only appear to be confused because of his nonsensical speech. Examination will reveal nominal dysphasia, and the sensible behaviour will be out of keeping with the disturbed speech. The disability can be very frightening and bewildering to the patient, who may become agitated and frustrated—and these can add to the difficulty of diagnosis.

At the onset of the stroke there may be headache, vomiting, vertigo, or ataxia as well as the acute onset of confusion. In many cases there will be no confirmatory signs and one is left with a presumptive diagnosis based on the history and on the exclusion of other factors. Electroencephalography may suggest focal damage, but whether further neurological investigation, including lumbar puncture, is justified depends on the history and total clinical picture. As with paralysis, there is a natural tend-

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