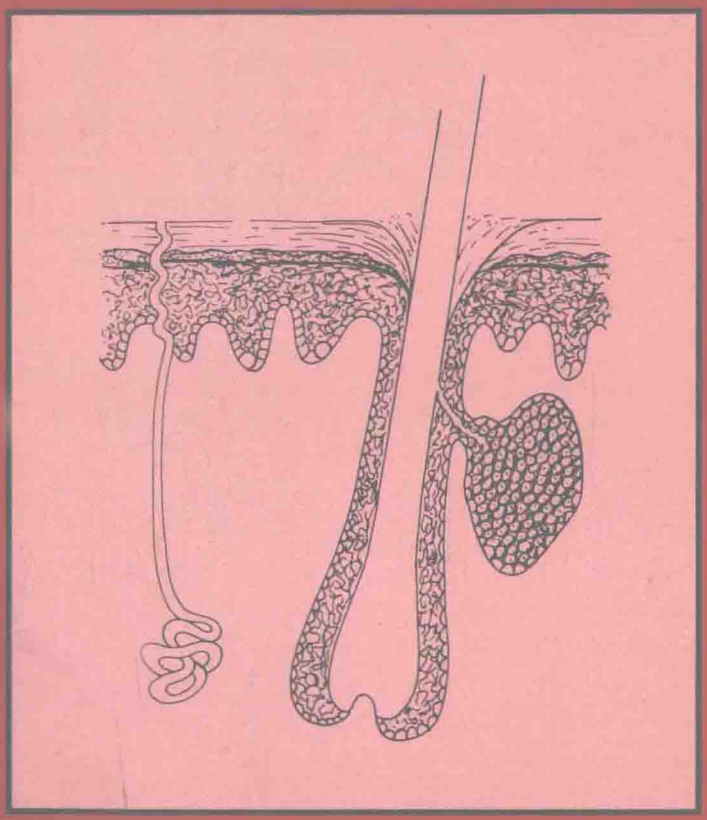
Medicine in the Tropics

MANUAL OF PRACTICAL DERMATOLOGY

John H.S. Pettit



Manual of Practical Dermatology

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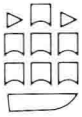

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Preface

This book will not be of much use to practising dermatologists and probably even dermatologists in training will find little they do not know. It has been written for that large portion of the medical profession in the world which finds itself having to treat skin diseases with little formal training. We hope to be of help to such doctors, to facilitate the recognition of the commoner skin diseases and to enable them to be treated with some degree of success. Recognising as we do that many countries, many hospitals and many patients are not rich, it is hoped that the treatments recommended will be practical, useful and relatively inexpensive.

With this in mind the book is divided into four sections. Firstly a brief introduction to the skin and an outline of skin therapy and secondly a large section on the commoner skin problems in which diagnosis is usually relatively easy (eczema, psoriasis, acne etc.). The third section is devoted to problems whose relative rarity may prevent a physician from being sure of the diagnosis (lupus erythematosus, dermatitis herpetiformis etc.) while the final part is designed to help the physician who 'knows *where* it is but doesn't know *what* it is' by considering differential diagnosis from a regional point of view.

We hope this volume will give support to physicians working away from 'centres of excellence' and enable them to face their skin patients with a little more certainty. As in many parts of the world such patients are not Caucasians, a large percentage of illustrations are of Asian and African patients.

Kuala Lumpur, 1983 J.H.S.P.

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My thanks are due to several doctors who kindly allowed us to use photographs of their patients; Dr William Jopling, Dr Alan Lyell, Dr Allan Green, Dr E. Kohout, Dr Werner Dutz and, most particularly, Dr Gunnar Lomholt who provided almost all the pictures of African patients.

Contents

Introduction to the skin

This book is not for readers who are, or wish to be, dermatologists. It is planned for those doctors who have to treat skin cases despite poor facilities and therefore contains only minimal information on pathology and bacteriology. The following brief introduction to the skin may be a helpful starting point.

1

Anatomy and pathology

ANATOMY OF THE SKIN

The epidermis

This is an organ for building keratin, the more or less waterproof layer of dead cells which covers the skin and forms the hair and nails. At the base of this structure is a single layer of cuboidal cells called basal cells which grow away from the body. Above the basal layer is a network of prickle cells joined to each other by intercellular bridges. The prickle-cell layer makes up most of the thickness of the epidermis and quite suddenly changes into a granular layer in which kerato-hyalin granules appear and the nuclei start to die. By the time the kerato-hyalin has changed into keratin the nucleus has disappeared and the outer layer of the skin, known as the horny or keratin layer is made entirely of dead keratinocytes.

Basal cells contain varying amounts of melanin according to racial or family tendencies; this pigment, formed by melanocytes which are scattered in the basal layer, is injected into the adjacent cells. The melanin collects above the nucleus and provides protection against the sun's rays.

The dermis

Under the epidermis lies its support system; the blood vessels, supplying the necessary nutrition, and the nerves which provide a protective warning system. Around these collagen and elastin fibres provide an elastic background which permits the skin to be freely movable especially over the joints.

Dermal appendages

The dermis also includes the sweat glands and the sweat ducts, which add excretory and thermo-regulatory functions to the skin, and the pilo-sebaceous follicles in the major part of which hairs are continually being made, cast and regrown. While occasional sebaceous glands open directly on to the skin, especially on the face,

usually they empty their sebum into the upper part of the pilosebaceous follicle.

Subcutaneous tissue

Between the skin and the rest of the body is a layer of fatty tissue in which are embedded larger arteries, veins, lymphatics and nerves. Relatively few dermatological diseases spread into this tissue.

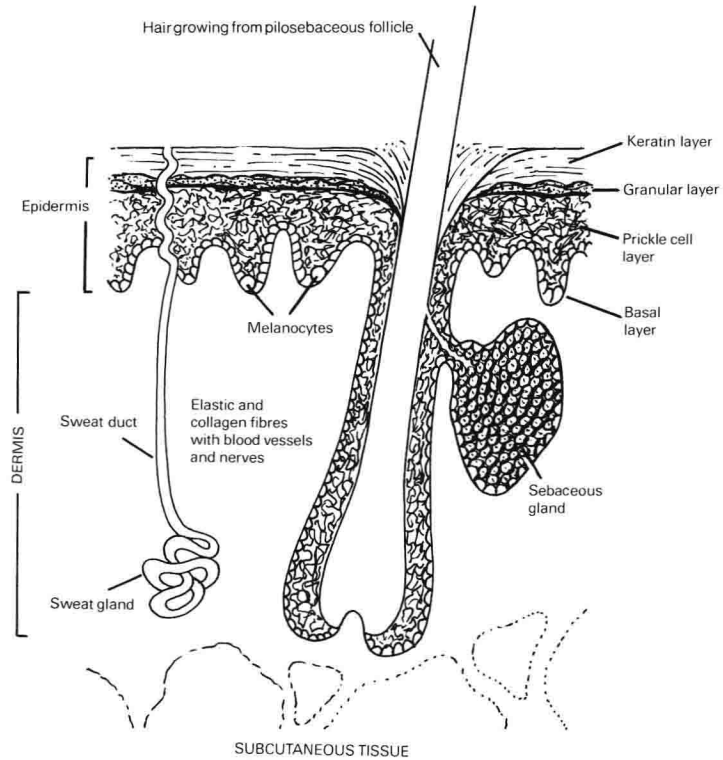

Fig. 1.1 The skin consists of the various layers of the epidermis (basal layer, which includes melanocytes, prickle cell layer, granular layer and keratin layer) the epidermal appendages (sweat glands and ducts, hair follicles and sebaceous glands) and the dermis (containing collagen and elastic fibres, blood vessels and nerves).

GLOSSARY OF SIMPLE PATHOLOGICAL TERMS

Acantholysis. Destruction of the intercellular bridges of the prickle-cell layer, usually leading to bulla formation.

Acanthosis. Overgrowth of the prickle-cell layer.

Achromia. The total absence of melanin in part or all of the skin due either to a congenital defect in melanin formation (albinism) or to an acquired deficiency (vitiligo).

B-cells. Lymphocytes which are not thymus dependent and are connected with humoral reactions.

Bulla. A fluid containing cavity (more than 0.5 cm in diameter) which may be entirely in the epidermis (intra-epidermal) or immediately underneath it (sub-epidermal).

Comedone. A collection of inspissated sebum, keratin, bacterial debris and (usually) a coiled up hair situated in the upper part of a pilo-sebaceous follicle.

Dermal papilla. Usually the dermo-epidermal junction is not flat but indented by parts of the dermis pushing it upwards and producing the typical undulant dermo-epidermal line. The upward digitations are called dermal papillae.

Ephelis. A macule which becomes visible in summer—a freckle. An area of melanocytes, normal in number but physiologically over-active under solar stimulation.

Erosion. Destruction of part or all of the epidermis in which the dermis remains intact.

Erythema. Redness of the skin due to dilatation of superficial blood vessels.

Erythroderma. A widespread redness and scaliness of the skin sometimes called exfoliative dermatitis. Due to vascular dilatation in the dermis combined with acanthosis and parakeratosis.

Granuloma. A proliferative lesion of the dermis containing chronic inflammatory cells and epithelioid cells or giant cells. Found in tuberculosis, leprosy, syphilis, the deep mycoses etc.

Hyperkeratosis. An increase in thickness of the horny layer normally present on the palms and soles but elsewhere due to a slower than normal epidermal turnover.

Hyperpigmentation. A brownish-black discolouration due to an excessive deposition of melanin in the skin or upper dermis.

Hypopigmentation. Pallor of the skin, not amounting to achromia, due to diminished production of melanin.

Keratinophilic. A term used for those funguses which like to live in or on keratin.

Lentigo. A hyperpigmented macular naevus due to an increase in the number of melanocytes in the basal-layer.

Leukoplakia. A white patch on the mucosa of the mouth lip or vulva, potentially premalignant.

Macule. A small discoloured mark on the skin which is not raised above the surface.

Melanocytes. Individual cells scattered among the basal layer which produce melanin.

Papilloma. A nodular tumour of the skin characterised by digitate hyperkeratotic proliferation. (verruca vulgaris, seborrhoeic wart and acanthosis nigricans)

Papule. A raised lesion on the skin which may or may not have a different colour from the skin. A papule is always palpable, a macule never.

Parakeratosis. Clinically manifest by a loose silvery scaliness, this is due to a faster than normal epidermal growth rate as a result of which the granular layer does not form and the keratin layer is incompletely keratinised, the cells retaining their nuclei.

Pustule. A small collection of pus, containing polymorphonuclear leucocytes and cellular debris in the epidermis or pilosebaceous follicles, usually due to streptococcal or staphylococcal infection. Sometimes sterile pustules develop which do not have a bacterial cause.

T-cells. These are thymus dependent lymphocytes and are involved in cell-mediated immunological reactions.

Ulcer. Destruction of the epidermis and part of the underlying dermis which heals with a scar.

Vesicle. A small (less than 0.5 cm) collection of fluid in the epidermis, usually clear and shiny.

2

Skin treatment

PRINCIPLES OF TREATMENT

Almost without exception people visit the doctor because they need treatment. If a definite diagnosis is made this will often enable a specific therapy to be prescribed but regrettably frequently a dermatosis has no certain cure and the patient has to be treated in a hit-or-miss manner usually implied in textbooks by such phrases as '. . . . may be helpful' or '. . . . can be tried'. This empirical approach reaches its nadir in those patients for whom no definite diagnosis can be made but who need alleviation of their symptoms as much as anybody else.

Methods of treatment may therefore be divided not only into local and systemic but these can be subdivided into specific or non-specific.

Local therapy

Lotions are most useful for acute epidermal conditions while creams and ointments are usually given for deeper or more chronic lesions. Conditions originating below the dermal papillae are usually not helped by local applications.

Some lotions are watery (eusol, potassium permanganate, Castellani's paint) while others, which are called 'shake lotions,' contain finely powdered material. These, which must be shaken before use, cool by evaporation leaving an inert powder on the skin.

In the past it has been easy to differentiate creams from ointments; creams were usually oil-in-water or water-in-oil emulsions while ointments were greases which did not usually mix with water. Pharmaceutical firms producing tubes of local applications have discovered such an extensive range of materials to use as bases that differentiation is much less clear than it used to be.

Medicated bandages have a useful place in the treatment of chronic epidermal conditions. In ichthyol, coal tar or hydrocortisone bandages a single medication is incorporated in an emulsifying base.

They are all rather sticky and it is best to cover them with a two-way stretch adhesive bandage.

Systemic therapy

It was once said that to be of any use a local application should stink, stick, sting or stain; and it is true that they are often difficult to apply and embarrassing to use. Specific systemic therapy is the ideal form of treatment and may be possible when a diagnosis is made while corticosteroids, sedatives, tranquillisers and antihistamines are frequently helpful in a non-specific way.

Intra-lesional injections

This is a half-way house between local and systemic treatment. A water soluble steroid may be injected into a thickened epidermal or dermal lesion but it must not be forgotten that such injections have systemic as well as local effects and they must not be used too frequently. Concurrent oral steroids should be suitably reduced.

A SIMPLE PHARMACOPOEIA

Throughout the world, particularly in less affluent countries, dermatological therapy is hindered by:

1. The doctor's limited knowledge—all too often the education proffered by a medical school seems sadly unhelpful when the doctor finds himself working in a centre of need rather than a centre of excellence.
2. The hospital's finances—it is often impractical to store a large range of expensive medications which may be only infrequently needed.

It is recommended that every clinic which may be expected to see skin cases should use the following basic pharmacopoeia.

Prepared lotions

Benzyl benzoate 25%. This specific for scabies will be needed for many years to come.

Calamine lotion. A soothing antipruritic shake lotion which also has a drying action.

Castellani's paint (Pigmentum Magenta B.P.C.). Useful for candidiasis, erythrasma and athlete's foot.

Potassium permanganate 1%. When suitably diluted can be used for acute infective conditions.