

PRACTICAL HANDBOOK OF THE PATHOLOGY OF THE SKIN

AN INTRODUCTION TO THE HISTOLOGY, PATHOLOGY,
BACTERIOLOGY AND MYCOLOGY OF THE SKIN WITH SPECIAL
REFERENCE TO TECHNIQUE

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PREFACE TO THIRD EDITION

It has been gratifying to the authors to find that, notwithstanding the limitations set by hostilities on the distribution of the book, the second edition was exhausted within four years of its publication, with the United States showing an equal interest in the book.

With so few intervening years there did not, in the opinion of the authors, appear to be any necessity to effect any marked change in the composition of the book, though they have taken the opportunity to correct several errors and enlarge on descriptions which needed amplification.

With the reawakening of serious study following on the return of medical men from the Services to civil life, they hope that this third edition will prove of some assistance to those about to devote their interests to both dermatology and pathology.

Once again they wish to thank Messrs. H. L. Jackson and F. Boothby, directors of Messrs. H. K. Lewis & Company Ltd., for their valuable help with the production of this book.

J. M. H. MACLEOD.

I. MUENDE.

St. John's Hospital for Diseases of the Skin.
March, 1946.

PREFACE TO FIRST EDITION

THIS handbook is intended primarily for students of dermatology, and is based on a series of demonstrations given by me in the Dermatological Laboratory of Charing Cross Hospital.

The sub-title, "An Introduction to the Anatomy, Pathology and Bacteriology of the Skin, with Special Reference to Technique," indicates more precisely than does its title the object of this book, which is to place before the student a compact handbook in which are described the histology of the skin, the pathological changes which may affect its various elements, its bacteriological flora, and the technical methods applicable to its study.

But although the changes affecting the elements of the skin in disease are described in detail, and the more important morbid states are referred to in which these changes are found, the book does not profess to be a complete treatise on the pathology of the skin, but rather a practical introduction to the subject.

There is no work on similar lines in this or, as far as I am aware, in any other language, and its arrangement is, I venture to hope, the one best adapted to simplify the subject to the student.

The skin is one of the few organs which can be seen and felt, and consequently it affords a peculiar opportunity for the study of the histological changes in relation to the multiform naked-eye appearances which they produce. By considering skin-lesions from the anatomo-pathological basis, much of the confusion which at present embarrasses dermatology, especially with regard to nomenclature, might be avoided; and this is the natural line of advance in the future.

As it is impossible to appreciate the finer points in the pathology of the skin without a thorough knowledge of its minute structure in health, and without some acquaintance with its development, I have deemed it advisable to devote a considerable part of the letterpress to these elementary subjects.

The book is the outcome of a number of years of research; but in it I have also drawn freely from the accumulated knowledge of recent years scattered so widely over the various text-books and journals. I trust I have duly acknowledged such sources of information in the

text; but should any have been inadvertently omitted, I crave forbearance for the oversight.

The majority of the illustrations are drawn from my own specimens, a few are from preparations kindly lent to me for the purpose, and several are reproductions. In making these drawings I have attempted to combine accuracy with clearness, and as far as possible have avoided the reproduction of the irrelevant detail which renders so many photomicrographs of comparatively little value from the teaching point of view.

No one could be more sensible of the imperfections of the book than the writer; but whatever its shortcomings may be, and doubtless they are many, I would fain hope that it will be accepted in the spirit in which it was written—and if it be the means of stimulating further research towards the elucidation of this important branch of medicine, its existence will have been more than justified.

It now remains for me to express my debt of gratitude to my various masters in dermatology—to the late Professor Kaposi, Professor Ehrmann, Professor Caesar Boeck, and especially to Dr. P. G. Unna, to whom I am indebted more than I can adequately express for his teaching while I was a pupil in his laboratory in Hamburg, and for his well-known writings on the pathology of the skin. I must also thank the many friends who have so generously assisted me by their valuable advice and warm encouragement. Among these I must specially mention Dr. T. Colcott Fox and my senior colleague, Dr. James Galloway.

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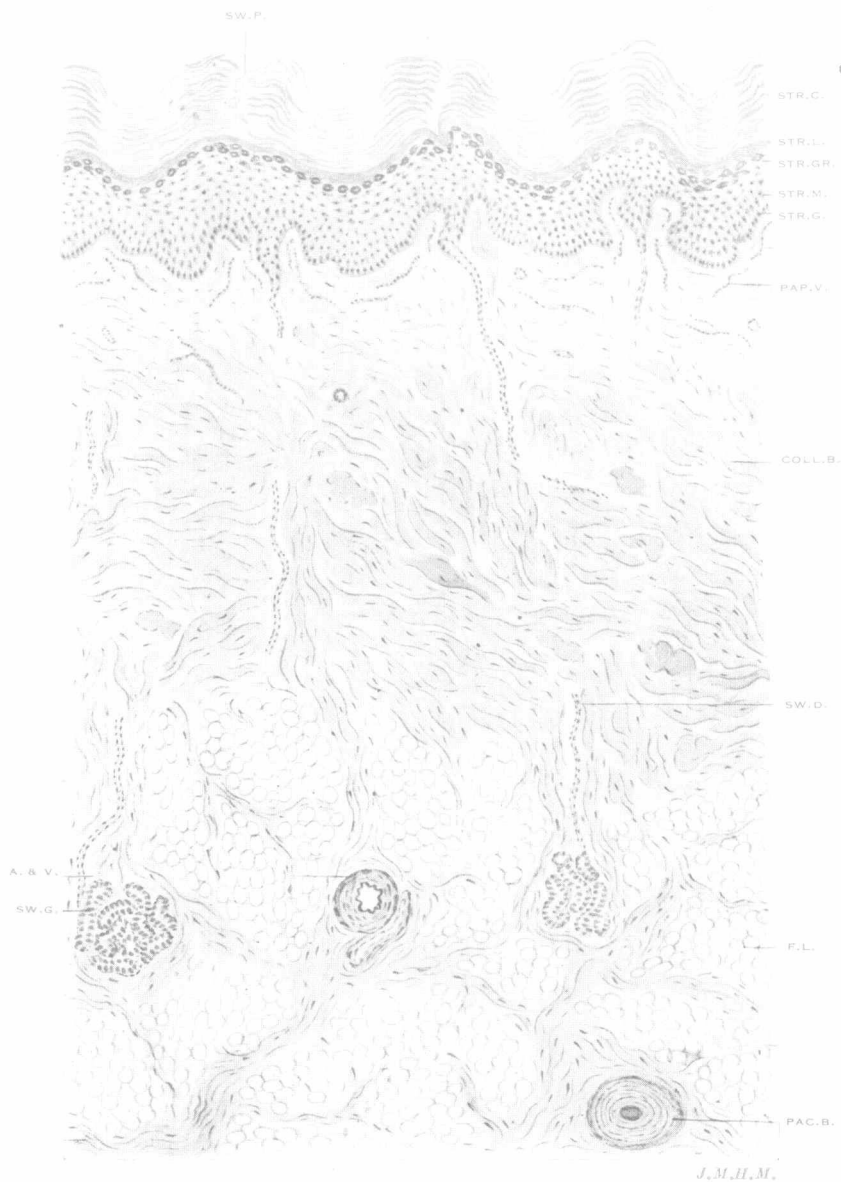


FIG. 1.—THE SKIN OF THE PALM OF THE HAND.

(Polychrome methylene blue-neutral orcein preparation.)

str.c.—Stratum corneum, *str.l.*—Stratum lucidum, *str.gr.*—Stratum granulosum, *str.m.*—Stratum malpighii, *str.g.*—Stratum germinativum, *coll.b.*—collagen bundles, *sw.p.*—sweat-pore, *sw.d.*—sweat-duct, *sw.g.*—sweat-gland, *a. & v.*—artery and vein, *f.l.*—fat-lobules, *pac.b.*—Pacinian body, *pap.v.*—papillary vessel,

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PATHOLOGY OF THE SKIN

CHAPTER I

BIOPSIES

THE skin is the organ, above all others, which is best adapted for the study of histological changes in association with the clinical appearances which they produce. If we wait till after death before making a microscopical examination of the skin, the result is apt to be unsatisfactory, for just as the clinical appearances are altered by death, so are the histological details. In children who have died during the eruptive stage of malignant scarlet fever, the skin, an hour after death, except for a few hæmorrhages, shows little sign of the extensive dermatitis which previously affected it. In the same manner skin lesions of the type of those of psoriasis lose their vivid colour after death and appear only as so much scaliness. By means of biopsies, i.e. the excision of a piece of living tissue for the purpose of microscopical examination, and the immediate fixation of the tissue excised, we are able to study the minute structure and to see details which could otherwise have been only imperfectly detected. Besides their importance in the study of the minute structure and development of skin lesions, biopsies are of the greatest value for diagnostic purposes.

As the operation is of the simplest nature, and if carefully and expeditiously carried out need cause neither pain nor discomfort, and as it is generally in the interest of the patients, there is, as a rule, no great difficulty in obtaining their consent.

In choosing the lesion for excision, a recent one should always be selected—in which the original characters have not been altered by secondary changes—and it is always advisable to remove a small piece of the normal surrounding skin along with the diseased tissue. An elliptical piece of tissue about $\frac{1}{2}$ inch to $\frac{3}{4}$ inch long and about $\frac{1}{4}$ inch wide will usually be found to be sufficient for the purpose and will allow for shrinkage.

The operation

The skin of the region where the biopsy is to be made should be cleansed thoroughly with spirit, care being taken to avoid rubbing

off scales. Under no circumstances should iodine be used, as it interferes with staining. The whole procedure should be regarded in the light of a minor surgical operation.

The anæsthesia

A local anæsthetic should be employed, viz. novocaine or ethyl chloride.

Novocaine

The injection of novocaine is a most reliable method of producing local anæsthesia. By it a perfect anæsthesia, which lasts about twenty minutes, can be obtained rapidly, the colour and consistency of the skin are unaltered, and large areas can be anæsthetised. It is customary to employ a 2 per cent. solution of novocaine in physiological saline solution, and only the minimum quantity requisite to produce the anæsthesia need be injected.

Ethyl chloride

Ethyl chloride is sprayed on the part to be excised till the skin becomes white and the excision is then performed.

This method has the following serious disadvantages, on account of which it is falling into disuse: (a) The colour of the skin is so altered by it, that at the time of the excision it is difficult to recognise the limits of the lesion. (b) It is followed by congestion, on account of which it may be difficult to stop the bleeding. (c) It does not always produce perfect anæsthesia, and even when the tissues have become white, the excision may still be painful. (d) It should be used with caution on the face, as the vapour is irritating to the nasal mucosa and the conjunctivæ. (e) It renders the skin so hard where the epidermis is thick, as in the palm and sole, that it is difficult to cut.

The procedure

The instruments required for the excision are a scalpel, preferably one with thin, replaceable blades, a pair of fine dissecting forceps, needle, and scissors.

An elliptical incision of the requisite size should be made in the direction of the lines of cleavage, vertically to the skin, and extending down to the subcutaneous tissue. The portion of tissue included in the incision should be raised up with the forceps and dissected away.