



# DERMATOLOGY

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# PREFACE

SOMEONE, long ago, remarked ironically that most textbooks seem to have been written to perpetuate error. An addition to the many comprehensive books of reference on diseases of the skin requires some justification. The following paragraphs summarize the authors' reasons for the writing of this volume.

Diseases affecting the skin present much difficulty and confusion to the general physician. This is surprising because, although there are many gaps in the understanding of the etiologic factors in such diseases, the physician possessed of reasonable familiarity with the principles of applied anatomy, physiology and chemistry of the skin, and with the dozen or so chief patterns of disease which it presents, will be able to classify over 90 per cent of all dermatologic patients diagnostically, and to treat most of them effectively. If, in the course of the initial examination, the skin lesions of a patient can be classified as common or uncommon, banal or serious, and local or systemic, much has been accomplished. Many diseases of the skin may be diagnosed with accuracy on inspection, as surely as the pathologist recognizes a characteristic cytologic picture. Others are more obscure and difficult and require further study, utilizing all the resources of general medicine and special laboratory procedures.

Dermatologic diseases are encountered rather frequently in all branches of medicine and surgery. On the basis of the enormous U. S. armed forces experience during World War II, it is clear that any general physician who is practicing in a temperate zone will find that some 7 to 15 per cent of his patients present themselves with a chief complaint of a disease affecting the skin. In warm, humid tropical climates, this incidence rises to 25 per cent or more. Under conditions of disaster and war, the skins of the affected population offer a particularly fertile field for micro-organisms and parasites. In industry, dermatoses comprise the largest group of occupational medical diseases.

In writing this volume, we have attempted to keep in mind constantly the viewpoint of students and physicians who have had little or no experience with skin diseases and whose preclinical training has not included any acquaintance with the fundamental aspects of skin physiology which have useful application. This has led to a considerable expansion of the section dealing with such basic considerations. Other variations in the approach to clinical dermatology have been employed. These may be summarized briefly, as follows:

In few medical schools is the skin given more than short shrift in the preclinical teaching. As a result, the medical student has difficulty in learning something about diseases of the skin, because he has had little opportunity to understand its *normal functions*. This is in contrast to his ability to understand the diseases of the kidney, for instance, because his previous study of the anatomy and functions of this organ has been much more prolonged and detailed.

Few teachers in the preclinical sciences have had any personal investigative experience with the skin, and ordinarily regard it merely as a rather annoying veil which obscures their observation and study of organs which they find more lively and interesting. The teacher of clinical dermatology is, therefore, at some disadvantage. For this reason, the chief facts regarding the normal skin have been summarized in several chapters, and it is hoped that the reader who peruses these summaries, even if he does nothing more than study the illustrative diagrams and the condensed summaries at the end of each chapter, will be better able to understand the diseases of this organ.

If one is able to arrive at a working *diagnosis* of the dermatologic syndrome which a patient presents, further detailed information regarding the disease in question may be obtained from many sources. A major practical difficulty, however, is encountered in arriving at the most likely diagnosis. For this reason, the discussions of methods of dermatologic diagnosis are fairly extensive. They are considered on the basis of the types of primary and sequential lesions, distribution patterns, the relative incidence of various dermatoses in infancy, childhood, and old age, the types of diseases more commonly encountered in the tropics, the chief diagnostic possibilities in dermatoses limited chiefly to certain parts of the body surface and mucous membranes, etc. The pathologic changes are not considered in detail, but indication is given of those diseases in which a biopsy may be helpful or even essential. All of these diagnostic devices have varying usefulness and critical value, but are constantly employed by the experienced physician.

*Dermatologic terminology* has been the butt of many humorous allusions, though it has long since lost its pre-eminence over other branches of medicine in its complexities. The situation has reached a point where a specialist in one field frequently has difficulty in communicating intelligibly with a specialist in another. In the midst of this babel, the general physician is left in an understandable state of confusion. Complex terms as designations for human disease are too often employed chiefly to obscure ignorance and to impress the uninitiated. We share the current wave of revulsion against much of the archaic and often pompous jargon with which clinical medicine is burdened. For this reason, we have used a single term in designating clearcut skin diseases, without mention of numerous less preferable obsolescent synonyms. In these and other ways, at least a third of the terms ordinarily found in inclusive dermatologic texts have escaped mention. Some of this gain has been sacrificed to more extensive discussions of applied physiology, psychiatry, associated systemic findings, genetics, parasitology, and tumors, but this expansion has seemed worth while.

In many diseases of the skin, *treatment* is highly satisfactory. For those diseases in which one or two methods are outstanding, this is so stated. For diseases in which several methods of management must sometimes be tried, the order of preference is given. There has seemed no reason to list alternate methods of treatment of uncertain value. Some types of treatment offer more risk than the disease being treated, and emphasis has been given to this fact. Where it appears that no satisfactory method of treatment is available, it has seemed proper to say so frankly.

The length of discussions of the *clinical characteristics* of various derma-



tologic syndromes may be varied almost at will, depending on one's interest in minutiae. Some variation in emphasis is necessary. The most important diseases are, obviously, those which may produce death or significant disability. In the case of systemic diseases in which the cutaneous signs are incidental, it has not been possible to do more than summarize the diverse and complex visceral changes which may be encountered. The more common diseases which are ordinarily entirely cutaneous have been dealt with in some detail. In addition, the skin is subject to a considerable number of changes which are of little real medical importance, but in which patients have a consuming interest, and these have been discussed rather fully. Of diseases which are exceedingly rare, we have written little; and of some conditions which appear to be no longer worthy of separate classification, no mention is made.

Insofar as possible, the clinical syndromes having common etiologic factors have been grouped together, e.g., bacterial, viral, fungal, etc. In many diseases, however, the basic causes may only be surmised or are completely unknown. These have been grouped, variously, on the basis of the portion of the skin chiefly affected, e.g., an appendageal gland, the blood vessels or the corium. It is occasionally convenient, even necessary, to consider diseases together on the basis of some outstanding clinical characteristic, e.g., bullous diseases, papulo-squamous eruptions. These classifications are by no means entirely satisfactory, but steady progress toward more logical and understandable groupings is being made.

A knowledge of the *cutaneous lesions which are reflections of systemic disease* is important. In a large number of important general medical disturbances, the experienced physician promptly suspects the underlying disease on the basis of cutaneous signs which are, variously, clear-cut to subtle. These signs must be critically evaluated, however, because the significance and specificity of many of them have been overrated.

*The pictures in this volume* have been selected, insofar as possible, from those of patients whom the authors have observed personally, chiefly within the past ten years. This has been considered advisable, because too great a proportion of "loaned" pictures invites error and dilutes the authority of the accompanying text. No satisfactory photographs of a few common conditions and a considerable number of rare ones were available from our own collection; in these instances, illustrations have been obtained from several generous colleagues. The charts and diagrams have been prepared wholly within the department.

In any extensive text, the problem of inclusion of *pertinent references* is a difficult one and is never solved to everyone's satisfaction. Exhaustive and complete lists of references, of the type essential to monographs and review articles, are impractical in textbooks by reason of considerations of space. References in the body of the text are disconcerting and often meaningless to the nonspecialist reader, and also offer difficulty in deciding whether the paper cited deserves merely a literary nod, a low bow or a complete genuflection. Moreover, lists of references too frequently include an overlarge proportion of the papers of the authors and their close colleagues; it is difficult to maintain adequate objectivity in such matters. We have, therefore, adopted the plan of including only one or a few key references to the subject matter of each chapter, and these should serve

as an adequate starting point for the reader who desires to consult original sources. The discussions include a considerable number of unpublished studies from our own group, but no specific reference to these has seemed necessary.

In a few modern medical and surgical texts, a welcome note of informality has crept in, akin to that which characterizes the really informative and stimulating lecture or seminar. During the years which have been required for the planning and writing of this text, we have found it impossible to maintain an attitude of consistent solemnity in respect to the subject matter at hand. It is perhaps a failing of many physicians that medicine too frequently looms in disproportion to other human activities and interests. If this occurs to someone whose primary field is a specialty of medicine, his outlook may become irremediably warped. We have, therefore, tried to guard against this with some zealotry.

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# CONTENTS

## Section I. APPLIED BASIC PRINCIPLES IN DISEASES OF THE SKIN

### Chapter 1

GENERAL CONSIDERATIONS.....	1
-----------------------------	---

### Chapter 2

THE EPIDERMIS.....	7
--------------------	---

### Chapter 3

PIGMENT FORMATION.....	15
------------------------	----

### Chapter 4

KERATINIZATION.....	20
---------------------	----

### Chapter 5

THE PERMEABILITY OF SKIN.....	24
-------------------------------	----

### Chapter 6

NAILS.....	32
------------	----

### Chapter 7

HAIR.....	40
-----------	----

### Chapter 8

THE GLANDS OF THE SKIN.....	52
-----------------------------	----

### Chapter 9

THE CORIUM AND THE SUBCUTANEOUS TISSUE.....	67
---	----

**Chapter 10**

THE BLOOD VESSELS AND NERVES OF THE SKIN.....	77
---	----

**Chapter 11**

BASIC PATHOLOGIC PATTERNS.....	93
--------------------------------	----

**Chapter 12**

FUNDAMENTALS OF CUTANEOUS MYCOLOGY.....	103
---	-----

**Chapter 13**

FUNDAMENTAL CUTANEOUS BACTERIOLOGY.....	118
---	-----

**Section II. BASIC PRINCIPLES AND CLINICAL APPLICATIONS  
OF ALLERGY AND HYPERSENSITIVITY**

**Chapter 14**

INTRODUCTION—DEFINITION AND CLASSIFICATION OF AL- LERGIC DISEASE.....	129
--	-----

**Chapter 15**

SERUM SICKNESS—ANAPHYLAXIS, ATOPY.....	133
--	-----

**Chapter 16**

ALLERGY OF INFECTION.....	142
---------------------------	-----

**Chapter 17**

DRUG ALLERGY.....	149
-------------------	-----

**Chapter 18**

CONTACT DERMATITIS OF THE ALLERGIC TYPE.....	155
--	-----

**Section III. PRINCIPLES OF DIAGNOSIS**

**Chapter 19**

THE MEDICAL HISTORY IN DERMATOLOGIC PATIENTS.....	175
---	-----

**Chapter 20**

CLINICAL EXAMINATION AND REGIONAL DIAGNOSIS..... 208

**Chapter 21**

DIAGNOSIS: TYPES OF SKIN LESIONS..... 271

**Chapter 22**

DISTRIBUTION PATTERNS AS AN AID TO DIAGNOSIS..... 291

**Section IV. DERMATOLOGIC THERAPY**

**Chapter 23**

TOPICAL AND SYSTEMIC THERAPY..... 301

**Chapter 24**

IONIZING RADIATION THERAPY..... 329

**Chapter 25**

SURGICAL DIATHERMY AND ULTRAVIOLET LIGHT THERAPY 345

**Section V. CUTANEOUS MEDICINE**

**Chapter 26**

DERMATITIS AND ECZEMA..... 363

**Chapter 27**

BACTERIAL INFECTIONS OF THE SKIN..... 459

**Chapter 28**

SYSTEMIC BACTERIAL INFECTIONS..... 499

**Chapter 29**

SPIROCHETAL INFECTIONS..... 541

<b>Chapter 30</b>	
FUNGAL INFECTIONS.....	578
<b>Chapter 31</b>	
VIRAL AND RICKETTSIAL INFECTIONS.....	672
<b>Chapter 32</b>	
PAPULOSQUAMOUS ERUPTIONS.....	719
<b>Chapter 33</b>	
DISEASES OF THE BLOOD VESSELS.....	748
<b>Chapter 34</b>	
CHRONIC VESICULOBULLOUS ERUPTIONS.....	782
<b>Chapter 35</b>	
ACNE, ACNEIFORM ERUPTIONS AND ROSACEA.....	804
<b>Chapter 36</b>	
DISEASES OF THE ECCRINE SWEAT GLANDS.....	828
<b>Chapter 37</b>	
DISEASES OF THE APOCRINE GLANDS.....	856
<b>Chapter 38</b>	
DISTURBANCES IN PIGMENTATION.....	866
<b>Chapter 39</b>	
DRUG ERUPTIONS.....	876
<b>Chapter 40</b>	
DISTURBANCES IN KERATINIZATION.....	888
<b>Chapter 41</b>	
DISEASES OF THE CORIUM AND SUBCUTANEOUS FAT.....	899



**Chapter 42**  
LUPUS ERYTHEMATOSUS, SCLERODERMA, DERMATOMYOSITIS, AND SARCOIDOSIS..... 915

**Chapter 43**  
METABOLIC AND NUTRITIONAL DISEASES..... 956

**Chapter 44**  
DISEASES OF THE HAIR..... 984

**Chapter 45**  
DISORDERS OF THE NAILS..... 1011

**Chapter 46**  
DERMATOLOGIC PARASITOLOGY..... 1028

**Chapter 47**  
THE LYMPHOMAS..... 1079

**Chapter 48**  
TUMORS OF THE SKIN..... 1095

**Chapter 49**  
HEREDITARY CUTANEOUS DISORDERS..... 1180

**Chapter 50**  
PSYCHOCUTANEOUS MEDICINE..... 1215

**Chapter 51**  
REACTIONS TO PHYSICAL AGENTS..... 1241

**Chapter 52**  
INDUSTRIAL DERMATOSES..... 1263

INDEX..... 1283

## *Section I*

# APPLIED BASIC PRINCIPLES IN DISEASES OF THE SKIN

## CHAPTER 1

### GENERAL CONSIDERATIONS\*

**T**HE SKIN is the anatomic boundary between the body and its environment, a shield without which life is impossible. It is the largest body organ, comprising up to 15 per cent of the total body weight, and is an adaptive organ par excellence. The signals of pain, touch, heat and cold are recorded in it with high precision and alert the organism for appropriate responses. The skin aids man in "perceiving" his environment and performs or initiates many of the essential adaptive adjustments resulting from this perception.

The skin serves the following principal functions:

(A) **PROTECTION.** The skin is conforming, soft and elastic, and can, accordingly, withstand a variety of traumas and shocks arising from without and within. It largely prevents the inward transmission of noxious physical and chemical agents, and the undue outward loss of critical substances such as water. Its general lack of permeability affords insulation against the complex "chemical" environment in which man lives. But the stimuli and shocks are sometimes so severe or unusual as to overwhelm the skin physically or functionally, or to stimulate it to respond in a variegated pattern of disease.

(B) **HEAT REGULATION.** The sweat glands and the cutaneous blood vessels

\* Rothman, S.: *Physiology and Biochemistry of the Skin*. Chicago, University of Chicago Press, 1954.

exert a regulatory effect on body temperature. Without their proper functioning, total body efficiency is severely impaired in hot climates and during heavy physical work.

(C) SENSATION. Heat, cold, pain and touch are perceived through the nerves which permeate the skin.

(D) SECRETION. With the exception of the water secreted by the sweat glands for the purpose of dissipating heat, which under extreme conditions may be as high as two liters in one hour, the secretory activity of skin is not of paramount importance in the general physiology of the body. Metabolic wastes are not disposed of through the skin in significant amounts, and it is not to be compared with the kidney as an excretory organ. Sebum may play some role in maintaining the suppleness of the surface layer by diminishing water loss from the stratum corneum. It contains the precursor substances for the elaboration of vitamin D by the skin, and also has certain antibacterial and antifungal properties.

The skin is a complicated membrane. It contains a variety of glands, nerves, vessels, lymphatics and muscles, and is stratified anatomically into distinct layers. These are, from without inward:

- (1) *the epidermis*
- (2) *the corium* (or true skin)
- (3) *the subcutaneous tissues*

The epidermis has a thickness approximately equal to the paper of this page and is the thinnest of the skin's layers. It is a cellular layer with a high metabolic rate. The corium is composed mainly of noncellular collagenous tissue, and its energy needs are much lower. It is 20 to 30 times thicker than the epidermis and rests upon a thick pad of fatty subcutaneous tissue which acts as a shock absorber and heat insulator.

The skin appendages are of two kinds: (1) *glandular* and (2) *keratinized* or *cornified*. The hair and nails comprise the keratinized appendages, and the apocrine, eccrine and sebaceous glands the glandular appendages. All are derived from the epidermis embryologically.

The skin is not uniform everywhere; in some regions it is adapted to particular purposes and varies in thickness, suppleness and looseness. The skin of the eyelids, for instance, is considerably thinner and looser than that over the pressure areas of the palms and soles. The appendages are specially distributed, with characteristic concentration in certain regions. The palms, for instance, contain eccrine sweat glands, but no sebaceous glands; the ear lobes contain sebaceous glands, but no eccrine glands.

Consonant with this anatomic variation, the reactivity and general behavior of skin vary in different areas. The reactions of hairy skin differ considerably from those of glabrous skin. Intertriginous areas must withstand special stresses to which ordinary skin is not subjected. Phylogenetic patterns may account for the peculiar concentration of glandular appendages in certain areas, and the specialized features of the skin in different regions clearly influence the distribution of lesions in certain diseases.

The skin is a reactive, dynamic organ, the appearance of which is markedly altered by age and by a great variety of external forces. The skin eloquently