

Sequeira's
DISEASES OF THE SKIN

SIXTH EDITION

by

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With 63 Coloured Plates and 426 Text Figures



LONDON

J. & A. CHURCHILL LTD.

104 GLOUCESTER PLACE, W.1

1957

<i>First Edition</i>	.	.	.	1911
<i>Second</i>	„	.	.	1915
<i>Third</i>	„	.	.	1919
<i>Spanish Translation</i>	.	.	.	1926
<i>Fourth Edition</i>	.	.	.	1927
<i>Fifth</i>	„	.	.	1947
<i>Sixth</i>	„	.	.	1957

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Sequeira's
DISEASES OF THE SKIN

PREFACE TO THE SIXTH EDITION

JAMES HENRY SEQUEIRA was born in 1865, entered the London Hospital in 1884 and qualified in medicine in 1889. He subsequently held resident appointments at the hospital, in medicine, surgery and gynaecology and obstetrics over the following seven years until he went abroad to study dermatology under Kaposi in Vienna and Finsen in Copenhagen. It was nine years after his appointment as Dermatologist to the London Hospital, and upon this broad foundation, that Sequeira first published his "Textbook of Dermatology," which came to have a world-wide reputation.

James H. Sequeira, M.D. (Lond.), F.R.C.P. (Lond.), F.R.C.S. (Eng.), was a pupil of Hughlings Jackson, Jonathan Hutchinson, Stephen Mackenzie and many other eminent clinicians, and worked with Arthur Keith, Wood Jones and William Bullock. He was a pioneer in radiotherapy and in the Finsen-light treatment of lupus vulgaris in Britain. His contributions to dermatology, including tropical diseases, and to the study of syphilis were numerous and were always pursued in the light of general medical principles and with a very human touch. He was descended from a long line of distinguished physicians, his great-grandfather having come to London as physician to the Portuguese Embassy to the Court of St. James when Napoleon invaded the Peninsula.

After his retirement at the age of sixty-two, Sequeira went to Nairobi, Kenya, where he took an active part in medical affairs until his death at the age of eighty-three years, on November 25th, 1948.

It was our privilege to collaborate with Sequeira in the last edition of this book in 1947 and we feel a pride in presenting a further edition which we trust will be a worthy memorial to our late master and will to some extent continue his wise teaching. The very considerable advances in the medical services which have taken place in the last ten years, the changes in social and economic conditions and in the health and nutrition of the community, have affected dermatology with all other branches of medical practice. These changes are reflected in the text of this book, much of which has had to be rewritten. Syphilis has almost disappeared in Britain and the diseases from animal parasites are now uncommon and like pyogenic diseases are amenable to modern treatment. The course of many grave diseases, as pemphigus and the reticuloses and of some disabling affections like eczema, Besnier's prurigo and exfoliative dermatitis, has been profoundly modified by hormonal steroid therapy.

We have, as far as possible, adhered to the previous pattern of presentation which is largely ætiological and has been found useful in teaching students. We have again refrained from extensive bibliographies but have given a few major references where we have thought it desirable.

We are again indebted to many colleagues for their help and have usually been able to make acknowledgment in the text, but there are many without specific reference who know of our appreciation. Dr. R. G.

Cochrane has kindly written the chapter on leprosy and we have had assistance from Dr. R. W. Riddell and from Dr. C. J. La Touche on mycological subjects, from Dr. H. Haber on histopathology, and from Dr. W. H. Jopling on tropical diseases.

We are indebted to Dr. Harriette Chick, formerly of The Lister Institute, for help in the revision of the section relating to vitamins and the deficiency diseases.

We have been grateful to receive clinical photographs from our friends in Australia and South Africa, and for permission to use many photographs from The Institute of Dermatology.

We have been helped in the production of the new edition by the wealth of information contained in the first and second series of "Modern Trends in Dermatology," edited by Dr. R. M. B. MacKenna, and "Recent Advances in Dermatology," by Dr. W. N. Goldsmith and Dr. F. F. Hellier. We have often referred to the excellent summary of "Histopathology of the Skin," by Dr. W. F. Lever. Our readers are advised to use these works to supplement their reading.

Our secretaries, Miss E. M. Earnshaw and Mrs. G. M. Moore, have given untiring help throughout and Miss Pamela Ingram has been responsible for the indexing of the work.

We are grateful to our publishers for their help and generosity, and their forbearance which made our heavy task so much easier.

J. T. I.
Leeds.

R. T. B.
London.

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INTRODUCTION

THE diseases of the skin can only be understood properly if they are approached with a sound knowledge of general medicine. In this work it will be our endeavour to show that the health of the skin largely depends upon and reflects the maintenance of a sound body in a healthy environment. Though dermatology is commonly regarded as a specialty the skin does in fact portray many aspects of general medicine in a way that is denied to those organs which are hidden from view.

The skin, which is so extensive and so easy of approach, provides an excellent field for training in observation. In dermatology it is not easy for the physician to deceive the patient or to deceive himself. He must soon learn the infinite variety of patterns which may be assumed by the same disorder in different persons and will often see resemblances where others see differences. He will also learn how readily interference may aggravate and masterly inactivity heal.

Too often the student approaches the study of diseases of the skin with the idea that it is something alien to general medicine.

We would point out that the study of dermatology affords exceptional opportunities for the observation of elementary disease processes, and might with advantage be introduced earlier in the curriculum.

The skin is invaded by most of the organisms and is subject to many of the pathological processes affecting other organs. In it may be recognised states of anæmia, toxæmia, nutritional and vitamin deficiencies, various disorders of metabolism as well as certain nervous and psychological disturbances. Its reactions therefore serve to elucidate the effects of disease elsewhere and provide useful diagnostic and prognostic data.

Probably the most significant behaviour of the skin lies in the psychological field. This is no doubt related to the fact that the central nervous system is developed as an infolding of the ectoderm of the embryo, and both the wisdom and the conceit of *homo sapiens* alike depend upon the bit of skin tucked in and becoming swollen headed at the front end. These relationships will be discussed in the chapters on the physiology of the skin and in the numerous dermatoses¹ which have a nervous or psychogenic origin.

A minority of the dermatoses, though paralleled in other organs, are peculiar to the skin, and depend upon changes in the epidermis and the appendages. We shall see that some of them are due to external influences, physical, chemical or microbic. Parallel reactions occur in the respiratory and gastro-intestinal tracts.

Many affections of the skin, however, are the expression of diseases affecting the body as a whole and are to be interpreted by the criteria which we apply in general medicine.

Because of the loose use of the term "allergy" we have, in previous editions, avoided it. It should, however, be recognised that true allergic reactions are common and are important in a wide range of pathological

¹ We use the term "dermatosis" to indicate any skin disease.

processes. The use of the term "allergic" in clinical and pathological interpretations should be understood to mean a specific acquired reaction in a particular tissue to a recognised antigen and should not be used to cover ignorance.

The earlier ideas on allergy arose from observation of effects produced in animals when doing tests for toxicity. Repeated injections at times produced some protection (prophylaxis) and at others lowered resistance (anaphylaxis).

Further analysis indicated that the antigen used was specific and that the reacting or target organ varied in different animals. The development of the specific reaction was thought to be humoral because of the fact that passive transfer could be demonstrated (the Prausnitz-Kustner reaction). It is thought that antigens or allergens stimulate the production of antibody in reticulo-endothelial cells and that excess antibody in the circulation may attach itself to the cell walls of tissue cells and that it is here that any reaction to further antigen occurs with the production of histamine.

It is known that chemicals may attach themselves to normal human proteins and convert them into sensitising proteins and further that the same sensitising effect may be produced with such chemicals though attached to a variety of different and not necessarily human proteins. Such allergens are described as haptenes.

The understanding of allergic reactions is increasing and the use of isotopes in tracing these antigens may in the course of time bring order into a rather confused field.

CHAPTER I

THE NORMAL SKIN

Histology and Physiology

THERE are so many variations in the appearance of the normal skin when examined by the naked eye or under a hand lens, that generalisation is impossible. Variations in colour and texture are due to race, to family, to climate and even to season. In the individual, different characters are found in different areas, and such are recognisable even in the darkest negro. The age of the subject is an important factor ; in the normally healthy the smooth supple integument of youth ultimately develops into the withered, inelastic, dried-up skin of the senile. We shall learn how far these changes depend upon endocrine, nutritional and environmental factors.

Beauty of complexion depends, as we have just indicated, partly upon youth, but heredity plays an important rôle and good health usually, though not universally, contributes its share. We are able to recognise what one may call "thin" or delicate skins, which react easily to external influences. They are common in blondes, in whom also vascular changes produced by emotion are often embarrassingly evoked. The "thick" or more resistant skins, endowed with a highly protective epidermis, though commoner in brunettes are also met with in some fair individuals. The activity of the cutaneous glands shows many variations. Normally there should be adequate reaction to changes of temperature, but some subjects in perfect health exhibit a tendency to excessive sweating or oily secretion. In the negro the skin in health is shiny and oily, and plugs of greasy matter may be seen in the orifices of the sebaceous glands. The experienced observer at once recognises that a dry skin in the black man indicates sickness.

The hygiene of the skin is important and simple cleanliness will prevent many ailments of external origin. By simple cleanliness we mean not only of the person but of the body linen, etc. It cannot be too widely known that there are few better prophylactics than soap and water. Special attention will be required for exposed areas, especially by those engaged in certain industries. This subject will be discussed when we come to consider the "occupational" dermatoses. The flexures require particular care in everyone, *e.g.*, the retro-auricular sulcus in children, the axillæ, the submammary fold, the umbilicus, the genitocrural and peri-anal areas.

We shall, however, have occasion to observe that the excessive use of soap and water especially with inefficient drying may damage the protective surface layers. The popular detergents, being more efficient emulsifiers of fat, rapidly degrease the skin and leave it susceptible to irritation.

Langer's lines. In 1862 Langer published the results of an extensive study of the lines of the skin. Many of these "lines" can be seen easily with the naked eye, others may require a hand-lens. The most interesting

are those which are formed by creases over joints and other movable parts. Excellent examples are seen on the palmar surface of the digits. The essential feature is that the lines are produced by the special distribution of fibrous and elastic tissue in the corium or true skin, and their deep attachment which prevents the integument puckering in folds like the finger of a glove.

The faint lines seen under a lens which divide the surface into innumerable triangles and other figures, are remarkably constant in the individual

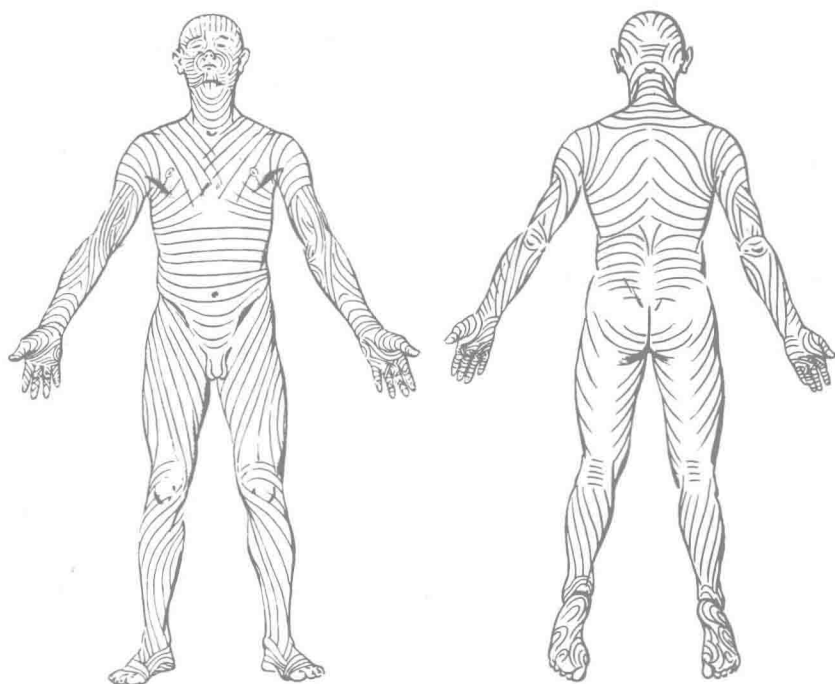


FIG. 1. Diagram of Langer's lines.

and on the digits form the basis of the study of "finger prints." In certain areas, notably on the abdomen, there are what Wood-Jones called "tension lines," which demand the attention of the surgeon when he is planning incisions, for cuts made across such lines of tension tend to gape. Surgical incision across Langer's lines favours the formation of keloid and is to be avoided, especially in plastic surgery of the hand and about joints.

Hair "trends." The distribution of the "trends" of the hair have been extensively studied. Apart from the differences due to sex which are manifested at puberty (*e.g.*, the upward extension of the pubic hair in the male), it is found that the main trends on the trunk are based on whorls in each axilla. Thence the streams pass up to the head and neck, down the arms, across the thorax and abdomen and down the legs. The general direction of the hair is determined by the obliquity of the follicles in the skin.

On the scalp the base is a whorl (or two whorls) over the occiput and whorls at the medial end of the eyebrows. There are innumerable patterns, which may

be distinctive even in the infant at birth. There is far greater variety in the trends of the hair than in Langer's lines on the skin and Wood-Jones found no relationship between them.

ANATOMY AND FUNCTIONS OF THE SKIN

It is perhaps not always realised that the skin is one of the most important organs of the body and that it has many functions. It constitutes 16 per cent. of the total body weight. Vitamins A, B and C are essential for its normal health.

- (1) It protects the underlying tissues, by the horny layer of the epidermis, its greasy covering, the "acid mantle" and by its pigment.
- (2) It receives and transmits sensory impressions of various types to the central nervous system. (The integument is the largest sensory organ.)
- (3) It regulates the heat of the body.
- (4) It excretes water and waste products.
- (5) It secretes sebum to assist in the protection of the epidermis, to keep the horny layer and the hair supple and to prevent loss of water from the cells beneath.
- (6) It is a source of vitamin D produced from sterols under the influence of light, and possibly has other metabolic functions.
- (7) It has a small part in respiration, *i.e.*, some exchange of gases takes place through the skin.

External and internal influences may modify one or all of these, such responses being made manifest by changes in colour, temperature, greasiness and moisture.

HISTOLOGY OF THE NORMAL SKIN

The integument is composed of three layers; the epidermis or cuticle, the dermis or corium, and the subcutaneous tissue or hypoderm.

The epidermis (Fig. 2) is a non-vascular protective covering composed of stratified pavement epithelial cells. It has five layers: (1) the stratum corneum, (2) the stratum lucidum, on palms and soles, (3) the stratum granulosum, (4) the stratum mucosum (Malpighian layer), (5) the stratum germinativum.

(1) *The stratum corneum.* The superficial part of the horny layer consists of cells which are constantly shed, and owing to their loose attachment are sometimes called the stratum disjunctum. The main part of the stratum corneum varies in thickness in different parts of the body. It reaches its highest degree of development on the palms and soles and is enormously thickened in regions exposed to pressure. Extreme cases of this hypertrophy of the horny layer are common on the soles of those races which habitually walk barefoot, and the thickened plantar integument makes the Babinski reflex somewhat difficult to obtain in the negro. The cells are flattened and lie in lamellæ. They have no nuclei and are composed of keratin and in the horny plaques of the workman's hand there is a little eleidine. Keratin is a fibrous structure possessing elasticity

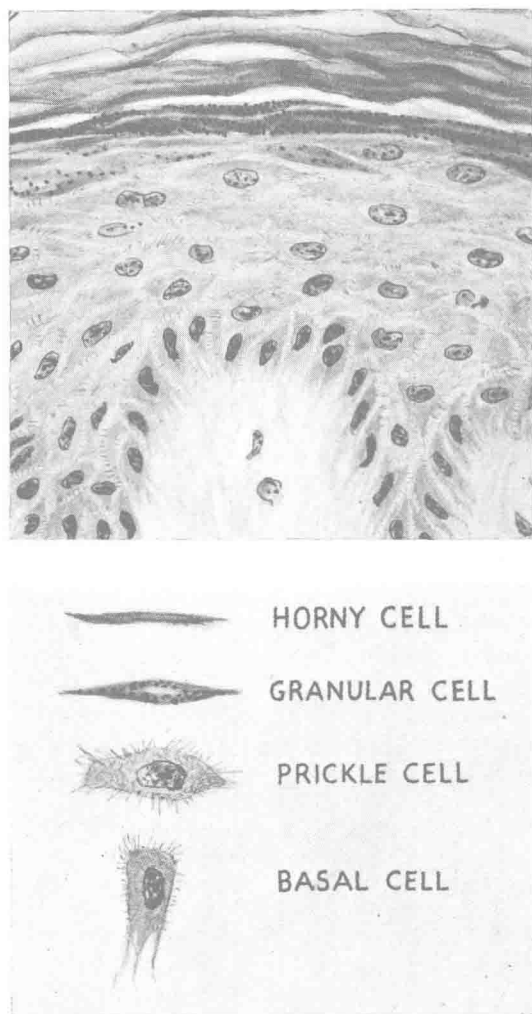


FIG. 2. Vertical section of epidermis. (*Institute of Dermatology.*)

and regular intermolecular folding into grid-like structures composed of polypeptide chains with -s-s and possibly other cross-linkages in the polypeptide grid (Astbury, W. T. (1950), *Brit. Jour. Derm.*, 62, 1). There is on the surface of the skin a layer of fat and cholesterol, acid in reaction, constituting the protective "acid mantle" (pH 5-6) and giving suppleness to the horny layer.

(2) The *stratum lucidum* lies immediately under the stratum corneum and may be looked upon as intermediate in its structure between the horny and granular layers. It has a homogeneous appearance, its cells are non-nucleated and devoid of fatty matter, but contain flakes and larger droplets of ketohyalin. It is seen only on palms and soles.