# CONTACT DERMATITIS

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CONTACT DERMATITIS is the MOST COMMON SKIN DISEASE--occurring in all age groups. Everybody is susceptible to the development of the disease, regardless of whether or not an allergic background exists.

A NEW APPROACH: The determination of the cause of contact dermatitis by studying the appearance of the lesions (the usual approach is history taking followed by patch testing with suspected items). In some cases a single glance at the lesion can lead to the detection of the cause.

A Monograph In
THE BANNERSTONE DIVISION OF
AMERICAN LECTURES IN DERMATOLOGY
Edited by
Arthur C. Curtis, M.D.
Chairman, Department of Dermatology and Syphilology
University of Michigan
Ann Arbor, Michigan

232 pages
332 illustrations

AN ATLAS OF PHOTOS AND PATTERNS for comparison with lesions to be investigated.

INCLUDES TREATMENT OF SPECIAL INTEREST to dermatologists, allergists, industrial physicians and surgeons--and, of course, to every general practitioner who is usually the first to see these lesions.

(continued on front flap)

American Lecture Series

# CONTACT DERMATITIS

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*The* BANNERSTONE DIVISION *of*
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*Edited by*

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*University of Michigan*
*Ann Arbor, Michigan*

*To my wife*

EDITH M. WALDBOTT

# *Foreword*

Some may consider it presumptuous for an allergist to concern himself with the treatment of Dermatitis, and thus encroach upon the territory of the dermatologist. Yet, those who have studied this disease must admit that a great deal of progress has been made in the treatment of dermatitis by utilizing developments in the field of allergy. Conversely, such dermatologists as Bloch, Jadassohn, and especially Sulzberger and his disciples, who pioneered in this field long before allergy was recognized as a separate science, have not only greatly stimulated the field of allergy, but have taught individual allergists a great deal about dermatology. For many years, I, personally, have visited and observed and consulted with dermatologists on questions of mutual interest in my practice. This, I feel, has helped me greatly to understand the problems discussed in this monograph.

The search for the causes of contact dermatitis is one of the most intricate detective tasks with which physicians are confronted. As it is the main purpose of this monograph to aid general practitioners, as well as specialists in this task, such aspects of the disease as nomenclature, the history of the disease, and certain controversial points in the underlying immunology are eliminated. In this monograph, the term "Contact Dermatitis" is used for the "Eczematous contact type of Dermatitis" in distinction from "Atopic Eczema" which is to designate what some have termed "Atopic Dermatitis," "Neurodermatitis," "Infantile Eczema," "Prurigo Besnier." For the theoretical data underlying our knowledge of the disease, I wish to refer the reader to the proper sources in the bibliography. Such books as the one by Schwartz and Tulipan, or that by Sulzberger, and most text books on Dermatology and Allergy will serve this purpose. The text of this monograph is confined to data which bear upon the practical side of the subject. In brief an attempt is made to follow the clinician into his office and to proceed with the practical management of the patient.

I purposely refrained from presenting a chemical analysis of most causative objects such as the various types of plastics, the constituents of rubber, etc. To the practitioner and even to most specialists, it matters little for the management of a certain case whether a black dress or a particular rubber article contains this or that chemical. In some instances a detailed analysis of these materials would undoubtedly detract from the purpose of this book. Research workers, or those called upon to testify at an industrial trial, are again referred to the complete and thorough studies by Schwartz and Tulipan who have devoted many years to analyzing the chemical compounds responsible for industrial dermatitis.

In chronic cases it is imperative that the patients acquire as much knowledge as possible concerning their disease in order to cooperate effectively with the doctor. For this reason, he may wish to have his patient read the pertinent parts of this monograph. The glossary appearing on pages 192 to 199, therefore, is more extensive and more elementary than is necessary for the use of a physician.

During my thirty years' experience in practicing allergy, I have learned that careful observation of the pattern of dermatitis, produced by a certain object, is by far the most reliable clue for the detection of its cause. I, therefore, endeavored to collect and classify as many patterns of actual cases as possible. The material accumulated in this book is largely derived from my own practice and from that of my former associate, Dr. J. J. Shea of Dayton, Ohio, whose wide experience and keen sense of observation have been of utmost value in this work. Photographs assisted us greatly in retaining the impressions of certain designs observed in patients with contact dermatitis. During the war years, however, when photographic material could not be obtained, many interesting and very characteristic cases could not be photographed. In such instances, the patterns were carefully sketched on diagrams and attached to the patient's record. Thus, it was possible to utilize the material in this monograph.

Another important contribution to this study was afforded by the answers received in reply to circular letters directed to dermatologists and allergists throughout this country. These letters asked them to supplement our work with cases from their own practices. In this manner a number of additional designs came to my attention for inclusion in this book, which I had not observed personally. I wish to express my gratitude to all those who cooperated, particularly to Doctor Francesco Ronchese of Providence, Rhode Island, who permitted me to study his photographs before he published them in his book on *Occupational Marks*.[128] To the many other contributors whom I am unable to mention individually, I am most appreciative.* Furthermore, I wish to acknowledge the untiring assistance rendered me by my present associate, Dr. Karl Merkle, in compiling data from the literature, in organizing the glossary, the index, in aiding in the photographic work and in the search for the causative agents in my patients. His many valuable suggestions have been incorporated in this book. Finally, Mr. George Schlaepfer deserves much credit for his photographs of patterns on the hands, depicted in Chapter VIII, and for many useful suggestions. His great care and thorough approach in taking the pictures was indeed appreciated.

G.L.W.

* Another book, *Les Dermatoses Allergiques*, by A. Tzanck and E. Sidi, Masson et Co., Editor, 1950, has been a valuable source of information to me.

# *Preface*

IN CONTACT dermatitis a cure depends largely on the detection and removal of the cause. How careful observation of the design of a lesion enables us to establish a causative diagnosis is clearly illustrated by the following instance in which neither an elaborate history nor other extensive investigative procedures were required:

Mr. D. K., (**Case 1**) 49 years of age, had a contact dermatitis on the radial portion of both hands, involving wrist and basis of thumb and index finger (Figure 1). This had been present for more than 15 years. When he consulted me, the dorsal surface of his right hand showed a skin graft. According to his statement, this was necessitated by burns from too intensive x-ray treatment administered for relief of his dermatitis. The left hand showed evidence of an x-ray burn superimposed on a chronic dermatitis of the venenata type. When the patient was first seen, his hands were in the pockets of his trousers, approximately one-half being exposed; a part of the lesions in the area described was visible. Because lesions on the dorsal surface of the hand bring to mind an object with which contact exists through "reaching into something," and because, according to his statement, he had the persistent habit of keeping his hands in his pockets, it was concluded that something in the patient's pocket might be responsible for the lesion. Inspection of the lining of the pocket showed it to be practically black with dirt. The right pocket contained a key chain with keys, the left one, his silver coins. A patch test for nickel sulfate produced a strongly positive reaction. By avoiding the nickel objects, by replacing the dirty lining with a clean one, and by eliminating friction in this area through keeping his hands out of his pockets, an eruption of 15 years' standing was cleared up within a few days. Indeed, only half a minute was required to discover the cause of this chronic, intractable ailment.

Here is another equally striking experience to demonstrate the value of this procedure:

At the exhibit of the A.M.A. Convention in Chicago in 1948, a doctor studying my photographs of patterns brought to my attention a lesion of dermatitis on his right hand, localized on the dorsal surface about the knuckles. I could not ascertain the specific cause, but I did state that this general pattern suggests contact with such objects as a woman's purse, a bag, a brief case; in other words, articles into which he might habitually

Figure 1. X-ray burn, superimposed on chronic dermatitis due to nickel. Nickel particles of coins and key chain had soiled pocket lining. Patient had habit of keeping hands in pocket.

reach. Within a short time another doctor presented his right hand to me with a dermatitis distributed in exactly the same manner on the dorsal surface. In discussing the question of "reaching into something," the rather obvious fact was brought out that most physicians are in the habit of reaching into their bags. The lining of this doctor's bag contained a zipper (nickel). The habitual contact with this material is likely to result in considerable traumatization of this particular area of the skin. Several months later one of the doctors informed me that by avoiding this contact the dermatitis of several years' standing cleared up completely. No testing of any kind and no elaborate local or general therapy was needed.

These cases illustrate the great diagnostic and therapeutic value of the study of the localization of dermatitis, a phase of the disease which has been somewhat neglected in the past. Of course, this method is subject to minor shortcomings, as are most diagnostic procedures. These will appear in the course of this discussion. A thorough elucidation of other aspects of the disease, particularly of the other diagnostic methods which are at our disposal, must necessarily precede the discussion of the patterns.

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# CONTACT DERMATITIS

# I

## *Incidence of Contact Dermatitis*

CONTACT DERMATITIS is considered to be the most common skin disease. No adequate statistics are available on its distribution among the general population, on its incidence as to sex, race, and age groups. Negroes are said to be affected less often than whites. North American Indians are susceptible to poison ivy dermatitis in the same degree as white people, repeated exposure to the plant being the principal determining factor. On the other hand, the Eskimos of Baffin Island, who are believed to be of the same race as North American Indians, do not exhibit susceptibility to poison ivy; the plant does not exist on Baffin Island.

Contact dermatitis occurs in all age groups. I have observed a four weeks old infant who was sensitive to his mother's lipstick. In infancy and early life, however, contact dermatitis is much less prevalent than in later years, undoubtedly because there is less chance for repeated exposure to contact agents, the requisite for the establishment of sensitization. In my own practice the incidence of dermatitis among women was 63% as compared with 37% among men. Of more than 32,000 cases of dermatitis in industrial workers, Brinton [19] encountered a slightly higher incidence in women than in men (Table I). Contact dermatitis is of special importance in industry, particularly since the advent of the newer synthetic materials. It is believed to have become more prevalent proportionally with industrial expansion.

It is well established that everybody is susceptible to the development of the disease, regardless of whether or not an allergic background exists. By far the majority of cases observed in my own practice present an allergic family history or personal background of allergy. This, however, may not be true in general practice. In an allergists's office patients are more likely to come from allergic families. On the other hand, through wider experience and greater consciousness thereof, an allergist may be more likely than others to detect an allergic background. For instance, I have observed recently that a relatively large percentage of patients with contact dermatitis may present no features of allergy other than a tendency to chronic sinus disease. Some are not aware that this is a characteristic feature of an allergic history.