MEDICO-LEGAL ASPECTS OF OCCUPATIONAL DERMATOSES*†

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As the title of this contribution indicates, the subject has at least three major aspects: the medical (dermatologic), the forensic, and the industrial or economic. It is obviously impossible to do justice to all three in this relatively brief communication. For the discussion of the legal aspect alone would require a voluminous treatise, as each country, and, in the United States, each State, has its own laws covering occupational disease; thus from the legal viewpoint no discussion would be of more than local interest unless each separate law were given individual consideration. This paper is therefore confined, in the main, to the dermatologic considerations, including only certain generalities regarding the industrial and the legal, and the forensic issues are envisaged solely from the viewpoint of the physician.

As regards the law: its formulation, revision, interpretation and enforcement, I necessarily adhere to the viewpoint of the dermatologist; and the suggestions which I shall make are those which, from this viewpoint, seem most likely to insure justice to the worker, to the employer, to the insurance carrier and to the community at large. Certain examples of imperfections of compensation law and its enforcement are cited to clarify specific points. These examples are chosen from my own experience with the laws of New York State. Obviously, these examples cannot be valid in States or countries whose laws differ from those of my experience in regard to the specific points under discussion.

To those who have not been in intimate contact with the subject, the revelation of the actual numerical and fiscal (economic) importance of occupational dermatoses must be staggering.

The most accurate figures at present available in the United States show that occupational dermatoses constitute over 65 per cent of all industrial disease. The estimated loss per annum is over 4,000,000 dollars. And the United States seems to be no exception, for in England, Overton's statistics state that in the year 1927, of 1349 cases of industrial compensable disease, 979, or approximately 72 per cent, were skin diseases. (Cited from Ref. 4.) Prosser White in England, and Oppenheim in Austria fix the incidence of occupational dermatoses at 15 to 20 per cent of all skin diseases.12-14 These figures seem incredibly large, but in reality they are probably below the actual incidence; for I should like to venture the opinion that occupational skin diseases are not being regularly diagnosed and classified as such in the majority of large public hospitals and clinics of the country. In fact, to my knowledge, no official dermatologic diagnostic and classification list contains the heading "occupational dermatoses" or "industrial dermatoses."

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† I am greatly indebted to Referee L. B. Siegel and to Dr. Wesley Rogers for their constructive criticism.
Dr. Louis Schwartz of the United States Public Health Service, Office for Dermatoses Investigation, has been kind enough to read this paper in manuscript and to make many helpful suggestions. He has expressed himself as being in accord with the views expressed.
It is, therefore, no exaggeration to state that, second to occupational accidents, occupational skin disease is one of the most important compensation problems of today. Despite this importance, an importance increasing daily with the increase in the complexity of modern manufacturing processes and production methods, there is no medical school in which this aspect of medicine is adequately taught, no institute in which manufacturing processes and industry can be scrutinized and studied from this viewpoint; and few, if any, specialists who possess the necessary combined knowledge of dermatology and of immunology, as well as of industrial processes and hazards and of legal and economic matters; nor is there any institution devoted to the training of such specialists.²³ Later in this paper I shall attempt to advance some constructive suggestions on this deficiency.

Before entering into details, I want to repeat that my viewpoint throughout is that of the dermatologist; and that I believe that my opinions are arrived at without prejudice against or favoritism towards any of the parties or groups concerned, be they the employees, the employers, the insurance carriers, or the state.

In my experience with and consideration of the medico-legal problem of occupational skin disease, I have attempted to formulate for myself an ideal basic law, i.e., a law which seemed to hold the greatest promise of justice to all concerned. And it is this private and hypothetical “law,” and its comparison with the general tenor of existing law, which really form the basis of this communication. Of course a physician, and my knowledge and attitude towards these problems is necessarily always that of the physician, cannot pretend to the ability to formulate laws. However, I believe that compensation laws will adequately do justice to occupational dermatoses only when they are formulated with the advice and collaboration of competent dermatologists. So that, while I can hope nevertheless to submit this opinion in the form of a suggestion.

It seems to me that the greatest good should be achieved under a general law worded approximately as follows:

When an employee suffers from any skin condition, or from the sequae of any skin condition, in which his occupation can be proved, beyond reasonable doubt, to be, directly or indirectly, a causal or contributory factor,* such employee is entitled to compensation commensurate with (a) the degree to which the occupation is responsible for the skin disease and/or its sequelae; and (b) the extent and duration of the skin condition and/or sequelae, the resulting discomfort, disability and/or disfigurement. Such employee is further entitled to the payment of the reasonable costs of adequate medical attention and treatment, administered through qualified physicians, hospitals, etc. of his own choice; and such employee is further entitled to such reasonable costs of investigation, and of expert testimony as may be necessary in order to substantiate his claim.

In my experience, compensation laws in general not infrequently present some or all of the following outstanding imperfections:

1. **Limitation of compensation to certain specified dermatologic entities**

Any law which mentions specific names of diseases, requires for its interpretation and enforcement exact legal definitions of medical terms. Such incontrovertible definition is often impossible in medicine. For example, very few dermatologists will today agree on the exact definition of “dermatitis venenata,” of “eczema,” or even of “dermatitis.”

Furthermore, dermatitis venenata, direct infections of the skin (e.g., anthrax, tuberculosis), traumas (caustic and acid burns, etc.) are among the few skin conditions which the laws generally designate as compensable.† This narrow limitation is

* Comparable to the “injuries out of and in the course of” of the accident compensation laws.
† In the United States only eleven states legally provide compensation for skin diseases.
obviously unjust, for it excludes from compensation a large number of skin diseases which, in specific cases, may actually be of occupational origin.

This last point may be illustrated by a number of cases in which I was recently called to the witness stand.

A series of acne cases suddenly appeared in a factory in which a chlorinated pitch and paraffin compound was introduced in the process of manufacturing electrical condensors. The appearance and course of the eruptions made it clear to every dermatologist, and subsequently to the employees, the employers and the insurance company, that these were indisputable occupational acnes due to the chlorinated compound. The damage was evident and the cause was undisputed. Nevertheless, the insurance company saw fit to controvert the cases in the courts. They contended, justifiably perhaps under the New York State law then in force, that an acne was not a compensable skin disease. For the law specified only “dermatitis venenata” due to oils, acids, or alkalis, etc.*

Even in my own necessarily limited experience, I have encountered numerous cases which could serve as additional examples here. I have seen a dermatitis herpetiformis brought on by an occupation entailing contact with fluorides and iodides. I have seen so-called “butchers’ pemphigus” due to an occupational infection; atopic dermatitis in a baker, caused to exacerbate by the inhalation of wheat flour. And, of course, all dermatologists know the fungus dermatoses which are prone to occur in such occupations as dish-washing, cooking, handling of fruit and vegetables, canning, soda “jerking,” and in literally hundreds of other trades and occupations in which

* I do not know how this issue was ultimately settled. But I do know that I felt justified in stretching a point on the witness stand. I defined “dermatitis” as an “inflammation of the skin and/or its appendages”; and I explained that the sebaceous glands and hair follicles were appendages, invaginations of the skin; and that the acne was due to an inflammation of these structures, and was therefore a dermatitis in the wider sense of the word. And since the compound at fault was admittedly a poison, the acne was a dermatitis venenata, Q.E.D.

moisture, maceration, heat and perspiration play a rôle. And furunculosis, other pyodermas, and numerous other skin infections are often traceable, to a greater or less degree, to occupational skin damage through maceration and friction; or appear as sequelae of itching occupational dermatitis and scratching. Furthermore, all dermatologists have seen patients suffering from sensitization dermatoses of long duration, due to the application of topical and other remedies employed for the relief of an original, clearly occupational skin condition.

While it is evident that all the cited examples are cases of occupational skin disease and its sequelae, none of them falls into the categories specified as compensable under the majority of compensation laws, nor under the law of New York State as in force up to September 1, 1935. In my suggestion for amendment I have, therefore, avoided the limitation of compensation to certain specified dermatologic entities; and I have used throughout the general terms “any skin condition” and “skin disease.”

II. Limitation of compensation to dermatologic entities caused by certain specified substances

Any law which limits compensable skin diseases to those produced by “substances” must eo ipso be inadequate. For it ignores the occupational dermatoses produced by factors or agents which cannot be termed “substances.”

As examples, I need mention only occupational dermatoses due to exposure to light, those due to heat and cold, to rapid changes in temperature, pressure, etc., and to ultraviolet rays, etc. (Here I am excluding, of course, the ordinary acute burns, freezing, etc. which are usually covered by the law under the heading of “trauma” or accident. I am referring to the rare skin conditions, such as lupus erythematosus acutus, hydroa vacciniforme, heat and cold urticaria, etc.)
But it is not the use of the word "substances" which constitutes my main objection. It is rather the listing of specified substances which seems to me to be the major imperfection in the law. For any list, no matter how long and how carefully compiled, must inevitably be incomplete. And this for two reasons: first, because the constant rapid advance in commerce and industry brings workers into contact with new substances and with the constituents and conditions of new or altered processes of production; and, second, because the modern and constantly increasing knowledge of allergy has proved that any and every substance can, through sensitization, become the competent producing cause of a dermatosis.2-4 In other words, the older concept at the basis of most compensation laws led essentially to the listing of primary irritants and poisons, whereas, in fact, a large proportion of the substances causing occupational dermatoses are ordinarily innocuous. As common examples, I need mention only the dermatoses reported to have been caused by wheat and wheat oil; silk and rayon; nickel and other metals; spruce, cocobola, mahogany and other woods; flowering plants such as chrysanthemums and primroses; fruits such as oranges and apples; animal products such as wool-fat and glue, etc.; and animal emanations such as feathers, horse dander and rabbit hair. A list attempting to include all substances of this type would have to be long without end, and it would still fall short. For, within the scope of the modern allergic concept, almost any and every substance could be capable of causing sensitization and subsequent dermatoses.2-3,11,17

In my suggestion for amendment I have, therefore, avoided the use of the word "substances," and have also avoided the limitation of compensation to dermatologic entities caused by certain specified substances; and I have chosen the wording to state that the employee is entitled to compensation when his occupation can be proved, beyond reasonable doubt, to be a causal or contributory factor in the production of the skin affection.

III. Specification of trades and occupations which shall be entitled to receive compensation, by a listing of so-called "hazardous occupations." This leads to the limitation of compensation to certain industries, trades and occupations, and to the exclusion of all others.

Since the number of trades and occupations which can produce dermatoses in susceptible (hypersensitive) individuals is necessarily equal to the existing number of trades and occupations, such listing is obviously unnecessary. And, moreover, it is certainly unfair to all workers in pursuits not included in the list. It does not seem necessary to clarify this statement by further discussion, nor to drive it home by citing examples.

For the reasons mentioned, I have, in my suggestion for amendment, avoided the listing of hazardous trades and occupations; and have thereby avoided having certain trades and occupations legally designated as the exclusive producers of compensable skin diseases.

IV. Limitation of compensation to those cases in which the occupation is the proved cause.

My criticism of this formulation of law is directed against the significance of "the proven cause." There are many instances in which the occupation is not the sole cause, but a partial or contributory causal factor. In such cases, the employee should be entitled to some compensation, the amount of compensation to depend, of course, upon the relative importance of the occupational factor in the production of the skin disease.

I admit that the adjudgment of this proportionate blame will often be difficult, delicate, and, in some cases, more or less arbitrary. Nevertheless, I feel that justice demands that this issue be faced.
The importance as well as the difficulty of such an adjudgment is probably best illustrated by the following two examples. These examples are by no means the pictures of isolated cases; they are typical of a vast majority of occupational dermatoses. In fact, it is not exaggeration to say that they fairly represent the difficulty most frequently encountered by the physician asked to pronounce judgment as to causal relationship in dermatologic compensation cases.

Example 1. A young man, during his period of high school athletics, suffers occasional attacks of scaling and maceration between the toes; and, more rarely, groups of minute vesicles appear on the soles and on the fingers. These attacks are never severe or incapacitating. But on one occasion, during a routine examination, a physician observes the presence of this dermatophytosis and dermatophytid, and prescribes for it. The condition continues in this mild form until the patient takes employment as a soda clerk. A short time after beginning this work, the patient’s entire hands are covered with crusting, oozing, fissured and scaly lesions; and are swollen, tender and painful. His condition makes it impossible for him to continue at his work, and requires dermatologic treatment.

Investigation with patch tests, etc. demonstrates no specific hypersensitivity to any of the patient’s occupational contacts. There are no pathogenic fungi to be found in the hand lesions; but trichophyton fungi are demonstrable in the slightly macerated skin between the toes. The intracutaneous trichophytin test elicits ++++ reaction. The dermatologic diagnosis is: dermatophytosis of the feet, with probable dermatophytid of the hands. Under treatment, the incapacitating condition clears up, only to return promptly each time the patient returns to his work as a soda clerk.

At first blush, this case might not appear to be entitled to compensation. There is clearly a pre-existing dermatophytosis at the basis of the entire trouble. Compensation laws, likewise, often fail to recognize such cases as compensable.

However, closer scrutiny and analysis bring out the following facts: (a) The original mild condition from which the patient suffered is so common that it can scarcely be considered pathologic (probably 90 per cent of adults in the U. S. have or have had mild forms of dermatophytosis or dermatophytid); (b) during many years the patient’s dermatosis had remained quiescent, with no tendency to increasing severity; (c) the first severe attack began when the patient started to work at the soda fountain; (d) the condition cleared up each time the patient stayed away from his occupation, and it repeatedly got worse each time that he returned to his work (in itself presumptive evidence of occupational causation); (e) it is known that such occupations as soda dispensing, entailing the constant contact with soap, dishwater, cleansers, etc. result in damage to the skin’s normal horny layer, to its fatty covering and to other protective devices. This, together with the maceration which prepares a soil for the fungi, favors the appearance of dermatophytosis and dermatophytids.

The sum of these considerations must make it clear that the patient’s occupation was a causative factor in the production of the incapacitating dermatosis. I therefore hold that justice demands at least partial compensation in this case and, of course, in all analogous cases.

Example 2. A worker in a fur-dyeing establishment has been employed for many years in the handling of dyed furs. The skin has suffered no ill-effects from this work. One hot Sunday, he takes a long walk in a new pair of shoes which are a bit too tight. The friction, perspiration and maceration cause a flare-up of a pre-existing mild dermatophytosis of the feet; and thus lead to the formation of a few minute, probably unnoticed dermatophytid vesicles on the hands. He returns to his work on Monday and performs his normal functions on the job, coming into contact with only the substances which he has been encountering regularly for years. But on this Monday he must have begun to become sensitized by the fur-dye; for, two weeks later, a typical severe eczematous dermatitis is present on his hands and forearms. (N.B. It usually takes from nine to fourteen days for a new eczematous sensitization to develop to a sufficient degree to cause the appearance of clinical manifestations.)

The patient is sent to a competent dermatologist, who immediately diagnoses: “der-
matitis venenata (probably caused by fur-dye)." A patch test with paraphenyldiamin is then applied. When this elicits a strongly positive response, the physician is convinced of the correctness of his etiologic diagnosis, and the case is classified as an open-and-shut "occupational dermatitis."

At first blush, this claimant would appear to be one entitled to full compensation. Compensation laws in general provide for such cases in this manner.

However, closer scrutiny and analysis must bring out the following facts: (a) the patient had been working with paraphenyldiamin for years with impunity; (b) the sensitization had begun on the day following the flare-up of an independent, pre-existing fungus affection; (c) it is well known that such flare-ups of fungus dermatoses tend to favor the production of new skin sensitizations to external contact substances, either by providing portals of entry to the sensitizing agent, or by producing a heightened tendency to sensitization in some unknown, immunologic manner. It must be evident, therefore, that the patient's occupation is here not the sole actual cause of the incapacitating dermatosis; and that the pre-existing dermatophytosis must be regarded as a strongly contributory factor.4p I> 8

After due consideration it seems self-evident that justice demands not full, but only partial compensation in this case and in cases of this type.

These two representative examples clearly illustrate the dermatologist's common quandary. For, under the usual compensation laws, he is regularly called upon to answer either Yes or No to the following form of question: "Was the patient's occupation (occupational contacts) the competent producing cause of the existing dermatosis?" A categorical Yes or No would, obviously, be an untruthful and unscientific answer, leading to a miscarriage of justice.

At this point I wish to hazard the opinion that a Yes or No answer as to the cause of a disease is, in general, unscientific and medically incorrect. For diseases are, in almost all instances, the resultant of action and interaction between numerous factors and forces, all of which must be considered as directly or indirectly contributory or causal.*

For these reasons, any law will prove inadequate if it specifies or implies that "the occupation and/or its contacts must be the cause of compensable skin disease."

I have, therefore, in my suggested amendment, chosen wording to cover all cases in which the occupation is "directly or indirectly a causal or contributory factor."

V. Award of compensation without proof of the causal connection between the occupation and the existing dermatosis

A compensation law which does not insist upon proper proof of occupational causality in each individual case must, in many instances, work injustice upon employers and insurance carriers. And yet, compensation laws do not always recognize the fundamental necessity for demanding proof of cause and effect. For example, the law effective until September 1, 1935 in New York State did not clearly require that such proof be brought. It merely listed acids, alka1is, acids or oil, brick, cement, lime, concrete or mortar, and stated that cases of dermatitis venenata are compensable when occurring in persons engaged in occupations involving contact with the listed substances.18

The following are examples of the obvious miscarriages of justice possible under such a law:

Example 1. A cement worker suffers from a dermatitis venenata. Under the law, this worker's claim must be awarded full compensation, although his dermatosis may be proved due not to an occupational, but to a non-occupational cause.

*It is today recognized as being scientifically incorrect to state that the tubercle bacillus is the cause of the disease tuberculosis. For, as is well known, almost every individual in a civilized community has been infected by the bacillus at one time or another. But the development of active tuberculous disease usually depends upon an unfortunate conjunction of predisposing and precipitating factors, such as the constitutional susceptibility or the environmental influences reducing resistance (undernourishment, exposure, trauma, non-tuberculous infections such as measles, etc.). These factors, then, plus the tubercle bacillus, are the causes of tuberculous disease.
home contact, such as hair-tonic, insecticide, or a plant in his garden. For, under the letter of the law, it is necessary for such a claimant to prove only that his work brings him into contact with cement and that he has a dermatitis venenata.

Example 2. A young woman is engaged in an occupation involving contact with oils. She suffers from a dermatitis venenata of the hands. Under the law, she is entitled to full compensation, even when and if this dermatosis is proved due to such extra-occupational contact as, for example, a new cosmetic hand-cream, a new pair of dyed gloves, or a soap employed in washing her baby’s diapers.

Example 3. An operative in a nickel-plating establishment is necessarily exposed to nickel sulfate and to caustics. Even should his dermatitis venenata be proved due to the varnish on the steering-wheel of his car, or to the fish-glue he uses in pasting stamps in his collection, or to the dyed fur-piece of his lady-friend, the worker would nevertheless be entitled to full compensation just because he is employed in nickel-plating, thus has contact with alkanis, and has a dermatitis venenata.

It might well be argued, in reference to any such cases, that the occupation could have been a contributory factor by playing a rôle in the production of sensitization. While not denying this possibility, I contend that justice demands that adequate proof be brought of the rôle of the occupational factor in each individual case; and that, if and when proved, the relative importance of such occupational factor be evaluated and considered in the award of the compensation.

In view of the foregoing considerations, my suggestion for amendment states that the employee is entitled to compensation only when “his occupation can be proved, beyond reasonable doubt, to be, directly or indirectly, a causal or contributory factor” in the production of the dermatosis. My suggested amendment also provides that “the compensation be commensurate with the degree to which the occupation is responsible for the skin disease.”

All the foregoing represents merely the necessarily limited viewpoint of a specialist in dermatology. I fully recognize that the simple writing down of such an abstract ideal is comparatively easy. Its practical realization through the formulation, enactment and enforcement of a compensation law designed along these perhaps Utopian lines is surely beset with countless and perhaps insurmountable difficulties. Some of these difficulties are surely beyond my knowledge; but I can clearly see medical obstacles to the proper enforcement of such a law under present general conditions.

Strictly from the dermatologic viewpoint, the greatest obstacle I see today is that we dermatologists do not yet possess the necessary and highly specialized knowledge required for the equitable judgment of the causal connex in cases of occupational dermatoses. In order to pronounce fair judgment, the dermatologist must have an exhaustive knowledge not only of the medical aspects of his specialty, but also of the substances and conditions to which employees are exposed while at work. Furthermore, he must be fully familiar with the substances and conditions to which these employees are exposed while away from work. He must then possess a mastery of the investigative technique necessary to determine the probable rôle of a suspected substance in the causation of the dermatosis under consideration.¹⁸

In cases of dermatitis of the contact type, this technique consists of two main forms of approach: (1) the patch test; (2) the empiric procedure of avoidance and renewal of contact.

Unfortunately, neither of these methods is infallible. The results of both should be evaluated jointly and only in conjunction with all other evidence, such as, whether or not fellow-workers are similarly affected, the exact nature and duration of the exposure, the type of substances to which the patient has been exposed, the appearance of the eruption, the site and the time of the first manifestations, the patient’s history, the appearance and state of the skin preceding the eruption, etc.
The patch test is incomparably the most useful and serviceable of present methods for determining the cause of an occupational dermatitis of contact type.* But, putting it briefly, the drawback is that a positive reaction is not always conclusive proof that the substance has caused the dermatitis; nor is a negative reaction conclusive proof that the substance may be exonerated.†

"False positives" are usually caused either by application of test-substances in too strong a concentration; or by the existence of a polyvalent hypersensitivity in which the skin is sensitive not only to the cause of the dermatosis, but to other substances as well; or because the hypersensitivity demonstrated by the test was, in fact, acquired independently of the hypersensitivity at the basis of the dermatosis under investigation.

"False negatives" are usually due to the fact that the patch test never fully reproduces the actual conditions of contact, which may have included such adjuvant factors as friction, heat, maceration, repetition of contact, etc.; or to the fact that the actual site of the hypersensitivity is not touched by the test, since certain areas of the skin may be hypersensitive while others are not;* or to the fact that, at the time of testing, the patient may be in a generally hyposensitive or refractory state which so often follows the outbreak of a dermatosis.

The empiric procedure of avoidance and renewal of contact is often useful. In fact, many a patient’s history contains presumptive evidence of the occupational nature of the complaint. In such cases the patient has noticed, even before consulting the physician, that his skin condition improves when he stays away from his work, and then recurs or exacerbates when he returns to the job.

However, the method of deliberate exposure for the sake of testing has its distinct limitations. For this form of testing is often prohibitively time consuming, as it necessitates waiting for the dermatosis to heal before undertaking the renewed exposure. Furthermore, a renewed test contact necessarily exposes to the risk of a renewed outbreak of the dermatosis; which is certainly, to say the least, questionable procedure. Aside from such practical difficulties, the results of even this drastic test are not infallible. Here, too, there may be encountered "false positives" and "false negatives."

The "false positives" are due usually to a polyvalent hypersensitivity; or to a reaction of skin areas previously damaged and through this previous damage rendered pathologically but non-specifically susceptible to irritation by factors which may have no relationship to the original cause.

The "false negatives" are usually due to the hyposensitive, anergic or refractory phase previously referred to; or to a spontaneous reduction in sensitivity representing, in effect, an immunity achieved for some unknown reason and in some unknown manner; or, not infrequently, the patient is exposed to conditions which are seemingly identical with those of the exposures producing the original dermatosis, but which are actually altered by some change in the occupational factors determining the skin hazards.

These few remarks have surely served to suggest the difficulties to be encountered at every step in the field of occupational dermatology. The complications and subtleties of the problems are such that the finding of causes and the evaluation of the proportionate rôle of each contributory cause require the knowledge of specialists within the specialty. It must be granted
that such a high degree of specialization is rare today.

I believe, nevertheless, that the equitable adjudication of many compensation dermatoses imperatively demands that the ultimate causal factors be discovered, and that the proportion of blame of each factor be determined. And since this requires the services of a large number of highly trained specialists, it will be necessary to develop them.

How and where can such specialists best be developed? In the medical schools (primarily the postgraduate schools) and in institutions devoted to the study and management of occupational diseases.

Such institutions devoted to occupational skin diseases seem necessary, not only in relationship to the proper functioning of the amended compensation laws, but for many other reasons. These institutes would not only train specialists, but they would constantly, in laboratory as well as in clinic and in hospital, be working toward better understanding of sensitization phenomena, and toward improvements in diagnosis, prophylaxis and therapy.

Institutes of this kind would not be an extravagance. On the contrary, I am convinced that they would rapidly repay the original investment, become self-supporting, and eventually prove to be of great saving to employers and to the community at large. For, through hospitalization and the best methods of therapy, the period of disability and the costs of medical services and treatment would be materially diminished and perhaps cut to a half or to even a smaller fraction of the costs under the present system.

Furthermore, incalculable savings would be effected through the development of scientific prophylaxis. This prophylaxis would be achieved mainly along the two following lines: (1) the study of industrial processes and the skin hazards involved, with the object of eliminating, as far as possible, those conditions, procedures and substances which are most likely to cause dermatoses; (2) the proper selection and rotation of employees, with the object of excluding from hazardous positions individuals a priori most likely to become sensitized, and also of controlling and abbreviating the periods of exposure to sensitizing procedures and substances. (For further details, see Ref. 4.)

Whereas I have long been urging the necessity for such an institute, I am by no means the sole sponsor of this idea or ideal. Many have been striving in this direction. The Division of Industrial Hygiene of the New York State Department of Labor has for many years been working towards this goal. The United States Government has already established an Office for Dermatoses Investigation, which has undertaken to develop at least one aspect of this problem in an admirable fashion. This office has recently investigated a large number of industries and their processes as causes of occupational dermatoses; and the publications of Louis Schwartz and his collaborators are supplying a growing fund of essential information.

But not only the Federal and State Governments but also progressive private industries are aware of the need for organized study of industrial hazards. For example, last February the E. I. DuPont de Nemours Company established the Haskell Laboratories near Wilmington, Del. This laboratory has as its object the study of the effects on the human system of the products and processes of the DuPont Company.

Another most promising step in the right direction is the recent formation of a Committee by the Section of Dermatology of the American Medical Association. This Committee with Dr. Harry Foerster as Chairman has as its object the formulation of suggestions for improvements in the study and management of occupational dermatoses.

In this paper, I have merely attempted to set forth my personal viewpoint of an ideal compensation law covering dermatoses; and also my conception of how such a law could best be administered. I can
only hope that these tentative suggestions may, after correction and revision by more competent authorities, perhaps find partial acceptance. However, should this hope not be realized and should my suggestions do no more than excite thought and stimulate further discussion of the medico-legal problems in occupational dermatoses, I shall feel that this communication has not been entirely futile.*

REFERENCES
3. Lane, C. G. Irritations of the skin due to industrial causes. Nation's Health, 7: 6 (June) 1925.

* In attempting to limit this contribution to the space allotted, I have omitted discussion of certain important aspects of the problems of workmen's compensation.

I agree heartily with Brahdy that among the chief medical problems of a workmen's compensation bureau are:

1. Medico-legal. How to make available to the referees a complete medical record and impartial and clear opinions for payment of compensation in all cases.
2. Clinical. How to obtain for all those injured or suffering from industrial disease the same high standards of treatment now accorded to some of them.

I am also in complete accord with Brahdy in recognizing that, under the workings of the present law, physicians asked to give testimony are inevitably exposed to influences which only the superhuman could be expected to resist. I believe that in the majority of cases, physicians giving testimony are, at present, dependent, in one way or another, upon the insurance carriers for fees or for regular salaries. On the other hand, the physician giving testimony is occasionally dependent for his fee upon the claimant or upon the award of compensation. In either case, it would be a great deal to expect completely objective testimony of such a witness.

Furthermore, I hold it to be particularly true in the case of dermatoses that by no means all compensation cases are being accorded the best possible treatment.

Brahdy's suggestion for the solution of both of these problems by means of the supervision of treatment by the medical department of the Compensation Bureau, analogous to the present supervision of the determination of disability, certainly merits serious consideration. However, it is my belief that boards of specialists appointed to be of assistance to the medical department of the Compensation Bureau would be essential; or would, at any rate, greatly facilitate the dispensation of just awards.

(For an excellent and detailed discussion, see Ref. 19.)

18. In Subdivision 2 of Section 3 of the Workmen's Compensation Law, Chapter 67 of the Consolidated Laws of New York State, to September 1, 1935, the portion applying to the compensability of dermatosis was worded as follows: "Occupational Diseases. Compensation should be payable for disabilities sustained or death incurred by an employee resulting from the following occupational diseases:

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<td>27. Dermatitis (venenata)</td>
<td>27. Any process involving the use of or direct contact with acids, alkalies, acids or oil, or with brick, cement, lime, concrete or mortar capable of causing dermatitis (venenata).&quot;</td>
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[For Remainder of References see page 550.]
pain or it may be the cause of other forms of obstruction, like volvulus.

The diagnosis of the condition, especially after obstruction has occurred, is usually uncertain. This form of ileus like the incidence of hepatic carcinoma is a sequel to neglected or undiscovered cholelithiasis. It should not occur.

The major number of patients are females.

A great majority of the patients have been ill for a long period of time, many of them for months or years. They live through periods of well being and recrudescence attacks of indigestion, stomach upheaval and sporadic distention, with irregular periods of recovery. Many of them have had hepatic or gall-bladder trouble from infancy or adolescence, and all of the patients present themselves eventually with signs and symptoms of inconstant intestinal obstruction and are usually in a weakened or critical condition.

All of these patients should be thoroughly x-rayed, as soon as they present themselves. Flat plates will often show the position of the obstructing stone and as Sickles and Hudson have demonstrated increasing numbers of patients who have suffered from spontaneous internal biliary fistula will be discovered. In the reference quoted\(^2\) 30 such instances were cited, of which 16 were due to cholelithiasis. The mortality as I have indicated is of necessity very high. The continued irritation of the stone, the advanced age of the patients, the long-standing intoxication and the uncertain conception of the cause of the trouble run the risk close to 60 per cent. In handling a case of this type one must be prepared and fitted to do varied abdominal operations and be capable of controlling many intraperitoneal emergencies. Gallstones, in the gall bladder, common duct or hepatic duct, intestinal perforations, bowel anastomosis may require attention. There may be one or more stones and there may be multiple obstructions.

\(^2\) Am. J. Roentgenol., 31: No. 1 (Jan.) 1934.

REFERENCES OF DR. SULZBERGER*

This law has been most recently amended, and effective as of September 1, 1935 (the approximate time of this writing), the legal definition of occupational disease is broadened by the addition of the following paragraph:

"Column One. Column Two.
28. Any and all occupational diseases. 28. Any and all occupations enumerated in Subdivision 1 of Section 3 of this Chapter."

[N.B. Subdivision 1 of Section 3 is a listing of "hazardous occupations," which includes nineteen groups containing at least the majority of trades and occupations.]

To my legally untutored mind, it seems that this amendment fails to define "occupational diseases"; in its very definition it simply reemploys the term "occupational diseases." I should like to venture the opinion that this law still requires more precision as to what is meant by "occupational diseases," before it can be interpreted and before it can be enforced. There is a possibility that the legal definition will be given approximately according to my suggestion, i.e., that occupational diseases are those diseases, and/or the sequelae of those diseases, in which the occupation can be proved beyond reasonable doubt to be directly or indirectly a causal or contributory factor.

It will be seen that this definition is closely analogous to that now actually in use in that part of the New York State law which refers to occupational accidents. In Section 2, Subdivision 7, the definition given for occupational injury is as follows: "accidental injuries arising out of and in the course of employment . . . ."

It might be feasible, therefore, to define occupational disease as "disease arising out of and in the course of employment," and to interpret this in essentially the same manner as is done in the case of occupational injury.

* Continued from p. 540.
incontinence following spinal anesthesia, for a laparotomy (February 5, 1932) in another hospital. Radiograph of the spine (taken through a jacket) revealed a distinct paravertebral thickening about the bodies of the eleventh and twelfth dorsal vertebrae with compression of the twelfth dorsal vertebra (March 5, 1932).

Post-mortem examination (July 30, 1932) revealed a malignant schwannoma with infiltration of the tenth, eleventh and twelfth dorsal and second lumbar vertebrae, sacrum and multiple submucous nodules (nervous elements of the ileum). The ribs of the eleventh and twelfth vertebrae were separated from the vertebral column. The eleventh dorsal vertebral was completely destroyed. The upper and posterior portions of the body of the twelfth dorsal vertebra were also involved by tumor tissue. The second lumbar vertebra and the sacrum were similarly involved. The radiograph of the bisected vertebral column disclosed clearly the large foci of bone destruction.

This case illustrates the point that a tumor of the infiltrating type may be difficult to locate early radiologically, unless the process, if present in the dorsal vertebrae, produces separation or dislocation of the ribs at their vertebral insertions (Pomeranz).

CONCLUSIONS

These cases illustrate the difficulty encountered in detecting by radiologic examination the presence or absence of metastatic foci in the vertebral column. Only when the lesion is large enough to produce a definite contrasting shadow, or when marked osteosclerosis occurs about the soft tissue metastasis, can radiologic examination show definite evidence of metastatic foci. Very often, however, the radiologic examination may be the only method of confirming the clinical diagnosis of osseous metastasis. It must be emphasized that the negative radiologic findings are no indication of the absence of metastatic foci. Undoubtedly, many primary tumors are removed surgically on the basis of negative radiologic examination of the bones.

1 Personal communication from Dr. M. M. Pomeranz.

REFERENCES OF DR. SULZBERGER

If some such wide application of the words "occupational diseases" is eventually adopted either in the law or in decisions under the law, then the newly amended law of New York State will have embodied some of my major suggestions for the possible improvement of compensation laws; if, however, the definition of "occupational diseases" should again be in any way confined to diseases labelled by certain diagnoses and to diseases caused solely by certain specified substances, then practically all the criticism voiced in this paper will again apply.

If, however, the amended law adopts the wider (and in my opinion certainly more adequate) interpretation of the term "occupational diseases," its proper functioning will require numbers of highly specialized, qualified and unbiased experts capable of passing judgement as to the role of the occupation in the production of the dermatosis in each individual claimant. (See p. 537 and the Footnote at the conclusion of this paper.)


* Continued from p. 550.