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FIRST ROCKY MOUNTAIN CONFERENCE IN INDUSTRIAL HEALTH

Denver Chamber of Commerce Building

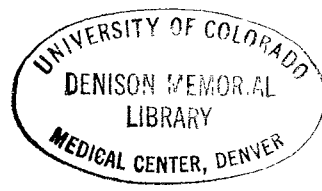
October 31, November 1 and 2

Denver, Colorado

First Annual Conference - 1949

Sponsored By: Colorado Manufacturers Association  
Denver Chamber of Commerce  
Colorado Chamber of Commerce  
Colorado State Department of Health  
Division of Industrial Medicine of the University of  
Colorado School of Medicine

400  
100  
100



# ATTENDANCE ROSTER

| <u>NAME</u>              | <u>ADDRESS</u>                                                                    |
|--------------------------|-----------------------------------------------------------------------------------|
| Anderson, R. C.          | Industrial Commission of Colorado, 768 Capitol Annex, Denver.                     |
| Avery, Charles B.        | Shwayder Brothers, Inc., 1050 So. Broadway, Denver.                               |
| Beardmore, George W.     | Potlatch Forests, Inc., Lewiston, Idaho.                                          |
| Becker, G. T.            | Stearns-Roger Mfg. Co., 1720 California, Denver.                                  |
| Benesh, Lewis C., M.D.   | United Airlines, Denver.                                                          |
| Brannaman, Ray H.        | Colorado Industrial Commission, Denver.                                           |
| Brennan, M.              | U.S. Vanadium Corp., Grand Junction, Colorado.                                    |
| Bridges, Clark D.        | Zurich General Accident & Liability Ins. Co., Ltd., Chicago, Illinois.            |
| Bridwell, O. F.          | Colorado & New Mexico Coal Operators Assn., Denver.                               |
| Bugdanowitz, Robert      | Assistant District Attorney, C. A. Johnson Bldg., Denver.                         |
| Church, Franklin W.      | University of Colorado Medical Center, 4200 E. 9th Ave., Denver.                  |
| Cottrell, J. D.          | Merchants Biscuit Co., 842 Walnut, Denver.                                        |
| Coulter, William J.      | Climax Molybdenum Co., Midland Savings Bldg., Denver.                             |
| Danish, A. A.            | Julius Hyman & Company, Denver.                                                   |
| Davis, Richard M.        | First National Bank Building, Denver.                                             |
| Doyle, Henry N.          | U. S. Public Health Service, Box 2537, Ft. Douglas Station, Salt Lake City, Utah. |
| Dorsey, William A., M.D. | United Mine Workers Assn., 110 Medical Center, Colfax and Garfield, Denver.       |
| Durbin, Edgar, M.D.      | 1809 E. 18th Avenue, Denver.                                                      |
| Ettenson, I. Z.          | Kilpatrick Baking Co., 753 Santa Fe Drive, Denver.                                |
| Evans, Arthur W., M.D.   | Colorado Fuel & Iron Corp. Clinic, Pueblo, Colorado.                              |

| <u>NAME</u>             | <u>ADDRESS</u>                                                                  |
|-------------------------|---------------------------------------------------------------------------------|
| Fritts, George B.       | U. S. Dept. of Interior Health, 204 New Custom House, Denver.                   |
| Gee, Addison H.         | Colo. Central Power Co., Englewood, Colorado.                                   |
| George, Raymond A.      | Gardner-Denver Co., 1727 E. 39th Ave., Denver.                                  |
| Glaeser, Oscar A.       | U. S. Smelting, Refining & Mining Co., Newhouse Bldg., Salt Lake City 13, Utah. |
| Glanville, Leo          | Climax Molybdenum Co., Climax, Colorado.                                        |
| Groves, C. H.           | Colo. Fuel & Iron Corp., Pueblo, Colorado.                                      |
| Holdsworth, Earl E.     | Gates Rubber Co., 999 So. Broadway, Denver.                                     |
| Hallen, George S.       | State Compensation Insurance Fund, Denver.                                      |
| Heiser, Victor G., M.D. | National Assn. of Manufacturers, 14 W. 49th St., New York 20, N. Y.             |
| Jacobson, J. R.         | Kilpatrick Baking Co., 753 Santa Fe Drive, Denver.                              |
| Jensen, Frode, M.D.     | University of Colorado Medical Center, 4200 E. 9th Ave., Denver.                |
| Jones, W. E.            | Climax Molybdenum Co., Climax, Colorado.                                        |
| Kehoe, Robert A., M.D.  | Kettering Laboratory of Applied Physiology, Cincinnati, Ohio.                   |
| Kingsley, W. H.         | Sandia Laboratory, Albuquerque, New Mexico.                                     |
| Kittell, L. H.          | Manufacturers Assn. of Colorado, Colorado National Bank Building, Denver.       |
| Kruger, Ada, R.N.       | United Mine Workers Assn., 110 Medical Center, Colfax and Garfield, Denver.     |
| Lapi, Angelo, M.D.      | Denver General Hospital, Denver.                                                |
| Lauer, B. E.            | University of Colorado, Boulder, Colorado.                                      |
| Lelli, Martin           | Monolith Portland Cement, Laramie, Wyoming.                                     |
| Leaf, C. W.             | Idaho Self-Insurers Assn., Carssow Building, Lewiston, Idaho.                   |
| McIlvray, William A.    | University of Colorado Medical Center, 4200 E. 9th Ave., Denver.                |

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|---------------------------|---------------------------------------------------------------------------------|
| McPeck, J. C.             | U. S. Vanadium Corp., Rifle, Colorado.                                          |
| Miner, C. G.              | Colo. Central Power Co., Englewood, Colorado.                                   |
| Moodie, John              | Homestake Mining Co., Lead, South Dakota.                                       |
| Northcutt, Forrest E.     | First National Bank Building, Denver.                                           |
| O'Kane, Leo D., M.D.      | Federal Employers Health Service, Denver.                                       |
| Palmer, Charles           | Standard Oil Company of Indiana, P.O. Box 1320, Denver.                         |
| Pinto, Sherman S., M.D.   | American Smelting & Refining Co., First National Bank Building, Denver.         |
| Peterson, Carl M., M.D.   | American Medical Association, 535 N. Dearborn St., Chicago, Illinois.           |
| Pinci, Frank, M.D.        | University of Colorado Medical Center, 4200 E. 9th Ave., Denver.                |
| Pagliano, Felix           | State Compensation Insurance Fund, Denver.                                      |
| Richards, Lynn S.         | Utah Self-Insurers' Association, 716 Newhouse Bldg., Salt Lake City 13, Utah.   |
| Richards, Paul, M.D.      | U. S. Smelting, Refining & Mining Co., Newhouse Bldg., Salt Lake City 13, Utah. |
| Roberts, Major David      | Colorado School of Mines, Golden, Colorado.                                     |
| Riddell, Stanley K.       | Industrial Commission of Colorado, 768 Capitol Annex, Denver.                   |
| Rust, Harold H.           | Colo. Central Power Co., Englewood, Colorado.                                   |
| Ryan, James J.            | American Smelting & Refining Co., First National Bank Bldg., Denver.            |
| Sampson, Edward A.        | Colorado State Chamber of Commerce, Chamber of Commerce Building, Denver.       |
| Sculpte, Harry F.         | Los Alamos Scientific Laboratory, P. O. Box 1663, Los Alamos, New Mexico.       |
| Shepard, R. T.            | Denver Fire Clay Co., P. O. Box 5510, Denver.                                   |
| Spurbeck, George W., M.D. | University of Colorado Medical Center, 4200 E. 9th Ave., Denver.                |

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|--------------------------|-------------------------------------------------------------------------------|
| Stearns, Robert L.       | University of Colorado, Boulder, Colorado.                                    |
| Stewart, Allen F., M.D.  | Texas State Medical Association, Lubbock, Texas.                              |
| Thompson, G. M.          | Employers Mutual Insurance Co., Equitable Bldg.,<br>Denver.                   |
| True, J. M.              | Mountain States Employers Council, 303 Boston<br>Bldg., Denver.               |
| Turner, Robert, M.D.     | Roslyn Hotel, Denver.                                                         |
| Waller, H. E.            | Armco Drainage & Metal Products, 3033 Blake,<br>Denver.                       |
| Walmer, C. Richard, M.D. | Industrial Hygiene Foundation, 4400 5th Ave.,<br>Pittsburgh 13, Pennsylvania. |
| Waters, Theodore C.      | Industrial Hygiene Foundation, 4400 5th Ave.,<br>Pittsburgh 13, Pennsylvania. |
| Weers, Arthur F.         | Weers Electric Plant Service, 1150 Jackson,<br>Denver.                        |
| White, R. S.             | Climax Molybdenum Company, Climax, Colorado.                                  |
| Williams, Joe T.         | Bunker Hill Mining Co., Kellogg, Idaho.                                       |
| Williams, Winifred S.    | Emily Griffith Opportunity School, 13th &<br>Welton, Denver.                  |
| Wolf, W.                 | University of Colorado, Boulder, Colorado.                                    |

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FOREWORD

The first Rocky Mountain Conference on Industrial Health was organized for the purpose of bringing together the various representatives of management and the medical profession for a discussion of mutual problems which concern workers in industry. Since management, safety engineers, attorneys, physicians and personnel managers are all interested in the prevention of occupational diseases and in the maintenance of employee health, it is well that these groups meet together occasionally to discuss the existing problems and methods of solving them. It is felt that the continuation of such conferences in this region will assure better understanding by employer and employee alike of the many health hazards which are found in our present day industrial civilization. From such better understandings, improved working conditions and higher morale will result.

This conference has been divided into five sessions, each of which was directed toward a particular group, but any of which should have appealed to all those attending the conference. In addition to a small local group of speakers, a number of experts from other parts of the country were invited to speak, and these men gave unstintingly of their time, energy and enthusiasm and were most instrumental in making the conference a success.

The sponsoring organizations express their deep and sincere appreciation for the work undertaken by these men in preparing papers for presentation and for the enthusiastic manner in which the discussions were conducted.

Monday P.M., October 31, 1949

Moderator: Dr. Robert A. Kehoe.

Speakers: Lynn S. Richards, Secretary & General Counsel, Utah Self-Insurers' Assn., Salt Lake City, Utah.

Oscar A. Glaeser, Industrial Relations Manager, United States Smelting & Mining Co., Salt Lake City, Utah.

Theodore C. Waters, General Counsel, Industrial Hygiene Foundation, Pittsburgh, Pennsylvania.

Richard M. Davis, Attorney at Law, Denver, Colorado.

Moderator: Ladies and gentlemen: Over a period of some years I have been placed in the position of answering questions presented to me by legal gentlemen, sometimes under awkward circumstances, so I am rather pleased this afternoon to have, so to speak, the whip hand in a matter of this sort and I would like to urge the group here that when the opportunity comes we play them with the same kind of questions that they sometimes put to us. This particular subject of industrial health would certainly be quite unrealistic in terms of present day activities if we did not have these matters discussed in their legal aspects. I think one can scarcely escape the feeling that in our time much of the intention that has been centered on the problem of industrial health has been brought about, number one, because of the economic consequences; this, that and the other occupational situation; number two, because of the legislative activities which I think have been expression of the increasing consciousness of the community as a whole in the need for legislative control of one kind or another. I think that we are to be very much congratulated in having with us this afternoon four gentlemen who can speak to us very effectively on the subject. It gives me considerable pleasure to introduce Mr. Lynn Richards, Secretary and General Counsel of the Utah Self-Insurers Association, who will speak on Legislation and Judicial Trends in Utah as they Affect Occupational Disease Compensation. Mr. Richards.

Mr. Richards: Ladies and gentlemen, it is with great pleasure that we come over on this side of the Rockies to associate with you in this conference. You are to be congratulated on attempting the organization of such matters as you have done here. We really came over I presume, as was suggested by one of my colleagues, to find out if we are conducting our industrial hygiene and industrial medicine in the proper manner. We are glad to be with you and to associate in any way we can in your endeavors.

In order to present to you an orderly picture of the development, general course and direction of occupational disease legislation and judicial decision in Utah, it will be necessary to review in brief the history of the occupational disease disability law of that state.

Utah enacted a Workmen's Compensation Law in 1917.<sup>1</sup> The definition of an "injury" was limited to accidental injuries. It has never been accepted by

1. Compiled Laws of Utah 1917, Sec. 3061 et seq.

the courts as including occupational diseases although some have been compensated under it.

The enactment of the Utah Occupational Disease Disability Act in 1941 was preceded by a legislative appropriation, with authority of the Industrial Hygiene Director of the State to collaborate with the United States Public Health Service in a survey of the metal mines, smelters and coal mines of the State for the purpose of determining the incidents and exposure to harmful quantities of silicon dioxide dust.<sup>2</sup> The result of the survey was to minimize in part the hysteria that usually develops upon proposal of a law which would create a liability upon industry for an accumulated disability. A committee, composed of representatives of industry, labor and the medical profession, then proceeded to draft the law which was passed without dissenting vote in both houses of the legislature.<sup>3</sup>

We will not review the provisions of the Act, but discuss them as they have been interpreted and construed by the decisions of the Industrial Commission and the Supreme Court.

The judicial and quasi judicial decisions which have proved of importance, involve primarily the subject of silicosis which is named as an occupational disease in the schedule of diseases. Silicosis is defined as a "chronic disease of the lungs caused by the prolonged inhalation of silicon dioxide dust, characterized by small discrete nodules of fibrous tissue similarly disseminated throughout both lungs, causing a characteristic x-ray pattern, and by variable clinical manifestations!"<sup>4</sup>

This subject was wholly new to the Supreme Court. Two years after the act became effective the court was called upon to review an award involving silicosis. The court, in casting about in other state decisions for experience and supporting definition of the disease chose a loose one which characterizes silicosis as a disease which is prevalent among employees "where the air is permeated with minute particles of stone, quartz, slate, or metal dust which is inhaled to the detriment of the tissues, glands and lungs."<sup>5</sup>

The Utah law is far more specific. No inhalations can cause the disease other than silicon dioxide dust and the detriment to the lung must be "characterized by small discrete nodules of fibrous tissue similarly disseminated throughout both lungs."

The legislature did not desire by this definition to prevent just claims. Upon the committee who drew the Act was a renown Industrial Physician and Surgeon who knew that the definition must be insisted upon to warrant a finding of silicosis.

2. Public Health Bulletin No. 270.
3. Laws of Utah 1941, Chap. 41, p. 79.
4. Section 42-1a-29 Utah Code Annotated 1943.
5. Uta-Carbon Coal Co. et al v. Industrial Com. et al, 104 Utah, 567.

As a protection against accrued liability the Act provides that no compensation shall be paid in case of silicosis unless during the ten years immediately preceding the disablement the injured employee shall have been exposed to harmful quantities of silicon dioxide dust for a total period of not less than five years in this state, and that the employee must also have been exposed to harmful quantities of silicon dioxide dust during a period of 60 days after the effective date of the Act which was July 1, 1941.<sup>6</sup> The law also provides that the liability shall not be apportioned among the former employers but shall be the responsibility of the last employer in whose employee the worker was last exposed during a period of 60 days or more, after the effective date of the Act (July 1, 1941).

The contested problems that arise out of the application of these provisions of the law concerning silicosis have centered primarily around three problems.

1. What constitutes harmful quantities of silicon dioxide dust?
2. Is a right to compensation the employee's exclusive remedy?
3. Should compensation be paid for so-called parial disability?

Considerable difficulty has been encountered by the Industrial Commission and Supreme Court in the determination of what constitutes "harmful quantities" of silicon dioxide dust. In the face of scientific tests and evidence produced, the Commission and the Supreme Court have both held that dust samples do not conclusively show what concentrations the employee has worked under over a course of 5 to 10 years as may be required by the Act.<sup>7</sup>

The court has refused to follow reports and surveys offered by the employer "that the minimum amount of dust would have to be 5.0 million particles per cubic foot of air over a period of ten years to induce silicosis," "that of 2,000 of its employees examined, its survey showed only one was found to have silicosis among those who had no underground mining experience." The employer offered in evidence the United States Public Health Service Bulletin No. 270 to show "that with respect to miners in Utah, no silicosis was found where the exposure to dust was less than 6.0 million particles per cubic foot." The employer surveys conducted under U. S. Public Health Service standard procedure showed "an absolute maximum exposure of 4.5 million particles per cubic foot" with "a weighted average of 1.26 million particles per cubic foot."<sup>8</sup>

Medical and scientific experts have not always agreed as to what constitutes "harmful quantities." The courts have been confused where medical testimony, at times based upon x-ray films and clinical histories, have indicated a substantial variance of opinion. In these cases the Supreme Court has accepted as probative and sufficient to support the award, the testimony of

6. Section 42-1a-13 (a) (3).
7. Uta-Carbon Coal Co. v. Industrial Commission, 104 Utah 567.
8. Kennecott Copper Corporation v. Industrial Commission supra.

order that there be paid to the Division of Vocational Rehabilitation of the State Board of Education not to exceed \$520.00 for use in the rehabilitation and training of the employee, this rehabilitation to be under the direction of the State Board of Education Division. Only under these conditions will compensation be paid.

Compensation is allowed at the rate of \$25.00 a week for not to exceed 10 weeks during the time the employee is actively in training under the Division of Rehabilitation. At the termination of the training period, the employee is paid \$12.50 a week until the compensation to which he is entitled is paid in full. In no event may this compensation exceed in any one case an aggregate of \$3,000 and all payments so made shall be credited to the employer and deducted from any award which might ultimately be made should the employee subsequently be totally and permanently disabled.<sup>20</sup>

By way of summary, it can readily be seen that the definition of "harmful quantities" which would require scientific determination to provide compensation to only those who are entitled to be helped has been by judicial legislation avoided. There is a resistance against placing upon the employee a burden of proof which may be difficult to meet.

Where states do not have an elective law but purport to have an exclusive remedy statute to avoid common law suits, an explicit definition of "exclusive remedy" will deter vexatious law suits.

As a concomitant there should be a provision in the schedule of diseases which will safeguard against those injuries to health not specifically defined in the schedule.

Degrees of disability less than total can also be the subject of claims requiring legislative treatment.

Better administrative and judicial decision can be expected when trained experts can pass upon the technical and scientific aspects of compensation. It is the function of a well informed legislature to provide the statutory law whereby the trained physician in industrial medicine and the qualified engineer in industrial hygiene can be utilized effectively in compensation matters.

Moderator: I think all of us will agree that that's a very interesting and very clear presentation of some of the important problems in litigation and legislation in this field. It is, therefore, a considerable satisfaction to be able to introduce Mr. Glaeser, Industrial Relations Manager, United States Smelting and Mining Company of Salt Lake City, on the subject of Compensation for Partial Disability in Silicosis. This is a subject which certainly does require considerable ventilation. Mr. Glaeser.

Mr. Glaeser: Ladies and gentlemen, you have just heard the title of the subject that was assigned to me by Dr. Princi. I don't mind telling you that for me that was somewhat of a challenge. I have changed that title a little bit since I have developed a somewhat personal aversion to the idea of partial disability when we talk about silicosis. I would like to call this with your permission, Doctor, Compensation for Lung Changes Due to the Inhalation of Silica Dust, if I may.

Compensation for silicosis is, with some exceptions, generally still considered payable only in those cases where men clearly can no longer work because of the debilitating effects of silicosis complicated with tuberculosis. That the requirement of total permanent disability as a condition of compensation should be challenged should probably have been foreseen. In those states where so-called occupational diseases are compensable by definition of "injury," the transition from compensating only for total permanent disability to cover compensation for so-called partial disability was simply made by administrative action. Such change was, however, barred in states having a so-called scheduled law and where compensation for silicosis was by statute limited to conditions of total permanent disability. The demand to recognize earlier stages of silicosis, for compensation purposes, has resulted in legislative changes in some states.

New York recognized the complexity of the problems relating to compensating for so-called partial disability in silicosis. It appropriated \$50,000.00 in 1947 and made it available to the Trudeau Foundation to cover an investigation of how the debilitating effects, if any, of early stages of silicosis can be measured. This study is still continuing. It has so far produced insufficient information for any new conclusions.

The Utah Occupational Disease Disability Law was amended by the 1949 legislature to include for the first time compensation for so-called partial disability in silicosis. No claims were filed immediately after the effective date of the amendment. However, in August of this year and after cessation of practically all mining operations in one of Utah's mining districts, 16 claims were filed. As Mr. Lynn Richards has pointed out, the law now provides for a panel of medical experts. The panel consists of one roentgenologist and 5 internists specializing in various fields of lung and heart disease. The Industrial Commission, most desirous that the amended law should be administered as properly as humanly possible, requested all members of the panel to participate in the examination of this group of claimants and their records. The applicants were x-rayed. Only stereo x-rays were taken. Electrocardiograms and other tests such as blood count, sedimentation rate, sputum test, hematocrit, Kahn test, urine analysis and in some cases even a biopsy were made of each applicant. They were given a careful physical examination. Work histories and family medical histories

were carefully recorded. When the information was all assembled and with complete data at hand, the panel examined and reviewed the case histories. Each applicant was carefully examined by one panel member. Thereafter all panel members discussed each case and arrived at conclusions. Of the 16 claims filed 4 were found to have silicosis with tuberculous infection. This means, of course, that these 4 claimants under the law are presumed to be totally and permanently disabled and compensation is being awarded accordingly. The other 12 cases showed no evidence of silicosis and the applicants were so advised. With one exception they were further advised that they could return to their mine employment without fear of endangering their health so far as present findings are concerned. Their employers were also advised of the panel's findings.

In order that you may be able to appraise the character of the medical panel reports I would like to read to you the report of one of the disabling cases and the report of a case determined to have no silicosis.

Report of Medical Panel  
(A Silicosis Case)

Extent of permanent disability - 100%.

Silicosis; early conglomerate, Sampson - Class 3, with infection, inactive moderately advanced tuberculosis, left upper lobe; and non-specific mixed infection (bronchitis).

Fractured nose, residuals from 1926.

Sinusitis, exact status undetermined.

Nasal septum, deviation of, right, severe.

Rhinitis, chronic, moderate.

Arteriosclerosis, compatible with age.

Defective hearing, p rceptive, hearing 0/0 right; 15/15 left.

Bronchitis, chronic, catarrhal, generalized, non-specific, moderate.

Emphysema, generalized, chronic, mild.

This case was considered to be compensable as a total permanent disability case due to silicosis with tuberculous infection.

Report of Medical Panel  
(Case having no silicosis)

Arteriosclerosis, coronary.

Defective hearing, chronic, mild, bilateral.

Rhinitis, vasomotor type, chronic, moderate.

Hemorrhoids, external, ulcerated, chronic, moderate.

Pes planus, bilateral 2nd degree, non symptomatic.

Cardiac disease

- (a) Arteriosclerosis (coronary sclerosis), old infarction.
- (b) Myocardial damage; old anterior infarction; hypertrophy; mitral valve damage (sclerosis); mitral regurge.
- (c) Myocardial insufficiency, arrhythmia, premature beats; possible anginal syndrome.
- (d) Functional capacity III.
- (e) Therapeutic Class D.

Bronchitis, catarrhal type, chronic, moderate.

Peritruncal accentuation (x-ray), Sampson classification (late P<sub>1</sub> or early P<sub>2</sub>).

This case was considered to have no silicosis and, therefore, not entitled to compensation. The panel recommended against return to mine employment because of the heart conditions.

The Industrial Commission is optimistic with respect to the incidence of silicosis in Utah as a totally disabling condition and silicosis as a partially disabling condition. Commissioner Otto Wiesley, who is the Administrator of the Workmen's Compensation Act of Utah and the Occupational Disease Disability Law, believes that the number of so-called partial disability cases will be negligible and that the incidence of silicosis in Utah, low from almost the very beginning, will not be a problem in the future. He states that immediately following the effective date (July 1, 1941) of the Utah Occupational Disease Disability Law the Industrial Commission was faced with 20 claims. Thereafter the number of claims filed annually dropped off sharply to but one or two claims per year until this year when the 16 claims for partial disability were filed under the new amendments of the Occupational Disease Disability Law. Commissioner Wiesley has said further, and I quote, "We yet have to find a miner in Utah who has worked underground less than 15 years and who has signs of silicosis." Commissioner Wiesley has said further that men who have been examined so far and have been found to have some silicosis have worked at least 20 years in Utah mines. In fact, and I still quote Commissioner Wiesley, "Some recently examined mine employees have been underground since 1915 with no sign of silicosis."

The establishment of silicosis as a compensable condition and the amendments thereto, which now make so-called partial disability compensable, has spotlighted certain situations that deserve the considered attention of the best

men in industry, in medicine and in the legal profession who concern themselves with workmen's compensation.

Those of you who have concerned yourselves with compensation matters over the years, I am sure, will agree that silicosis is not the scourge that it was once labelled in a news reel in 1935 by the then Secretary of Labor. In that year and largely as the result of the Gauley Bridge Tunnel experience a mass hysteria spread among miners throughout the country with respect to silicosis what at that time was likened to the black plague in early history. It rekindled a long standing fear of so-called "miners' con" which must be dispelled if silicosis is to take its proper place among the many other human ills that are no longer considered of major importance

Practically all of the 16 claims that I have previously referred to were filed by the individuals because at some time or other the claimants were told that they had silicosis. When they were informed by the panel of specialists that they had no silicosis they were actually surprised and not a little confused. For example, one man asked, "Couldn't I have just a little?" In general they tell the panel that their family physician had told them they had silicosis and that they "now don't know what to believe." The Industrial Commission and the panel of specialists have tried to convince these men that they have no silicosis, first, by thorough examination and comprehensive test permitting a determination of what is causing a feeling of ill health, second, by having the men examine their own chest x-rays and by pointing out to them by comparative x-rays what silicosis looks like, and third, by attempting to convince them a special technique is necessary to find early silicosis and that it requires a stereo x-ray (they are shown the difference between stereo x-rays and flat films). This panel of medical men try in every way to convince the men that the thoroughness of their examinations, together with the facilities that were used to arrive at the panel's conclusions, leaves little room for error.

Silicosis is not a condition that can be diagnosed as simply as measles. The lung is made up basically of air sacs, blood vessels and lymphatics. Each of these three component parts is subject to its own particular and peculiar disorders, any one of which may produce shadows in an x-ray film that might mistakenly be considered to be silicotic in character.

Based upon almost ten years of Utah administrative experience a summation of the minimum procedures under which a diagnosis of silicosis should be made is briefly: Clinical findings, stereo x-rays of the chest using only the large 14" x 17" films with adequate x-ray equipment, a thorough and complete physical examination which should include a personal, occupational, residential and family history, diagnosticians to include internists and roentgenologists thoroughly experienced in this field. Not one but many case histories support these conclusions. It should be realized that any diagnosis of silicosis will start a chain reaction which touches many people and which persists regardless of the correctness of the diagnosis. Also, if incorrect, that it will do great harm to the man, that it will probably mean serious financial loss, hardship to his family, and dislocation of employment. A financial burden may be imposed upon the state which may have to go through an expensive procedure to disprove an erroneous diagnosis.

As a case in point I would like to review briefly a recent experience concerning a man thirty-two years of age who, at the time of his employment in a mine on July 8, 1948, had had no previous record of work in mines or in so-called dusty occupation. Recently he was absent from work for several weeks because he did not feel well. He had gone to his family doctor who told him he had silicosis. His employer suggested that he be examined by a specialist. The man agreed readily. The examination revealed there was no sign of silicosis, that the man's chest x-ray taken at this examination was practically identical to that taken when he was employed 15 months earlier. The man was actually suffering from an allergy of hay fever and bronchitis which first developed in 1948 and then disappeared and came back in July of this year. Ten days prior to his last examination he had developed an infectious process in his bronchi, which condition was then subsiding. The examining physician so advised the patient. Despite assurance that he has no signs of even early silicosis this worker has asked to be transferred to surface employment. This man had an excellent work record. He is above average intelligence, is somewhat of a short story writer and has been seriously considered for promotion to a mine foreman.

A typical example of how men may become imbued with the idea that they have silicosis is demonstrated by one of the group of 16 men recently examined by the Industrial Commission's medical panel. This man, at the onset of the investigation, showed a rather belligerent attitude toward the investigation because he said he knew he had silicosis. He said his father died of "miners' con" and that his brother, who had also worked in the mines, was now in a hospital and totally and permanently disabled by reason of silicosis, and that since he had worked in the mine of the same area, there was no question about his having silicosis also. As a matter of fact, this man's brother, who has been examined carefully on several occasions, was known not to have silicosis. Furthermore, the man in question had on his own accord sent chest x-rays to a specialist who had already told him he did not have silicosis. Despite all of this information to the contrary he insists that he has silicosis. Now, as a matter of fact, he does not have silicosis, and the medical panel feels that it has quite a task on its hands to convince this man of that fact.

Silicosis, so-called, is a peculiar lung condition. It is not an infectious process, nor is it contagious. The most positive diagnostic procedure, the x-ray, reveals the protective mechanism which nature provides rather than the silica dust particles. This lung change generally cannot be clearly distinguished from other conditions in its early stages, but, becomes distinguishable in its intermediate and later stages before the individual develops a physical awareness of any change.

I am of the opinion that there are probably many human ills which in their indistinguishable beginnings are hardly ever considered disabling to any degree, nor are such early signs labelled as a disease or with the name of a specific disease. I have in mind conditions such as sore throat, which may, in now rather rare cases, be the early indication of scarlet fever; athletic heart, which may in future years result in heart failure; a pigmented mole that might develop into cancer; or a back ache that might well be the indistinguishable beginning of a serious arthritic condition. On the

other hand, a chest complaint or a barely discernable lung change is frequently and without the benefit of a pathologist or roentgenologist diagnosed as silicosis. I have often wondered whether in cases of early lung changes we are not perhaps inclined to establish a "disease" in our minds long before it may be determined physically with any degree of certainty.

America's outstanding worker in this field, Dr. U. LeRoy Gardner, after his many years of intimate investigation of silicosis and diseases of the lung, strongly maintained to the very last that there is no such thing as partial disability in silicosis and that men did not become disabled as the result of simple silicosis. It would seem, therefore, that if compensation is to be paid for a lung change that is not in itself disabling, the basis of payment should not be labelled as "partial disability." The label should be - what in fact it is - payment for a non-disabling lung change. Such payment at this time appears justified only if the worker loses his job and can find no other at comparable wages because of a lung change which is the direct result of his occupational environment. The misnomer "partial disability" may be far more debilitating to the individual than the condition within his lungs. Ample evidence exists that in the large majority of cases silicosis is not disabling and does not prevent the worker from performing physical labor. If that is the case then the term "partial disability" merely invites such a workman, his family and friends to consider him a semi-invalid and suggests that he thereafter look to compensation rather than employment for maintenance. This situation, in my mind, raises this further question: Is it possible that we have fallen into the error of accepting a terminology merely because it happened to be first used? If we are confronted with a lung change that is neither a disease as the word "disease" is normally used and which symptomatically fails to reveal any physical impairment or even discomfiture with physical exertion, are we on the right track to acknowledge a disability in any degree?

In conclusion may I say, that in Utah silicosis is not a problem and the indications are that so-called "partial disability" by reason of inhalation of silica dust is not going to be a problem. The Utah medical panel plan is effective and in addition is doing an excellent public service which was not contemplated. Only qualified men should presume to diagnose so-called early silicosis. There is to date no competent evidence that early lung change due to the inhalation of silica dust is disabling in any degree. Serious consideration should be given to present day terminology of "disease," "silicosis" and "partial disability," when referring to lung changes that have not progressed to the point of clearly demonstrable disability.

Moderator: Our next speaker, I believe, is known to most of you and scarcely requires an introduction, since Mr. Theodore C. Waters, General Counsel of the Industrial Hygiene Foundation at Pittsburgh, has been working very vigorously in this field for many years. It's a pleasure I'm sure to introduce him. He will speak on the subject Industrial Hygiene Codes and Their Impact upon Manufacturing Operations. Mr. Waters.

Mr. Waters: May I preface my remarks by reminding you of the purposes and liabilities resulting in the enactment of workmen's compensation statutes. These statutes provide benefits for those who sustain injuries, either

traumatic or resulting from occupational diseases arising out of and in the course of employment, without regard to any fault or negligence of the employer or employee. Under them the employer becomes an insurer of his employees against the injuries made compensable under the statute.

The statute provides the exclusive remedy to the employee for injury so sustained with a limitation and monetary liability on the part of the employer. Such laws are now effective in all the States of the Union, and since their original enactment the tendency in this field of legislation has been to increase the scope of the law to include all injuries, whether traumatic or sustained by occupational diseases, provided that the injury is peculiar to, and the result of, an industrial process to which the employee has been exposed. They have become of increasing importance in the field of industrial relations. Employees have become increasingly concerned with the subject of protection of their health, and employers have come to appreciate the fact that the cost of prevention of industrial injuries is but a small part of the cost of compensation for injuries so sustained. In other words, industry today has become health conscious, and with that consciousness there has developed a public demand that all industrial processes shall be conducted in safety with the elimination of hazardous conditions that may give rise to industrial injuries.

Directly related to the purpose of providing compensation for an injured employee is the purpose to control and prevent industrial injuries. In the past decade we have witnessed the extension of activities of Divisions of Industrial Hygiene to eliminate, insofar as it is possible, all industrial hazards. This has resulted in the adoption of codes of industrial hygiene and the assignment of their enforcement to State Agencies, skilled and experienced in that field.

Diseases are now compensable in forty States, the District of Columbia, and all of the territories of the United States. The form of these statutes differs; seventeen States<sup>1</sup> having adopted so-called schedule coverage laws, and twenty-three States<sup>2</sup> having adopted so-called general coverage laws.

There are now fifty-eight Industrial Hygiene units established in various

1. Arizona, Arkansas, Colorado, Georgia, Idaho, Iowa, Kentucky, Maine, New Hampshire, New Mexico, North Carolina, Pennsylvania, South Dakota, Tennessee\*, Texas and Virginia\*.

\*An employer may elect general coverage.

2. California, Connecticut, Florida, Illinois, Indiana, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New York, North Dakota, Ohio, Oregon, Washington, Wisconsin, South Carolina. (United States: Civil Employees, Longshoremen's Act). Delaware, Rhode Island and Utah.

State and City Departments.<sup>3</sup> To these units have been assigned the duty to supervise and regulate the conduct of industrial processes in the particular jurisdiction where they exist, and it is with respect to such rules and regulations that I would like to direct your attention.

The obligation for the prevention of industrial injuries rests upon both employer and employee. It is the obligation of the employer to install such protective equipment and furnish such appliances as medical and engineering sciences may have found to be practicable and desirable to control the hazards to which employees are subjected. On the employee rests the obligation to utilize that equipment, and only by full cooperation between the employee and employer in this respect can the ultimate goal be attained. To assist in that accomplishment various State Departments are empowered, either by constitutional or statutory authority, to adopt industrial hygiene codes for the regulation of hazardous industrial practices.

The word "code" is defined in Bouvier's Law Dictionary as follows:

"A body of law established by the legislative authority, and designed to regulate completely, so far as a statute may, the subject to which the statute relates."

The basic authority for the promulgation and enforcement of industrial hygiene codes is found either (1) in State Constitutions, granting to State Departments of Health power to control practices injurious to health, and (2) by legislative authority, granting to State Departments the power to promulgate industrial hygiene codes for the regulation of hazardous practices.

One of the most authoritative articles relating to codes of industrial hygiene is that prepared by Mr. J. J. Bloomfield, Assistant Chief of the Industrial Hygiene Division of the U. S. Public Health Service, entitled, "Codes for the Prevention and Control of Occupational Diseases," and published in the transactions of the Eleventh Annual Meeting of the Industrial Hygiene Foundation of America, Inc. That article tabulates complete information with respect to all of the codes now effective in the several States, together with charts summarizing the particular provisions of each code in each State.

In the limited time that is assigned to me, it will not be possible to discuss these codes in any detail, but certain matters are peculiar to all codes; namely,

- (1) the administrative agency charged with the promulgation and enforcement of the code,
- (2) maximum allowable concentrations of toxic substances, and
- (3) provisions dealing with sanitation, safety and housekeeping.

3. As of October 1, 1949.

### ADMINISTRATIVE AGENCY

To the administrative agency is given the power of enforcement with a penalty to be imposed in the event of any violation. In practice the Divisions of Industrial Hygiene of several States have assumed an administrative policy of education and cooperation, rather than the exercise of police powers to restrain industry from violation. It is a tribute to the administrators of these units that representatives of industry look with confidence on their activities, welcome their cooperation and assistance in solution of problems, and utilize the services of such Departments to the end that their operations may be conducted in full compliance with the legal requirements.

The purposes of the administrative agencies have been to guide industry in the correction of practices that tend to create hazardous conditions, and to assist industry in maintaining the health of employees. Industry seeks the maximum production of its materials at minimum cost. If our competitive system is to be retained and business is to succeed, these bureaus must assist in the attainment of that goal by the simplest and most inexpensive methods possible.

In some States the administration of industrial hygiene codes may be granted to one or more State agency, for example, the State Department of Health, the State Department of Labor or the State Industrial Commission. This has lead to considerable misunderstanding and confusion on the part of industries seeking to comply with the rules and regulations established by several State Departments. In a given instance the Health Department may make recommendations or issue orders with respect to operating conditions; concurrently or shortly thereafter conflicting orders may be issued by the Department of Labor or the other Department having authority in the matter, with the net result that the industry sought to be regulated may not be able to comply with the different requirements of the respective Departments and the cause of industrial hygiene is retarded.

It must be borne in mind that the problems presented to the Division of Industrial Hygiene are primarily health problems, involving the control of industrial conditions that may injure the health of exposed employees. In my opinion it follows that State Departments of Health are better equipped and organized to administer codes than any other State Agency.

### MAXIMUM ALLOWABLE CONCENTRATIONS OF TOXIC SUBSTANCES

Such concentrations have legal status in approximately fifty per cent of the codes now effective; in the remaining codes they take the form of recommendations or suggested guides. Prior to the inclusion of such concentrations in a given code, it is submitted that a thorough study of plant conditions within the State should be conducted to determine the potential hazards in that plant, and to ascertain whether or not it is reasonable and practicable for a given industry to comply with the proposed maximum. Bureaus of Industrial Hygiene should desire a reasonable and practicable code in the same manner that industry does. Further, with respect to such permissible concentrations, it is submitted that it is unfair and unreasonable for one given sample to be taken and serve as the basis for an alleged

violation. In this respect, I am most critical of a number of the codes that are now effective, because they do not establish the technique to determine concentrations or provide some average atmospheric condition existing over a period of the shift during which employees would be working. Fortunately, we have had sane administration of the codes, but it is highly probable that at the instance of pressure groups, industry may well be embarrassed by violations of these permissible concentrations and the cause of industrial hygiene thereby retarded. It is further submitted that the proposed maximum allowable concentrations should be subject to annual review, and the permissible limits adjusted in accordance with scientific research that may develop information as to what are proper standards.

#### PROVISIONS DEALING WITH SANITATION, SAFETY AND HOUSEKEEPING

Examination of the various codes will develop extensive differentials in the provisions applicable to these subjects. It is submitted that these rules and regulations should take the form of recommendations, rather than specific prohibition of given practices. The burden of compliance rests just as heavily upon the employee as upon the employer. The employer is dependent upon the discharge of the employee's duty to attain compliance. Modern industry seeks to operate clean plants and to maintain cleanliness and good housekeeping throughout those plants. This cannot be done without the full cooperation of the men who work on the job, and again management may be unable to enforce rules and regulations that Bureaus of Industrial Hygiene might consider proper.

An important activity of Bureaus of Industrial Hygiene will be to assist management in educating employees in the proper discharge of their duties so that the requirements of the code with respect to these matters may be fulfilled.

Many of the codes require an employer to furnish personal protective equipment in specified operations. The furnishing of such equipment does not always result in the prevention of accidents or injuries, for which their use is designed. Upon the employee rests the duty to properly utilize such equipment and, in the event of his failure to use same, he should be penalized in some way. It is practically impossible for the employer to police the maintenance and use of such protective equipment. Accidents happen that could have been prevented by their use, and, assuming that the employer has discharged his liability by furnishing the protective device, the employee should be required to use it. Effective penalty provisions enforcing use will materially assist in the administration of this phase of the code.

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The American Conference of Governmental Hygienists has had under consideration for several years the draft of a uniform code which could be recommended to the various State Agencies for adoption. That matter has been the subject of careful consideration by the Code Committee of the Conference. The draft of the proposed code, as submitted to a recent meeting of the Conference, was circulated widely among various interests that would be affected by the proposed adoption and administration of such a code.

At the Spring meeting of the Conference action was taken to submit the draft to the American Standards Association for its criticism and advices. It is the ultimate purpose of the Conference to approve such a draft of code and to have it available for any State Agency that may desire to use it. For such procedure to be effective it would probably be necessary for several States to repeal legislation now effective upon this subject, and to enact new legislation granting to one State Department the power to regulate and control industrial hazards.

### CONCLUSION

In my contact with various State Departments administering codes in the past, it has been my experience that their personnel are thoroughly alive to their public responsibility in the administration of codes. Generally speaking, they have been administered in the spirit of education and co-operation, rather than by the enforcement of penalty provisions in the exercise of police powers. There are many hazards in industrial operations and industry has not, as yet, succeeded in attaining perfection in their control. While the cause of industrial hygiene has been promoted rapidly in the past decade, there is still room for improvement.

Industry is seeking to discharge its obligation to protect the health and welfare of those engaged in our industrial processes. Bureaus of Industrial Hygiene have an important part to play in accomplishing this result, and in the administration of codes they have the opportunity to assist industry, and to minimize injuries resulting from improper industrial practices.

Let us bear in mind that, when adopted, industry must live with these codes; that their successful administration will depend upon the degree of cooperation existing between industry and the personnel of the administrative agency. The formal adoption of codes does not of itself put an end to hazardous conditions, and this can be accomplished only by intelligent administration, careful supervision and education.

Moderator: We have heard three very interesting discussions on this subject. The greatest difficulty a chairman or moderator at this kind of meeting could possibly have is trying to restrain himself from not taking advantage of the great number of subjects to comment on. I shall hold myself in check and introduce the fourth speaker. I am sure that you will be very much interested in knowing the trends in compensation law in the State of Colorado just as I think all of us who hail from other states wish to be adequately clear on the trends in compensation laws in our respective states. I am pleased to introduce Mr. Richard M. Davis, practicing attorney of Denver, who will speak on these trends in the State of Colorado. Mr. Davis

Mr. Davis: I fear it may be all too evident before I'm through that I'm an amateur in a professional field up here, so I think I should apologize first and admit it. I am not a practitioner of Workmen's compensation exclusively. However, I do want to present to you, to you who are from Denver and from other points in Colorado and from out of state, some thinking from a strict legal standpoint, and perhaps from an overall policy standpoint, of a practicing lawyer on the subject of workmen's compensation and the current trends in that field, particularly in occupational diseases.

Strictly I should say that we have no particular current trend in Colorado with respect to workmen's compensation laws that varies from the national trend. In other words, our trend is upward as far as rate structure is concerned and the basic concepts are pretty well established in this field excluding occupational diseases. The last legislature amended the Colorado workmen's compensation law, which had been amended prior to that in 1947, and rates established in Colorado which I think now need no apology. I believe that we are about the mean for the United States. We have an elective law in Colorado, not a compulsory one, except as far as public employees are concerned; we have insurance available in the state fund or in private insurance carriers or self insurance. We have normal coverage, I believe, excluding agricultural workers and domestic help, and we have a numerical exemption of four, which I think is rather typical.

The measure of compensation is 50% of the average weekly wage; the maximum under our recent amendment for a weekly benefit is \$22.75; the minimum is \$10.00 a week, regardless of wage, an increase from \$7.00 previously in effect. The maximum recovery in a fatal case is \$7,098.00, not too much of an increase. The maximum recovery for permanent partial disability is \$5,915.00, an increase from \$4,500.50. For permanent total disability we have life-time compensation which puts us in the upper half or third of the states of the United States and is something of which we can be proud. Medical and funeral compensation rates are: \$1,000.00 and six months for medical benefits plus prosthetic devices, an increase from \$400 to \$500; funeral expenses a flat \$150. We have a waiting period of 7 days and a six weeks retroactive provision. We are also in line with many of the other states in having a subsequent injury fund which was established in 1945, as a means of enabling an employer to run the risk of hiring handicapped workers. Administration of Workmen's Compensation in Colorado is by the industrial commission and is complete supervision over the process of compensation, throughout.

To compare Colorado with other states, I have used the U. S. Government summary of October, 1948, consequently my figures may be slightly out of date. On the question of the elective versus the compulsory type of statute, (organized labor has been arguing for years for a compulsory statute) I find the national figures are about 50-50. There are about 28 states that have compulsory laws and 26 that have elective laws. Some laws are presumptive of acceptance in the absence of actual notice posted by the employer rejecting the benefits of the statute; this is the case in Colorado. Most of the states permit the use of private insurance companies and do not make compulsory the state compensation fund; I believe that there are only 7 states that do so. Self insurance has a place in Colorado, but I am not going to comment on that at the moment.

I understand that on a national basis the workman's compensation laws probably cover only 50% of the gainfully employed workers, due to the various exemptions from the statute's coverage. As I said before, Colorado is typical in that respect, in its exclusion of agricultural and domestics and less than four workers. I think 30 states have a numerical exemption of some kind, as does Colorado. I believe most of the states permit voluntary coverage as is available in Colorado if you want it. Colorado is one of 18 states, possibly 19, that has lifetime benefits for permanent total

disability and I believe all the other states have a limitation of the amount of dollars or the period of time. The new maximum death benefit of \$7,098.00 puts Colorado in the upper half of the states but it is not, as I'm sure you all know, anywhere near as high as some of the more highly developed states. Colorado, like most states, gives compensation for permanent partial disability in addition to total disability.

It is very controversial, of course, this business of placing a limitation on medical expenses and medical benefits. A good many people feel that it is not sensible to have a limit as to amount or as to time on medical expenses. I am advised, however, that that question has not arisen a great deal or been an embarrassment in Colorado. I am advised by both a representative of the Commission and practitioners engaged in compensation work that it doesn't often happen that a carrier will deny liability or will invoke the statutory limits, either as to amount or as to time with respect to medical benefits.

I therefore feel that the criticisms which used to exist as to the low compensation rates prevailing in Colorado have been pretty effectively eliminated by the 1948 amendments of the law. We started compensation in this state in 1915 with a rate of \$8.00 per week maximum; there has been a steady march upward and for many years the maximum rate was \$14.00. In 1947, as I think I told you, it went up to \$17.50 and it is now \$22.75.

Our act authorizes, as do many, the payment by the Commission, and at its discretion, of a lump sum benefits in lieu of weekly or other benefits. There is criticism by insurance carriers of this provision of the law and there is a tendency in some instances to abuse that privilege. To criticize our law a little further, or evaluate it, we have in our statute (Section 77) a prima facie presumption of permanent total disability in the loss of any two limbs, two eyes, or any combination thereof; that's supposed to be a prima facie presumption. Our Supreme Court has tended somewhat in the decided cases to consider this a conclusion presumption of total disability. There are those who believe that this is not a proper attitude; the loss of an eye and a limb is not necessarily a permanent total disability.

I have discussed with attorneys who represent claimants and who represent insurance carriers, the administration of the Colorado law and I think it is fair and reasonable to both sides. The actual detailed work of the commission, as in many states, is handled to a large extent by the referees, the Commission taking only official action. I think it's fair to say that it is the consensus of informed opinion here that the workmen's compensation law in Colorado is well run, and that the Commission does a very effective job of administering it and of supervising it. I am sure that probably anybody who has had experience could cite some examples showing that I'm wrong in stating that, but I believe that's a fair appraisal, nevertheless.

We have two or three anomalies in our law that should be eliminated; one of them is that we have a prima facie presumption that if death follows more than two years after an accident it is prima facie presumed not to be due to the injury, and then a statement following that, that if death results within two years, benefits will be paid. This has resulted in a

decision by our Supreme Court, which I feel must be corrected by legislation, to the effect that where death occurred more than two years after injury there is no death benefit - whereas if the death occurs within two years after the injury but not as a result of the injury, you get death benefits. A bill to correct this anomalous situation has been introduced at least once and died in committee.

Further criticisms of our law, particularly by the labor unions and claimants, concern the provision which provides for a 50% cut in compensation due to wilful failure by the employee to use safety devices, failure to obey reasonable safety rules, intoxication, etc. I do not think this is a legal problem because I can't imagine such a provision being improper. Some such measure should be in the law in this respect. The principal criticism is that this provision places on the employer the duty of establishing reasonable rules of safety and to have safety appliances and devices and in the absence of these there is always the question of whether the employer has met his obligation and whether the employee has fulfilled his by using them.

The most interesting thing about Colorado Workmen's compensation law relates, I believe, to occupational disease and to the trend in the direction which I would describe as to much a matter of theory and not enough actual factual basis for compensation awards.

You all know that the courts are pretty well dedicated in all states to liberal interpretation and construction of workmen's compensation laws. That is a very reasonable proposition with which no one should argue. The acts should be construed in the light of their purpose, and their purpose is to give compensation for industrial injuries. We have come a long way, we already are a far cry from the common law basis of legal liability; where you say that an injury suffered as the result of an act in the scope of employment is the basis of legal liability for which there is insurance. This is particularly true when we come to occupational disease. The courts in Colorado have done the same thing as has been done in many other states, namely they have tried to stretch the content of the workmen's compensation law, deliberately I think, in many cases, to permit recovery where they thought the employee ought to have compensation, even though the letter of the law, the original scope, the strictly legal interpretation of liability was missing in one respect or another. Our occupational disease act in Colorado was passed in 1946 and before describing it at all, I think it's fair to say that it is a highly restrictive type of legislation. It can be said here again that a fair evaluation of informed opinion would be that the occupational disease law in Colorado at the present time is close to ridiculous. The reason for that is quite clear; it is a schedule law, not a blanket law, and it names silicosis and asbestosis and nineteen different types of poisoning. Coverage applies to all employees who are subject to the workmen's compensation act and either the employer or employee may accept or reject it.

The act purports to be the exclusive remedy in case both employer and employee are covered and, apropos of what was said earlier by the speakers on this program, I think that the provision in the law denying the employee any remedy unless both are covered is of doubtful validity. The reason

that our law doesn't work (and we have practically no cases, we have had only a few cases that have ever reached the Supreme Court) in a practical sense is that it places an almost impossible burden of proof upon the plaintiff. The law requires the employee prove "by competent medical evidence," that there is a "direct causal connection" between the disease and the employment; that the disease was a "natural incident" of the work; that it can be "fairly traced" to the employment as the "proximate cause"; that it flowed from the source of employment as a "natural consequence." I don't think that any of you are naive enough not to realize that when the lawyers use language of this kind in a statute it becomes just a question of words; it becomes necessary to prove what is meant when you say that an occupational disease must have a direct causal connection, must be a natural incident, and must be fairly traceable to the employment.

In addition to the difficulties of proof we have definitions of silicosis and asbestosis that are very extreme. Silicosis refers to the disease caused by "uncombined silicon dioxide." Disability must be within two years of the last exposure; death must occur within two years of the last exposure; during the past ten years the person must have received his disabilities and must have been exposed in harmful quantities. With respect to the poisons named in the law, disability must be within 120 days from the last exposure, death must have resulted in one year, claim must be filed within one year after disability, etc.

Also defenses exist including willful misconduct, violation of safety rules, willful self-exposure with certain prescribed presumptions of willful exposure in certain cases. I will not take the time to go into the benefits but they have not been brought up to the standards of workmen's compensation laws. We have in our statute another restrictive and conflictive provision, Section 17, which provides that where an occupational disease is both complicated with or aggravated by non-poisonous or other non-compensable disease, or vice versa, first the compensation is reduced to that portion of the disease which is attributable to the compensable disease, and if the cause can't be separated, there will be no compensation, except that if disability or death occurs due to silicosis or asbestosis, complicated by tuberculosis, then compensation is awarded on the basis of uncomplicated silicosis.

To summarize, the difficulties of proof under our occupational disease statute are terrific; the claimant often can't live that long or can't pay for or can't get the medical and other evidence necessary to prove his claim. Proof of this is found in the fact that the men who work in the field know, of their own knowledge, of cases where there was unquestioned silicosis, and where the insurer has acknowledged liability and paid benefits, although the claimant was wholly unable to prove his case, due to the many restrictions of the law and the many difficulties of proof.

I will not take the time to summarize the provisions of other state laws or comparable laws. I believe that out of the 40 odd states that have occupational disease laws, about 23 have a schedule law like Colorado. In 21 of the states I believe the benefits for silicosis and asbestosis are limited; i.e., they are smaller than they are for personal injuries under the workmen's compensation law as in the case of Colorado, and

Colorado joins the 14 other states that have no recovery for partial disability. In 9 states according to the information I have, the medical care for asbestosis and silicosis is strictly limited as compared with other injuries, and that is true in Colorado.

In conclusion, I would like to say, based on this brief review, that I am more interested in the work that has been going on at this conference and I think it's a splendid thing. It has interested me very greatly to study the occupational disease law and think about this business of industrial hygiene. I feel that from the point of view of legislation, from the point of view of a lawyer, we have a good deal to do if the current trend in the country is toward full coverage for occupational diseases. If industry is to be made legally responsible for death and disability due to occupational disease, I think it behooves industry, the experts here, and the medical profession to do certain things which to my knowledge have never been done adequately and which many of the speakers on this panel are engaged in doing; namely, we must thoroughly examine and define occupational disease; we don't need to define it just in grammar, we need to define it in meaning and content; we must have objective standards for determining what it is and what causes it. There may be much room for argument, but there has to be some objective standard. Standards must be set if we are going to use them as the basis of legal liability.

We should have, or develop by scientific means, criteria for measuring degrees of disability due to occupational disease. That is a tremendous challenge, but we should reject, in my opinion, any notion that industry has to pay the bill for health and accident insurance for all of its employees, for whatever reason. This is a different matter; one of social responsibility. If we are going to do that, let's do that as such; but as long as we proceed on the basis of insurance and as long as we go on the basis of legal liability and responsibility, we should steer away from any notion of pensions or retirement and stick to compensation on the basis of known standards. I think that's quite an order for anybody to ask for, but that's what I feel we should have and that's what I hope and believe that a conference of this kind will help develop.

Moderator: I'm sure that this has been a most instructive period of talks and I think that we should have an opportunity for further exploring the knowledge and information that these gentlemen can give us in an open discussion.

#### DISCUSSION

Moderator: Gentlemen, I think we can get to our questions. I have looked them over with the idea of sorting them out. The question is raised of Mr. Richards. "Can you compare the relative cost of a partial coverage in relation to complete coverage of occupational disease laws?"

Mr. Richards: I think that Mr. Glaeser can answer that better than I can. That's an operator's problem.

Mr. Glaeser: First of all, I don't think that I quite understand the question.

Wednesday A.M., November 2, 1949

Moderator: Mr. Oscar A. Glaeser.

Speakers: Victor G. Heiser, M.D., New York City, New York.

Robert A. Kehoe, M.D., Cincinnati, Ohio.

C. Richard Walmer; M.D., Medical Director, Industrial Hygiene Foundation, Pittsburgh, Pennsylvania.

Frode Jensen, M.D., Director, Graduate and Postgraduate Medical Education, University of Colorado School of Medicine, Denver, Colorado.

Moderator: This is the last session of the first annual Rocky Mountain Conference on Industrial Health. I think you'll agree with me that during these sessions we have discussed a pretty broad field of scientific and human endeavor that over the years will pretty much make a major segment of American Industry. In talking about rebuilding that part of industry, we have been very serious in our discussions and other deliberations. I told my good friend Paul Richards last night there hasn't been a story told. We've been so intent on the subjects that we have covered. Perhaps I shouldn't deviate from that course, but I think maybe we ought to start out this morning with a little bit of laughter. Our good friend, Ted Waters, has something to present to you that in substance too was intended to remake part of the world, and I'd like to call on Ted this morning to read that little article that he has.

Mr. Waters: I may say that Dr. Paul Richards is the author of this document and shares with me a headache from last night. The caption of it is the Morning After and the wife is speaking:

Good morning, my bright international mate,  
My outstanding genius in problems of state;  
I trust all is clear in that wonderful mind,  
Which last night remodeled the whole of mankind.

Your handling of Russia, the Ruhr and Palestine  
And charring Greece, it was masterly fine.  
You're sure to be named the man of the year,  
Here are four or five aspirins; swallow them, dear.

Arise, my sweet prince, but be careful don't skid;  
Arise and consider the things that you did.  
The wrecked garden, the splintered garage;  
It sounded just like an old fashioned barrage.

Go see your hostess and carry a check.  
I think if you'd sign it just "pain in the neck"  
The bank will okay it; it would have to be you  
That went berserk twixt the dawn and the dew.

within 12 to 24 months, and that's the way a good many of them have come about. A goodly number of us working in this particular field and whose life's efforts have been spent in this field of industrial toxicology, are more than a little skeptical on this approach to the problem and more than a little skeptical as to the business of the extension of these things in that fashion as any more than suggestions in relation to good occupational factors. It is like drunkenness in terms of a certain alcoholic concentration which has crept into the statutes of two or three states. It's a very nice thing done for a very good purpose but it's very bad medicine.

Moderator: Mr. Waters, is it your opinion that the concentration of less than 5 million particles of free silica, of less than 5 microns in diameter will not produce or cause the disease silicosis? I'm sure it should be put to a lawyer, not a doctor.

Mr. Waters: I was delighted to hear Bob Kehoe's skepticism with respect to these MAC values that have been established in so many of the codes and I hope that industrial hygienists generally will come to share that skepticism. The present question is a serious question. I happened to be a member of the legal committee at the time of the National Silicosis Conference. I was on the legal committee and the particular question that has just been directed to me was fired around between the medical and the engineering committee, so I didn't have too much of an opportunity, nor did our committee have too much of an opportunity, in the first place we didn't know anything about it. I think so many of us that participated in that conference were so lacking in basic knowledge. The fact is that in that conference our learned brothers, that group of scientists who have spent a lifetime in the attempted research on that particular question, came out not with any positive statements but with a statement from their review of information then available to them, the permissible concentration of exposure to silican dioxide dust should be kept below 5,000,000 particles per cubic foot of air of pure free silican dioxide. I've been at the conferences at Saranac, I've heard LeRoy Gardner, who was certainly the greatest authority on this subject, discuss this particular question. You get into the question of individual susceptibility. I had a case the other day who came to me from a silica company in the State of Pennsylvania and the man who for some 45 years had been engaged in a sand blast with that particular company, back in the days when industrial hygiene meant nothing, and the fact that he came up really for retirement because of his age and was examined and it was determined that he had silicosis. He was disabled. There's a man who had been working under those conditions for some time, and John Smith working under the same conditions will get the disease, Bill Jones working right next to him will not. And Dr. Richards, you know that that's the story, and it's one of those explainable stories. Dr. Kehoe, in the laboratory work he is engaged in, is running down these things, trying to determine what are proper MAC's. In the discussion that I presented today, I was trying to follow the subject of scientists to tell you what little I know about that particular subject, but now as an advocate of industry, I share Dr. Kehoe's skepticism, not only for the employer, but also for the employee. This is not a one-way street; there are two parties that are involved in this thing. I share his skepticism in attempting to write into any given code a permissible MAC of any material. I have been representing recently the chrome industry with respect to the problem of the

incidence of lung carcinoma among chromate workers. I'd like to state that the Public Health Service is conducting an extensive investigation into that particular subject and in all of these codes, I forget the figures, Dr. Kehoe you will correct me if I'm wrong, I think there's a permissible concentration of one-tenth of a milligram per cubic meter, but nobody knows what is the proper permissible concentration. I say to all of you in this particular part of the country that may be concerned with this matter of industrial hygiene codes, study that very carefully before you establish any MAC in any industrial hygiene code. If you don't, industry is going to be exceedingly in the dark and the basic fact is that we are not going to accomplish the job that should be accomplished. Dust, as such, to answer the question that has been put to me, any silican dioxide dust to which employees are exposed, should be eliminated. We have engineering facilities and advice with respect to the control of their hazards and those of you gentlemen who operate silica plants or have silica hazards or any other of the 140 compounds to which Dr. Kehoe referred to a few moments ago, don't feel safe with any permissible MAC. Clean up your plants, you can do it; clean up your operations and eliminate those particular substances insofar as it is humanly possible to do so.