

few days and that we will all go back home with a firm determination to meet the new hazards and responsibilities that are confronting us today in industry in connection with our defense program and to do our utmost to convert our hopes and our aspirations for an industrial life free from preventable accidents into an actuality by injecting into our safety work new interests, new enthusiasm, and more intensive effort.

Chairman Cline: We will make preparations now for the film, gentlemen, and while we are getting the screen in position I want to publicly thank Mackin Kelly and Harry Sain for the very splendid cooperation they gave me in helping to arrange this general session. Without their help I am sure I would have had a difficult time. It has been a privilege to be with you.

The film you are about to see is presented through the courtesy of the DuPont Company, a unique film, "Three Dimensional Sealing."

"THREE DIMENSIONAL SEEING"

The film, "Three Dimensional Sealing", presented through the courtesy of the DuPont Company, was then shown upon the screen.
The General Session then adjourned.



PLAINTIFF'S
EXHIBIT
OSC-6

PROCEEDINGS

OF

All Ohio Safety Congress

Held Under the Auspices of
THE INDUSTRIAL COMMISSION OF OHIO
and the direct management of
THE DIVISION OF SAFETY AND HYGIENE

Published under the authority of
of

The Industrial Commission of Ohio

NEIL HOUSE
COLUMBUS, OHIO

APRIL 20-21-22, 1943


THE F. J. HEER PRINTING CO.
COLUMBUS, OHIO
1943
Bound at the State Bindery

LIST OF HONORARY VICE PRESIDENTS

Geo. A. Strain, Director, Department of Industrial Relations, State of Ohio.
 Thos. C. Wilson, President, Columbus Chamber of Commerce, Columbus, Ohio.
 Don K. Martin, Secretary, Ohio Manufacturers Association, Columbus, Ohio.
 Grove Patterson, President, Toledo Blade, Toledo, Ohio.
 Phil Hanna, Secretary-Treasurer & Legislative Agent, Ohio Federation of Labor, Columbus, Ohio.
 Thos. J. Duffy, Former Chairman, Industrial Commission of Ohio, Columbus, Ohio.
 Judge Lee E. Skeel, President, Cleveland Safety Council, Cleveland, Ohio.
 Frank A. Purnell, President, The Youngstown Sheet & Tube Co., Youngstown, Ohio.
 Charles R. Hook, President, The American Rolling Mill Co., Middletown, Ohio.
 E. E. Grover, President, Columbus Safety Council, Columbus, Ohio.
 Ben W. Marri, President and General Manager, Columbus & Southern Ohio Electric Co., Columbus, Ohio.
 S. P. Bush, Columbus, Ohio.
 Frank H. Ireland, President, Dayton Safety Council, Dayton, Ohio.
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 Lewis M. Crosley, Vice President & General Manager, Crosley Radio Corp., Cincinnati, Ohio.
 H. C. Blackwell, Union Gas & Electric Co., Cincinnati, Ohio.
 Charles L. Keller, Vice President, The Gardner-Richardson Co., Lockland, Ohio.
 J. A. Voss, Vice President in Charge of Personnel, Republic Steel Corp., Cleveland, Ohio.
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 E. E. Grant, President, Crystal Tissue Co., Middletown, Ohio.
 Everett S. Greer, Superintendent, Plant No. 2, Hazel-Atlas Glass Co., Zanesville, O.
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 C. E. Torrey, General Manager, Ohio Power Co., Canton, Ohio.
 H. A. Timken, Jr., Vice President, Timken Roller Bearing Co., Canton, Ohio.
 Dr. O. P. Geier, Director of Employee Relations, Cincinnati Milling Machine Co., Cincinnati, Ohio.
 James R. Byrum, President, Middletown Safety Council, Middletown, Ohio.
 W. V. Fisher, Vice President and General Manager, Anchor Hocking Glass Co., Lancaster, Ohio.
 D. S. Luntz, President, Scrap Iron and Steel Institute, Canton, Ohio.
 E. E. McPherson, Superintendent, Heath Refinery, Pure Oil Co., Newark, Ohio.
 H. E. Nold, The Ohio Ceramic Industries Association, Columbus, Ohio.
 E. M. Tharp, Vice President and General Manager, Ohio Fuel Gas Co., Columbus, Ohio.
 Col. Harry E. Gibbs, Director of Internal Security Division, Headquarters Fifth Service Command, Ft. Hayes, Columbus, Ohio.
 Hal G. Sours, Director of Highways, State of Ohio, Columbus, Ohio.

COMMITTEES

Arrangements

Chairman: Thos. P. Kearns, Superintendent, Division of Safety and Hygiene, Industrial Commission of Ohio, Columbus, Ohio.
 P. A. Alberty, Secretary, Ohio Fuel Gas Co., Columbus, Ohio.
 Campbell Allen, American Rolling Mill Co., Middletown, Ohio.
 W. Andrews, Seiberling Rubber Co., Barberton, Ohio.
 John Askan, Ohio Oil Co., Findlay, Ohio.
 Ernest Augustus, Safety Director, The Mead Corp., Chillicothe, Ohio.
 Claude Bawden, Underwriters Laboratories, Youngstown, Ohio.
 C. O. Beckett, Millwood Sand Co., Howard, Ohio.
 Fred G. Bennett, Safety Director, Buckeye Steel Castings Co., Columbus, Ohio.
 H. K. Bergen, Standard Oil Co., Toledo, Ohio.
 F. A. Berkey, Mansfield Tire & Rubber Co., Mansfield, Ohio.
 H. C. Blackwell, Union Gas & Electric Co., Cincinnati, Ohio.
 Sam Bolen, Snyder Oil Co., Orrville, Ohio.
 John Breidenbach, Third Vice President, Ohio State Federation of Labor, Dayton, O.
 Gordon J. Buchanan, Cincinnati & Suburban Bell Telephone Co., Cincinnati, Ohio.
 William G. Burkhardt, Vice President, Burkhardt Brewing Co., Akron, Ohio.
 C. E. Burnett, Kroger Grocery & Baking Co., Columbus, Ohio.
 D. J. Carpenter, National Lime & Stone Co., Findlay, Ohio.
 Ross S. Castle, The Mill Mutuals, Columbus, Ohio.
 Claude L. Clark, Executive Secretary, Ohio Sand & Gravel Assn., Columbus, Ohio.
 A. C. Cook, Superintendent, Safety, Welfare & Claims, Carnegie Steel Co., Youngstown, Ohio.
 Harold R. Cross, Secretary, Chamber of Commerce, Barberton, Ohio.
 Robert O. Dale, President, Ohio State Conference B.M. & P.I.U., Euclid, Ohio.
 Dale Davis, Moores & Ross, Inc., Columbus, Ohio.
 Karl B. Dodge, Secretary, Trumhull County Manufacturers Assn., Warren, Ohio.
 H. G. Ehret, Division of Factory & Building Inspection, Department of Industrial Relations, Columbus, Ohio.
 Alfred P. Eier, The Nevada Farmers Grain Assn., Nevada, Ohio.
 F. A. Ellis, Director of Welfare, Wheeling Steel Corp., Wheeling, W. Va.
 H. S. Ernst, Asst. Manager, Canton Chamber of Commerce, Canton, Ohio.
 M. B. Fasnacht, Pittsburgh Plate Glass Co., Barberton, Ohio.
 Capt. W. T. Fergus, Bureau of Public Relations, Cleveland Fire Department, Cleveland, Ohio.
 R. H. Ferguson, Manager of Safety, Republic Steel Corp., Cleveland, Ohio.
 Russell Fifer, Secretary, Ohio Dairy Products Association, Columbus, Ohio.
 D. K. Finley, Secretary, Columbus Safety Council, Chamber of Commerce, Columbus, Ohio.
 F. W. Frecker, Ohio Power Co., Canton, Ohio.
 C. E. Frost, Marion Reserve Power Co., Marion, Ohio.
 D. H. Gilhousen, Norwalk Truck Lines, Norwalk, Ohio.
 H. R. Graman, Parker Vocational High School, Dayton, Ohio.
 E. E. Grover, Columbus & Southern Ohio Electric Co., Columbus, Ohio.
 Rita Hampel, Sorg Paper Co., Middletown, Ohio.
 Phil Hanna, Secretary, Ohio State Federation of Labor, Columbus, Ohio.
 J. O. Harshman, Ohio Fuel Gas Co., Findlay, Ohio.
 H. F. Heil, National Cash Register Co., Dayton, Ohio.
 H. H. Henry, Safety Director, Otis Works, Jones & Laughlin Steel Corporation, Cleveland, Ohio.
 Robert C. Hess, F. J. Beasley Co., Athens, Ohio.
 Gay W. Jacobs, Secretary, Ohio Association of Ice Industries, Steubenville, Ohio.
 J. J. Jurgens, Robinson Clay Products Co., Uhrichsville, Ohio.
 John W. Jockel, Ohio Conference of B. M. & P. I. U., East Cleveland, Ohio.
 Marcus Kerr, Chief, Ohio Division of Mines, Department of Industrial Relations, Columbus, Ohio.
 Victor L. Keys, Ohio State Association of Dyers & Cleaners, Columbus, Ohio.
 J. T. Kidney, Manager, Employees Service Division, Goodyear Tire & Rubber Co., Akron, Ohio.

F. H. Kleiman, H. E. Kleiman Co., Cleveland, Ohio.
 S. S. Knisely, The Hinde & Dauch Paper Co., Sandusky, Ohio.
 R. H. Krone, Safety Director, Cincinnati Gas & Electric Co., Cincinnati, Ohio.
 John F. Lacey, Commercial Steel Foundries, Inc., Marion, Ohio.
 William Loeffler, Secretary, National Assn. of Foremen, Dayton, Ohio.
 A. L. Leonard, Manager, Columbus Packing Co., Columbus, Ohio.
 L. W. Lohrey, Personnel Director, Delco Products Corp., Dayton, Ohio.
 K. C. Loomis, Ohio Rubber Co., Willoughby, Ohio.
 G. F. McConnell, Mosaic Tile Co., Zanesville, Ohio.

Program

Chairman: Carl L. Smith, Managing Director, Cleveland Safety Council.

Exhibits

Chairman: Buell W. Nutt, President, Safety Equipment Service Company, Cleveland, Ohio.

Entertainment

Chairman: H. G. Ehret, Safety Director, Division of Factory and Building Inspection, Department of Industrial Relations of Ohio.

Publicity

Chairman: Harry M. Paul, Supervisor of Printing and Publications, Division of Safety and Hygiene, Industrial Commission of Ohio.

Reception

Chairman: Harry L. Sain, Assistant Superintendent, Division of Safety and Hygiene, Industrial Commission of Ohio.

Registration

Chairman: C. C. Beasor, Statistician, Division of Safety and Hygiene, Industrial Commission of Ohio.

BUREAU OF INFORMATION ON SAFETY, COMPENSATION AND CLAIMS

SAFETY

Chairman—H. P. Heyne, Safety Engineer.

Staff of the Division of Safety and Hygiene of the Industrial Commission of Ohio:
 C. G. Barth.....Safety Engineer
 W. Thornton Bogert.....Safety Engineer
 H. P. Heyne.....Safety Engineer
 DeWitt Huffman.....Safety Engineer
 Mackin Kelly.....Safety Engineer
 Frank W. Klett.....Safety Director
 James P. Scanlon.....Safety Engineer
 Sidney Smith.....Safety Engineer
 C. C. Thompson.....Safety Engineer
 Wm. D. Holt.....Safety Engineer
 W. M. Morrow.....Structural Engineer
 Thos. Ashton.....Mining Engineer
 D. M. Ryan.....Mining Engineer
 H. F. Hillebrandt.....Special Representative
 W. E. Obetz.....Medical Director
 George Calhoun.....Special Investigator
 A. R. Whippo.....Special Investigator
 James Fluker.....Special Investigator
 Ben T. Godfrey.....Special Investigator
 Arnold Bill.....Special Investigator
 A. R. Taubman.....Special Investigator
 Bliss Frame.....Special Investigator

COMPENSATION

Robt. W. Nott, Supervisor of Information, Industrial Commission of Ohio.

MUSIC

GENERAL SESSION

Tuesday, April 20, 9:45 A. M.

Group Singing

Leslie L. Diehl, Baritone

Marie Arms, Accompanist

ANNUAL CONGRESS BANQUET

Tuesday, April 20, 6:30 P. M.

Orchestra—Bill Vaughn and His Jesters

GENERAL SESSION

"Conservation of Manpower for Warpower"

Wednesday, April 21, 1:30 P. M.

FIRST AID CONTEST

Wednesday, April 21, 7:30 P. M.

TOPIC SESSIONS

Thursday, April 22, 9:30 A. M.

GENERAL SESSION

Thursday, April 22, 12:15 P. M.

Group Singing

THURSDAY EVENING

THIRD ANNUAL AWARD BANQUET

OHIO TRAFFIC SAFETY CONTEST

SIX-FIFTEEN P. M.

LIST OF EXHIBITORS

Booth No.	Exhibitor	Location
89-40	Acme Safety Products Co.	Akron, Ohio.
10-11	American Optical Co.	Cleveland, Ohio.
78-74	Bausch & Lomb Optical Co.	Rochester, N. Y.
1-3	E. D. Bullard Co., Inc.	Pittsburgh, Pa.
59	H. Childs & Co., Inc.	Columbus, Ohio.
58	Columbus Glove Mfg. Co.	Columbus, Ohio.
50	Davis Emergency Equipment Co., Inc.	Newark, N. J.
9	The Dionol Co.	Kalamazoo, Mich.
29	Flohr Mfg. Co.	Buffalo, N. Y.
55	The Fyr-Flyer Co.	Dayton, Ohio.
62	Lunkin Safety Appliance Co., Inc.	Louisville, Ky.
28-27	Keystone View Co.	Meadville, Pa.
45-46	The Kimball Safety Products Co.	Cleveland, Ohio.
18-17	Walter G. Legge Co., Inc.	New York, N. Y.
28	Lightfoot Schultz Co.	New York, N. Y.
38-37-38	Luse Display Co.	Akron, Ohio.
18	Melflex Products Co.	Akron, Ohio.
30	Melville Shoe Corp.	New York, N. Y.
42	Metropolitan Life Insurance Co.	Pittsburgh, Pa.
65	Mine Safety Appliance Co.	Cleveland, Ohio.
63-64	The Monroe Co., Inc.	Chicago, Ill.
56	National Safety Council	Chicago, Ill.
22-23	The Patent Scaffolding Co., Inc.	St. Louis, Mo.
14-15	The Patent Scaffolding Co., Inc.	Chicago, Ill.
32-33	The Positive Safety Mfg. Co.	Cleveland, Ohio.
19	Portable Lamp & Equipment Co.	Pittsburgh, Pa.
49	Rose Manufacturing Co.	Denver, Colo.
7	Safety Clothing & Equipment Co.	Cleveland, Ohio.
14-15	Safety Engineering Magazine	A. M. Best Co., New York, N. Y.
32-33	The Safety Equipment Service Co.	Cleveland, Ohio.
19	Safety First Supply Co.	Pittsburgh, Pa.
7	Save Electric Corp.	Toledo, Ohio.
43-44	A. Schrader's Son, Inc.	Brooklyn, N. Y.
34-35	A. Smith & Son, Inc.	Philadelphia, Pa.
47-48	Standard Safety Equipment Co.	Chicago, Ill.
25	The Steel Scaffolding Co., Inc.	Evansville, Ind.
67	Sugar Beet Products Co.	Saginaw, Mich.
12	Sugart Manufacturing Co.	Chicago, Ill.
8	The Tarbom Co.	Cleveland, Ohio.
31	Waverly Petroleum Products Co.	Philadelphia, Pa.
34	West Disinfecting Co.	Cleveland, Ohio.
6	Williams & Co., Inc.	Pittsburgh, Pa.
60	The Geo. L. Williams Co.	Cleveland, Ohio.
	Wilson Products, Inc.	Reading, Pa.

FOREWORD

Since there was a considerable expansion of the 1943 Congress programs over those of the preceding year, it has been found necessary, in the editing of this report of the proceedings, to eliminate considerable extraneous matter, especially where it has not even a remote relation to the safety theme.

This has been absolutely necessary in order to keep this volume within reasonable limitations, both as to size and content. This will, we believe, be a convenience to the reader. Likewise, it will obviate any unnecessary drain upon the financial resources of the Division and maintain the general character of the Congress as a state-wide conference devoted exclusively to safety topics.

In the carrying out of this policy, we have attempted to exercise extreme care in preserving the essential elements of all safety discussions and in giving full reports on all talks wherein the subject matter was at all applicable to the work of industrial accident prevention.

Even as it is, this volume is still considerably larger than we had hoped it would be and if the section officers for 1943 will use every effort to see that discussions are confined more closely to subject covering the purpose of the Congress, it will be possible to publish a verbatim report of the proceedings without the necessity of culling out irrelevant matter.

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TUESDAY MORNING, APRIL 20

GENERAL SESSION NINE FORTY-FIVE A. M.

Chairman—Will T. Blake, Chairman, Industrial Commission of Ohio.
Invocation:
Rev. Paul C. Kaefer, St. Paul's Evangelical and Reformed Church, Columbus, Ohio.

Opening Remarks:

Thomas P. Kearns, Superintendent, Division of Safety and Hygiene, Industrial Commission of Ohio.

Dedication:

His Excellency, John W. Bricker, Governor of Ohio.
Song—"My Ohio"

Welcome to City:

Honorable Floyd F. Green, Mayor of Columbus.

"Administrative Experiences During War Emergency":

George A. Strain, Director, Department of Industrial Relations, State of Ohio.
Solo—Leslie L. Diehl
Group Singing—Led by Leslie L. Diehl
Marie Arms, Accompanist

Inspirational Address:

Arthur C. Horrocks, Counsel, Public Relations Department, Goodyear Tire & Rubber Co., Inc., Akron, Ohio.

BE SURE TO VISIT THE EXHIBITS

TUESDAY AFTERNOON

SECTION MEETINGS

CERAMICS

Glass Products

TWO P. M.

Chairman—C. S. Matheny, National Fireproofing Corp., Haydenville, Ohio.
Vice Chairman—G. F. McConnell, Mosaic Tile Co., Zanesville, Ohio.

Secretary—Robert Minsker, Personnel Director, Owens-Illinois Glass Co., Columbus, Ohio.

Robert Minsker, Presiding.

2:40 P. M.—Opening Remarks: Robert Minsker.

3:10 P. M.—"Making the 'Glass House' Safety Program Work":
Howard E. Waugh, Personnel Director, Hazel-Atlas Glass Co., Plant No. 1, Zanesville, Ohio.

3:40 P. M.—"How to Organize and KEEP ACTIVE Your First Aid Squad":
Richard Stickney, Personnel Manager, American Blower Corp., Columbus, Ohio. Technician film will be shown.

CONSTRUCTION

TWO P. M.

Chairman—F. H. Klefman, H. E. Klefman Co., Cleveland, Ohio.

Where Should Safety Begin?
Oscar W. Rosenthal, Rosenthal, Cornell & Co., Chicago, Illinois; President, Builders Association of Chicago.

Safety Is Better Than Compensation
Evan A. Baker, Secretary-Treasurer, Bricklayers and Tile Layers Union, Local No. 18 of B. M. & P. I. U., Cincinnati, Ohio.

DAIRY AND DAIRY PRODUCTS

ELEVEN-THIRTY A. M.

Chairman—C. E. Schrock, Sanitary Milk Co., Canton, Ohio.

Vice Chairman—Dale Davis, Moores & Ross, Inc., Columbus, Ohio.

Secretary—Russell Fifer, Ohio Dairy Products Assn., Columbus, Ohio.

11:30 A. M.—Registration.

12:00 Noon—Luncheon.

"Putting Personality Among the Priorities"
Dr. Harold Lancaster, King Ave. M. E. Church, Columbus, Ohio.

1:30 P. M.—*"How Can I Reduce My Workmen's Compensation Premium Payment?"*
E. E. Watson, Consulting Actuary, Columbus, Ohio.

Discussion—Leader: Dale Davis, Vice Chairman.

2:30 P. M.—*"Accidents"—Prevent or Pay?*
R. J. Crosby, March & McLennan Insurance Co., New York, N. Y.

Discussion—Leader: Neil Baker, Fairmont Creamery Co., Columbus, Ohio.

Presentation of Safety Awards
Dr. R. C. Rouche, Telling Belle-Vernon Co., Cleveland, Ohio; President, Ohio Dairy Products Association.

EMPLOYEE PUBLICATIONS

ONE-THIRTY P. M.

Chairman—H. F. Heil, National Cash Register Co., Dayton, Ohio.

Vice Chairman—Gordon J. Buchanan, Cincinnati & Suburban Bell Telephone Co., Cincinnati, Ohio.

Secretary—Miss Rita Hampel, Sorg Paper Co., Middletown, Ohio.

Editor of the Blue Pencil—Miss Phyllis M. Swisher, Cincinnati & Suburban Bell Telephone Co., Cincinnati, Ohio.

1:30 P. M.—*"Should It Be a Picture in a Story or a Story in a Picture?"*

W. W. "Bill" Diehl, Publicity Director, Dayton Chamber of Commerce, Dayton, Ohio (former editor, A. P. news photographer and feature writer).

2:15 P. M.—Discussion.

2:30 P. M.—*"What to Print and Why"*
Donald R. Burgess, Office of War Information, Cleveland, Ohio.

3:00 P. M.—Discussion.

3:15 P. M.—*"A Tonic for Troublesome Times"*
Glenn Maasman, Public Relations Department, Delco Products Division, General Motors Corp., Dayton, Ohio.

FLOUR MILLING AND GRAIN ELEVATORS

TWO P. M.

Chairman—Robert C. Hess, F. J. Beasley Co., Athens, Ohio.

Vice Chairman—Alfred P. Eier, The Nevada Farmers Grain Assn., Nevada, Ohio.

Secretary—Ross S. Castle, The Mill Mutuals, Columbus, Ohio.

Opening Remarks: Chairman.

"Safety and Accident Prevention in Grain Elevators, Feed Mills and Flour Mills"
H. L. Kennicott, Secretary, Lumbermen's Mutual Casualty Co., Chicago, Ill.

Round Table Discussion on the Causes of Accidents and What to Do to Prevent Them:
Leader: Alfred P. Eier, Vice Chairman.

Review of Accident Records for the Year 1942:

R. S. Wilcox, Secretary, Ohio Millers State Association.

INDUSTRIAL ARTS AND VOCATIONAL EDUCATION

ONE FORTY-FIVE P. M.

Chairman—H. R. Graman, Parker Vocational School, Dayton, Ohio.

"Health Conservation as Applied to the Industrial Worker"
Captain R. T. Homewood, Industrial Hygiene Engineer, Patterson Field, Dayton, Ohio.

"A Safety Program for Ohio Schools"
Paul E. Landis, Supervisor of Health, Physical Education, Recreation and Safety, State Department of Education, Columbus, Ohio.

"What Can the Schools Do to Prevent a Catastrophe in Unsafe Driving After the War?"
Leslie Silvernale, Field Representative, Educational Division, National Safety Council, Chicago, Illinois.

"Eye Conservation"
Milton M. Bowman, Field Representative, U. S. Department of Labor, Cleveland, Ohio.

INDUSTRIAL AND COMMERCIAL MOTOR VEHICLE OPERATION

ONE-THIRTY P. M.

Chairman—F. W. Frecker, Ohio Power Co., Canton, Ohio.

Vice Chairman—D. H. Gilhousen, Norwalk Truck Lines, Norwalk, Ohio.

Secretary—C. E. Burnett, Kroger Grocery & Baking Co., Columbus, Ohio.

1:30 P. M.—*"Selection and Training of Drivers in Wartime"*
R. O. Bennett, Manager, Safety & Personnel Department, Great Lakes Greyhound Lines, Inc., Detroit, Michigan (A presentation of the fleet personnel problems as they exist today).

2:00 P. M.—*"Fleet Safety as a Part of the General Safety Program"*
R. S. Metzger, Safety Director, Toledo Edison Co., Toledo, Ohio (Meeting the problems of the scattered fleet and the incidental driver).

2:30 P. M.—"Doing More and More With Less and Less":

R. D. Thomas, Regional Manager, Division of Motor Transport, Office of Defense Transportation, Cleveland, Ohio (Meeting the burdens of increased traffic in the face of increased regulations and equipment shortages).

3:00 P. M.—Information Please:

All open discussion will be withheld until this time. This will be your opportunity to ask questions concerning your problems or to present information of interest and value to others.

METALS**TWO P. M.**

Chairman—E. H. Meeks, Transue & Williams Steel Forging Corp., Alliance, Ohio.

Vice Chairman—Edward Mandry, Republic Steel Corp., Bolt & Nut Div., Cleveland, Ohio.

Secretary—A. B. Waugh, Jones & Laughlin Steel Corp., Otis Works, Cleveland, O.

"How the Army Can Help the Metals Industry in Their Safety Program":

Major John F. Jones, Chief, Safety & Health Section, Fifth Service Command, Fort Hayes, Columbus, Ohio.

Discussion

"Training of Women in Industry":

W. C. Wright, Director, Supervisional Training, Goodyear Aircraft Corp., Akron, Ohio.

Discussion**NEWSPAPERS AND PRINTERS****ONE-THIRTY P. M.**

Chairman—R. Reid Vance, Ohio Printers Federation, Columbus, Ohio.

Vice Chairman—Allen E. McDonald, American Education Press, Columbus, Ohio.

Secretary—Kathryn B. Reynolds, American Education Press, Columbus, Ohio.

1:30 P. M.—A Look at the Records:

R. Reid Vance, Chairman.

Appointment of Nominating Committee.

1:45 P. M.—"The War and Safety at Home":

C. A. Jones, Asst. Treas., American Education Press, Columbus, Ohio.

2:30 P. M.—"Safety as the Employee Views It":

Paul J. McCarthy, President, Columbus Allied Printing Trades Council, Columbus, Ohio.

3:15 P. M.—Round Table Discussion—"Safety Suggestions To Take Home."

Report of Nominating Committee.

PAPER AND PAPER PRODUCTS**TWO P. M.**

Chairman—S. S. Knisely, The Hinde & Dauch Paper Co., Sandusky, Ohio.

Vice Chairman—Harry J. Harris, Carthage Mills, Inc., Carthage, Cincinnati, Ohio.

(Now in the U. S. Navy.)

Secretary—Thomas D. Young, Auglaize Box Board Co., St. Marys, Ohio.

Review of the Accident Experience of the Paper and Paper Products Industry in Ohio for 1942:

S. S. Knisely, Chairman.

"Mechanical Safety From an Engineering Viewpoint":

G. H. Suhs, Sorg Paper Co., Middletown, Ohio.

"Are We Using Out-Moded Methods in Teaching Safety?"

Joseph R. Strobel, Director of Vocational Training, War Production Workers,

Cincinnati, Ohio.

PETROLEUM**TWO P. M.**

Chairman—C. K. Roof, Pure Oil Co., Newark, Ohio.

Vice Chairman—Sam Bolen, Snyder Oil Co., Orrville, Ohio.

Secretary—H. K. Bergen, Standard Oil Co., Toledo, Ohio.

Inspirational Address:

Dr. Charles Copeland Smith, Speakers Bureau, National Association of Manufacturers, New York, New York.

"War Time Plant Protection":

L. S. Westcott, Chairman, Committee on Protection of Petroleum Facilities, Great Lakes Region; Vice President and Secretary, Pure Oil Co., Chicago, Illinois.

"Safety in Training Courses":

Cloyd S. Steinmetz, Director of Personnel Training, Owens-Corning Fiberglas Corp., Newark, Ohio.

RUBBER**TWO P. M.**

Chairman—K. C. Loomis, Ohio Rubber Co., Willoughby, Ohio.

Vice Chairman—W. Andrews, Seiberling Rubber Co., Barberton, Ohio.

Secretary—F. A. Berkey, Mansfield Tire & Rubber Co., Mansfield, Ohio.

Opening Remarks: K. C. Loomis, Chairman.

2:15 P. M.—Rubber Industry Statisticians:

W. Andrews, Vice Chairman.

2:30 P. M.—Pop Talk:

3:00 P. M.—"Women in Industry":

A. D. Caddell, Safety Director, Curtiss-Wright Corp., Columbus, Ohio; former Secretary of the Industrial Commission of Ohio.

3:30 P. M.—Safety Film—"How Fires Start in Industry" (Courtesy of Associated Factory Mutual Fire Insurance Co., Boston, Mass.)
Appointment of Nominating Committee.

TUESDAY EVENING**SIX-THIRTY P. M.****ANNUAL CONGRESS BANQUET**

Orchestra—Bill Vaughn and His Jesters.

Toastmaster: Eugene T. Lippincott, Lippincott & Lippincott, Attorneys, Lima, Ohio.

"The Battle of Bunker Hill":

Max Sauer, Leesburg, Ohio.

Solo—Leslie L. Diehl, Baritone.

Accompanist: Marie Arms.

"Smoking America":

Ralph W. Carney, Vice President and Sales Manager, Coleman Lamp & Stove

Co., Wichita, Kansas.

WEDNESDAY MORNING, APRIL 21

SECTION MEETINGS

AIRCRAFT

NINE A. M.

Chairman—J. T. Kidney, Manager, Employees Service Division, Goodyear Tire & Rubber Co., Akron, Ohio.

9:00 A. M.—Opening Remarks:

J. T. Kidney, Chairman.

9:15 A. M.—Welcoming the New Section to the All Ohio Safety Congress: Thomas P. Kearns, Superintendent, Division of Safety and Hygiene, Industrial Commission of Ohio.

9:30 A. M.—“The History of Aviation”: A. Colwell, Vice President in Charge of Engineering, Thompson Products, Inc., Cleveland, Ohio.

10:30 A. M.—“Streamlining the Safety Organization”: A. D. Caddell, Safety Director, Curtiss-Wright Corp., Columbus, O.

10:45 A. M.—“Those Women”: R. W. Fickes, Safety Director, Goodyear Aircraft Corp., Akron, O.

11:00 A. M.—“Training New Employees”: Peter S. Barno, Safety Director and Employment Manager, Thompson Products, Inc., Cleveland, Ohio.

11:15 A. M.—Open Discussion on Above Subjects.

11:45 A. M.—Report of Nominating Committee.

Election of Officers.

CEMENT, LIME, QUARRY, SAND AND GRAVEL

NINE A. M.

Chairman—C. O. Beckett, Millwood Sand Co., Howard, Ohio.

Vice Chairman—D. J. Carpenter, National Lime & Stone Co., Findlay, Ohio.

Secretary—Claude L. Clark, Ohio Sand & Gravel Assn., Columbus, Ohio.

Introductory Remarks:

C. O. Beckett, Chairman.

“Impressions of a Year and a Half”:

H. O. Meloy, Superintendent, Standard Portland Cement Co., Painesville, Ohio.

“Accident Prevention in Lime Plants”:

D. J. Carpenter, Asst. Sales Manager, National Lime & Stone Co., Findlay, Ohio.

“Accident Control in the Sand and Gravel Industry”:

William Edward Hole, President, Ohio Sand & Gravel Assn., Greenville, Ohio.

R. W. Diemer, Secretary, The Neale-Phypps Co., Toledo, Ohio; Safety and Insurance Counselor for The France Stone Co., assisted by R. J. Heckathorn.

“A Proven Safety Program”:

Consulting Engineer, The France Stone Co., with Motion Pictures.

Awarding of Trophies by Division of Safety and Hygiene.

Election of Officers.

Suggestions for 1944 Section Meeting.

CERAMICS

White Ware and Heavy Clay Products

NINE A. M.

Chairman—C. S. Matheny, National Fireproofing Corp., Haydenville, Ohio.

Vice Chairman—G. F. McConnell, Mosaic Tile Co., Zanesville, Ohio.

Secretary—Robert Minsker, Personnel Director, Owens-Illinois Glass Co., Columbus, Ohio.

C. S. Matheny, Presiding.

9:00 A. M.—“Silicosis”:

Dr. R. C. McKay, Cleveland City Hospital; Member, Silicosis Board, Industrial Commission of Ohio.

9:50 A. M.—“Dust Elimination in the Ceramic Industry”:

George L. McCreery, Technical Supt., Ohio Brass Co., Barberton, Ohio.

12:00 Noon—Luncheon:

Toastmaster: H. E. Nold, Secretary, Ohio Ceramic Industries Assn.

“Let’s Relax”:

Professor H. R. Cotterman, Department of Education, Capital University, Columbus, Ohio.

CONSTRUCTION

NINETHIRTY A. M.

Chairman—F. H. Klefman, H. E. Klefman Co., Cleveland, Ohio.

“Safety in the Building Industry”:

Harry C. Bates, President, Bricklayers & Masons International Union of America, Washington, D. C.

“Electrical Engineers—three Phase Circuit”:

Homer A. Davis, Treasurer, Cleveland Construction Co., Cleveland, Ohio.

EMPLOYEE PUBLICATIONS

NINE-THIRTY A. M.

Chairman—H. F. Heil, National Cash Register Co., Dayton, Ohio.

Vice Chairman—Gordon J. Buchanan, Cincinnati & Suburban Bell Telephone Co., Cincinnati, Ohio.

Secretary—Miss Rita Hampel, Sorg Paper Co., Middletown, Ohio.

Editor of the Blue Pencil—Miss Phyllis M. Swisher, Cincinnati & Suburban Bell Telephone Co., Cincinnati, Ohio.

9:30 A. M.—“The Service Man’s Mail”:

Gordon Buchanan, Editor, Cincinnati & Suburban Bell Telephone Bulletin, Cincinnati, Ohio.

10:00 A. M.—Discussion.

10:15 A. M.—“Army’s Plant Safety and Health Program”:

Captain Raymond Crowley, Safety and Health Section, Army’s Continuous Security Division, Fifth Service Command, Fort Hayes, Columbus, Ohio.

10:45 A. M.—Discussion.

11:30 A. M.—“Morale in War Time”:

The Rev. Harold J. Weaver, Assistant to the Episcopal Bishop of Kentucky, in Charge of War Work with the Armed Forces, Louisville, Kentucky.

12:30 P. M.—Get Together Luncheon and Election of Officers.

FOUNDRIES

NINE-THIRTY A. M.

Chairman—Peter E. Rentschler, Hamilton Foundry & Machine Co., Hamilton, Ohio.
Vice Chairman—Harold Segraves, American Radiator & Standard Sanitary Corp., Elyria, Ohio.
Secretary—John F. Lacey, Commercial Steel Foundries, Inc., Marion, Ohio.

"Safety Is Simple":
 Ray O'Connell, Insurance Commissioner, Ohio Steel Foundry Co., Lima, Ohio.
 Discussion.

"Silicosis":
 Dr. John Skavlem, Assistant Professor, College of Medicine, University of Cincinnati; Past President, Academy of Medicine, Cincinnati, Ohio.

METALS

Power Press Session

NINE-THIRTY A. M.

Chairman—E. H. Meeks, Transue & Williams Steel Forging Corp., Alliance, Ohio.
Vice Chairman—Edward Mandry, Republic Steel Corp., Bolt & Nut Div., Cleveland, Ohio.

Secretary—A. B. Waugh, Jones & Laughlin Steel Corp., Otis Works, Cleveland, O.

"Practical Methods in the Elimination of Machine Hazards":
 P. G. Leeper, Safety Supervisor, Republic Steel Corp., Bolt & Nut Div., Cleveland, Ohio.

Discussion.

"Safety in Your Job Training Program—How and Why":
 W. T. Cameron, Chief Safety Advisor, U. S. Department of Labor, Division of Labor Standards, Washington, D. C.

Discussion.

Report of Nominating Committee.

MINING

NINE-THIRTY A. M.

Chairman—William Roy, Jr., Hanna Coal Co., St. Clairsville, Ohio.
Vice Chairman—J. J. Jurgens, Robinson Clay Products Co., Uhrichsville, Ohio.
Secretary—Thomas Price, United Mine Workers of America, Columbus, Ohio.

Welcoming Remarks:

Marcus Kerr, Chief, Division of Mines, State of Ohio.

Introduction of Speaker:
 John Owens, President, District No. 6, United Mine Workers of America, Columbus, Ohio.

Address:

Percy Tetlow, President, District No. 17, United Mine Workers of America, Charleston, West Virginia.

Introduction of Speaker:

R. L. Ireland, Jr., President, Ohio Coal Association, Cleveland, Ohio.

Address:
 C. W. Connor, Superintendent of Mines, American Rolling Mill Co., Nellis, West Virginia.

Presentation of Safety Awards:

James A. White, Member, Industrial Commission of Ohio.
Election of Officers.

PAPER AND PAPER PRODUCTS

NINE-THIRTY A. M.

Chairman—S. S. Knisely, The Hinde & Dauch Paper Co., Sandusky, Ohio.
Vice Chairman—Harry J. Harris, Carthage Mills, Inc., Carthage, Cincinnati, Ohio.
 (Now in the U. S. Navy.)

Secretary—Thomas D. Young, Auglaize Boxboard Co., St. Marys, Ohio.

"Experience of a Safety Nut":

E. F. Myers, Sales Manager, French & Hecht, Inc., Davenport, Iowa.

"First Aid in an Industrial Safety Program":

Wilbert Ohlemacher, Plant Engineer, American Crayon Co., Sandusky, Ohio.
Question and Answer Period on Safety in Paper Mills and Converting Plants:
 Conducted by Thomas D. Young, Secretary.

PETROLEUM

NINE A. M.

Chairman—C. K. Roof, Pure Oil Co., Newark, Ohio.

Vice Chairman—Sam Bolen, Snyder Oil Co., Orrville, Ohio.

Secretary—H. K. Bergen, Standard Oil Co., Toledo, Ohio.

"Synthetic Rubber":

Dr. R. E. Burk, Professor of Chemistry, Western Reserve University; Director of Research, The Standard Oil Co. of Ohio, Cleveland, Ohio.

"War Manpower":

G. W. Hannekin, Vice President, Standard Oil Co., Cleveland, Ohio.

"Use of Up-to-date Methods During Large Oil Unit Shutdowns":

E. E. McPherson, Superintendent, Heath Refinery, Pure Oil Co., Newark, Ohio.

"Static Electricity":

Professor Robin Beach, Dean of Electrical Department, Brooklyn Polytechnic Institute, Brooklyn, New York.

PUBLIC UTILITIES

NINE-THIRTY A. M.

Chairman—E. A. Orser, Ohio Bell Telephone Co., Akron, Ohio.

First Vice Chairman—J. O. Harshman, Ohio Fuel Gas Co., Findlay, Ohio.

Second Vice Chairman—C. E. Frost, Marion Reserve Power Co., Marion, Ohio.

PANEL DISCUSSION

"Development of Safe Tools, Materials and Operating Practices":

Participants: Charles S. Bowden, Distribution Superintendent, Ohio Public Service Co., Alliance, Ohio.
 Lyle G. Bentley, General Safety Agent, Chesapeake and Ohio Railroad Co., Richmond, Virginia.

John N. Adams, Division Engineer, Ohio Fuel Gas Co., Sugar Grove, Ohio.
 John W. Campbell, Engineer of Outside Plant, American Telephone & Telegraph Co., New York, New York.

RUBBER

NINE-THIRTY A. M.

Chairman—K. C. Loomis, Ohio Rubber Co., Willoughby, Ohio.
Vice Chairman—W. Andrews, Seiberling Rubber Co., Barberton, Ohio.
Secretary—F. A. Berkey, Mansfield Tire & Rubber Co., Mansfield, Ohio.

9:30 A. M.—Report of Nominating Committee.

9:45 A. M.—"Compensation and Safety":

John J. Loge, General Tire & Rubber Co., Akron, Ohio.

10:15 A. M.—"Labor's Relation to Safety and Responsibility of Workers to Improve Safety Program":
 Sherman H. Dalrymple, President, United Rubber Workers of America, Akron, Ohio.

10:45 A. M.—"Toxicity of Volatile Solvents":

H. H. Radke, Industrial Hygienist, B. F. Goodrich Co., Akron, Ohio.

11:15 A. M.—"Dermatitis and Dust":

Grant O. Shibley, Industrial Hygienist, Goodyear Tire & Rubber Co., Akron, Ohio.

11:45 A. M.—"Hazards in Processing Synthetics":

Fred S. Mallette, Industrial Hygienist, Firestone Tire & Rubber Co., Akron, Ohio.

12:30 P. M.—Rubber Section Luncheon.

Toastmaster: J. T. Kidney, Goodyear Tire & Rubber Co., Akron, Ohio.

WEDNESDAY AFTERNOON

ONE-THIRTY P. M.

GENERAL SESSION

"Conservation of Man Power for War Power"

Chairman—James A. White, Vice Chairman, Industrial Commission of Ohio.

Remarks by:

Col. H. E. Gibbs, Internal Security Division, Fifth Service Command, Fort Hayes, Columbus, Ohio.
 Lt. Col. H. E. Erickson, Internal Security Division, Fifth Service Command, Fort Hayes, Columbus, Ohio.

"What Comprises the Army's Minimum Plant Safety Program":

Major John F. Jones, Safety and Health Section, Fifth Service Command, Fort Hayes, Columbus, Ohio.

"Conservation of Man Power for War Power":

Martin V. Coffey, Department Commander, American Legion; Vice President and Sales Manager, Miami Metal Cabinet Co., Middletown, Ohio.

"Labor's Part in Conserving Man Power for War Power":

Phil Hanna, Secretary, Ohio State Federation of Labor, Columbus, Ohio.

"Help Wanted in War Production Plants":

William Bachrach, Coordinator, Engineering, Science and Management, War Training, Chicago, Illinois.

Ted F. Silvey, Secretary-Treasurer, Ohio C. I. O. Council, Columbus, Ohio.

BE SURE TO VISIT THE EXHIBITS

WEDNESDAY EVENING

SEVEN-THIRTY P. M.

FIRST AID CONTESTS

Mine Teams vs. Manufacturing Teams

Committee in Charge:

Wilbur R. Miltendorf, Director, First Aid, Life Saving and Accident Prevention, Franklin County Chapter, American Red Cross, Columbus, Ohio.
 Dr. W. F. Obetz, Medical Investigator, Division of Safety and Hygiene, Industrial Commission of Ohio.
 Ernest Schell, General Superintendent, Lorain Coal & Dock Co., Blaine, Ohio.

THURSDAY MORNING, APRIL 22

NINE-THIRTY A. M.

TOPIC SESSIONS

"MERCHANDISING SAFETY"

Chairman—R. H. Ferguson, Manager of Safety, Republic Steel Corp., Cleveland, O.
 "Shoot the Works":
 Gene Flack, "Sunshine Bombarrier," Public and Trade Relations Counsel, Loose-Wiles Biscuit Co., New York, New York.

"Their Names in Lights":

Lincoln D. Lippincott, Chicago, Illinois.

"INDUSTRIAL FIRE PREVENTION"

Chairman—Capt. W. T. Fergus, Bureau of Public Relations, Cleveland Fire Department, Cleveland, Ohio.
Vice Chairman—M. B. Fassnacht, Pittsburgh Plate Glass Co., Barberton, Ohio.

"The Organization of Plant Fire Patrols":

Thomas F. McManamon, Instructor, State Vocational Training School, Kent State University, Kent, Ohio.

"Eliminating Fire Hazards in Wartime Industries":

Battalion Chief Emmet Byrne, Drillmaster, Cleveland Fire Department, Cleveland, Ohio.

"Defeat for the Arsonist":

A. F. Gallagher, Deputy State Fire Marshal, Cleveland, Ohio.

"OCCUPATIONAL DISEASE HAZARDS—THEIR CAUSE AND CONTROL"

Chairman—Dr. R. M. Andre, Supervisor, Medical Section, Industrial Commission of Ohio, Columbus, Ohio.

"Occupational Diseases Can Be Controlled":

Dr. C. D. Selby, Medical Director, General Motors Corp., Detroit, Michigan.
 Industrial Skin Diseases and How to Prevent Them:
 Dr. Christopher Leggo, U. S. Public Health Service, Columbus, Ohio.

BE SURE TO VISIT THE EXHIBITS

THURSDAY AFTERNOON

TWELVE-FIFTEEN P. M.

GENERAL SESSION

Supervision Safety Improvement

Introduction:

George L. Coffinberry, Member, Industrial Commission of Ohio.

Chairman—L. W. Lohrey, Personnel Director, Delco Products Corp., Dayton, Ohio.

12:15 P. M.—Luncheon.

1:15 P. M.—Opening Remarks:

L. W. Lohrey, Chairman.

1:35 P. M.—“Magic and Hypnotism Make Accidents Disappear”:

Clyde R. Powell, Manager of Personnel, Endicott Johnson Corp., Endicott, New York.

2:10 P. M.—“How Is Your Safety, Mr. Foreman?”

Frank H. Irelan, General Manager, Delco Products Division, General Motors Corp., Dayton, Ohio.

THURSDAY EVENING

SIX-FIFTEEN P. M.

THIRD ANNUAL AWARD BANQUET

OHIO TRAFFIC SAFETY CONTEST

Toastmaster—Hon. Lee E. Skeel, Judge, Court of Appeals, Cleveland, Ohio;
General Chairman, Ohio Traffic Safety Council, and President, Ohio State Safety Council.

Presentation of Awards to the seven cities adjudged winners and the seven cities adjudged runners-up in their population groups in the All Ohio Traffic Safety Contest for 1942, in which 141 out of 142 eligible Ohio municipalities competed.

“Highway Transportation in the War Program”:

H. G. Sours, Director, Ohio Department of Highways.

GENERAL SESSION

Tuesday Morning, April 20, 1943

The General Session of the All Ohio Safety Congress was called to order at 9:45 o'clock by Mr. Will T. Blake, Chairman, Industrial Commission of Ohio.

Chairman Blake: The first part of our ceremonies this morning will include the posting of the colors. Shall we all rise while the soldier boys from Ft. Hayes Barracks post the colors?

POSTING OF THE COLORS

Squad from Ft. Hayes
Barracks

All the members of the Session then joined the Chairman Blake in pledging allegiance to the flag.

STAR SPANGLED BANNER

Lead by LESLIE L. DIEHL,
Marie Arms, Accompanist

Chairman Blake: I trust that the words of the grand old anthem that we have just sung will awaken in your heart and mine a new and more profound sense of our responsibility to those who are fighting for us today on all battle fronts, on land, on sea and in the air, accepting as they do the hazard of death itself in order that they may preserve for us those priceless traditions of liberty which have made us great as a people and a nation.

The divine blessing of our assembly that we may have spiritual guidance and wisdom in our deliberations will now be invoked by the Reverend Paul C. Kafer, pastor of St. Paul's Evangelical and Reformed Church of Columbus. Shall we all rise for the invocation?

INVOCATION

REV. PAUL C. KAFFER,

St. Paul's Evangelical and Reformed Church, Columbus, Ohio

We lift up our eyes unto the hills, from whence cometh our help. Our help cometh from Thee, O God, who hast made Heaven and earth. We pause, O God, in this sacred hour to give Thee thanks, O God, for all the blessings which Thou hast bestowed upon us as a people. We thank Thee, O God, that we do know that Thou art the great architect of the universe, that Thou hast not only created this marvelous earth in which we move and have our being, but that Thou hast also created and designed man in Thine own image, that we might know Thee, love Thee and serve Thee all the days of our life. And so, O God, for a direct purpose. We thank Thee, O God, for every representative here, and we pray, God, that Thou wilt help us to realize during these convention days that Thou art an omnipotent God, that Thou art omniscient, good, blessed and merciful. And so lead us, O God, in our thoughts and our deliberations while we are assembled here in this community. Bless, O God, this great state, as it labors today as it never labored before. We thank Thee, O God, that we can assemble here and begin this great Congress in the name of the Father, knowing, O Lord, that there is one God over us all, that here in this great nation of ours we have religious liberty, that we can worship Thee, O God, according to the dictates of our conscience. And so we pray Thy blessing, God, to rest upon every speaker on this platform. Bless every representative come here, O God, on this convention floor, this Congress, and may we, Lord, as we assemble together for inspiration and guidance and help, go back to our tasks with a new inspiration and new zeal.

May we never become weary of good and well doing. We pray Thy divine blessing, O God, to rest upon those boys who have left our homes and our shores and our communities to go out to fight this great battle. We pray, Lord, that Thou wouldst be with them wherever they are, and if it is Thy will, O God, we pray soon that there may come peace on earth and good will toward men.

CERAMICS SECTION

Wednesday Morning, April 21, 1943.

This session of the Ceramics Section of the All Ohio Safety Congress was called to order at nine o'clock by Mr. C. S. Matheny, National Fireproofing Corporation, Haydenville, Ohio, Chairman.

Chairman Matheny: The Ceramics Industry of Ohio, in fact all the states, is confronted with a problem today and have been for quite some time. I refer to silicosis. We of the white ware division have realized for some time that we are, most of us at least, slow in getting under way on this program, and doing anything in the way of prevention, and we thought the time was proper to begin to bring some of this to the front and to have people realize just what we are confronted with, and that we will soon be compelled to take steps to eliminate dust and to prevent silicosis.

So we have arranged to have Dr. R. C. McKay of the Cleveland City Hospital, and a member of the Industrial Commission, to give us a talk this morning on silicosis. Dr. McKay.

SILICOSIS.

DR. R. C. MCKAY, Cleveland City Hospital, Member Silicosis Board,
Industrial Commission of Ohio.

Mr. Chairman, Ladies and Gentlemen, if you will pardon me I will make one minor correction in your introduction. I am not a member of the Industrial Commission, I am a member of the Silicosis Board of Referees of the Industrial Commission.

As a physician I have long been impressed by the fact that among all the diseases that silicosis is unique in several respects. In the first place I know of no other disease which requires the expert contribution of highly trained specialists in so many fields, both medical and non-medical. For example, on the medical side we need, in the first place, the practicing physician to evaluate symptoms and estimate disability and correlate the X-Ray findings with the clinical findings. We need the roentgenologist. It has often been said that a diagnosis of silicosis can not be made from the X-Ray alone, and can not be made without the X-Ray. By and large, that is true, but there happens to be exceptions. We very greatly need the services of the pathologist who studies the tissue of the diseased victims and increases our knowledge in that way, and above all the experimental pathologists who induces silicosis in animals and have increased vastly in our knowledge in that way. We need the epidemiologist to study the relationship between silicosis and tuberculosis as it affects communities. We need the services of the industrial hygienist to advise on the non-medical side we need the chemist to tell the percentage of silica we get in dust and for a more accurate knowledge of the identification we have to have the services of the petrographer, who alone can differentiate the silica from combined silica or silicates. We must have the services of the trained engineer to make dust counts, of the best type of engineering counting, that is required in devising means of protection.

Silicosis is also a legitimate and necessary concern of legislators, and unfortunately of attorneys and also it is the necessary concern of industrialists and all labor unions.

The second point in which silicosis is unique is that it is the oldest occupational disease of which we have record. References to this miner disease were made by the Greek physician Hippocrates 600 B. C. In the Sixteenth Century the Italian Agricola wrote a treatise on mining which some years later was translated by Herbert Hoover and his wife, before he came into public life. And that book contains one chapter on the peculiar diseases that obtained among the miners of the Carpathian Mountains. And in one instance it was stated that one woman survived seven husbands who had died from this peculiar disease. In the Seventeenth Century one Thomas Benson obtained a patent for wet grinding of flint, for his experience showed that the ordinary dry method had been disastrous to health and life.

Our modern knowledge of the disease begins in the late 1880's with the appointment of the first of a series of British Royal commissions who studied the disease in the South African gold and diamond mines.

The cause of silicosis, at least, was partially recognized for the first time in 1904, when a report of a committee on the health of Cornish miners in England was delivered and they recognized for the first time that stone dust was the essential element.

Since then our knowledge has increased rapidly and particularly in the last fifteen years, and in this country the work in experimental animals with silicosis and its relation to tuberculosis by Dr. Gardner, at Saranac Lake has been outstanding, not only in this country but throughout the world.

The third point that I might mention in this very cursory historical review at the present time, I believe about half of the states of the Union have silicosis compensation laws. The first one was Wisconsin, which passed its silicosis law in the late twenties.

The third point in which silicosis is unique is the fact that if one excludes the various types of dermatitis it is the most prevalent of all occupational diseases. It involves some 200 different occupations and in that connection it is interesting and significant to remember that approximately 75 per cent of the earth's crust is made up of the various chemical substances which are known as silicates. There is an infinite variety of these silicates.

In association with most of the silicates there is a certain amount or variable amount of free silica which is the cause of this disease. By free silica we mean silicon dioxide, expressed by the formula SiO_2 at various times in the evolution of our knowledge different representatives of this group of silicates have been suspected and believed to play a part in the causation of the disease, silicosis, but at the present time, to the best of our knowledge there is no single example of a silicate which produces disease with the one exception of asbestos, which is a minor example in the overall picture, and certainly a very minor example in Ohio. Personally I have seen only one case of asbestosis in Ohio.

Among these 200 different occupations which involves the silicate hazard the most familiar are mining of all types, quarrying, tunneling, highway construction, stone moulding, ceramic industries, sand blasting, grinding and so forth. Any occupation which involves any disturbance of the earth's crust is apt to involve the silicate hazard also.

Many of the technical phases of this subject are matters which you gentlemen are more familiar with than I am. But I want to remind you in passing that perhaps not all of you are familiar with the fact that the dust, which is dangerous and causes the disease, is invisible. One thousand particles below ten microns is disease producing and ten microns happens to be the bulk visible to the human eye. The bulk is three microns a hundred and that is a state of fineness which produces solubility. In that connection there is an interesting story which emanates from Saranac Lake about a patient who was taking the cure for tuberculosis in the village, and he subsequently died and was autopsied, and the physician that performed the autopsy found that in addition to tuberculosis that silicosis was present. When the announcement was made the patient's physician fumed and sputtered in indignation, he said that is impossible, the man is a gentleman, he never did a day's work in his life, he couldn't have silicosis. The pathologist said it is no mistake, he had silicosis. An investigation disclosed that this victim had been the proprietor of a small axe factory, his office was partitioned off from the end of the grinding room by boards with some clincks between them, through which the fine invisible dust had filtered in sufficient quantities over the years to give him silicosis.

The duration of exposure necessary to produce the disease varies greatly according to the type of occupation, but in general terms the figures of five to thirty years certainly cover 99 per cent of the cases. I think the Ohio law very properly and wisely specifies three years as the minimum requirement. So far the shortest period of exposure I have seen in an Ohio case with recognizable silicosis was four years, and that man had an extreme exposure, his occupation was that of grinding dry quartz into powder, which was later used in the manufacture of silica brick.

No doubt there are very exceptional cases, one can not be too arbitrary in medical matters of this sort. There may be exceptional cases in which exposure of less than three years under terrifically severe conditions may produce the disease. But of those that have been alluded to in the literature law is

heavy official analysis. And in most of those cases it is not possible to exclude other exposures than the one given.

It is rather fortunate that in the State of Ohio the two major industries which produce 90 per cent, roughly, of all the silicosis, are the foundry industry and the ceramic industry. And they are both with minor exceptions industries in which the exposure are relatively mild and which therefore require long periods. In moulders for example it is rather rare to encounter a recognizable case of silicosis with less than ten years of exposure, and more often we get histories of fifteen and twenty years. There are some exceptions in the case of the men who work in the cleaning rooms of the foundries where they are grinding and shaping, their exposure may be more severe, but they are a small part of the total number of foundry workers. In the case of ceramic industry also most of the exposures are relatively mild, and the typical histories are ten, fifteen and twenty years with occasional exceptions.

Now, while speaking of the Ohio experience I have a couple of figures to share with you which you may already be familiar. You know that the Ohio silicosis law was passed and made effective in August, 1937. The total number of claims secured since the law was made effective is 430, according to recent figures handed me this morning by Mr. Huffman. Of that total of 430 cases, 176 of them came from the ceramic industry, which is 33 per cent of the total. However, year by year the figures show that the percentages of claims, of approved claims, which have come from the ceramic industry is declining. It was in the early years 40 per cent, then 34 per cent and in the year 1942 only 26 per cent of the total. Approximately from 40 to 55 per cent of the total claims presented have been approved by the Industrial Commission. That figure is slightly raised for the reason that obviously in the early years of the administration of the law the larger number of the claims were not eligible on legal grounds so that in the past year or so an approximate figure of 55 per cent is the correct one. Roughly about two-thirds of the cases which have fulfilled the legal requirement and have been presented to the Board of Silicosis Referees have been approved for compensation—that is we have recommended compensation. Our function is an advisory one, as you doubtless know, and the final decisions are properly made by the Commission. Of the other one-third cases which have been presented to the Silicosis Board and not recommended for compensation under the law, roughly we have found not to have silicosis at all, and the other half have had what we designate as simple silicosis, but which properly should be designated cases in which the silicosis was present but was not totally disabling and therefore was not compensable under the law. It has been somewhat of a surprise to me and needless to say a very great pleasure to find instances of obvious lingering to be extremely rare. They are not difficult to recognize when you encounter them.

Those cases which had silicosis which we thought was not disabling in some instances unquestionably disabled, but in our opinion their disability was due to things other than silicosis. In other cases unfortunately the family physician, in whose hands the patient had fallen, had made the error of accepting an X-Ray diagnosis of silicosis inaccurately and not evaluating the patient's conditions and symptoms with sufficient accuracy. So that he contributed to all of the disability present to the minor amount of silicosis which existed and that led the patient honestly and in good faith to file a claim. That is one point upon which the medical profession and the public generally need some education. I think it is credible, the overall figures are credible to the medical profession in saying that only roughly about 15 per cent of all the claims filed we found not to have silicosis.

Now, I will continue with the lantern slide and demonstrate a few of the practical medical points about the disease.

(And thereupon in a darkened room Dr. McKay proceeded to demonstrate further with the use of lantern slides.)

Dr. McKay: May we have the lights again please?

From a medical point of view one of the most significant of all facts about this disease is its increased susceptibility to tuberculosis. Statistics vary somewhat but in most of the available statistics which are reliable it has been found that at least fifty years ago more often 75 per cent of the men who have silicosis eventually die of tuberculosis. Just why the silicosis predisposes to tuberculosis is a medical fact which still remains to be discovered. But the fact that it does predispose is established beyond the possibility of any argument. Once in a while a report appears in the medical literature in which

some individual challenges that statement because his patients has not shown the usual symptoms of tuberculosis, but it is a well recognized fact that the tuberculosis that accompanies silicosis does behave differently than ordinary tuberculosis and is often much more difficult to recognize, not only in life but even in autopsy it is more difficult to recognize.

The ordinary symptoms of uncomplicated silicosis, and by uncomplicated I mean without any tuberculosis, the cardinal symptoms are shortness of breath and fatigue. No one can talk to and examine large numbers of these patients without being impressed by the obviously sincere ones, that it is simply a case of fatigue which we have no objective way of measuring, but a loss of strength and increasing fatigue on exercise or fatigue after a day's work is a very common and frequent symptom. Of course, to evaluate disability medically we must have more tangible and important things, but they are always present. Other symptoms are ordinary pain in the chest, more often soreness than sharp pain; weight loss, which only comes in the more advanced stages of silicosis, unless it is accompanied by tuberculosis. The cough of silicosis also is not usually severe and it usually not productive of expectoration. The question of individual susceptibility of this disease has come in for a great deal of medical discussion and study and for a time there was considerable difference of opinion, but the prevailing opinion among the best medical authorities at the present time is that there is a considerable individual susceptibility. Given a group of persons who have exactly the same exposure to silicosis there will be a variation in the amount of disease which develops, and the reasons for that are not clearly understood. Some of the factors are because some of the individuals had a more effective screening apparatus in the upper air passages to filter out the dust.

Now, you will no doubt be interested in certain collections which I have to make regarding the operation of the present Ohio law on the basis of my experience on the Silicosis Referee Board. I know nothing about the origin of the law, I know nothing about who was responsible for its framing, but it is obvious that the framers did have some good expert advice. By and large, I think it is a very good law and it has taken in its formulas the experience of other states. No law, of course, is going to avoid working a human being into an occasional individual. It is impossible for a human being to formulate such a law. There are, however, a few minor, but I think, obvious defects in the present law which I would like to point out. Perhaps the most common complaint regarding it is that partial disability due to silicosis is not compensable. That is unfortunate and it unquestionably works a hardship and injustice in certain individuals. However, if they will be plucky enough to proceed in their work for a few more months or another year or two the chances are that their disability will be total and they will be legally compensated. The objection to incorporating in the law any provision to make partial disability compensable, from the medical point of view, is that the administration of such a law would be utterly impossible with any degree of accuracy and honesty. We simply lack medical technique which would enable us to evaluate partial disability with enough accuracy to make such a law capable of being administered fairly.

The question of the two year limit after exposure experiences, under the present law requires that the claim be filed within two years after the last exposure to silicosis. That was based on medical advice and on the recognized principle that after the exposure has ceased the disease made progress within limits due to the immobilization within the lungs of particles of silica that have already been inhaled. Roughly speaking the progress is about one year, but the law has added another year to give the claimant the benefit of doubt and to that extent it is fair. However, in Ohio, due to the fact that in the foundry and ceramic industry long exposures are the rule, most of these claimants are some partial disability due to silicosis, might discontinue his exposure and several years later due to the wear and tear of advancing age, the amount of silicosis he has might be enough to make him totally disabled without having increased in the meantime. That might seem like splitting hairs. But we do encounter such cases.

What is more serious, however, is a couple of other points. Where the individual claimant may be so unfortunate that no doctor has made the diagnosis within the two years after his exposure ceased, and when the diagnosis is finally made the delay is due to no fault of the claimant, and in all fairness the law should provide that such claims should be compensable. Perhaps the

law should provide that such claims should be compensable. Perhaps the

occupation. If he is a young individual that may be the best advice, but if, as it most often happens, he is pretty well along, he is past middle age, and the particular exposure to which he is subjected is a mild one, the chief menace to his future lies in not a little more exposure to silica, but it lies in the development of tuberculosis. And he is just as liable to develop tuberculosis in some other job as he is in his regular job, and he can't make a living in some other job as well as in the job to which he is trained. Those facts should be kept in mind, and I think more often than not that the individual who has silicosis but isn't disabled is better able to stay in his job.

That concludes my discussion and I will be glad to answer questions in so far as time permits. (Applause.)

Chairman Matthews: At this time we will have a period for asking questions. Dr. McKay has kindly agreed to answer any questions that he can and you may feel free in the next few minutes to ask any questions you wish.

Question: I would like to ask the doctor one question, he mentioned about checking of the family, and I am wondering in that connection whether or not these so-called patch tests that are given in the schools are of any real value. Do they prove anything?

Dr. McKay: The patch test is of value, it proves the presence of tuberculosis infection. Now, we have to distinguish. Tuberculosis is the only disease in which we must make the differentiation between infection and disease, because most of this audience, for example, probably 75 per cent of these people have tuberculosis infection, but I assume and hope that none of you have tuberculosis. Now, if a school child is discovered to have tuberculosis infection the significance of that fact lies in this point, that it gives an opportunity to possibly discover where he got his infection, from whom he got it. The effort of testing that child is a total waste unless it is followed up by his household contact to see where the source may be, where he might be getting it. Does that answer your question?

Question: Yes, with one exception. I notice instances where they have the positive test then they are recommending X-Rays. In other words, it is necessary to follow through with the X-Ray.

Dr. McKay: It is wise, of course, because an occasional child who has the positive test occasionally has a disease that needs treating, although it is rather rare.

Question: I would like to ask the doctor, under that section of law "other respiratory diseases" what the condition is from dust of other nature, does it produce fibrotic conditions as shown here in the X-Rays or whether that is just characteristic of silicon dust alone.

Dr. McKay: That is a very good question. A great variety of dust when inhaled may produce limited anatomic changes in the lungs and those changes are defined by the general term of pneumoconiosis. The changes are limited to a relative small amount of fibrosis which occurs along the course of the lymph channels and blood vessels in the lungs, and the maximum degree of the disease which such dust produces is represented in the X-Ray by an exaggeration of those linear markings, which I pointed out. The nodular fibrosis which I illustrated as characteristic of silicosis does not occur as a result of any other dust which is known at the present time. Asbestos dust also produces a change but its manifestations are somewhat different and I haven't time to go into that. But all other dusts than those two produce only this very mild and limited degree of fibrosis represented on the X-Ray by the exaggerated linear markings and thus far no one of those has been proven to cause increased disease or cause disability. It is a condition in the strict interpretation, it is not properly a disease, because it does not disable. Does that answer your question?

Question: Yes, I am rather out of place here in the Ceramic Department, I come from the steel mills. Recently a lot of our men have suffered respiratory disorders, and when they left the place for a few days and came back it came back on them. We are led to believe it is the condition of dust. We understand that aluminum oxide will not produce the condition that silica will. We are wondering if something of that nature taken in the lungs would not have an action similar to silica.

Dr. McKay: Any dust may cause a temporary disability in the form of bronchitis. That ceases when the exposure to dust changes, it is not a permanent condition and is not a professional disease. Aluminum oxide does not produce the nodules of progressive disease or disability in any way similar to that of silicosis.

the criticism of all of the two year limitation, from the medical point of view, is this. A claimant who has what we call simple silicosis, or a workman, let us say, he is not yet a claimant and has no disability, may change his job or he may retire for some reason leave his employment. That man unquestionably for the remainder of his life has a seriously increased susceptibility to tuberculosis which may develop at any time subsequently throughout his life. And if it does develop it is in all fairness properly attributable to silicosis, and in my opinion the law should provide that such individuals should be compensated.

The requirement of the minimum of three years of exposure, I think, is a very wise and reasonable one for reasons which I have already mentioned.

One other additional requirement which I personally think should be in the law is this, that if the claimant is disabled from silicosis, complicated by tuberculosis, he should, in order to receive his compensation, it is only reasonable to expect that he should undergo proper treatment for his tuberculosis so that any possibility of recovery will be taken advantage of. Under the present law no person or agency or authority has the power to compel that man to do the right thing in treating his tuberculosis, and I have unfortunately seen already a good many examples of claimants who did the wrong thing, who by their own indiscretion impeded their own recovery and thereby kept themselves compensable for an unnecessarily long period of time.

Now, my concluding remarks are primarily suggestions to those of you who are engaged in these ceramic industries and are face to face with the practical problem. I lack the technical knowledge, of course, to give you any advice about the prevention, that is an engineering subject, but I have several suggestions on the medical point of view.

First, remember that a degree of silicosis which may not be disabling at all to an otherwise one hundred per cent healthy and normal person, may be enough to disable some individual who was previously partially handicapped by, let us say, some heart disease or asthma or chronic bronchitis or any conceivable pre-existing disease of the heart or lungs, will certainly result in total disability from the degree of less silicosis than will be required in the case of an otherwise normal individual. Therefore, I think it behooves you gentlemen to have careful pre-employment examination with particular emphasis on the part of your doctors in excluding all individuals who have any demonstrable disease of heart or lungs and particularly tuberculosis. The slightest degree of arrested, thoroughly healed tuberculosis which would be utterly unimportant in any other group of individuals, a degree of tuberculosis which doubtless exists in a certain percentage of this audience, although you don't know it, would be hazardous to an individual who has to enter an occupation that involves the silica hazard. The ideal thing—this may be utterly impractical—the ideal thing would be to have an annual survey of the entire group of employees who are exposed to silicosis, for the purpose of detecting tuberculosis at the earliest possible moment, not only for the safety of that individual, but to keep carriers out of the plant so that they can not spread it to others.

Along that line I think an entirely new field is waiting to be developed in the matter of cooperation between the management of industry in which there is a silica hazard and the local health officers whose responsibility it is to control tuberculosis, as a public health problem. For example, suppose you have an employee who has an early and minor degree of silicosis. That employee might conceivably continue the rest of his working life in that industry without developing enough silicosis to make him disabled, but some member of his family may have unsuspected tuberculosis in his household at home. That makes this employee with his silicosis an easy victim to such exposure. It happens at the present time that silicosis is, by law, a reportable disease, reportable to the State Health Department only, and so far as I know there is no use that for statistical purposes only. I think it is important that every local health officer should have a list at his disposal of all known silicotics in the community no matter how healthy they are, so that the members of the household can be checked periodically for possible tuberculosis. Of course, it is axiomatic in tuberculosis control that we can not wait for the symptoms of the disease to appear. We must go out and look for it by X-Ray methods.

One more practical point which often arises is that which concerns the disposition of the workmen when a diagnosis of simple non-disabling silicosis is made. Too often the first thing the employee, and still more regrettable the fact all the family doctor may think of is to advise him to get out of the

Question: In other words, Doctor, you suggest we correct our dust condition and it will have corrected this temporary disability that is occurring among our men?

Dr. McKay: That is right.

Question: Do you see any evidence of this, Doctor, in the dust bowl areas? **Dr. McKay:** The dust bowl areas have not produced silicosis. I have often wondered about the boys being in North Africa and in those dust storms they are subjected to, whether silicosis results. I have never heard of it and my guess is the dust of the African Desert is not of sufficient quantity, nor that the dust bowl area is not sufficient.

Question: That goes for farmers, too?

Dr. McKay: Yes.

Question: You talked about disturbing the earth's crust.

Dr. McKay: The ordinary earth, not the kind of earth that you gentlemen in the Ceramic Industry deal with, but the kind of earth that the farmers are exposed to does not contain any silica.

Question: Thank you, I want to work in a Victory Garden.

Dr. McKay: Me, too.

Question: You raised the question of difficulty in partial disability. Do you think that is much more difficult medically than the case of strain or back injury, strains of that type of thing which we know is difficult, but still we don't deny to the worker the right to receive partial compensation just because it is a difficult one.

Dr. McKay: I am not a surgeon, I am not even a general practitioner. Unfortunately my medical experience has been almost entirely with chest disease and I really couldn't make a valid comparison. I can only speak from the point of view of chest disease. I think it would be a medical impossibility to evaluate partial disability with accuracy due to chest disease. I am hoping that in the future, and the not too distant future our physiologists will devise fractional tests which will enable us to measure pulmonary functions more accurately than we are now. But at the present time we are dependent on the ordinary physical examination and resort to X-Rays and the evaluation of serum and so forth. I don't doubt that we make occasional mistakes in evaluating total disability but I think we come to reasonable accurate conclusions in most cases, but partial disability would certainly be a terrific problem, and I would hate to have the responsibility of diagnosing.

Question: Doctor, would it bother you nearly so much in failing to decide whether 40 per cent or 60 per cent, would that bother you nearly so much as the job of turning down a man, who in your own conviction is 90 per cent? I am wondering whether you are worrying about that problem. It would be much less if you want to call it that, in making a little error in the accuracy than to have to say to a man who you know is almost disabled that you can't pay him anything.

Dr. McKay: In partial disabilities you still incur more fractions and it does make it more difficult.

Chairman Matheny: Any other questions? If not, I want to thank Dr. McKeay for his highly educational talk and pictures here this morning, and I hope, Doctor, you can come back again some time probably in later years, or maybe next year, because I think this problem is one that we know very little about, and particularly the Ceramic Industry, and we need to know a whole lot more than we do.

I would like at this time to appoint a Nominating Committee for the purpose of nominating officers for this section for next year. I will appoint Mr. Stein, of the American Radiator Sanitary Company, Tiffin, Ohio, Mr. L. Pollock, the Ohio Brass Company, Howard E. Wough, Hazel Atlas Glass Company, Zanesville, Ohio, W. E. Trippl, Universal Batteries of Cambridge, Ohio, and Myron Lindholm, Federal Glass Company, Columbus, Ohio.

We have asked George L. McCreery, Technical Superintendent, Ohio Glass Company of Fairport, Ohio, to give us his experiences on "Just Elimination in the Ceramic Industry."

Mr. McCreery: Gentlemen, if we may have a few minutes recess I would like to set up a lantern to project pictures in order to show what we have done in an attempt to control this dust concentration in various portions of the Ceramic Industry.

(And thereupon a short recess was had.)

JUST ELIMINATION IN THE CERAMIC INDUSTRY. MR. GEORGE L. MCCREERY, Technical Superintendent, Ohio Brass Company, Fairport, Ohio.

Gentlemen, following up this talk of Dr. McKay on the medical aspects of silicosis I have a little presentation here of one method of helping out this situation in the Ceramic Industry. The reduction of dust in operation is obviously one method of reducing the existence of the dust and this paper deals particularly with the methods that we have employed in our plant to handle these operations.

There are many problems in a variety of ceramic plants which are basically the same regardless of the final product being produced. Handling dusty materials, and manufacturing operations which produce dust are characteristic of a great many ceramic processes, hence a discussion of some of the methods found useful in one plant should be of assistance to others having similar dusty operations to consider.

The Fairport Division of the Ohio Brass Company manufactures electrical porcelain by wet process methods. Nevertheless there are some steps in our operations where the materials or product must be handled in dry condition, and unless given adequate provision for dust collection, these stages can be disagreeable, untidy and a possible health hazard. Efforts to eliminate the most prominent of these dusty conditions were started many years ago in our plant, but it was not until we obtained equipment of our own for measuring the dust in the atmosphere, that we were able to make a systematic program of dust elimination. Our measurements of atmospheric conditions started in 1935, when the practice of dust collection in ceramic plants in this territory was very much in its infancy. Ventilating engineers called in for consultation offered suggestions and equipment but in this early period, the results were not up to our expectations and too frequently were not so good as the standards suggested by the U. S. Public Health Service in the Spring of 1934.

One of our most difficult problems involved unloading of raw materials and the subsequent handling in the dry or semi-dry state through the batch house into the wet stage. Various systems of exhausting the dust laden air in the batch house had been tried, but for the most part these were erratic in performance, involved handling enormous volumes of air and at the same time hauled out all the available heat in the winter. In 1937 we inspected a new installation in a batch house for a glass plant which was a radical departure from anything we had seen. The entire system of elevators, conveyors and individual scoops for the various ingredients was enclosed and connected with an exhaust system. It was an excellent arrangement for that particular plant but it was all new construction and involved an investment of nearly a quarter of a million dollars. Proposals for dust free handling of the batching for our plant were along the same line of thought, and were unsatisfactory to meet our circumstances, which included utilization of existing space, remodeling without interruption of production and a cost in balance with our ability to invest in new equipment.

Our plant engineer, Mr. A. M. Morris, had been working closely with this problem and had developed some ideas which were adopted for the remodeling of our handling system. Some of the features were patented and assigned to the Ohio Brass Co., but the use of these patented features will be made available to others at a nominal charge. In the pictures which will be shown in a few minutes the principles involved are more clearly demonstrated than by word of mouth.

It may be well to explain that we have two extremes of raw material in our group. Feldspar and flint are received as extremely fine powders, also a considerable portion of our dry scrap goes through the batch house as a powder. These constitute the greatest source of atmospheric dust since they can penetrate the air every time they must be handled. At the other extreme are the ball clays mostly in lumps or chips which carry and retain considerable moisture for long periods. These can be shoveled or dumped without creating large amounts of dust so long as they are damp, but because they do not flow readily are not so well adapted to handling by screw conveyors.

The first picture shows an obsolete method of unloading powdered Feldspar in a wheelbarrow from a box car. In accord with the best practice available, in our plant that was shipped with 1% to 2% moisture added when the car was loaded. This made a very considerable reduction in the dustiness of the

but was far from a real solution. The work was heavy and hot. Workmen refused to wear respirators continuously and for their own protection had to be shifted to other work after a few months.

The second picture shows our solution of this difficulty. Four 40 type bins were erected in place of two one-story bins. Each will hold 4 to 5 carloads of powdered material and as a group constitute our working bin and reserve storage, eliminating the need for reserve stocks across the railroad track. The material is received in closed top, hopper bottom cars which discharge directly into the hood of an elevator that lifts the material to the top of the silos and discharges through a preselected and locked chute into the proper bin. They discharge into the same elevator system used for car unloading and the material is carried up to the top of the system again to flow into the working bin. A portable throat extension for the conveyor under the car seals the bin. A portable throat extension for the conveyor under the car seals the bin opening to the hopper. An air operated vibrator keeps the material flowing from the hopper.

Picture No. 3 shows our batch car and exhaust system as in June, 1937. The car is a mobile scale with a separate balancing system for each material. The motive power is by trolley and the car is shifted to each bin along the track as required. The slotted openings at car top level in the left wall are connected to the exhaust system, creating a suction across the car top and away from the workmen in the bins or on the car platform. This was an improvement over earlier systems of exhaust ducts opening into the bins themselves. Occasional spillage between the car and the working bins can be noted on the floor at the right. This was eliminated as shown in a later picture.

Picture No. 4 shows a screw conveyor discharging one of the pulverized materials into the batch car. This was dry scrap which at times flows like water, hence the bin was located opposite the powerful suction of a separate system which also served the discharging operation when the batch car was unloaded.

Picture No. 5 shows an improvement covered by U. S. Patent No. 2,255,448. The top of the batch car is hooded and connected at all times to the exhaust system at the left by means of a long flat nozzle which slides over a wire screen under a flexible rubber sheet as the car moves from one bin to another. The hood on the car confines and directs the full velocity of the air stream so that air-borne dust particles are picked up at the point of origin and have no chance to spread. The continuous connection is particularly important because turbulence in the hopper holds dust in suspension for some time after loading and if not under continuous suction the dust can escape between stations and raise the count in the whole area. One 10 H. P. motor drives the exhaust fan and is more efficient than previous installations with more than double the power requirement. This collection track is 175 feet long.

Picture No. 6 shows baffle plates between the clay bins and the wall which prevent material from dropping between the edge of the car and the wall of the track area.

Picture No. 7 shows the runway along the clay bins. The clay is shoveled over the baffle plates at the left directly into the batch car connected to the dust exhaust system.

Picture No. 8 shows the arrangement for crushing dry scrap so that it can be handled by conveyor and screw from an enclosed bin. Fine dust and scrap are dumped directly into the elevator hood; large chunks are broken to pass the grid. An exhaust pipe below the grid creates a strong draft downward through the grid maintaining clean air at working level.

Picture No. 9 shows the discharge of a batch car into the hood of an elevator leading to the wet mix tank. The batch car is brought into position after loading all the necessary clays and fine powders; then a sliding gate allows the material to flow out of the car. Strong suction is applied at car top level of the hood to pick up floating dust. At the same time the strong suction inside the batch car keeps fresh air sweeping through the car and prevents contamination of the room. None of the dust flows through the operator's working area, fresh clean air being drawn from above by the suction created at his feet. This location illustrates very well the principle of working in the direction of gravity. Much less volume is required in the exhaust system when you allow the weight of the dust to help draw it into the ventilator opening. Also if ventilators were placed in the enclosure above the operator he would be forced to stand in the dust stream. The cost of removing batch house up to this point of delivering the wetter car of

material to the wet mixer, was approximately \$30,000.00, which is considerable for an investment but much less than an entirely new construction.

Picture No. 10 is a general view of our filter press room. Dust from the dry material passes through a closed conveyor into closed mixing tanks where it is dispersed in water. The next steps are wet screening into storage tanks, filter pressing to remove the excess water then removal of the press cakes and packing the latter into suitable plastic clay blanks for subsequent forming. The press room is well lighted and walls of kilnized tile permit frequent washing of the latter as well as the floors to remove any unpurified clay which might become a source of dust.

Picture No. 11 illustrates the application of dust collection to the loading operation of a wet ball mill. This mill is loaded by means of a skip hoist at floor level with strong suction applied on two sides of the hopper. Clays and other bulk ingredients are dumped directly from a wheelbarrow with welded-on extensions of the sides to restrict the flow. Powdered flint is discharged from bags at the same point. In a few seconds the floating dust is drawn out of the level another strong suction pulls floating dust down across the mill opening and prevents escape into the room. This exhaustion of ball mill equipment is probably of less importance in our plant than in many ceramic industries where the body mix is prepared in ball mills. We employ it for glaze grinding in which the loading cycle involves only a few minutes per day. It takes real suction to pick up the dust. This installation required 5 H. P.

Picture No. 12 records an experimental effort at dust collection from a dry flexible pipe mounted near the middle of a tube shaped clay blank about three feet long. Obviously good dust pickup could only be obtained opposite the strong suction, and the next step of providing strong suction all along the turning arc was indicated.

Picture No. 13 shows the development of this idea into a full sized hood with a low, slot-like opening at about 14 inches high in the rear of the work. This provides a sweeping action with a large volume of air along the entire working area. Fine particles which might pollute the atmosphere are carried away by the air blast and only the larger coarse grains drop into the scrap box below. Pending plans for this department include a continuous conveyor system for removing this coarser material which will be transported directly to the batch house. The very fine dust from the exhaust system is caught in bag type collectors and discarded.

Picture No. 14. Parts that have been dry trimmed must have loose dust blown off before glazing. This picture shows a hood used for this purpose. However, the design did not give the best results for some types of ware and table height and the table moved in to eliminate the gates and rear aisle.

Picture No. 15 illustrates two styles of feltling tables used on tube inspection. Experience with these has shown that a blow-off hood similar to the one now convenient for the type of operations we must do in this department is well along this line have been made.

Picture No. 16 shows one of our recent developments in dust collecting at a station on one side like the one shown in the tube room. Operations in this department included light feltling, sponging and some glazing on a turntable, which should accommodate a large variety of shapes and sizes. The operations, when combined in one station over these chamber type suction heads with water convenience and adequate dust elimination. The suction pipe is connected under the floor.

Picture No. 17 shows a drilling operation on guy strain insulators to form holes with a curved seal to fit a loop of wire cable. The insulator is clamped in a swinging arm and the piece is rotated against the drills. The narrow slot in the rear of the hood is the suction office. Coarse material drops into a box below.

Picture No. 18 covers a subsequent operation required for all guy insulators. As the surface of the drilled holes must be blown off, but because of the nature of the holes in these insulators, a blinged baffle, which partly closes the opening during the blow-off, was found to be a big help. The baffle can be swung

our powers of vision made possible by such devices as the electron microscope, indicate that an absolutely dust-free atmosphere has not yet been achieved under the best of laboratory conditions.

Most of our dust problems at the Barberrton Division of the Ohio Brass Co. deal with prepared clay dust containing not more than 20% of free silica, which would fall into the 30 to 80 million dust count classifications of the National Safety Council. However, we found by experience that an upper limit of 5 million could be obtained at dusty operations which were properly shielded, ventilated and maintained. This level was set up as our ultimate goal, regard-

less of the free silica content of the dust in question. The few places where we have obviously dusty operations have been enclosed. The few places where we employ pure silica were tackled first, but unless adjacent operations producing less dangerous dusts, were brought to the same low level, the dust count in the entire area would be too high to measure the efficiency of the exhaust system. Furthermore the fresh air supply from the outdoor atmosphere carries a dust count of 1 to 4 million, thus requiring very efficient dust collection at the operation to hold the total below a 5-million condition.

We started taking dust counts at 20 locations in 1935. By 1937 when the Ohio Silicosis Law became effective, we were checking on 45 locations. In 1943 we had 33 regularly inspected spots on our list. Considerable increase is due to new or extended operations, but a large number of spots are at measure-

dusty work throughout the plant area, to serve as control points for measurement as well as checks on the general efficiency of dust control methods. A final but fundamental feature of the program is a regular inspection of all dust collecting equipment by the maintenance crew which reports on the condition of every piece of the equipment. This must be supplemented by an alert attitude on the part of foremen and workmen to observe established procedure and report immediately any inadequate performance of equipment.

Chairman Mackenry: I want to thank you, Mr. McGreevy, for your very fine illustrated talk. I am sure we have all enjoyed it and I am sure it has been very educational to us.

I want to say a word in closing that we are going to be confronted with this in the very near future so we might just as well begin to make our plans.

Now, I would like at this time to hear from the Chairman of the Nominating

Committee with regard to the officers for the coming year. Mr. McGreevy: The Committee met during the short recess, and motion by Mr. Waugh that the procedure of other years be followed, of moving up the officers of this section. This would make Mr. G. F. McConnell, Chairman, Mr. Robert Minkler, Vice Chairman, and we have also added the name of Mr. F. W. Ginher, as the new Secretary. Mr. Pollock seconded the motion. The motion was voted upon and passed.

After discussion it was decided that the Committee, due to present conditions of giving the officers elected the right, in the event of any resigning due to the war conditions, that the remaining officers appoint a new member to take his place.

CONSTRUCTION SECTION

Wednesday Morning, April 21, 1943.

This session of the Construction Section of the All-Ohio Safety Congress was called to order at 9:45 a.m. by Mr. F. H. Kietzman, H. E. Kietzman Company, Cleveland, Ohio, Chairman.

Chairman Kietzman: Gentlemen, we had 82 here yesterday afternoon, which, I believe, was the largest attendance that the Safety Congress has ever had in the Construction Panel. Let's hope that there are a great many more to show up this morning, and we may equal that record this morning.

I regret very much to inform you that Mr. Jockel has received notice from Mr. Bates that he will not be able to be here this morning. He is on that War Man-power Commission, and he said the meetings are being held every day and he just has to stay there to look after the interests of the people that he represents. However, he has sent to Mr. Jockel some of the things that he intended to talk about here personally, and Mr. Jockel, this morning, is going to deliver that message to us.

We have a chairman and vice-chairman to elect this year that will serve this panel for the next session of the Safety Congress. I am going to appoint a Nominating Committee, to consist of Sam Nauman, Arnold Hill, and Homer Davis.

If they will please meet and bring us in their recommendations for chairman and vice-chairman. While I am on that question, you probably have noticed that the vice-chairman is not present here this year. Well, ladies and gentlemen, he passed away a few months ago. He had been very active in safety work. I am sure many of you remember the words he told us about safety last year. It was only a few months later when he passed to the great beyond, and I believe it would be fitting and just for us to rise and stand in silent tribute for our vice-chairman, now, at the opening of this session. Will you please rise.

(All of the persons assembled in the room then rose and stood in silence for a few moments.)

Chairman Kietzman: We had a fine program yesterday. We heard from a lot of the various trades, much more than we have in any previous conference. I hope we can continue that this morning and you will all be willing to participate in the discussion so that we may take something home with us from this Congress.

Our first speaker this morning is a man who needs no introduction to any of you. I don't believe that there is one man in the State of Ohio that has taken a greater interest in safety work than our first speaker. He has always been here. I don't believe that I have ever been at a session that I have not seen him, and he was always active. He travels around the State in his duties. He has done much to help the safety cause in the State of Ohio.

Mr. John Jockel is going to be our speaker.
(Applause.)

MR. JOHN JOCKEL, State Secretary of Bricklayers Union,
Cleveland, Ohio

Mr. Chairman and friends: You are interested in safety in the construction industry. I want to say that I am supposed, this morning, to fill a big man's shoes. Our general president, Mr. Harry G. Bates, was supposed to be the speaker this morning to represent and talk for labor. Mr. Bates is well known over the United States by all laboring people and contractors. He is known to be a square-shooter. He talks right from the shoulder; he doesn't mince his words.

In his experience as a labor leader, he would be able this morning to give you a wonderful address on the prevention of accidents, and I am sorry to say that he is not here to deliver his address in person.

position to go right to the Executive officers of the local union and say: "We are having too much absenteeism on fake sickness or fake accidents." You have got a working force in there that can take the problem right to the local executive board, and it is a joint committee, it is much different than if the supervisor would go to the foreman, and the foreman would go to the committee, that is the representative or negotiating committee within a department, and say: "John Jones is staying home, not because he is sick or had an accident, but because he wants to work in his victory garden." I think when it is brought to the attention of the Safety Committee the Safety Committee would make a joint investigation and it would be much more effective. I know we are going to have a certain amount of that regardless of what we do. There always have been fakers and always will be fakers, but fakers can also be reduced if the proper methods are taken to handle that.

Mr. Faber, General Tire. In our safety school which is going on now at Akron U., there was a thought thrown out just last week that on these accidents caused by mind wandering off on outside interests, maybe sick child or sickness in the home, something like that, it was suggested that there should be a Safety Committee in each department that this person comes in when he is kind of downhearted and so forth, that this fellow should go to him and try to find out what's wrong, why he is so downhearted, give him a little boost, because when a fellow thinks he is standing alone a little kind word or smile or pat on the back will go a long ways.

Chairman Loomis: Most of the companies have through their personnel contact service similar to what you speak of. They are getting into it. Maybe some of the smaller companies haven't had them. I know all the big companies like that, there are some people, I know, like Mr. Dalrymple says, there will always be some kinds of fakers, and there will always be some employees who will bite off more than they can chew regardless of what type of advice they have been given, and our Personnel Department tries to help them the best way they can to budget their earnings, so to speak, and I know a lot of the other companies are doing the same thing. It is a problem with mixed work and about plant, now more than ever, where the wife is thinking about work and about rationing, and income tax, and pay-as-you-go, and it is all types of mixed up matters in their mind, and we are going through an economic period, I think we will have to agree to that. Do we have any more questions that you would like to ask Mr. Dalrymple?

Mr. Dalrymple: Mr. Chairman, I was going to say I may have some accidents at home doing work, now that my wife went to work. (Laughter.)

Mr. L. Helmer, B. F. Goodrich Company: I would like to ask Mr. Dalrymple just how you would go about organizing a joint Safety Committee by management and labor, and would it be composed of supervisor and representatives of the Union, or how?

Mr. Dalrymple: Well, it would be composed of whatever representative the company wished to assign on the part of management and also the chosen representative on the part of the Union. It would serve as the main Safety Committee, and, as was spoken of a few minutes ago by the representative here from the General Tyres, there could easily be sub-committees aiding and assisting in this safety work, both represented on those sub-committees by management and labor. I don't want to be misunderstood when I said some management didn't want to go along with these kind of programs. Maybe I stressed that too emphatically, because there are some unions that don't want to go along with such programs, with the management as management with union, and that not only in Safety Committees but we also find it in Labor and Management Production Committees, and it is the duty of the top management together and work out some program which will aid and assist in the elimination of these accidents. I know that there was one time here in the shop we had a pretty good job on accidents. We had them reduced down to a minimum, and they are increasing, and naturally so, because now employees are coming into the plant for a number of years, and they are not quite as nimble as they used to be.

Mr. Shibley, of Goodyear: The thought just came to us back here about

that question of people laying off, I don't think we are bothered a whole lot with that right now. Maybe this is just a thought, anyway the fact that there is such a difference in the price the man would make if he were at work and that you have to force a man to stay off sometime rather than the opposite. That does enter into the picture today.

Chairman Loomis: Thank you for throwing that out to the meeting.

Mr. Harris: That does not apply to the particular question I asked, due to the fact that ever so many men are on jobs that are unsatisfactory, they don't want the job to begin with, and since they can't get the certificate of availability for another job they will mislead the job they are on. I have investigated a few of those accidents and I found that that's the trouble.

Chairman Loomis: That's a problem we will probably all have. Any more questions? Thank you, Mr. Dalrymple, for consenting to answering these questions after your fine talk.

It has been suggested that we send a wire to Jack Kidney, who is a sort of a pillar of the Safety Group. He is in the hospital, Jack Kidney, with kidney trouble, as I have been told. He is getting along fine, and it is suggested that our Secretary send him a good-will and get-well-quick wire from this group. Is the nominating committee prepared to hand in their recommendations, Mr. Woodson?

Mr. Woodson: Mr. Chairman: Chairman, W. Andrews, from the Selberling Rubber Company, Barberton, Ohio; Vice Chairman, F. A. Berkoy, of the Mansfield Tire and Rubber Company, of Mansfield, Ohio, and for Secretary, Mr. Hodgson of the Republic Rubber Company, Youngstown, Ohio. And the Committee suggests that we call for further nominations from the floor.

Chairman Loomis: Thank you, Mr. Woodson. You have heard the report of the nominating committee, W. Andrews for Chairman, Berkoy for Vice Chairman, and Mr. Hodgson as Secretary, for next year's officers. Do we have any further report here as being the choice of this group? And all those in favor signify by saying "Aye". (Motion carried.)

Chairman Loomis: Next on our program we will have a talk by Grant O. Shibley, Industrial Hygienist of Goodyear Tire and Rubber Company, of Akron, who will give us a short talk on "Dermatitis and Dust." Mr. Shibley, (Applause.)

DERMATITIS AND DUST

Mr. Grant O. Shibley

Industrial Hygienist, Goodyear Tire & Rubber Co., Akron, Ohio

I might tell you about Jack Kidney. He is walking around and home from the hospital. He will be back on the job in about a week or so.

This subject of mine, we have re-arranged this a little bit, but we will try to look it in so it is in pretty good shape. Our talk, so that the subject I have is not misinterpreted, is not from the medical angle at all, it is more from the safety and industrial hygiene out in the plant, and we will try to give you some ideas on how to combat this thing, Dermatitis and Dust. Dust will be a separate subject from the Dermatitis.

Now as to what dermatitis is, we might give you a very general idea, or we will call it skin irritation. As a whole, the decision as to whether it is an industrial thing should be left up entirely to your physician. It is nice if you have a plant physician that you can send all cases to, and if he can't make a decision for you, in rather a sizable town it is nice to refer the cases to a dermatologist that specializes in things like this. It is a great aid in making the final judgment if you have not a dermatologist that will definitely say it is caused by an industrial thing or something outside.

Why is dermatitis important? Well, recent statistics say that sixty-five per cent of the industrial diseases are the dermatoses, and you might know that they are trouble makers, but you might compare them to the common cold and not be off at all; it might cause him trouble on his job, time is lost, production is lost. Then there is one thing that is very important, he may build up an attitude about his work. Our idea on all this safety is to make the worker

happy, and if he has something that is causing him some trouble, or he thinks will cause him some trouble, it is not the best for the production.

The causative factors in dermatitis are numerous. We might discuss a few of them, the chemical irritants, such things as solvents, acids, alkalis; some of the things are pretty specific in their action. We have some infection that might be due to their work, bacterial infections, fungi, and some parasites and other things, unclean conditions around the factory.

I might talk about a few of these solvents. By the way, as Mr. Dairymple talked I thought of one thing. I wish this could be passed around, because it does cause a little discussion once in a while. Talking about solvents, the thought came to me about this word benzene. We have a lot of discussion—probably most of you know that there are two kinds of benzene—"ene" and "ine". Now to be talking about dermatitis, you talk about solvent vapors, you run into that talk a lot, and there is a lot of difference of the toxicity of the "ene" and "ine" benzene, and there could be a little bit of an educational program passed around about those two words. Probably it would help a little bit if the "ene" were called "oil", benzol.

Now as to solvents, where they do their harm, you might say in general, not to go into it too technically, what they do is dissolve the skin fat. That does a great deal of harm. We find in a lot of our processes out there, if we have a can of pure solvent there, suppose some folks get a little bit of rubber cement on their hands at the end of their shift or during their shift, they will take on a literal bath in the stuff; they will take and rub the stuff up and down their arms and use it just as they would water, and you know that action is not the best for the skin. Irritation follows, then you may have some bacterial infection that sets in.

I might tell you briefly this bacterial action and infection that follow, how bacteria work. Bacteria reproduce by little organisms called spores. I don't know whether we have some chalk over here. I might tell you a little bit about that. If you have any breaking of the skin, starting in with the use of solvents, you may have a little breaking of the skin. Now if your skin line is about like that (indicating on blackboard), say you have some little holes in your skin. Bacteria are usually classed as plants, and you know if you had a plant, to grow it you would have probably the correct temperature, some moisture and some air. Now bacteria are reproduced by what we call spores. Plants reproduce by seeds, you need water, temperature and air, air, oxygen to grow them. If you have bacteria on the skin, or spores of bacteria, you have some in open places—by the way this same little discussion here would fit for infections here—if you had some spores here, little reproductive things go down in there, your skin has these three conditions here, water, temperature and air. These spores get down there, reproduce, sometimes they send off some put, you might say, if that word is O. K. to use here; you have some infection going on there. It is quite a thing to deal with and it is one of the things that follow if there is a careless use of solvents, and we know that those spores are everywhere present.

Another thing you might have to deal with, some fungus infection around the plant. Ring worm might be picked up in the shower rooms. Various reproductive by spores. They are not bacteria, they are classed as fungi. Various protective measures can be taken to handle that situation. You are probably all acquainted with the foot bath and things like that that could be used, and general cleanliness will help in taking care of these spores that are present around the working area and in the shower rooms and the toilets.

The next thing that might be a causative factor in dermatitis would be some of your toilet facilities. Soap—strong soaps might cause a little trouble. I suppose some of the salesmen out here will try to sell you on this idea, but there is an element of truth, quite an element of truth in what they say. We found out in one plant that we licked a lot of the dermatitis by changing the soap, not necessarily because of its strength, but other little things enter in there. Now soap people should know of its action. The reason you put soap on your hand usually is to take those dirt particles, whatever might be on your hand—in eliminating oils, the things like that, what soap does is to take those little dirt particles and put a little film of soap around those dirt particles. What you are supposed to do after that is to take water and wash off the dirt particles that are surrounded by that soap and washed off. If that is left on there you are not cleaning yourself. The bacterial action of soap—many folks

I think, exaggerate how it works; after all it is not such a good killer of bacteria.

Now, how to keep up on these cases of dermatitis. We found out in our hospital, we are keeping records there, we put down a fellow's department, his name, and right after what he came to the hospital for. One fellow might come for a headache, one might come—of course we always keep the sick cases separate and the injury cases over here. One might come for headache, another for skin irritation, another for sore feet, and so on. We found that wasn't the best way to handle this thing, so we changed our hospital forms and we made a form like this, where we would put the department over here, then the name and other miscellaneous things like whether it was a new case, a re-dress, or something like that. Over here we start with some columns for dermatitis, might have some nausea cases, and so on. Then we had a column end of the day and the end of the week you can look down there and see how many dermatitis cases. Then you can make an entirely new sheet, going over here and taking the department and cases of dermatitis. Now this in, I suppose I should have mentioned something else first, but at least this was one of the steps we took to see if we couldn't keep up on this problem a little bit, so we changed our hospital forms. Now the thing I should have said before this was that you ought to know what you are using in your departments.

Now in safety work, probably the ideal situation, you probably know about going to put in a new machine, the nice set-up would be for the engineer to walk over to the safety man and tell the safety man to give him O. K. on the whole set-up and then set the thing in, then everything would be nice. That is to the chemist, and before they put something new in your department to submit to certain tests. With all due respect to the chemists they don't always know synthetic rubber industry today—they should submit this material for tests. There are various places where things can be tested out, there are some bonds of you who have studied a little along this thing know if you try the toxicity of a certain material on rabbits or guinea pigs it might not act the same way on humans. But at least you can make certain tests to see how toxic the thing is, then you can work in close contact with your doctor, your medical staff.

Another thing that comes in here is some of these trade things that come into your plant. It is peculiar, but we are acting like pre-war folks about some of these trade things. We are all working for the same goal, to lick the know what they are using. They may experience some difficulty with a certain product, they won't let the other fellow know what it is. I think some of those barriers should be knocked down. The thing I really wanted to say is that these trade solvents, not to mention any particularly, you ought to know what's in them. You have some crude products, you have some substitutions for all you are using you ought to know the percentage, as much as possible, of the hazardous substance, and the companies that make these products should put out the information. It is very important, because some of the small percentage of things are trouble makers.

Patch testing! That is a nice idea, but it is not a cure-all. I think you all know what patch testing is. They put a little bit of the substance on a person's skin to see if the material bothers that person. That is a good idea. You might find out some of the individual's allergies and be able to do something about it, but it doesn't necessarily mean because you have got a few people that will react to a substance that that substance should be thrown out the window. It is just merely a guide.

Now as to protection, you probably all know that they are pretty well up on these creams, these skin creams, and if you know what you are using, if you don't have one skin cream that will suit the job you can get them to develop one. A little problem enters in there. I think you all know how those skin creams work. Suppose you are using a certain solvent; they develop a cream that solvent won't dissolve and yet it will dissolve in water, so when you use the solvent that cream remains on your hand, and then at the end of the time you can wash that cream off with soap and water. They are pretty careful along that line, but you have to be very careful that there isn't an

over-use of this material. You may get a little bit on the product you are making, and it may interfere with the production in the end. In the use of solvents you might provide swabs with handles. I told you a while ago some folks just literally bathe in it. They don't notice any effect at the time, but it does have to be guarded against.

Management could do a lot towards affording good toilet facilities, clean working conditions. We had a little thing happen—Mr. Dalrymple was talking about the Labor-Management Committee—I might answer for Goodyear that it is working out very successfully, but we had one toilet that was rather dirty. Now, it is very easy to blame the employees, but there was a little something after we looked over the situation there, that we did that helped that, and we knew that we hadn't been up on it before. We found out that there were dirty towels all over the floor, the place wet around—you can probably picture the thing without my going into it with too much detail—but we looked it over and we found just by a little bit of readjustment we cleaned up that toilet. Now what happened, where these fellows were washing their hands, the towels were right there, but the place to throw the towels was quite some distance away. Well, what happened—the fellows—now you can't criticize them, it just happens to be human nature—they didn't take the trouble to walk over and put their towels in the barrel. What we had to do was arrange the place so that the barrel for the towels was right at hand. You will be surprised how that toilet cleaned up with just that little readjustment there.

Now concerning women employees, and I suspect we better call a halt at it then. I am going a little over time, is quite a problem. When they come in as most of you know, their skin is a little more tender, according to our doctor there at our place, there is a little bit of a toughening period, and after that first period is over with things sort of settle down. We tried one experiment in one of our departments where we found out from watching our hospital charts we thought we were getting too much dermatitis. By the way we got the idea from Dupont. At a very moderate cost we tried administering a tablet of Vitamin C every day to those folks, a selected few. We studied the job and thought it might help a little bit. I think most of you know what Vitamin C is for, various things, but it does have something to do with warding off skin infections, and they thought there might be something in that. We tried it; here are some of the results we found out for positive: Not so tired, thirty-seven; relieved the dermatitis, five; relieved constipation, two; seven ate better; slept better, four; not so many headaches, one; not itchy, one; gained weight, one; relieved numbness in hands, one; good results, but could not explain, six; do more on the outside, three. Then the negative side: No relief from the dermatitis, one; two of them were sickened by it, and twenty-eight found no difference at all. We are not carrying that on. We tried it to see how it would work, but you can see the results there. You get various opinions.

I will just conclude with the other things that was hinted at a while ago, this problem of transfer. Most of you have to deal with your Labor Department, and I think you have to put a little educational program over to sell that to the Labor Department, that there is no sin in transferring folks, just some folks can't work with certain products, and very often, if you send a number of folks down to the Labor Department they right away wonder what is wrong with the conditions up in Department Go-and-so. Well, you just have to educate them and have them realize that dermatitis might be a personal thing, and it might not be the conditions in the department at all. There is one interesting thing, there is no answer for it at all, maybe transfer is the answer, but it is interesting. There is a self-produced eruption that can occur on folks, doctors call it dermatitis artefacta. Very intelligent people are more susceptible to something like this than the average run of people, but just from the expression, some folks maybe they don't like their work, maybe they are a little burned up at the boss, maybe over a period of time they can produce an artificial problem. How to deal with that is a labor problem, and probably a social one. (Applause.)

Chairman Loewis: Thank you very much, Mr. Shibley. Does anyone have any questions to ask Mr. Shibley? I might throw out something to think about a difference in people's skin. Dermatologists takes effect upon some people really than others, just the same as sunburn. My type of skin sunburns a faster than some of my buddies. I have discovered that through a number of vacations that I have happened to have, over a week-end, for instance some of my shop buddies. We both might work inside all week, or for

or four weeks, with the normal amount of recreation on the week-end, then get a whole Saturday afternoon off—that was back in pace times—we would go out in a boat fishing, the sun burns you on the way down and bounces off the water and burns you on the way back; my buddies pay no attention to it, and I burn up like a lobster if I am not exceptionally careful. I think we may have the same problem with people in the plant. I know in some of our departments where we transferred folks from certain type of work and put brunettes type people on there, and they never had a bit of trouble without any change in the processing at all. Anyone have any question to ask Mr. Shibley? If not, we will go on to the next, Mr. H. H. Radke, Industrial Hygienist, of the Goodrich Company of Akron, who will give us a little talk and slides on the Toxicity of Volatile Solvents. Mr. Radke.

TOXICITY OF VOLATILE SOLVENTS

Mr. H. H. Radke
Industrial Hygienist, The H. F. Goodrich Co., Akron, Ohio

At the beginning of the reading of this paper I wish to state that the views expressed in it are my own and not necessarily those of my company. Since the war, the amount and types of volatile solvents employed in the rubber industry have increased greatly. Consequently, it is highly important today to appreciate the potential hazards with their use in manufacturing processes.

Volatile solvents comprise a group of organic liquids that are employed in industry to facilitate manufacturing operations. In the rubber factories they are used chiefly to disperse natural or synthetic rubber to make cements for use in the manufacture of rubber products.

Although several hundred solvents are used, all are members of a few families. Grain alcohol, for example, is a member of the alcohol family and resembles other alcohols. Within a family the type of toxicity is the same, but a considerable difference in the degree of toxicity exists.

Solvents may be considered as hydrocarbons and their derivatives: (1) aliphatic hydrocarbons (kerosene, naphtha); (2) aromatic hydrocarbons (benzol, toluol, xylol); (3) chlorinated hydrocarbons (carbon tetrachloride, chloroform, trichlorethylene); (4) carbonyl solvents (acetone, methyl ethyl ketone, ethyl acetate); (5) alcohols (methyl alcohol, ethyl alcohol).

The aromatic hydrocarbons are more toxic than the aliphatic; the chlorinated hydrocarbons comprise a somewhat more hazardous group; and the alcohols and alcohol solvents in general are among the less toxic. (Slide illustrating this classification.)

Conditions of Use.

The chief hazard involved in the use of solvents is contact with their vapors. When a solvent is used, it tends to evaporate and thus contaminate the surrounding air. This tendency is governed by the boiling point of the solvent. The lower the boiling point, the more readily will the solvent evaporate. Most of the common industrial solvents have low boiling points.

When investigating a process in which a solvent is used, the industrial hygienist must distinguish clearly between the toxicity of a solvent and the conditions of its use. For example, an extremely toxic solvent may be present and if employed in a closed system with small surface exposed for evaporation or if its boiling point is so high that its evaporation rate is very low, or it is utilized in small quantities. On the other hand, the use of a much less toxic solvent may be hazardous if the latter is used at temperatures near its boiling point so that rapid evaporation takes place in a small unventilated space. The hazard, therefore, depends upon the nature of the process as well upon the toxicity of the solvent.

When Allowable Concentrations.

When a solvent evaporates into the air during a manufacturing process, the worker may be exposed to a definite concentration of vapor. This concentration is affected by many factors, such as wind currents, ventilation, temperature and humidity. The concentration of vapors that the worker is exposed to, the time of exposure, and the toxicity of the solvent are factors which make the extent of the hazard.

Thursday Morning, April 22nd

It is now a well-established fact that our successful and prompt termination of the present conflict depends, to a large extent, upon our ability to out-produce the Axis power. This is a war of production, wherein time losses in the production front, are casualties—casualties almost entirely in the material industry, time losses on the battle front, are casualties in the material industry.

So, then, it is our patriotic duty, our duty to our boys in the malaria-infested swamps of the South Pacific Islands, and then the desert sands of North Africa, to maintain and strengthen our staying powers or our stamina in industry, and control production losses resulting from absenteeism, due to occupational disease hazards.

There are no known methods of completely relieving absenteeism. However, This war could well be lost right here on the home front.

There are no known methods of completely relieving absenteeism. However, we do have methods whereby manpower losses can be and should be materially reduced. When we stop to consider that during 1942, 42,700,000 man days of work were lost to the war effort because of absenteeism from all causes, the importance of its control is obvious.

A survey of aircraft plants, found

work were lost. The most important of its control is obvious. Captain Eddle Rickenbacker, after a careful survey of aircraft plants, found that if absenteeism from all causes was completely controlled for only one day, that if absenteeism from all causes was completely controlled as General MacArthur needs. This is a serious problem that demands prompt consideration and correction.

The conversion of our great industrial establishments into war plants—they are on a war basis, and we find many new and varied problems confronting us. The shortage of trained workers necessitating employment of older workers, many with physical handicaps; the unforeseen housing conditions in our workshops and factories; the crowded housing conditions in our industrial centers; rationing of food-stuffs; new types of machinery and our industrial chemicals used, all have contributed greatly to our production problems. These problems must be adequately and intelligently studied, and methods of their control instituted.

and realizing that a carefully planned industrial health program, which, in reality, is nothing more than a practical system of preventive medicine, would aid materially in reducing absenteeism from occupational diseases, and relieving production losses in the future, the program committee has assigned this entire program to the control of industrial hazards.

We are honored this morning by the presence of one who is universally regarded as the foremost authority on occupational disease prevention in the nation. One whom we are proud to refer to as a native son, who left a large industrial practice here in Ohio to travel to more fertile fields, or I should have said, to become the Medical Consultant to one of the largest corporations in America; a former president of the American Association of Occupational Disease Control.

It is my very great pleasure to present to you Dr. Clarence D. Seby, Medical Consultant to General Motors Corporation, whose subject is "Occupational Diseases of the Largest Corporations and a Pioneer in Occupational Disease Control."

OCCUPATIONAL DISEASES CAN BE CONTROLLED

Dr. C. D. Selby
Medical Director

Thank you, Dr. Andre, for your gracious introduction. I might say, also, that being a former Ohio man, I accepted this invitation with a great deal of pleasure and it is nice to get back here and meet my friends of former years and to make new friendships in the state of Ohio. Physicians who are employed outside of Ohio are not eligible for membership in the Ohio Medical Association.

...are employed regularly in industry know that occupational diseases can be controlled, and they understand the technique of control; but their services are available to a limited number of workers, mostly those of the large establishments.

The owners of small plants are now asking for medical advice on the effect of shop conditions on health and methods of protecting health. Naturally, they go to the doctors to whom they are sending their workmen for the care of injuries, and these are usually neighborhood physicians in general practice who are not so familiar with the subject, even though they serve the larger proportion of the workers.

This discussion is intended primarily for the owners and the doctors of these small plants, but the plan which will be outlined is equally successful in large plants. The plan may be divided into two sections: Industrial Hygiene Methods and Physical Supervision.

2. **Industrial Hygiene Methods.** To prevent occupational diseases their sources must be sought out and controlled. They will be found in the working conditions and environment; the processes, operations or methods, the substances or materials intrinsic to manufacturing. They are usually in the form of dusts, mists, vapors, fumes, gases and fluids. For the purpose of brevity, all the industrial sources of disease are termed "exposures" and the word is used in that sense throughout.

1. Identification of Exposures

...the strategy toward control is the identification of the materials or conditions which are capable of causing disease. This can be done by (a) tracing back occupational illnesses as they occur; this is unscientific and expensive. It is far better for the doctor to anticipate possible occupational diseases by (b) a study of the materials used in manufacturing. If any of them are recognized as possible disease sources, the manufacturer

2. Determination of important sources of disease. The sources of disease are immediately recognized, the operations or processes of which are recognized, and the harmful substances which are produced are recognized. The sources are located in this way, but it is also important that the physician bear in mind that a harmless substance may become a source of disease under certain conditions. It is therefore necessary that he (a) study the methods of manufacturing and look for additional causes in the (d) general plant conditions.

2. Determination of Importance of Exposures

performance. This he may do by (a) visual observations. Harmful dusts, fumes, mists, vapors and gases which are noticeable are obviously not under control. If the doctor has any doubt, or if for any other reason he desires scientific confirmation, he may arrange for (b) engineering studies connecting of dust counts and other analytical methods of determining the condition of air at the breathing place of the workmen. These will indicate the extent of exposures and the findings may become useful as factual evidence. Such studies can be made by an industrial hygienist, a plant chemist in cooperation with the physician, or by someone especially trained for that purpose, not necessarily a chemist or engineer. If dust and other contaminants are important problems, a more or less continuous engineering service is desirable because conditions vary from time to time and one reading does not necessarily reflect the average.

This is largely a ventilation problem. It is not the duty of the physician, but having identified sources of disease and having reached conclusions as to their importance, it becomes his duty to direct the management's attention to them.

the need of control measures. How he does this depends upon his place in the organization.

For information, however, it may be said that exposures are ordinarily controlled by substitution of harmless materials if possible, (b) changes in processing and manufacturing, (c) segregation of operations in which capture gases at their points of origin, (d) segregation of operations in which capture is not feasible, (e) use of respiratory protective devices when safe limits of air contamination are necessarily exceeded, or (f) if the exposure be to the skin only, by the use of protective creams, suitable gloves, clothing, etc.

4. Maintenance of Control.

Exhaust systems for the removal of dust and other air contaminants and respiratory protective devices, being mechanical in nature, are prone to get out of order. Plant conditions and methods may be changed. It is therefore essential that the plan for the prevention of occupational diseases include procedures to assure continuous control over exposures. The first essential is intelligent use of the protective equipment. Workmen must receive (a) suitable instruction and have (b) watchful supervision.

In order that the plant physician make his full contribution to the problem of a control program, it is advisable that he make (c) periodic plant inspections as often as necessary, perhaps in some departments weekly, others monthly, and so forth.

Because of frequent changes in manufacturing methods and processes it is also important that the doctor make (d) studies of all materials that are purchased and (e) studies of all new processes or modifications of old ones before installations are made or changes are effected.

Use of the above program serves to simplify the problem of preventing occupational diseases and enables the plant physician, or the physician who practices casually in industry, to make an understandable analysis for submission to management.

Many conditions capable of causing disease will be found to be under control. As a matter of fact, industry has progressed surprisingly in this direction, far more than the medical profession realizes. Some exposures will be on the border line and there will be a few that need urgent attention, after which exposures on the border line of importance may be corrected more leisurely.

B. Physical Supervision. Having secured control over the conditions which are capable of causing occupational disease, the physician's control program is considerably simplified, but it is nevertheless important that he give the workmen themselves enough of his attention to assure them an early diagnosis if occupational diseases occur despite measures to control exposures. This attention consists in physical examinations to assure workmen of suitable employment, to remain suitably employed and to safeguard their health during employment.

1. Pre-Placement Examinations.

The pre-placement examination should be sufficiently complete for an accurate appraisal. It is important, for example, that a man with active tuberculosis be not employed in a dusty occupation. It would be unfair to the applicant himself and to his fellow workmen. Such a man needs treatment, not employment.

It is not possible to recognize tuberculosis in all of the stages by physical examination alone, therefore, modern industrial preventive medicine furnishes an applicant for employment in a dusty occupation with an X-ray examination of the chest. Carrying this thought a little farther, the examination department as a complete as to permit the physician to advise the employment department, first to the safe placement of all applicants who are physically handicapped, but the disease, by way of illustration, may on first impulse call for rejection, but the profession knows that many men with heart lesions may be employed under suitable conditions and given opportunities for useful lives. To see that the physically handicapped, as well as the whole and healthy, are suitably and safely employed is an important function of medical service in industry.

Many examples of this nature could be mentioned, but it is not the purpose to set up standards for rejection or placement. The doctor must use his judgment. He must decide each questionable case upon its merits and his decision must be influenced by facts only. Naturally, his examination should be complete as to justify his decision. To this end, special diagnostic equipment may be needed—X-ray apparatus for the study of the lungs, laboratory facilities for blood studies, electro-cardiograph, etc.

The object of the pre-placement examinations is to permit acceptance of applicants with a minimum of risk to themselves, their fellow employees and their employers, and placement under conditions that will have the least possible harmful effects upon their health and earning power.

2. Periodic Examinations.

The purpose of the periodic examinations is to aid workmen in continuing employment with a minimum of physical deterioration or sickness attributable to occupation. Inasmuch as some workmen are susceptible to certain exposures, it is desirable that all new employees who may be in any way affected by their occupation be observed frequently during their early days of employment. All workmen should be examined as often as necessary to assure them against ill effects.

The frequency of the periodic examinations depends upon the physical condition of workmen at time of employment or at time of last examination, and the nature of their occupations. If they be employed where lead is used under conditions which indicate the possibility of absorption, they should be examined monthly. If they are exposed to dust of a silicious nature or otherwise, they should be examined once a year. All workmen absent over seven days because of injury or sickness should be examined on returning to work. All employees should be examined at least once yearly.

If the doctor finds conditions that indicate the need of changing a person's occupation or of recommending a period of absence for recovery, he should be certain of his ground before he renders a decision, but having once reached an impartial study of the medical facts as he sees them.

3. Consultations.

The established plant physician will be consulted frequently for the relief of minor ailments and advice on the treatment of conditions that may or may not be related to occupation. This is a very delicate phase of industrial practice, and in it the doctor must so conduct himself as to maintain the confidence of the workmen and retain the good will of the workmen's own private physician in general practice. It is possible, however, for him to shorten the period that ordinarily exists between the early stages of sickness and treatment by one of the most important duties of the plant physician is to advise workmen who desire or need medical care for conditions which have no relation to employment. In these cases he may give temporary treatments which will enable workmen to finish a shift or handle an emergency, but all else of a personal nature must be directed into the channels of ordinary medical practice.

4. Adequate Treatment. The physician is a professional man. So long as he is employed he is entitled to use his judgment in the treatment of occupational injuries and diseases, and naturally he wishes to do this to the best of his ability.

5. Records. The maintenance of suitable and adequate records is one of the most difficult problems confronted by the physician in industry. Ordinarily his records show volume of work. Management is not particularly interested in the sources of injury and disease which are not under control. Management wishes a complete medical record of each employee in order that claims for compensation may be judged fairly. And the physician certainly needs a record of this nature in order that he may advise workmen in the maintenance of their health.

This plan for the control of occupational disease has been in effect in General Motors Corporation for a number of years. The Corporation has more than 100 manufacturing divisions. The number of its employees is well in excess of a quarter of a million. Its manufacturing operations are many and varied. The opportunities for occupational diseases are considerable. Its experience with occupational diseases is therefore of value to this discussion. Perhaps under certain circumstances hernias can be regarded as an occupational disease. Perhaps synovitis and the other ailments resulting from unbalanced repetitive operations, can also be regarded as occupational diseases. In any rate, these conditions are specified as such and are compensable under occupational disease laws of certain states.

Including them, the total number of the occupational diseases which are in the employees of General Motors Corporation last year was . . .

were causes of lost time, was 130. If the hernias and the miscellaneous conditions from mechanical causes are excluded, the lost time cases amounted to 98. Ninety-two of these were dermatitis, one was lead absorption (this case occurred prior to 1942; it was of doubtful origin and did not become a matter of record until a decision was reached by the compensation board), one was from carbon monoxide, one from tetrachloride, one from naphtha and one a conjunctivitis from a welding flash.

This pleasing record, which does not vary a great deal from year to year, is credited to the plan just outlined. This plan is available to the owners of small plants as well as those of large organizations. The only difference between the small and the large is in the quantity of the service required, there should be no difference in the quality. Small plants may obtain the services of doctors and nurses for an hour a week, an hour twice a week, or an hour or more a day, according to their needs, and at a cost which is within their means. It is essential that the services be rendered in the plants, not at the doctors' offices.

The medical profession is preparing itself for this service. In Ohio the State Medical Society has created a special committee on Industrial Health, Dr. B. J. Hein of Toledo is its chairman. Under the auspices of this committee the State Association held a series of meetings in Columbus recently which was devoted entirely to discussions on industrial health. Ohio's program is intended to prepare private medical practitioners to serve small plants when invited to do so.

I appreciate the opportunity of talking to you and of being with you. (Applause.)

Chairman Andre: We should be very grateful to Dr. Selby for the most convincing way he has covered the subject of Occupational Diseases. I trust that you will feel free to discuss Dr. Selby's paper or ask any question which might be of interest to you. I believe it would facilitate matters if you would arise, state your name and the name of your company and kindly limit your remarks to three minutes.

I shall ask Dr. Obetz, of the Division of Safety and Hygiene if he will please open the discussion.

Dr. W. E. Obetz, Medical Director, Division of Safety and Hygiene, Industrial Commission of Ohio: I think we must all agree that Dr. Selby has given us a very nice discussion on Occupational Diseases and how they can be prevented. I think he has also shown what sort of an ideal setup it would be for medical departments in the plants, and I am very glad that he emphasized a number of the advantages that those employees have that are privileged to be under such medical supervision, and I am also glad that he emphasized the fact that such supervision is available for the employees of small plants.

Now, I know that we are working under handicaps because a number of physicians have gone into the service, but I feel that there are still a number of doctors in the community, in every community, who probably can devote at least a part of their time to the supervision and these examinations, pre-employment and periodic examinations, if the employers will contact them and secure their services for their employees.

I think Dr. Selby has set up a very nice goal for the employers of Ohio to aim at, to see if they can attain it for their employees, and our statisticians and our records of occupational diseases and absenteeism are a very definite proof that such supervision and medical care is needed, and needed badly, in a great majority of our industries today.

I wish to call attention to that map or chart that appears up there showing the trend of occupational diseases during recent years. It starts at the corner with the year 1927, and you will see that for a number of years occupational diseases, that is the total number of claims filed, good, bad and otherwise, ran along a fairly even course, between 1,000 and 1,500 claims. One year here, to 1937, that was the first time it got above this 1,500 line. At that time silicosis became compensable. Then there was a little rise in industrial diseases, also, at that time, with a slight increase in the total number of occupational diseases. Then there was a slump in industry in 1938 and occupational diseases dropped a little bit. Then we had a rise in 1939—at that time the law was amended and all occupational diseases became compensable in Ohio. There was a slight rise up till 1940, and then we ran into the period of increased industrial activity, together with the increased number of claims that were filed because of this all-inclusive amendment and also due to the fact that

Industrial Commission had its classification that they did not know just exactly what to do with. I am referring to bilateral and calloused, particularly those that became infected and caused lost time. The Commission has been up against a problem whether to classify these as injuries or occupational diseases and fight at this time, or at the end of 1939 and 1940, they decided to classify them as occupational diseases in order to have a definite place in which to classify them and a definite sum or sum to pay them.

Now, those three things, the increase in employment and the all-inclusive occupational diseases of these calloused and bilateral have accounted for the remarkable rise you see here in 1941 and 1942, a jump from 1,500 cases up to 5,500 at the end of the year 1942.

The large number of the occupational disease claims that were filed that were responsible for the real occupational diseases were due to dermatitis. Practically 60 per cent of the claims filed came within this classification.

Now, in these claims for occupational dermatitis, there is one classification, oil, and I don't want to trespass on Dr. Leggo's paper there.

Now, I am sure that some of you may have some questions that you would like to ask Dr. Selby and possibly he may be able to give you some pointers on how you may obtain some of this medical supervision or you may have some problem; if you have, I think now would be a very good time to bring it up, or if you have something to contribute to this program we are putting on this morning.

Dr. Selby: Inasmuch as Dr. Leggo's paper deals with the same subject, I think you should go ahead with his subject, and then we can have this discussion after it.

Chairman Andre: Very well.

The next subject for consideration is one which is of great importance from an industrial hygiene standpoint. Of the 6,474 occupational disease claims filed in 1942, 3,642, or 60%, were for dermatitis, and of this 60%, 35% were for tremendously high rate of contact with oil or cutting compounds. This is a but this is a subject to be considered by the next speaker.

It is a very great pleasure to introduce to you Doctor Christopher Leggo, to Ohio by the Federal Government and is now director of the Industrial Hygiene Service of the Ohio State Health Department. His experiences in industrial hygiene have been many and varied. He was former consultant in industrial hygiene, California State Health Department, Plant Physician for the California and Hawaiian Sugar Refining Company, and is now Assistant Editor of "Industrial Medicine."

Dr. Leggo's subject is one which has caused a great deal of concern, "Industrial Skin Diseases and How to Prevent them." (Applause.)

INDUSTRIAL SKIN DISEASES AND HOW TO PREVENT THEM Dr. Christopher Leggo, U. S. Public Health Service, Columbus, Ohio.

Mr. Chairman, and ladies and gentlemen: In considering the subject, Occupational Skin Diseases and Their Prevention, it must be remembered that occupational diseases are too many to even be enumerated in the time allotted. I think we would be wiser if we attempt to formulate some rules and a formula into which most of our industrial conditions will fit. There are so many of the points illustrated in the commonest of all industrial dermatoses, cutting oil dermatitis, that I can afford to consider it roughly and use it as a basis for our understanding. If we can understand and understand all occupational dermatoses, we will have come a long way toward considering which we will discuss after we have explored the Cutting oil situation.

For those who are interested, the material on cutting oils is taken from an article called "Cutting Oils and the Skin" published in "Industrial Medicine", issued in February, 1943. Reprints will be available from the State Health