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Plant Surveys

The Laboratory of Industrial Hygiene conducted forty surveys of health conditions in the plants of our Group policyholders. Although this is a reduction in the number of plants surveyed last year, the individual plants surveyed were larger and employed a greater number of employees. Also, the initiation of a very large project - the surveying of approximately one hundred and twenty plants of the General Electric Company - as well as surveys of several other companies could not be included in this year's schedule due to the transportation strikes which held up for weeks trunks containing equipment and samples collected in the previous surveys.

A typical plant survey report includes a description of the processes, plant construction and layout, plant housekeeping and personal facilities; discussion of methods of sampling and analyses; chemical analyses and other findings of the samples collected; and recommendations for control of any health and safety hazards found. Attention is also called to safety hazards. A section of the report discusses the health hazards found - symptoms, toxic concentrations, treatment, etc.

The samples collected in the plants and sent to the Home Office Laboratory necessitated making 2,494 separate analyses. Exclusive of such environmental factors as defective illumination, inadequate local and general ventilation, and sanitary defects, a total of 42 different substances known

to affect adversely the health of exposed workers was detected. These consisted of dusts, such as silica (which is by far the most prominent), asbestos, lead, manganese; solvents, such as carbon disulphide, tetrachlorethane, trichloroethane, trichlorethylene, benzol, toluol, ethyl, methyl and butyl acetate, amyl and ethyl acetate, naphtha, as well as hydrofluoric, hydrochloric, and sulfuric acids.

A number of new instruments were purchased for the Laboratory during the year in order to facilitate and expedite the survey work and to attain the best possible accuracy in determining hazardous exposures. These are a mercury vapor detector, a sound meter used to determine noise levels, and a Geiger-Muller meter for measuring radiant energy.

A ventilation engineer is now available for consultation in planning new ventilation and exhaust systems or necessary revisions of those in use.

Home Office Inspections

The Industrial Health Section and the Laboratory of Industrial Hygiene has continued to make periodic sanitary and industrial hygiene inspections of the Commissary Division. These inspections include methods of preservation of food, refrigeration, food handling and disposal, dish washing, vermin control and cleanliness generally.

The office has also continued to be of assistance in such work operations as paint spraying, lead soldering, welding and other operations where solvents and toxic materials are employed throughout the building.

All chemical materials used by our Building Divisions are analyzed by our Laboratory and instructions are given regarding their safe use.

During the year sixty-two Home Office inspections were completed and recommendations made for improvement of working conditions.

Travel Credit

The incidental expenses incurred by our field men for travel and maintenance while conducting surveys are charged to the Group policyholders for which these surveys are made. During 1946, policyholders were billed for such charges to the amount of \$2,405.26.

Special Inquiries

Six hundred and seventy-five (675) requests were received during the year from our policyholders and others for assistance and information on industrial health subjects. This is an increase of one hundred and twenty-five percent in the number received and answered last year. The requests were handled by mail, as well as through conferences and visits to the Home Office. As in the past, many of the requests were for information on the control of injurious substances used in the plants of our policyholders; advice on the installation of medical departments and physical examinations; the question of bacterial control of air by radiation and aerosols; dermatitis from all manner of substances, including artificial resins, coal tar pitch, aniline dyes.

Due to the publicity which has been given to the vaccine for the control and prevention of influenza, we have received many requests regarding the

value of vaccinating employees in industrial and mercantile establishments.

Due to the return of our physicians in the Section, we were again able to review and interpret X-rays of the chests of employees of our Group policy-holders.

The following are described to give an idea of the type and variety of the information requested:

The Treasurer of a chain of pork-packing houses came to the office for information regarding food poisoning due to staphylococcus and general method of prevention.

The Medical Division of a large automobile company in the middle west requested information on systems for recording and coding causes of sickness and accidents. The company was anxious to install a system of medical records in their plant which would be helpful in correlating the cause of sickness and accidents by cause, by divisions, etc.

The Treasurer of a biscuit company in Iowa requested information on methods of minimizing allergic conditions among employees working with raw materials such as flour, sugar, etc.

A large company manufacturing tin cans requested information on the comparative effects of lead poisoning in children and adults. They were concerned whether their lead-soldered cans might have a bad effect on the health of children.

A company in Ohio manufacturing pick and shovels requested information on X-ray equipment for examining applicants suspected of silicosis and tuberculosis.

A bus company in Texas was planning to reorganize their system of physical examinations of bus drivers and wanted to know what other companies were doing. We were able to send them the plans of a number of large bus companies; the standards of the Interstate Commerce Commission; procedure for testing, selecting and licensing of drivers of the United States Navy; report of the National Safety Council on the selection of drivers of motor vehicles; the standards for operators of motor vehicles of the United States Civil Service Commission and the standards of a number of government agencies which maintain large fleets of busses.

A number of our Group policyholders which may have a potential silicosis hazard were interested in the value of aluminum therapy in the prevention and control of silicosis.

Several requests were received from policyholders in New York City for advice on the names of hospitals in New York City which would give physical examinations to their employees.

A firm in Minnesota which operates plating tanks was having trouble with blisters caused by exposure to cyanide fumes or mists from these tanks. Advice was given for control of these fumes as well as methods of protection for the skin, including protective clothing, etc.

A policyholder in Massachusetts was contemplating purchasing the plant of another rivet and machine company in Pennsylvania and wanted to know what arrangements they should make in the construction of a sewage disposal plant to take care of waste solutions from the cleaning, plating and polishing departments. Samples of the waste solutions from these departments were analyzed in our Laboratory. We secured for them also from the Department of Health of Pennsylvania information on regulations for the discharge of industrial wastes to waters in the state of Pennsylvania. This information will be of value to the policyholder in connection with the construction of a sewage disposal plant.

A spinning company in New Hampshire (a prospect for Group insurance) was having trouble with cases of dermatitis from mohair and wool among their employees. Advice was given on prevention, as well as methods of diagnosing occupational dermatitis.

One of our Group policyholders, operating a chain of restaurants, wanted to comply with the state regulations concerning rest rooms and locker rooms in a number of cities where their restaurants were located.

A steel company in the middle west requested information on the hazards of exposure to acid mists in a pickle house; on the possibility of skin absorption of carbon tetrachloride causing a dermatitis and whether there is any individual susceptibility to poisoning.

Our opinion was requested by a large steel company in Ohio regarding the proposed code of the Public Health Council of the State of Ohio on occupational diseases.

Literature

Three thousand six hundred and eighty-four copies of our booklets in the Industrial Health Series were sent during the year on request.

Publications

The following publications were revised during the year:

1. Health Protection in Welding
2. Industrial Hygiene and Safety
3. Prevention of Oil Pimples

The Industrial Health Section also revised the leaflets on Tularemia and Brucellosis (Undulant Fever).

Dr. McConnell prepared a revision of the seventh edition of the Textbook of Medicine by Russell Cecil for the sections on Diseases Due to Physical Agents and Diseases Due to Chemical Agents - i.e., compressed air illness, mountain sickness, heat prostration, electric shock, carbon monoxide poisoning, benzene poisoning, arsenic poisoning, mercury poisoning and chronic bromide poisoning.

The report of the work of the Industrial Hygiene Branch, Safety and Security Division, Ordnance Department, Army Service Forces, entitled "Occupational Diseases in Government-owned Ordnance Explosives Plants During World War II" was published in the June 1946 issue of "Occupational Medicine", the new journal of the American Medical Association. This paper is of interest to industry in showing how industrial health hazards can be controlled with adequate medical and engineering supervision.

Another paper by Dr. McConnell entitled "Summary of Twenty-Two Trinitrotoluene Fatalities in World War II" appeared in the May 1946 number of the "Journal of Industrial Hygiene and Toxicology".

Conferences

During the year, Dr. Lanza held sixty-two conferences and Dr. McConnell held eighteen, in the office with representatives of our Group policyholders and others from health organizations.

Field Trips

Dr. Lanza visited the plants of twelve of our Group policyholders and conferred with management regarding nursing service, poor claim experience or other matters of interest. Among policyholders visited were the Corning Glass Company, the General Electric Company, the General Motors Corporation, Johns-Manville Company and the American LaFrance Foamite Company. Dr. Lanza also made thirty-six other field trips during the year for the purpose of conferring with the executive staffs of health organizations, Government Bureaus, universities, other insurance companies, etc. regarding methods of improving the health of industrial employees. Some of the more important of these trips were for the following purposes:

He had a conference with Dr. Dudley Irwin in Pittsburgh concerning the future activities with respect to the aluminum treatment of silicosis.

He visited a number of Group policyholders on the Pacific Coast during the first part of July when he attended the annual meeting of the American Medical Association at San Francisco.

He attended a conference of the Associated Lead Industries in New York on a publicity program concerning lead poisoning.

He also attended a conference in Chicago of representatives of the Metropolitan, Equitable, and John Hancock Insurance Companies with officials of the American Medical Association to discuss prepayment medical service plans.

Dr. Lanza went to Washington for a conference with Admiral Boone and his staff to discuss the health survey of bituminous mines.

Dr. Lanza attended an all-day session of the Advisory Health Council of the United States Chamber of Commerce at the Waldorf-Astoria.

He attended a meeting of the Board of Trustees of the Trudeau Sanatorium and Foundation. Dr. Lanza has just been made a member of the Board of Trustees.

Dr. McConnell visited the plant of the Imperial Paper and Color Company at Glens Falls, New York to discuss with management a plan for the installation of medical service for employees.

On January 23rd he also visited the plant of the Eastern Tool and Manufacturing Company at Bloomfield, New Jersey to confer with the officials regarding cases of dermatitis among employees using a neutral high boiling oil. Dr. McConnell examined the employees and suggested treatment. A letter received in August told us that the treatment was working very satisfactorily and that they had no serious dermatitis cases since.

Dr. McConnell visited with Dr. Lanza the plant of the General Electric Company at Schenectady, New York and discussed with Dr. Vosburgh our proposed survey of all their plants.

Meetings and Addresses

Dr. Lanza attended 35 meetings and gave talks at five of these; i.e., he addressed a class at the Wayne University in Detroit on Group insurance and industrial medical practice; gave a talk on pneumoconiosis to students of the School of Public Health of Columbia University; gave a paper on "Pulmonary Diseases Due to Occupation" at the Tuberculosis Sanatorium Con-

ference; gave a talk on Industrial Medicine at the Post Graduate Hospital Symposium; and gave a talk on Industrial Medicine at the annual meeting of the Association of Life Insurance Medical Directors of America.

Dr. McConnell attended 21 meetings. At the annual meeting of the American Association for the Advancement of Science in St. Louis, he gave a paper entitled "Prevalence and Trend of Occupational Diseases in Army Owned Ordnance Plants During World War II"; at the annual meeting of the American Public Health Association, he gave a talk on the industrial hygiene experience of the Army; gave a talk on Industrial Hygiene to students at the Long Island College of Medicine. He also discussed Dr. Allen's paper on "Therapeutic Use of Low Temperatures" at the meeting of the American Society of Heating and Ventilating Engineers.

Mr. Fehnel attended four meetings and presented a paper on "Industrial Health Hazards in the Steel Industry" at the annual meeting of the Association of Iron and Steel Engineers in Cleveland, Ohio.

Mr. Battista attended the annual meeting of the Industrial Hygiene Foundation in Pittsburgh.

Testimonials

There are attached copies of a number of letters received during the year testifying to the value of the services rendered.

Committees

Dr. Lanza is associated with the following organizations:

- American Medical Association
 - Member of Council on Industrial Health
 - Member Executive Committee
 - Chairman, Comm. on Professional Relations) Subcommittees of
 - Member of Comm. on Physical Examinations) Council on Ind. Health
 - Member of Editorial Board - Occupational Medicine
- American Public Health Association
 - Member of Committee on Pneumoconiosis
- Industrial Hygiene Foundation of America
 - Member of Board of Trustees
 - Chairman, Medical Committee
- Association of Life Insurance Medical Directors
 - Joint Committee of the American Medical Ass'n and Insurance
 - Organizations on Prepayment Medical Plans (Member represent-
 - ing Life Insurance Medical Directors)
 - Committee to Promote Educational Activities Among Medical Examiners
- New York Academy of Medicine
 - Chairman, Subcommittee on Industrial Medicine
- U. S. Chamber of Commerce
 - Chairman, Ind. Medical Subcommittee (Health Advisory Council)
- National Tuberculosis Association
 - Member of Editorial Board - American Review of Tuberculosis
- New York Tuberculosis and Health Association
 - Member of Board of Directors
- Trudeau Sanatorium and Foundation
 - Member of Board of Trustees
- U. S. Employees Compensation Commission
 - Member of Board to Advise Commission on Medical Aspects
 - of Disability Claims.
- Life Extension Institute
 - Member of Hygiene Reference Board
- Modern Medicine
 - Member of Editorial Board

Dr. McConnell is associated with the following organizations:

National Association of Manufacturers
Member - Medical Advisory Group

American Society of Heating and Ventilating Engineers
Member - Sensations of Comfort Committee
Member of Research Technical Advisory Committee on
"Air Conditioning in Industry".

American Public Health Association
Member - Industrial Hygiene Section Council
Member - Special Committee on Standard Methods for the
Examination of Air.
Member - Committee on Atmospheric Comfort
Chairman - Nominating Committee
Member of Graduate Fellowship Committee
Member - Ventilation Committee on Ventilation and Atmospheric
Pollution.

American Standards Association
Sectional Committee on Light and Ventilation
Exhausts System Section Committee
Committee on Fundamentals of Ventilation

American Association of Industrial Physicians and Surgeons.

Lighting Committee for New Building
Chairman

Ventilating Committee for the New Building
Member

Commissary Committee for the New Building
Member.

Mr. Fehnel is associated with the following organizations:

American Industrial Hygiene Association
National Organization and the Metropolitan Chapter - Member

American Public Health Association
Member

Mr. Petrick and Mr. Ferry are associated with the following organizations:

Metropolitan Chapter of the American Industrial Hygiene Association
Member

AmL
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SUMMARY FOR 1946 OF WORK OF INDUSTRIAL HEALTH SECTION

Surveys conducted by Industrial Hygiene Laboratory	40
Analyses made in Laboratory	2,494
Home Office Inspections	62
Travel Credit	\$2,405.26
Special inquiries handled by mail or conference	675
(An increase of approximately 125% over 1945)	
Literature sent (Industrial Health Series)	3,684
Publications completely revised	2
Publications slightly revised	1
Leaflets revised	2
Other publications written and published	3
Conferences in Home Office	80
Field visits to Groups	14
Other field visits	36
Meetings attended by staff	61

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Dr. Lanza has been made a member of the Board of Trustees of the Trudeau Sanatorium and Foundation.

A ventilation engineer is now available in the Laboratory of Industrial Hygiene for consultation in planning new ventilation and exhaust systems and necessary revisions of those in use.

We have secured the services of another chemist in the Laboratory.

The following are a few of the more outstanding research jobs conducted by the Laboratory.

The Rochester Gas and Electric Company was visited by Mr. Fehnel to outline and supervise a program for the study of atmospheric dusts and gas pollution. The company is planning to erect a new steam electric generating plant which will take about two years to build. The Metropolitan is to make studies each season of the year of the normal dust counts and supervise the study of the dust fall and sulfur dioxide concentrations in the City of Rochester before the erection of the plant. After completion of the plant and when it is in production, we are to supervise check studies to see if the plant causes any pollution of the air which will be detrimental to the health of people living in the vicinity of the plant. The Metropolitan was asked to do this work by the Rochester Gas Company on the advice of the Republic Steel Corporation for whom similar work has been done.

A study was made of the possible exposure of employees to hydrogen fluoride generated by the addition of sodium fluoride to molten steel when pouring rim heat. The study was made over a prolonged period to determine the extent of the exposure of employees before this method of making steel was put into operation. Recently a strike was called at the Ford Motor Company due to complaints of employees who had been exposed to the irritating fumes of hydrogen fluoride generated at a similar process. It is interesting to note that before any new process is developed or any new materials are used in the plants of the Republic Steel Corporation, the company requests the Metropolitan to make a study to determine the existence of any possible health hazards.

Tests were conducted on certain days of the week for three consecutive weeks in the carding room of the Manville, New Jersey plant of the Johns-

Manville Corporation to determine the dust pollution that could be expected when carding, and spinning four different mixtures of asbestos and cotton. This is another example of tests being made by the Industrial Hygiene Laboratory of contemplated processes in the plants of our Group policyholders before being put in production to eliminate any potential health hazards.

Triethylene Glycol Study

In certain areas in the new building (Unit 1) the air supplied to the sections is treated with triethylene glycol as a method of air sterilization. We have taken air samples in the sections with the impingers and absorption tubes and made quantitative triethylene glycol determinations. Considerable work was done in checking and adapting the analytical method used. By adapting a special filter, we were able to use our Electrophotometer in the analytical work in these determinations.

The results of our study to date indicate that the concentration of triethylene glycol vapors in the atmosphere is not at the optimum quantity and, therefore, no positive results are indicated nor can they be expected until the triethylene glycol concentration is increased until it reaches the bactericidal or killing range.