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Connecticut Health Bulletin

"For a Clean State and a Healthy People"

Vol. 50

May, 1936

No. 5

**In Recognition
of its
Fiftieth Anniversary**

Stanley H. Osborn, M. D., C. P. H., Commissioner

Issued Monthly by the
State Department of Health
HARTFORD

Occupational Diseases

REPORT FOR APRIL, 1936

Alkalis		Metal polish	
Dermatitis	2	Dermatitis	1
Carbon Monoxide Poisoning	1	Poisonous plants	
Cause not definitely determined		Dermatitis	1
Dermatitis	2	Resins, Synthetic Molding	
Dust—Brass foundry		Dermatitis	1
Silicosis	1	Soap powder and solutions	
Dust—Redwood		Dermatitis	2
Dermatitis	2	Solvents (carbon tetra-chloride, benzene, etc., in spotting)	
Dust—Tobacco		Systemic poisoning	1
Dermatitis	4	Solvents—gasoline	
Friction and Tension		Dermatitis	1
Sub-patella bursitis	1		
Felon	1	Total	21

SPRING HOUSE CLEANING AN OCCUPATIONAL DISEASE PREVENTIVE

An important step in the elimination of dust hazards in any industrial plant is periodic and effective house cleaning. This may be best accomplished by means of industrial vacuum cleaning. In this manner, dust accumulations over a period of time on beams, rafters, girders, walls, floors, and near dust producing machines can be expeditiously removed without undue exposure to the clean-up crew. This cleaning should be done at night or over the week-end so that dust which is being disturbed will not be inhaled by all of the workers in the plant. The clean-up crew should be provided with respirators during the vacuum cleaning as they will be climbing along beams and girders having heavy dust accumulations and will of course disturb this dust.

In many plants high pressure air is sometimes used to clean benches, dust producing machines, walls and windows. Workers even clean their clothes in this manner, before leaving the plant. Foremen should instruct their men to discontinue this practice. It not only costs money to compress air, but the dislodged dust is **not** removed from the working environment; it is blown about and settles in another part of the room or plant.

Sometimes flushing with water is effective but machines have to be covered to prevent them from rusting and many times it is difficult to remove the muddy water. Industrial vacuum cleaning is a most effective means for plant house cleaning.



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SPECIAL ARTICLES

United States Public Health Service and Co-operative Health Work

Bovine Tuberculosis in Man

Registered Nurses And Trained Attendants

Hospitals Licensed in Connecticut

Toxicity of Carbon Tetrachloride

Successful Meeting—Laboratory Association

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health service. All public health workers, to use a common expression, are at present being placed upon the spot. A wonderful opportunity is at present available to all public health administrators to demonstrate what can now be accomplished by the practical application of the principles of sanitary science and health. This opportunity carries along with it a grave responsibility, the success of future development will depend largely upon the conduct of the present day public health workers. Every public health worker, regardless of his or her status, has definite duties to perform and if these duties are not performed properly, the whole public health program will be correspondingly retarded. Therefore, it is hoped that every public health worker in this state will realize fully his or her responsibility and will perform the duties assigned with such diligence and enthusiasm that those who made this opportunity possible may veritably acclaim, "Well done, thou good and faithful servant." Let everyone be constantly imbued with the idea that honest public health effort is never futile and ultimately will achieve worthwhile results.

HEALTH RADIO TALKS—JULY AND AUGUST CONNECTICUT STATE DEPARTMENT OF HEALTH

Station WTIC — Thursdays, 2:15-2:20 (DST)

- July 2—Keep Food Cold—Earle K. Borman, Asst. Director, Bureau of Laboratories
- 9—What Goes on at a Summer Round-up—A. Elizabeth Ingraham
- 16—First Aid in Case of Need—Millard Knowlton
- 23—Clean Food for the Public—Warren J. Scott
- 30—Raw vs. Cooked Food—Elizabeth C. Nickerson
- Aug. 6—Midsummer Madness—James M. Cunningham
- 13—The Public Health Nurse in Vacation Time—Elizabeth S. Taylor
- 20—By All Manners and Means—William C. Welling
- 27—Industrial Ventilation—B. F. Postman, Industrial Hygiene Engineer, Bureau of Occupational Diseases



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SPECIAL ARTICLES

Accidental Deaths in Connecticut in 1935
Progress and Deficiencies in Sewage Treatment in Connecticut

Connecticut State Cancer Program

The Typhoid Carrier Problem in Connecticut
Committee on Public Health of the Connecticut State Medical Society—Statement on Sanitary Districts

The Public Health Nurse and Her Board Member

Person Practicing Illegally Convicted
Sub-registrars in Connecticut

Physicians Licensed to Practice Medicine and Surgery

Dust Control Equipment Requires Attention
Laboratory Lacks Sufficient Funds for Mailing Reports

Chart—State Cancer Program

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Occupational Diseases

REPORT FOR JUNE, 1936

Alkalis			Infectious Organisms	
Dermatitis	1		Anthrax	
Benzene			Impetigo	
Systemic Poisoning	1		Mercury	
Cause not definitely known			Systemic Poisoning	
Clothes sorting			Instrument Manufacturing	1
Dermatitis	1		Hat or Hatters' fur manufac-	
Paint manufacturing			turing	1
Dermatitis	1		Poisonous Plants	
Printing			Dermatitis	1
Dermatitis	1		Resins and moisture	
Chemicals			Paper Manufacturing	
Poisoning	1		Dermatitis	1
Chemicals—Hair dressing solution			Soap Solutions	
Dermatitis	2		Dermatitis	1
Cutting Oils and compounds			Solvents—Gasoline	
Dermatitis	5		Dermatitis	1
Cyanide—Case hardening			Temperature Extremes	
Dermatitis	1		Frost bite	1
Dust, foundry			Total	8
Silicosis	4			
Grinding Operations (wet)				
Dermatitis	1			

DUST CONTROL EQUIPMENT REQUIRES ATTENTION

Provision of local exhaust to remove dust at its source is one of the most important factors in the protection of the health of those exposed to dusts. Excessive exposure definitely affects health to the extent of conditions varying from acute or chronic effects of the upper respiratory tract, systemic poisoning and pathological changes resulting in disabling lung fibrosis.

In order to be effective in keeping dust concentrations at low levels, all exhaust systems must be regularly inspected and maintained. In addition to this, there should be a quarterly, more meticulous inspection. Assuming that spring house cleaning is over and dust accumulations on walls, beams, girders and around machines have been removed, the various sections of the dust handling equipment should be inspected—hoods over wheels, piping, elbows, junction points, fans, fan wheels, motors, controls and belts. Cyclone or cloth-screen type dust arresters should not be used as storage space for collected materials. Effective and regular disposal of collected dust should be entrusted to the attention of one or more specifically instructed individuals.

A well designed, properly maintained dust exhaust system is an insurance against the development of occupational disease in those employed in industrial plants which are dusty as a result of their particular processes or have become so as a result of poor housekeeping.

For more detailed information relative to medical, chemical or ventilation factors pertaining to preventive measures in occupational disease control, communicate with the Bureau of Occupational Diseases, Connecticut State Department of Health.



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September, 1936

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SPECIAL ARTICLES

The Narcotic Drug Problem In Connecticut

Another Treatment Station For Syphilis Established

Attorney General's Opinion on Practicing the Healing Arts While Summering In Connecticut

Attorney General's Opinion on the Use of the x-ray by Chiropractic Physicians

Midsummer Madness (radio)

Practitioners Licensed

Regulations for Wells in New Haven

Hartford Regulations for Cleansing of Utensils at Public Eating and Drinking Places

Harvard Symposium on the Environment and its Effect on Man

National Institute of Health to Study Fungous Diseases

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December, 1936

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SPECIAL ARTICLES

Progress Report of Bureau of Mental Hygiene

Water Works Emergencies

Control of Dust Exposures in Connecticut Populations, State, Counties and Towns as of July, 1936

Lead Poisoning from Drinking Water

Broadcasting Schedule for 1936-1937

Clinical Thermometers Legal for Sale in Connecticut

Undulant Fever Contracted Far Away From Home

Control of Health Hazards From Organic Solvents

Evaluation of Serodiagnostic Tests for Syphilis

Index of Volume 50, 1936, Monthly Health Bulletin

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CONTROL OF DUST EXPOSURES IN CONNECTICUT

Albert S. Gray, M. D.

Exposure to dust of the type which produces pneumoconiosis presents the most serious single occupational disease hazard in the state. The Bureau of Occupational Diseases, early in its existence, classified Connecticut industry and listed the potential health hazards which may occur in each. Of the 96 industrial classifications, 41 were found to include such dust exposures.

Based on a general knowledge of the dust problem, surveys were conducted in plants presenting the most important problems in point of severity and of number of workers exposed. Dust determinations were made of operations and equipment which contributed to the dust content of the working environment. From this work much fundamental information was obtained on the dust exposures in the industries of the state, and dust control measures were instituted where necessary.

Factors in Pneumoconiosis

Four factors determine whether a dust exposure may produce pneumoconiosis: (1) the particle size, (2) the composition of the dust, both chemical and mineralogical, (3) the concentration of the dust in the air, and (4) the duration of exposure.

In order for dust to enter the inner recesses of the lungs and produce this disease, it must be smaller than 10 microns ($1/2500$ inch) in its longest dimension. In fact, most of the dust found in the alveoli of the lungs is less than 5 microns in size, though asbestos dust seems to be an exception as fibers even 300 microns in length penetrate into this portion of the lungs.

The dust which causes development of silicosis, a type of pneumoconiosis, on shortest exposure is that containing high percentages of free silica in the form of quartz. A number of exceptionally rapid cases have resulted where alkaline dust has been mixed with the quartz, but this is a comparatively limited exposure. Certain other types of dusts than those of high free silica content may cause fibrosis of sufficient extent to lead to disability. Asbestos, which contains but little free silica, is an example of such a dust.

In general, the concentration of dust necessary to cause silicosis is dependent upon its content of free silica. Extensive investigations of the effect of various concentrations of granite dust, for example, indicate that this dust hazard is well under control if the atmospheric concentration is less than 9 million particles per cubic foot.

The duration of exposure required to produce disabling silicosis depends on the type of dust and the concentration breathed. It usually requires several years even under the most severe conditions.

To determine the extent of potential dust hazards in the causation of silicosis, these four factors must be considered. This requires more than cursory inspection. Furthermore, control measures which are to be instituted must be based both on a general knowledge of these four factors and on specific information concerning them found at the particular operation or plant being investigated.

Dust Surveys By the Bureau

During the last few years, the dust problem has assumed such importance that the dust control activities of the bureau have greatly increased. As an indication of the diversity of dust exposures investigated by the bureau, fifty-four different types of industries or operations have been surveyed.

In the fiscal year ending June 1936, in addition to the many demands placed on the bureau for a wide variety of services in relation to hazardous conditions in industry, some eighty-three surveys were made of dust exposures alone. In the present year, with somewhat augmented personnel, the number of dust surveys will be more than doubled.

The survey of the foundry industry in the state which is at present in progress is an example of the operating procedure of the bureau. Briefly, the bureau first conducted a number of complete studies of foundry dust conditions in order to become thoroughly familiar with the extent of the dust exposures presented by specific operations and types of equipment. The conduct of such studies has been extended over the last three or four years.

Plans were then made for a complete survey of the entire foundry industry. A list was compiled of all foundries in the state, both those operating as the principal part of the business and also those which are merely one department in connection with other manufacturing operations. Forms were prepared containing items on materials, equipment, operations and general conditions which contributed to the dust exposure. This form was predicated upon an extensive knowledge of the industry and its dust problem.

Since dust control in the foundry industry is primarily a matter of provision of dust collection equipment, institution of good house-keeping measures, provision of adequate ventilation, affording proper respiratory protection and the like—all measures which come under the responsibility of management—it was considered desirable to discuss the bureau's program with the foundrymen of the state. The three-fold purpose of this survey was outlined before a meeting of this group as follows: (1) to obtain complete information of dust conditions in this industry, (2) to conduct an intensive educational program concerning the dust problem, and (3) to control the dust conditions which present health hazards.

At the present time more than half the foundries of the state have been completely surveyed. In addition to obtaining the facts included in the survey form, the representatives of this bureau have thoroughly discussed the silicosis problem at each of the foundries surveyed and have pointed out those excessive dust exposures which are evident on general observation. Recommendations for control of such conditions are presented at the time of the survey.

At the conclusion of the foundry survey the facts secured will be used for the development of adequate control measures. The most practicable control measures for each individual operation can then be applied to the end that the dust problem in this industry will be met as rapidly and economically as possible. It is an encouraging note that even before the completion of this survey, there is much activity among the foundries in clearing up dusty conditions which have been disclosed during the course of the survey.

In addition to necessary investigations of health hazards in particular plants which the bureau must conduct as a part of its regular program, surveys of other entire industries involving dust exposures will be undertaken. It is anticipated that such an orderly, well balanced procedure will continue to be effective in the further control of dust problems encountered in Connecticut.

POPULATIONS STATE, COUNTIES AND TOWNS, AS OF JULY 1, 1936

For many years the so-called "Arithmetic Method" has been used in Connecticut for estimating the population. This method assumes that any increase or decrease between two census dates, reduced to an annual increase or decrease, is projected forward by the annual amount from year to year until the next census. This is called "extrapolation".

This is the method finally decided upon for estimating the populations for 1936; but as another method of estimation has been studied, and which yielded some interesting results, a brief discussion of this other method is given.

According to legislation passed at the 1935 session of the General Assembly relating to assistance for the aged, a list of all persons between the ages of twenty-one and sixty, inclusive, residing in each town on the first day of October, shall be prepared each year and lodged in the office of the town clerk. These lists, and the numbers indicated thereby, were studied as a method of population estimation. The procedure is described below for the state as a whole.

1930 Census, April 1, Connecticut Total Population	1,606,903
Ages 21-60	884,222
Age Group 21-60, as Per Cent of Total	51.9149

It is now assumed that this per cent has remained constant since 1930 and is true in 1935. Referring now to the numbers reported in the tax lists, this number was 894,231. This number is 51.9149 per cent of 1,722,494, which might be considered as the population estimate not for 1935, but for 1936, as the tax lists for 1935 receive additions up to April, 1936. The arithmetic method gives 1,722,797 as the estimated population for 1935. This is only 303 more than the tax list enumeration. It remains to show why this should be carried over as the 1936 estimate.

After the census of 1920 was taken, it was necessary to estimate populations up to 1930. When the census of 1930 was taken it was a simple matter to discover the error in the estimate. The table below sets this forth:

Estimated Populations, 1920-1930, as of July 1, in Each Year

Annual Increase	27,439
1926	1,558,996
1927	1,586,435
1928	1,613,874
1929	1,641,313
1930	1,668,752
Subtract two annual increases	54,878
	1,613,874

Actual census of 1930, as of July 1, 1930, 1,613,422.