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NEWSLETTER

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FEATURES

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REMOTE CONTROL

Nuisance problems pertaining to outdoor atmospheric pollution are being shunted more and more onto the track of the industrial hygienist. Investigation of these problems often involves unique control measures.

An interesting means of control was applied recently in curbing a nuisance created by a plant manufacturing rock wool for insulation. The complaint embodied the fact that excessive amounts of rock-wool fibers were escaping from the stack and being deposited on homes and lawns of residents in the surrounding area.

At the time of the initial complaint, the rock wool was being blown into a large settling chamber. Periodically the process was stopped and the wool was removed manually from the chamber. During the process, and when the wool was being removed from the chamber, large amounts of fiber were blown out of the exhaust stack into the atmosphere. The first control measure was the installation of a perforated conveyor belt, exhausted from the bottom, which ran through the settling chamber. The rock wool fibers were drawn onto the belt, forming a filter pad and collecting many of the shorter fibers which would have escaped up the stack. This means of control helped considerably but did not completely solve the problem.

Slag, used in making the wool, was trucked in from a local source. This slag produced a short-fibered wool. Slag, obtainable from a more distant source in car-load quantities, and capable of producing long-fibered wool, was not used because of a minimum of storage space. As the cars could not always be unloaded upon arrival, freight penalties were involved and its use was prohibitive.

The company installed an overhead conveyor so that the slag could be piled higher in the storage area. Incoming cars of slag could then be unloaded immediately. Local trucking of short-fiber producing slag was discontinued in preference to freighting the long-fiber producing slag, which incidentally made a superior insulation.

Thus, an over-head conveyor system indirectly solved a difficult nuisance problem.—**Wisconsin Industrial Hygiene Division.**

Age: Help or Hindrance

Edward J. Stieglitz, M.D., F. A. C. P.

All those concerned with industrial health will have to become interested in the problems of senescence, whether they wish to or not. The problems created by an aging population are here; they are rapidly becoming acutely urgent. Procrastination, wishful thinking that some one else will solve the problems, and delusional denial that a difficult and unprecedented situation exists have already continued too long (*1*). Exhaustive (and exhausting) statistics are unnecessary for demonstration of the urgency of concern over the place of the older worker. It should suffice to point out that in the census decade from 1930 to 1940 the population of the United States increased 7.2 percent, but that the numbers of persons aged 60 or more increased 35 percent, or at nearly five times the relative rate. Furthermore, the median age of our population rose from 26.4 years in 1930 to 28.9 in 1940.

An increase of 2½ years within a single decade constitutes handwriting on the wall that must not be ignored. It has been estimated that in another 40 years more than 40 percent of our population will be over 40 years old. Today there are approximately 11 million persons aged 65 or more in the United States. Average life expectancy has risen from 47 in 1900 to nearly 67 today, or a 20-year increment in half a century.

Longevity is here. It will increase. What does this mean to industry? In brief it means that industry must either find employment for older men and women *appropriate to their capacities* or carry a major share of the rapidly growing burden of supporting them in tragically wasteful idleness, either through private pension funds, or worse, through crippling taxation. The wise choice should be obvious. Effective application of such a decision, however, is dependent on understanding the changes in capacities, both physical and mental, which are consequent to aging. It therefore becomes an obligation of industrial medicine to study senescence (both normal and abnormal) so that it may be in a position to guide personnel policies in such essential questions as placement and retirement. This demands an understanding of the biology of senescence, clinical geriatric medicine (*2*), and sociologic gerontology (*3*). Medical science is challenged by the problems of retarding depreciation and obsolescence of the human units of society so essential to a balanced and prosperous economy.

Regular physical examinations are highly recommended by health authorities for plant executives as well as workers to assure steady occupation at tasks suited to their physical and mental abilities.

To age is to change. Aging begins at conception and ends only with death. Aging is part of living; it is the fourth dimensional element, time, in the processes of life. The arrest of aging is an impossibility, a myth, begotten of wishful thinking. However, contrary to the usual assumption, aging is *not* all decline. As some capacities depreciate, others are enhanced. Aging is continuous, but at greatly variable rates. Different individuals change with aging at different rates; the aging of a single individual varies in different structures and functions and at different times in the life span. No one person is of the same biologic age throughout, and no two persons are necessarily of comparable age in functional capacity, although their chronological age may be identical. These elements of asymmetry and variability in aging change emphasize the lack of correlation between chronologic age and present and future work competence. As chronologic age and biologic age are not the same (except coincidentally), arbitrary retirement based upon chronologic age alone is obviously absurd (*4*).

It is true that certain capacities decline with normal senescence. But it is equally true that others improve upon attainment of full maturation. As speed declines, skill increases. Enhanced judgment compensates for slower reaction responses; lessened muscular strength is balanced by greater endurance for the long steady grind. Memory is only slightly impaired by aging if it is exercised; it becomes selective. Intense ambition and restlessness are replaced by loyalty and a growing sense of responsibility. It is true that aging does not guarantee the development of judgment; the young fool will become an old fool if he lives long enough. Near vision depreciates, but the ability to comprehend and use what is seen increases with experience. Useful seeing is more than perception; it involves understanding.

The older worker's balance sheet includes on the liability side of the ledger such factors as (1) increased frequency of chronic progressive disease, (2) diminishing muscular strength, (3) reduced speed of reactions, and (4) greater time loss following accidents because of slower repair. Counterbalancing these depreciations are the assets of (1) reduced absenteeism, (2) greater loyalty, (3) increased skill, reduced accident frequency, and (4) enhanced judgment derived from experience (*4*). Dr. Ross McFarland has emphasized the fact that older workers are particularly valuable in situations where supervision is minimal (*5*).

The charge of fixation and resentment to change has been laid to involution due to aging. However, personality fixation is more directly associated with the habit patterns of life than with the length of life. Constant repetition of the same procedure (whether physical or mental) for many years creates and fixes the *habit* of rigidity. If an individual changes his occupation, viewpoints, responsibilities, and techniques from time to time, flexibility and the ability to quickly learn new techniques and disciplines are retained long into the seventh and eighth decades.

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The Role of Industrial Hygiene Agencies in Air Pollution Control

H. G. Dyktor, Division of Air Pollution Control, City of Cleveland

The object of this presentation is not to induce official industrial hygienists to rush headlong into the field of air pollution control but rather to accept the challenge when offered. And the challenge is being offered to quite a number of official agencies.

There has been a great deal of publicity about air pollution, much of it of the sensational type, with very little understanding of the problem and a scant knowledge of the few available facts. Progress is not made by crusaders but by unravellers of problems. It will be necessary, therefore, to sketch very briefly the beginning of the present national movement for air pollution control, in order to appreciate the difficulties and observe trends for their solution.

Generally speaking, until about 2 or 3 years ago, air-pollution control was merely smoke abatement. It has been practiced for decades, principally in England and in the United States. Here it suffered numerous ups and downs for many reasons, mainly because of punitive legislation, lack of funds and competent personnel, lack of sustained support by the community, and campaign tactics that often promised "overnight miracles." This led in many instances to unsatisfactory results and sparked a spontaneous and thereafter organized demand by the communities for relief from the undesirable consequences of air pollution.

This demand, in turn, aroused the interest of the "fourth estate" which capitalized, and still does, on its news value, much in the manner I have stated before. The unfortunate part of this publicity is that it does more harm than good, because when the community finally realizes that the threatened dire results are not materializing, its interest in air pollution control is likely to wane and lead eventually to an abandonment of the control program. It must be understood at this point however, that I am not opposed to all forms of publicity, even of the critical type, or deny that under certain conditions, air pollution cannot, in isolated instances, be an actual danger to health and life of the individual.

In the meantime, municipal administrations have not been idle in the face of the people's demand for a decent living environment. They have realized that the old approach, based on abatement of smoke only, backed by police power, was inadequate to meet the problem, and they are now in the process of expanding this approach to include other types of pollutants. Cleveland was one of the earliest cities to adopt this change of thought.

The present difficulty in this expanded concept of environmental air pollution lies in that we know but little of its effect on human beings, animals and property and, therefore, cannot properly assess its severity. Because of the past insistence on smoke abatement alone, research on the other phases of air pollution has been neglected, with very few specific exceptions, such as for instance, occupational exposure. This neglect has led to a diversity of opinion as to cause and effect, which is very unfortunate at present, but this problem will be resolved in due course, as it has been the case with most other like problems. However, we can be agreed on the proposition that, in addition to a few minor sources, there are two main sources of air pollution, namely:

(1) From the incomplete combustion of fuel. The end results are smoke, soot, fly ash, cinders, etc. This is the concern of smoke abatement.

(2) From industrial operations. The emissions are fumes, vapors, mists, and dusts of a very large variety of substances. These are, in the main, of the nuisance type.

It is my opinion that industrial operations are potentially much more important than smoke problems in the air pollution control program of any industrial area. While I do not wish to minimize the importance of smoke, yet it is more amenable to regulation, and a determined effort can reduce it to a tolerable level within the space of a few years. However, from the psychological viewpoint, and it is one that must not be brushed aside when dealing with different segments of a community, it is quite important because it is so visible. Nevertheless, basic considerations must not be allowed to play second fiddle to popular clamor.

I consider that emissions into the general atmosphere from industrial operations are fundamentally more important because they present:

(1) The possibility of a hazard to health and life.

(2) The difficulty of proper assessment and tracing pollutant to source.

(3) An economic problem through large expenditure for appropriate controls, potential changes in production methods and possible experimentation.

(4) The inability, in rare instances, of devising any effective controls or changes, short of reducing or arresting production.

Points 2, 3, and 4 are really beyond the scope of this presentation, although you will realize that difficult technical problems and some perplexing legalities are involved.

Point 1, namely, that emission from an industrial source presents a possibility of a hazard to health and life, is a matter that can be discussed more fully. In the present state of knowledge, there are hardly any criteria by which we can judge whether a pollutant can affect the well-being of an individual. The concentration of these pollutants is generally but a small fraction of the known toxicological yardsticks and even in these very low ranges they cause physiological reactions. There is definite need for medical research and some reliable statistics. In this connection you may wish to know what the Committee on Atmospheric Pollution said at the Ninth Annual Congress on Industrial Health, American Medical Association, held at Chicago on January 18 and 19, 1949. Among the several statements, three are particularly appropriate:

(1) There is lack of scientific evidence aside from a few specific but dramatic instances that air pollution in-

health. However, air pollution has ...ic health implications when the ...finition of "health" expressed by the ...orld Health Organization is accepted, ...mely, that "health is a state of com...ete physical, mental, and social well-...ing and not merely the absence of dis-...ease or infirmity."

(2) Air pollution in its effects is divisible in two types: Those which affect the health of the individual and those which are not known to have such an effect, and air pollutants are predominantly of the latter type in our present state of knowledge.

(3) There are concentrations of air pollutants which, while they may not be actually health hazards, are nevertheless intolerably annoying and disagreeable.

I am of the opinion that these are fundamental statements, and, if properly publicized, will do much to allay popular anxiety on this subject. It should have a wholesome effect in refuting sensation seekers.

Now, you may well ask what all this has to do with the role which official industrial hygiene agencies should play in any air pollution program.

The industrial hygienist is, first of all, the only individual at present, who understands and has experience in problems connected with air contamination. He understands and has experience with the consequences of emissions from industrial operations. He knows industries and industrialists and has their confidence, acquired over a period of many years. He has developed a philosophy of education, cooperation, and persuasion which makes him outstanding among official agencies in getting achievements without invoking his police powers.

All of the foregoing virtues make the industrial hygienist the man who can meet the industrialist on a factual basis. It is no longer possible today to accuse any plant in general terms of emitting a pollutant in excessive quantities, especially when it is impossible as yet to determine how much is "excessive." The industrialist of today wants facts and not unsubstantiated assertions.

The industrial hygienist is the only one who has training and experience in sampling, analyzing, and evaluating a wide range of air-borne contaminants. This is a very difficult specialization as it involves the knowledge of many scientific disciplines which are not in the curriculum of others. In addition the industrial hygienist is provided with the necessary instruments and equipment, knows their strong features as well as their shortcomings, and is well trained in their use and application.

In support of my contention that the industrial hygienist is presently the most competent individual to direct a program of air pollution control, the pattern set by the Donora investigation will serve as an example. Local authorities turned to the United States Public Health Service for aid, and it was the Division of Industrial Hygiene which received the directive to conduct the investigation, in cooperation with the Pennsylvania State Department of Health which, in turn, delegated its responsibility to the Bureau of Industrial Hygiene. Along the same line of thought, the plant involved in this investigation obtained the services of the Industrial Hygiene Foundation of the Mellon Institute.

The foregoing does not mean to imply that in an air pollution control program there is no need for combustion and other engineers, but it does mean that the industrial hygienist is generally regarded as the one who has the fundamental know-how to tackle this problem. This is admitted time and again when difficulties with air pollution problems are submitted to a division or bureau of industrial hygiene for a solution. There is no other agency in any government capable of undertaking this task; other agencies may wish to but would have to go through a laborious, costly, and time-consuming process to gain the same competence. Why do it when there is already a proficient unit available? The answer is obvious.

Our Cleveland organization and its experience during the past 2 years in a closely knit community has convinced me that we are on the right track. We have been very fortunate in succeeding in combining in one division all the activities dealing with various phases of air pollution and which were scattered until the formation of the present Division of Air Pollution Control in the Department of Public Health and Welfare. This was done with the full cooperation of the commissioners of health and of buildings who had previous jurisdiction. Since the activities of industrial hygiene, smoke abatement, and industrial nuisances, together with an effective laboratory, have been integrated into one single division, results have been achieved which otherwise could not have been. I am very happy that my former industrial hygiene staff is still with me because the knowledge and experience they have contributed has been of immense value in the solution of some very knotty problems. Other members of my staff, qualified though they are in special phases, could not have contributed much in the short time that is usually available for the solution of a pressing problem.

More and more municipalities are interested in the way we are organized and operate but, for obvious reasons, very few have even the nucleus of an industrial hygiene activity. There is no doubt in my mind that the responsibility for air pollution control should be delegated to the industrial hygienists on the local level, whether it be a city or a county. Of course, this will call for an expanded staff and laboratory which is often a difficult proposition to effectuate, but you will find that funds will be more readily forthcoming when the entire community is involved rather than just one segment of it, however important it may be. It will also call for a slight reorientation of thought and attitude on the part of the industrial hygienist. He has learned by experience that his dealings with industry on intramural matters must be kept in strict confidence, and he must continue to do so in this respect. However, neighborhood nuisances and pollution arising from any sources are public matter and may be publicly discussed, although great discretion and a sense of fairness must be displayed by the official.

In cities where a smoke-abatement unit is already functioning satisfactorily and where an amalgamation is not feasible, the industrial hygiene unit should accept responsibility for the control of emissions from industrial operations and develop a close cooperation with the smoke abatement unit.

Since there are very few cities that include a bureau of industrial hygiene in their administration, it is indicated that the State bureaus will have to as-

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WORKERS' TEETH SHOW BENEFITS OF SCHOOL DENTAL PROGRAMS

Edward R. Aston, D. D. S.

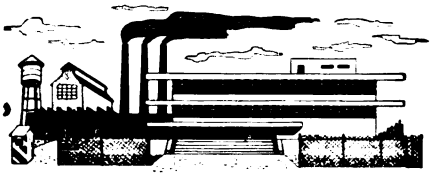
The benefits of an efficient school dental health program have been demonstrated by dental studies of industrial workers in Pennsylvania. Foremost among the advocates of such programs is the Council on Dental Health of the Pennsylvania State Dental Society, which recently held a 2-day conference on the subject of *Children's Dentistry—Can They Get It.* One of the conclusions reached by the section discussing "Experimental and Demonstrational Projects Relating to Dentistry for Children" was that a study should be made of the amount of tooth loss in young adults employed in industry who had lived continuously in a community where they had enjoyed the advantages of a children's dental health program.[1]

The Dental Section of the Industrial Hygiene Division, Pennsylvania Department of Health, has been conducting dental health studies among employees of selected industries in various sections of the State. Although it has not been possible to cover the entire State, enough examinations have been conducted to arrive at some conclusion regarding the dental health of the various groups selected. As tabulations of several male and female age groups have been made, it has been possible to determine the status of dental health in an area where there has been an established school dental health program as compared to another where such a program has not been in effect. A tabulation of some of these findings, in the age group of 25 and less, is shown below. The number of dental defects per industrial employee under 26 years of age is shown for plant A (where no children's dental health program is in effect in the community) and compared to plant B (where such a program is in effect):

Sex	Missing teeth		Teeth to be extracted		Cavities	
	A	B	A	B	A	B
Male	6.1	4.4	0.7	0.2	1.9	1.3
Female	6.5	3.9	1.0	.05	3.1	1.3

From the foregoing table it will be noted that defects per employee examined were fewer in the group which had the advantage of a children's dental health program.

Existing experimental and demonstration projects relating to dentistry for children can well be evaluated by examination of industrial workers who graduate from these programs and are absorbed by industry. There are more than 30 million people in the United States employed by industry. Of this total the young adult group comprises a large percentage. Since many years of effort have been contributed by members of the dental profession and by certain lay groups in establishing and conducting dental health programs for children, more effort should be exerted by these same groups to establish programs for continued dental service in industry.



Harold Hillenbrand, secretary of the American Dental Association, has suggested that wider application should be made of the principle that "Dental health must never become a temporary privilege available only to the young, to be withdrawn as the years advance. Dental health must be the privilege of all throughout the whole of life."

What more fertile field could be found to provide such a privilege than in industry where not only those employed would benefit, but, by combining an educational program with the diagnostic, its effects would be felt in the home and community as well. During my association with many of the 18,000 industries in Pennsylvania, I have observed that only on rare occasions has management or labor failed to display interest in dental health. I should like to see the dental profession take an equal interest in the development of oral health programs in industry.

[1] *J. Penn. State Dental Soc.*, vol. 16, February 1949.

SAFETY CONFERENCE MEETS IN BOSTON

The Twenty-eighth Annual Massachusetts Safety Conference met in Boston March 14–15. The industrial hygiene session was sponsored by the Division of Occupational Hygiene, Massachusetts Department of Labor and Industries. Subjects and speakers were: "Lead Poisoning, Industrial and Otherwise"—Manfred Bowditch, Director of Health and Safety, Lead Industries Association; "The Problem of Atmospheric Pollution"—Dr. H. H. Schrenk, U. S. P. H. S.; and "Precautionary Measures for the Protection of Personnel Handling Radio Isotopes"—D. W. Atchley, Sales Manager, Tracerlab, Inc.

The session sponsored by the Massachusetts Organization for Industrial Nursing had for its theme: Conserve the Health and Safety of the Worker—Increase Production—Reduce Cost.

Catherine R. Dempsey, R. N., Simplex Wire & Cable Co., was chairman of this panel. The discussion leader was Margaret Glennon, R. N., H. K. Porter, Inc., and speakers were Marguerite Rae, R. N., Hobbs Manufacturing Co.; Irene Eldred, R. N., Pepperell Manufacturing Co.; and Edith Forsander, R. N., National Blank Book Co.

RECOMMENDED READING

Brumm, J. M.: Health Programs in Collective Bargaining. *University of Illinois Bulletin (Institute of Labor and Industrial Relations)* **46:** 3–22 (February) 1949.

Gardner, K. D.: The nervous woman in industry. *California Medicine* **69:** 422–424 (December) 1948.

Line, W.: Mental hygiene in industry. *Psychiatry* **11:** 367–370 (November) 1948.

Thompson, A. S., and Goad, R. O.: What workers want from their jobs. *Employment Security Review* **16:** 11–13 (February) 1949.

STATE NEWS

LOS ANGELES

Air Pollution.—Since the activities of the County Atmospheric Pollution Control Bureau are mainly concerned with air contaminants outside of industrial plants, and our division is concerned with air contamination creating hazards within such plants, it was felt desirable to establish coordination between this division and the county bureau. A conference was therefore arranged, which was also participated in by the industrial hygiene agencies of the County and State health departments.

An informal agreement was reached that each agency would notify the other when recommendations were contemplated which might affect the program of that agency. This is particularly true when control of external air pollution is accomplished by a system which might at the same time be used for control of dust or other air contaminants inside a plant, or vice versa. An instance of this sort occurred in a plant recently in which this division recommended vented hoods over heat treating pots to remove irritating smoke and gases. Arrangements were made for consultation by the management with the County Air Pollution Bureau regarding an approved system for discharge of vented matter.

MASSACHUSETTS

Conferences.—Members of the staff of the Massachusetts Division of Occupational Hygiene participated in numerous panel discussions during the first annual Massachusetts Health Conference, which was held at the Hotel Statler, Boston, on February 19 and 20. With the objective, "Means of Improving Health in Massachusetts During the Next 5 Years," the discussions of Statewide public health programs were headed by outstanding spokesmen in their respective fields. Mr. Arthur D. Weston of the Massachusetts Department of Public Health was chairman of the Environmental Sanitation Panel, to which Mr. John B. Skinner, Dr. Hervey B. Elkins and Mr. Harold Bavley contributed their views. Mrs. Emma S. Tousant, of the Massachusetts Department of Industrial Accidents and Dr. Daniel L. Lynch of the Massachusetts Medical Society's Committee on Industrial Health were cochairmen of the Industrial Health Panel, in which Dr. Harriet L. Hardy and Mrs. Sarah E. Almeida, R. N., participated. It was the consensus among those present that much was gained by this free interchange of opinion, toward the goal of better health for Massachusetts citizens.

To further their knowledge of one another's activities, the Division of Occupational Hygiene of the Department of Labor and Industries has been continuing its monthly meetings with the Divisions of Local Health Administration, Food and Drugs, and Sanitary Engineering, as well as the Bureau of Health Information of the Department of Public Health. The March 18 meeting was devoted to the Division of Occupational Hygiene, with Director John B. Skinner introducing Dr. Clarence C. Maloof of the medical section, Messrs. Harold Bavley and Richard I. Chamberlin of the engineering section, and Messrs. John P. Fahy and Benjamin P. W. Ruotolo of the chemical section. The topic discussed was atmospheric pollution.

MINNESOTA

Nurses.—The Ninth Annual Continuation Study for Industrial Nurses is scheduled for May 19–21, 1949, at the Center for Continuation Study, University of Minnesota. This is a cooperative project of the Division of Industrial Health, Minnesota Department of Health, the University of Minnesota and Minnesota Nurses in Industry, Inc. In addition to regular members of the University faculty, out-of-State leaders in industrial health and in labor have been invited to join the teaching staff for this study. For the duration of the study, out-of-State registrants may live at the Center at nominal rates. Complete information regarding the program can be secured by writing the Center for Continuation Study, University of Minnesota, University Campus, Minneapolis 14, Minn.

SOUTH CAROLINA

Personnel.—The Executive Committee of the State Board of Health of South Carolina appointed Dr. Harry F. Wilson, Director of the Division of Laboratories, effective February 17, 1949. Dr. Wilson will remain as Acting Director of the Division of Industrial Health of the State Board of Health in addition to the appointment mentioned above.

MERCURY POISONING

May R. Mayers, M. D.

Some rather unusual exposures to mercury have been encountered in New York State during the past year or two:

(1) In a small thermometer plant an attempt was made to distill mercury. This very unusual procedure resulted in one case of acute mercury poisoning and several less acute cases. This dangerous practice was promptly discontinued. The incident was reported in the *Monthly Review* of the division for December 1947.

(2) In a mercury redistillation plant, a hazard was found where this metal was being distilled for the purpose of cleansing it prior to packaging it, for sale. The stills in this case were connected with a pair of vacuum pumps which were exhausting directly into the workroom, thereby contaminating the atmosphere with mercury vapor. In the packaging operation, spillage of mercury and poor housekeeping accounted for excessive mercury vapor exposure in that department. Measures to correct the hazard consisted of venting the vacuum pumps to the outside and making improvements in housekeeping. The latter included covering floors and worktables with impervious material and carefully removing all spilled mercury at the end of each day.

(3) In a metallurgical laboratory, mercury was used within a treating bottle through which a high current was passed. A stream of hydrogen passed through the bottle and then ignited. A series of 45 air tests were necessary to evaluate the extent of the hazard for purposes of control.

(4) In the manufacture of a catalyst, 20 pounds of crystalline mercuric chloride were added to carbon pellets in a hopper. Though the equipment was theoretically air-tight, air tests indicated dangerous leakage of mercury into the surrounding air which had not been suspected. Recommendations made to control the leakage were promptly followed.

(5) Invention of an extremely small dry-cell battery during the war introduced a new mercury hazard in New York State which has been under close surveillance. The company recognized this as a major problem and has done

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Detroit Investigates X-Ray Shoe Fitting Machines*

Ralph G. Smith

Fluoroscopic shoe fitting machines have been the object of considerable investigation by the Detroit Bureau for the past several months in an effort to evaluate the hazards attendant to their use. Sufficient data were collected to demonstrate conclusively that these machines could be equally as hazardous as conventional sources of ionizing radiations and hence should be treated as such by an industrial hygiene bureau. Of particular significance was the observation that personnel using these machines were usually completely ignorant of both the properties and potential dangers of X-rays, a condition which at times resulted in gross exposures not often encountered in industrial X-ray applications. In view of the fact that some 200 machines were estimated to be in use in Detroit, the need for a thorough investigation was thus clearly demonstrated.

As a starting point, several machines of various manufacture were examined and measurements were made of radiation leakages at a number of locations in the vicinity of the machines. The services of local radiologists were then obtained to make measurements of the intensity of radiation in the primary beam and, in addition, to give expert opinion on the desirable operating conditions for such devices. A machine was taken to the laboratory of an X-ray equipment manufacturer, and with the aid of a radiologist and X-ray engineers, optimum operating conditions were experimentally determined.

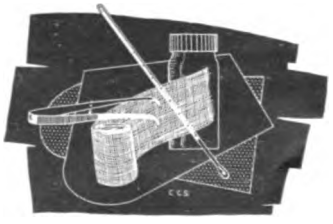
After sufficient information had been gathered, the intentions of the Bureau were made known to the Shoe Dealers' Association of Detroit and to the various manufacturers of shoe-fitting machines. After several conferences with these groups, a set of regulations governing the safe operation of X-ray shoe-fitting machines was drawn up, and copies distributed to all retail shoe stores and other interested parties.

At present the Bureau is engaged in investigating each machine in use in Detroit, and issuing orders to effect compliance with the regulations. To date approximately 50 machines have been investigated, and the remainder are to be examined as soon as possible. Each investigation includes a physical examination of the machine, measurement of the intensity of radiation in the foot chamber, and several measurements of leaking radiation. In addition, personnel are advised of the correct location of the machine and instructed in safe operating practices.

The regulations limit the intensity of radiation in the foot opening to a maximum of 12 roentgens per minute and caution customers against having more than five 5-second fittings per day, or 20 such exposures per year. Stray radiation is held to a maximum of 12.5 milliroentgens per hour at all points immediately adjacent to the machine, at the sides, rear and top, and at a distance of 10 feet forward from the customer's side. In addition a 5-second timing switch, a 1-millimeter aluminum filter and a 3-intensity starting mechanism are required, the three intensities to be labelled men, women, and children, respectively.

Of the machines thus far examined, several have had beam intensities of 70 r. per minute and an average value is about 40 r. per minute. Leaking radiation is quite variable but is generally several times greater than the limit value of 12.5 mr. per hour and occasionally runs as high as several thousand mr. per hour in very old or poorly shielded machines. A value of 21,000 mr. per hour was obtained at the side of one machine of very early vintage, and appreciable radiation was detected in an adjacent store.

Excellent cooperation with the program has been obtained from the shoe dealers thus far, and it is gratifying to note that new machines arriving in Detroit have been designed to meet the regulations and are guaranteed to do so.



*This article summarizes the work done by the Detroit Bureau of Industrial Hygiene as reported in a paper presented at the A. C. G. I. H., Detroit, April 4, 1949.

Industrial Nurses in Arkansas Receive Public Health Training

Since January 1947, there has been a training center for public health nurses in the Little Rock City Health Department. This center is cosponsored by the Arkansas State Board of Health and the Little Rock City Health Department. The training program is directed by a qualified public health nurse who devotes her full time to the project.

Through joint planning by the Director of the Division of Industrial Hygiene, Director of the Training Program, and Industrial Hygiene Committee of the Little Rock Chamber of Commerce, a plan for 2 weeks' observation in the training center was outlined, and industries employing nurses in the Little Rock area were informed that such an opportunity was available.

In November 1948 two industrial nurses from one industrial plant were admitted to the training center for a 2 weeks' observation period. During this period a carefully outlined program was carried out which included various activities in which a public health nurse functions. Emphasis was given to the use of community resources available to workers, and a series of lectures and field trips were arranged as part of the course to familiarize the nurse with these resources. The nurses were fully compensated for time on duty in the center.

At the end of the 2 weeks a conference was arranged to discuss and evaluate the experience. Attending were: Assistant Director of Personnel of the plant; Director, Division of Industrial Hygiene, Arkansas State Board of Health; Nutrition Consultant, Arkansas State Board of Health; Director of the training program; and the industrial nurses. During this conference there was an opportunity to review activities and relate them to the health program in the plant, also to plan with management and nurses for further use of health agencies, State and local. It was evident that the experience was considered valuable and that as a result there was an interest on the part of management and nurses in directing their efforts toward a sound health program in addition to first-aid clinic services.

Metropolitan Life Teaches Health Through Many Media

An Insurance Company's Experience in Health Education Leads to Emphasis on Reaching Whole Family

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The importance of helping employees to keep healthy has been recognized for a good many years. The question is and has been, "How can it best be done?" Many companies have felt that the answer lay in the elimination or control of hazards to health and safety and in such services as dispensaries, first-aid rooms, cafeterias, and many other types of safeguards. These things are, of course, an essential part of the answer. However, management has sometimes been disappointed at the results of such improvements. They have claimed, "The best health or safety equipment is here, but the workers don't use it"—"The cafeteria serves a nutritious and appetizing lunch, but the men prefer inadequate meals." In other words, many companies have led the horse to water, but . . .

Health educators today know that a program to help anyone to good health must first of all arouse the desire to have it. Recognition of this necessity to take human nature into account is evidenced by the shift in industrial hygiene from emphasis on environment to emphasis on the worker. Industrial hygiene technicians are moving over to make room for health educators whose function it is to awaken health consciousness and to "sell" the health services and equipment the employer makes available.

In the Home

As early as 1909 the Metropolitan Life Insurance Co. recognized its stake in the health and well-being of industrial workers, who formed the bulk of its industrial policyholders. The company's welfare division was established in that year to bring information on health to millions of these policyholders in their homes. In the same year, bedside nursing care for industrial policyholders ill at home was offered as an experiment. It was given by graduate nurses, working under the direction of the policyholder's physician. That this service filled a need was apparent by the extraordinary rapidity with which it grew, finally covering more than 7,000 cities and towns all over this country and Canada. The public health nurses who gave bedside care also carried health education into homes, and their work has always been an essential part of the company's health educational efforts among policyholders.

In Industry

In those early days communicable diseases of infancy and childhood were the major killers, and the home was considered the logical place to bring health education. The importance of other fields of effort was soon recognized, however, and by 1916 the Metropolitan was cooperating with industry to help solve health and safety problems affecting industrial workers on their jobs. Great impetus was given to these efforts by the formation in 1917 of the company's group insurance division, which opened up new channels for reaching workers and for cooperating with industrial management. An industrial health bureau was formed with an industrial hygiene laboratory which was the first of its kind ever established by an insurance company. A variety of special services are now made available to group-insured companies on individual problems, and studies of particular hazards are frequently made on request. As another phase of industrial hygiene service, technical pamphlets are offered to help management control health hazards, improve working environment, and organize important health services.

Services for Employees

In addition to cooperating with management on problems of environment, and offering group-insured employees skilled nursing care in their homes, the Metropolitan also established a program of personal health and safety education for workers and their families. Posters, pamphlets, employee magazine articles, and other materials are sent on a monthly schedule to all group-insured companies which wish to use them. These materials are designed to have popular appeal and to present the facts of health and disease to workers in such a way that they will want to do the things which contribute to good health.

Publications are Popular

Now in its 31st year, the program has grown steadily, particularly during the last 15 years. Material is now sent monthly to some 4,000 companies at their own request. Pamphlets distributed last year numbered more than 11,000,000. Ten years ago the number was less than half as many. More than half a million posters were sent out in 1948—about one-third more than were used 10 years ago. Editors of about 1,700 employee magazines are now on the company's mailing list to receive employee magazine articles and stories. This channel has grown particularly fast in the last 5 years. In 1948 alone, more than 800 names were added by request, indicating widespread interest in this medium of reaching employees.

One of the results of these signs of interest has been greater emphasis on employee magazine articles. Once prepared on special request only, without illustrations, they are now offered monthly on a regular schedule, with attractive sketches readily usable by the printer. Additional services in the form of "briefs" or fill-ins are sent to editors on request, and special service is still given if no prepared material is available on a particular subject.

More Films Used

In addition to the trend toward increased use of employee magazine articles as a medium for reaching workers, the Metropolitan has noticed signs that the use of films is increasing. Possibly more companies have equipment for showing films as a result of war-developed visual training programs, and are therefore now in a position to use them. Whatever the reason, the company's film unit reports an unusually

large number of requests from business organizations for its latest film, BE YOUR AGE, dealing with heart disease. This may suggest a comparatively new field of effort.

Distribution Methods Studied

To find out how to reach more workers more effectively, studies have been made from time to time on the best ways of distributing material. These studies indicated that in many companies as much as 90 to 95 percent of employees were taking leaflets home. This has pointed the way to several changes of distribution. Employers are placing pamphlets in locations which make it easier for workers to carry them home. Employee magazine editors have awakened to the fact that their periodicals also are taken home more frequently than they realized. As a result, the employee magazine is now mailed to workers' homes by a number of concerns. For the same reason, the employee magazine is now frequently becoming a medium for distributing health and safety pamphlets in "package" form. The current health or safety booklet is slipped inside the magazine, making it easier for people to take them home to their families.

These studies also showed that the easier it was made for workers to pick up material, the more they used such material. By making booklets available in a variety of locations, management found that the use of health and safety material was stimulated. For its own employees, for example, the Metropolitan features a particular booklet, or subject, each month in 14 different locations in its buildings, including its medical and dental divisions, the library, the gymnasium, lounges outside the company cafeterias, certain employee training units, and at main floor information desks. Although employees have always had easy access to health and safety material, a very minor effort in bringing it just a little closer has resulted in a major increase in use. The first year the broadened distribution system was in use, employees took 65,000 more pamphlets than they had taken the previous year. The program has now been expanded to include special exhibits which are constantly increasing employee interest.

These trends in distribution changes have naturally also brought about some changes in the preparation of health and safety material. More emphasis is being given to what might be called the "whole family" approach. Problems are discussed as they affect not only the worker, but his family as well, since the happiness and health of the worker are intimately related to his family unit.

Program Worthwhile

No matter how many media are used, or how much material employees take, the final criteria still are—how much value do they get from health education material? Many employers are convinced that they get a great deal. One says, "Reduction in loss of time due to health hazards is quite evident." Another comments, "Most of the employees take them home . . . questions on health definitely prove the information is helpful in promoting better health."

From these statements, and numerous similar comments, it is apparent that many more employers than formerly consider health education efforts well worth the trouble. That workers agree with them is also indicated by many remarks such as these—"good advice," "keeps us up to date," and "saved money in doctor's bills." Indeed, there are many comments indicating conviction that a timely message on appendicitis or cancer has been the means of avoiding serious trouble, and even of saving lives.

It seems evident from such comments, and from other facts, that workers are becoming more and more receptive to well-presented information on health, made readily available. This is encouraging for health educators, but here, as in other fields, nothing remains static. The greater the alertness to changing wants and needs in type of material and ways of presenting it, the better the results we can hope to obtain in reaching workers with health messages.

MERCURY POISONING

Continued from page 7

everything possible to cooperate in its control. In addition to engineering control, an in-plant medical office was established to provide adequate medical supervision for its workers, and a full-time registered nurse was employed. Physical examinations of workers are made monthly and urinalyses every week, in the case of exposed workers.

(6) Because the problem of mercury poisoning continues to be ever-present in one form or another, medical and chemical data collected some time ago in a very comprehensive study of mercury poisoning in fur-felt hat manufacture were recently analyzed to determine the relationship between the absorption of mercury into the body, as evidenced by excretion of mercury in the urine, and clinical evidence of poisoning. It was clearly shown that mercury poisoning may exist in patients who show no mercury in the urine, and vice versa. Routine urine tests, alone, therefore, would be insufficient for the detection of early cases of mercury poisoning. For purposes of prevention, they may be useful in indicating trends, if a large enough group of workers is used. For a diagnosis, a complete physical examination is required, including a careful neurological examination of the patient. The significance of mercury excretion was discussed in the *Monthly Review*, December 1948.

Because mercury-carrotted fur is now being imported into the United States, the Division's unpublished study of a fur-felt hat plant in New York State appeared in the April 1949 issue of the *Monthly Review*.

BIBLIOGRAPHY OF INDUSTRIAL HEALTH PUBLICATIONS AVAILABLE

Publications by the Division of Industrial Hygiene, Public Health Service, and other USPHS Divisions on industrial hygiene subjects have been compiled in a multilithed bibliography. These cover publications printed from 1942 to 1947, inclusive, also a few issued in 1948.

Copies of this bibliography are available from the Division of Industrial Hygiene, Public Health Service, Washington 25, D. C.

Jobside Chats with Charlie

Charlie Craftsman says, "Take your eye cue from me."

I've held plenty of jobs in my time, and I've learned something different on every one. A lot of things I picked up over the years are pretty hazy by now, but what I learned the hard way, I learned for keeps. One thing I'll never forget is the lesson I learned by being fired twice—twice in a row for the same reason.

I was a machinist, the first time I was fired, pretty sure of myself. Except for bad headaches occasionally, everything looked swell. Then the boss started turning back some of my work, but I figured it was just bad luck. Well, the boss took excuses for about 6 weeks. Then I was out.

I went to the next State and picked up an inspecting job in the new Titan foundry.

It looked like smooth sailing, till the headaches began to get worse, and some of the men took to calling me *Squinty*. After about 4 weeks, the foreman came around. Too many bad pieces getting by. He was nice enough, and said I probably needed four eyes instead of two. But I was out again.

Out again. Fired twice in a row. My pride took a dive, and it looked as if there'd soon be nothing in my pockets but the lining. I was mad enough to see a doctor, though, just to prove my eyes were as good as the next guy's. I told the doc about the two rough deals I'd had, and I mentioned the headaches, too.

After a few tests, the doc said, "Your foreman had something there. The trouble is, you shouldn't have tried to do a job that takes very good eyesight—at least, not without glasses.

"Lots of bosses give new employees a physical examination before they put them on a job. They make sure a man is physically fit to turn in a good day's work. That's good business. It's good business for the worker, too. You'd still have that machinist's job if you'd found you needed glasses before this. A good preplacement physical exam would have saved you trouble."

That made sense to me. It still does. I've had lots of preplacement exams since then, and they all add up to better health and more money in my paycheck. So, when the company doc says, "Say 'ah'!," he doesn't have to ask me twice!

And it's not only preplacement exams that pay off—any physical exam, or treatment, or good advice that keeps me healthy and on the job is as good as money in my pocket. If I get sick, I might have to call quits.

Maybe my boss can afford to lose one of his plants, but my only capital is my health. And I'm taking good care of it.

HERE IS THE FOURTH in a series of articles about Charlie Craftsman, the man in your plant who knows the answers to his health problems. He was introduced in the February number of the *Industrial Hygiene Newsletter*. In the March number he described his preplacement physical examination, concluding with this thought, "I decided those were the right words for the whole preplacement physical exam—playing it safe. And it's sure better to be safe than sick—if you need your pay." You are welcome to reproduce this series of articles and illustrations in your plant paper or magazine. Charlie talks straight from the shoulder to the man and woman in the plant.

Medical Care for Hospital Employees in Los Angeles

Hospital employees, while not subject to hazards of manufacture, are exposed to distinct hazards unique to hospital management. In addition to customary health and safety hazards incidental to maintenance and service procedures, there are additional hazards of strain due to lifting, and the rather increased chance for exposure to infections of all kinds. The employee populations in hospitals are also comparable to medium-size and large-size industries. There is reason to believe that the effect of exposure to some of the hazards is not minimized by the professional character of some of the hospital employees.

It was therefore decided by the director of the Division of Industrial Health, Los Angeles City Department of Health, to make an elementary survey of the facilities and programs for employee health and medical care in the 10 largest hospitals of that city. The administrator in charge of such faciliites was visited at each hospital by our industrial nurse consultant and interviewed regarding dispensary facilities for employee care and the nature of the health and medical care program for employees.

In none of the hospitals visited was there a program for illness or accident prevention, the establishment of which is our goal.

In most hospitals visited, the administrators did not seem to realize that a good employees' clinic program would be economically beneficial to the hospital, that a hospital is an industry as far as employment and personnel practices are concerned, and that health practices in a hospital should be exemplary for community purposes. The idea of a good health program as a tool for teaching purposes was also new to most of the hospital supervisors, but was accepted as a good idea.

As a concrete result of the survey one hospital requested assistance in formulating an employees' clinic program, and another requested our industrial nurse consultant to talk to their student nurses on industrial nursing and hygiene. A program of lectures and plant visits has been formulated.—**Dr. A. V. Nasatir.**

HEALTH EDUCATORS DISCUSS INDUSTRIAL PROGRAMS

Speeches excerpted in this article were made during a panel discussion of experts on the subject, "Health Education in Iudustry," at the Ninth Annual Congress on Industrial Health held in Chicago, January 17 and 18. Dr. Thomas Parran, Dean, School of Public Health, University of Pittsburgh, was chairman of the panel. His summary of the discussions and the recommendations made by the group were printed in the April number of the INDUSTRIAL HYGIENE NEWSLETTER. Also in that issue were excerpts from the speech made by Dr. Arthur Steinhaus, professor of physiology of George Williams College, Chicago.

SAWYER

Dr. William A. Sawyer talked on the kind of health education that has paid off at Eastman Kodak Co., specifically the nutrition education program. Dr. Sawyer said: "We have had a nutrition adviser on the medical department staff since 1922. The program was expanded over the years and there are now four divisions giving individual consultations on nutrition problems in our five Rochester plants. During the peak war year, over 11,000 consultations were held. Last year, over 8,500.

"The aims of the nutrition education program are, first, to promote a nutrition education program for the benefit of the individual employee and which insofar as possible will be carried into the home and benefit the family. Secondly, promoting good food and health habits through consultation and making wholesome food available in the plant cafeterias. Thirdly, promoting good will, thereby enhancing good employee relations.

"The employee may be referred to the dietitian by the doctors, the nurses, or counsellors, or they may just come of their own accord. They come or are sent because of undue fatigue, loss of appetite, constipation, frequent colds, or they may be suffering from the effects in other ways of faulty diet.

"As the dietitians have developed in proficiency of interviewing and counselling, they have become increasingly helpful in aiding people in solving personal and family problems. If this were not possible, I would not be so strong for this program. They solve the problems by suggestion or by referral to others more skilled and experienced in the techniques of psychosomatic medicine.

"We distribute on the average of between 1,750 and 1,800 pieces of educational material each month. Then we have articles in our weekly plant newspaper which is mailed to the homes of the workers so that the family gets the benefit of it.

"Realizing that visual education is of some value to those with a particular problem, posters are set up in the cafeterias and medical department waiting rooms to emphasize the principles of good nutrition. One recent exhibit pointed out that calcium and vitamins did go hand in hand for strong bones, hair, teeth, and nails. This brought a young woman into the department who had difficulty with her nails splitting and feeling sore. She complained of thin hair. She was instructed on a high-protein diet and vitamin supplement and in 2 months' time, her nails showed improvement, as did her hair.

"Other members of the department staff, doctors, nurses, including the visiting nurses and counsellors, often consult with the nutrition advisers on problems relating to the health of employees and the resulting exchange of ideas is of value in protecting the health of the individual.

"The kind of health education that makes for the greatest benefit is this personal counselling, and we are beginning such a program in a very small way, selecting those chronic absentees and those sickness-prone individuals, trying to instruct them in better ways of living, better health habits. I believe that using the counselling method is using a rifle, as it were, rather than a shotgun as we do when we use the printed word."

HODSON

An insurance company's experience with health education was discussed by Mr. Robert Hodson, Superintendent, Casualty Sales Division, Zurich General Accident and Liability Insurance Co., Chicago. Mr. Hodson emphasized the importance of a well-coordinated program. The Zurich program consists of monthly calendars with health and safety themes, sound slide films, lectures and take-home pamphlets. The worker must feel that he is part of the program, Mr. Hodson said. Health committees should rotate from department to department so that every one can participate. Mr. Hodson said that prior to the use of the "safety zone" program, the company had received five to seven suggestions a month from employees. Since the program developed, it is now getting from 125 to 150, because employees enjoy participating. In one plant, before the program was started, there were 1,000 lost man-days. After the health and safety education program had operated for 1 year, there were only 150 days lost.

NEWMAN—PRICE

A paper on the subject "Labor Wants the Facts on Health," written by Miss Pauline Newman, Educational Director, Union Health Center, International Ladies' Garment Workers' Union, A. F. of L. of New York, was delivered by Dr. Leo Price, Medical Director of the organization. Excerpts follow:

"Years of painstaking effort to bring the message of good health to ILGWU members has made a lasting impression upon them. Perhaps this has been accomplished because our lectures, our discussions, our radio talks, our literature, and our health films are accompanied by periodic health examinations, by chest X-ray surveys, by eyesight conservation programs, by nutritional instruction, and by many other preventive measures. The Union Health Center provides not only the 'ounce of prevention' but the 'pound of cure' as well. Opportunity for consulting a physician has been an integral part of its health education program. Experience has convinced center workers that health education without provision for frequent physical check-ups remains well-intentioned but ineffectual. Health education needs the vitality that

...es from close association with a ...dical care program.

"The Union Health Center recognizes the fact that as long as insufficient income stands as a barrier between hundreds of thousands of people and adequate medical care, so long will health education fall short of its mission. Bad housing, poor clothing and inadequate diet are detriments to health which must be dealt with."

BORDELON

In the discussion period which followed these talks, Dr. Myrna Bordelon, CIO Community Service, said: "One of the first things that we educators must realize is that the mere dissemination of rational information, the mere idea you can take someone ripped by certain insecurities and fear and confront him with a certain amount of rational information will not solve your problem. We must begin to realize that approach is entirely superficial and that somewhere along the line we have got to get at the root of the fears."

"Education is not funneling down to a group of people a certain amount of information. Education is best done and best achieved through the process of direct experience that people have in planning programs that are meant for them, and in giving their ideas and suggestions on a sustained basis.

"Now that expresses itself in the whole CIO program in terms of our tremendous interest in the joint union-management cooperation committee on the plant level.

"In the CIO in Chicago and many other cities throughout the country, we are doing several things to develop within our own ranks the responsibility for participation on the local plant level by our people who are our members. We are doing that, for example, in about 25 cities through a training program which we call 'union counselling.' That is a program through which the CIO itself develops rank and file volunteer union counsellors whose job it is to discover the needs that people have in the health and welfare field and to see that they are referred to the proper agency in the community.

"In Chicago, we have trained over a thousand people as union counsellors, and we are constantly finding that their potential is tremendous as they rub elbows and work with the people on the benches and see absenteeism and see people disturbed or not feeling well. They can become one of the best sources for discovering the need and getting it to the proper clinic or hospital or health agency that is concerned with that problem.

"We are trying to get every local union to establish a health and safety committee. That union safety committee shall then meet with the management safety committee and health personnel, and together they shall plan and supervise the whole safety organization.

"We have seen this work time and time again. It is real education. It is democratic participation. We have kept score of the accidents and disease in many of our plants, and the score in many situations relates almost directly, correlates completely with the amount of worker participation and uniform participation that we have in our plant."

ROPCHAN

Mr. Alexander Ropchan discussed the topic, "Local Health Agencies Must Accept the Challenge of Industry." Mr. Ropchan said, in part: "We in Chicago have made a great deal of progress in the field of public health as a result of the interest of the U. S. Public Health Service under Dr. Parran, and as a result of the interest and activity of the American Medical Association in local public health here. One of the most significant efforts in that line which also has spread its influence into the field of industrial health is the Chicago-Cook County health survey which was made here in 1946 and 1947 under the auspices and direction of the U. S. Public Health Service. We have summarized it in a readable, popularly written pamphlet called *The Blueprint for a Healthier Community.*

"A word or two about the facilities that are available to aid in the industrial health program of our metropolitan area: Those are extensive and numerous.

"Some agencies may be more successful than others in getting their programs before industry, and we have had waste because each agency has had to do its own individual selling job to industry—we have had waste for the industries and waste for the agency. We have had failure in the sense of meeting the whole problem of the whole industrial worker and his family, because this worker is not merely a pair of ears nor a pair of eyes, but a personality; and you must have a coordinated program directed at him if your are to accomplish results. As a matter of fact, very few of the voluntary health agencies in the Chicago area have made even much of an effort to get industry. The problem has been too big for them individually to try to do.

"Because of that situation, the health agencies through their health agencies committee, through the council of social agencies, has decided that something should be done in a program directed toward industry. The decision finally resulted in the establishment of the Chicago Industrial Health Association.

"In the process of establishment, the Medical Society, some of the other health professions, and a few of the official and voluntary health agencies, got together and laid out what they thought should be done. Leadership came from them, as it should, because they are the authorities in the field; it is their job.

"Once they laid out the general objectives, we got together with representatives of management and representatives of labor, and got their general agreement to the plan; and from there we went hand-in-hand on a partnership basis with both of these groups in developing the details and getting the program set up. We got the program set up with the financing provided again on a partnership basis, both by the voluntary agencies and by the official agencies, and later and more gradually by industry itself.

"This type of joint effort means that you have got to have machinery in the community by which the voluntary and the official agencies and the health professions, labor and industry, can plan jointly and get together and work out these things in a cooperative way."

LEVINE

Dr. Edward R. Levine, Director of the Chest Service of the Michael Reece Hospital, discussed the subject "Developing the Opportunity for Case-Finding in Industry." He stated: "Let's look at a survey and the way it runs: You find a certain amount of tuberculosis; okay. Those people should be taken out in the active stage, out of the com-

munity in which they are working, because we know that tuberculosis comes from tuberculosis; and if you take the source of contact out you will not have future cases. That is one step.

"Then you come to the most important aspect of the survey—the necessity for resurveying the same groups of people.

"Along this line, then, it is essential that the program be worked out as an over-all project. It has to be a program in which management and labor or individual workers take part, and in which both the voluntary and official health agencies of the community take part.

"If an industrial organization is big enough to have its own set-up and do its own survey and attempt to handle it on an individual basis, that survey is something less than a good one, because up come the problems, and what is to be done about them? If surveys can start with an agreement as to what is going to be done by voluntary and official agencies, by management and by labor, and then, when that is understood, health education programs precede the survey, and when the survey is completed the problems are picked up by the proper persons, groups or agencies, then perhaps you will have something.

"It is essential, if you are going to do a survey, to get everybody. That is the first point. I recognize that these cannot be made compulsory. A good educational program which begins with and cooperates with and takes into consideration the workers themselves, will generally end up with a condition of morale where a person will not want to refuse, whether he would like to or not; and thus you will get all the workers. That is the first point.

"The second point is to make sure that a person who is X-rayed does not suffer thereby. Things we sometimes forget in our enthusiasm to get those films in the camera are that he does not lose time from his work, which costs him money, and that if something is found on the X-ray he isn't going to lose his job or be relegated to a less well-paid job as a result of it.

"You are not going to be a very popular organization if you go through a factory once and a lot of people who feel perfectly healthy find themselves taken out of their jobs, or taken from well-paying jobs to less well-paying jobs; and when you come around the next year you will find a lot of people will say 'No, thanks! I feel well, I am working, and I'm going to keep on working. When I get sick I'll let you talk to me.'

"You have to take care of those realistic situations that mean a lot to the workers and very little to health agencies. That has to be done by arrangement and agreement *before* you start. After you get going that is no time to come back and start fighting about it. *It has to be done before you start.*

"If two things are done—if the project is approached as a method of keeping people well, and is organized to take in all of the agencies that are involved in a particular problem, and if something is done about it and the individual is made to definitely feel that this is of value to him and his family and that he is staying healthy as a result of it—then we will have good surveys."

PRITCHARD

Miss Elizabeth Pritchard, USPHS, whose subject was "Wartime Lessons in Health Education in Industry," reviewed many of the educational projects the Public Health Service carried on in industries during the war. She emphasized the long-time efforts necessary to change health habits, saying, " . . . health cannot be won in a day, and it cannot be plotted on a sales chart. It is not as simple to adopt a new health attitude or a whole series of health attitudes and attain health, as it is to switch one's brand of cigarettes and go out and buy another package." She also brought out the fact that health education on a large scale is still a very new field, that such programs were rare in industry, adding, "What we tried to do was to help get something started. I believe we did, because this Ninth Annual Congress is one example of it."

FAGIN

Dr. I. Donald Fagin, Director of the UAW-CIO Health Institute in Detroit, described briefly the extensive program of that organization, and in more detail the work of the health and safety education department. Dr. Fagin said: "The activities in that department deal primarily with general health, community health, and training the individual worker to be an intelligent member of a joint labor-management safety committee in the plant. The technics which we use in health education are manifold. Probably the widest used one is that of formal courses in health safety. They deal with the history of the safety movement in the United States, with the job analysis programs that are in use in the plant, with machines themselves and their risks, and how to avoid accidents, analysis of accidents and statistics, and things of that nature.

"In addition to the safety courses per se, we have courses in occupational health, courses in compensation, courses in social service and family relations, courses in industrial psychology, how to get along on the job, and courses on what we call health and human relations, courses in child psychology, as well as scattered lectures on isolated topics, such as child psychology, tuberculosis, venereal disease, and so on.

"We found we were getting the workers down to the courses within numbers that we could handle, but we were not getting anywhere with the families of the workers, probably because the approach to the problem was primarily industrial. Therefore, the people running the health education department decided to offer some courses which would be of primary interest to the wives as well as the female workers, and we called these courses charm courses. What they really are is sugar-coated health education courses. We attract the wives or female workers by discussing such items as cosmetics, dancing, making of clothes, or home economics, and at the same time we toss in lectures on venereal disease, child rearing, maternal health and other general health measures.

"In the courses we used visual education, the usual literature, and text books. I would like to say, parenthetically, that we have used a lot of these pamphlets that the U. S. Public Health Service has made available. We have used a lot of material made available by insurance companies. We call them 'give-away' materials. In many cases I call them 'throw-away' material, because I have seen hundreds of them in waste baskets.

"I think the only purpose they have served and where they have been of any value is when we put them in our pamphlet racks in the medical *clinic; a man*

with a hernia picks up the pamphlet on hernia, and so on. I think those are the only ones that are read in reality.

"Another activity in addition to these various courses is the conduct of talks at various locals during local meetings, again using films or slides and posters on subjects related to health and safety.

"Another item we use is the radio. We have a radio program for 15 minutes every Saturday afternoon on a large station in Detroit, which consists of dramatizations of problems in industrial safety and general health.

"Another activity consists of designing and lending exhibits on health and safety. These exhibits are available to locals for use at their meetings. We send them to various conventions, and so on. During 1947 we had 38 exhibits reaching 49,000 workers. Exhibits may be on various items, such as safety equipment, protective clothing, or general health.

'Another activity consists in the issuance of publications. We had a monthly newsletter which we called the *Stethoscope*, consisting of a four-page sheet that we mailed out in batches of thousands, and I think they were thrown in the waste baskets in batches of thousands, also.

"Literature doesn't seem to be the answer to health education. Later we incorporated this 4-page monthly newspaper in the union's publication or magazine that is issued monthly and known as *Ammunition*.

"Along the same line there is also a preparation of articles for publication in local union newspapers about twice a month, dealing with health and safety.

"Another activity which the health education department engaged in was attempting to avoid duplication of activities. That is the program as it has been functioning up until recently. A few months ago we discontinued it entirely, in order to evaluate our approach."

Chicago Industrial Health Association

Mr. Percy Shostac described the Chicago Industrial Health Association briefly. He said, "It is a joint effort by the health and medical agencies of this city, both official and voluntary, along with the labor organizations and the business associations and industrial firms, with the objective of carrying on a comprehensive (and the word *comprehensive* is very important in this situation) program of health education and some services for employees, their families and the city and community in general.

"The program is not complicated. It plans to use in its health education aspects three principal media. The first is a daily radio program. That will be gone into in detail a little later. Next, and what we are working on now, is a monthly pictorial magazine to reach (we hope) a very large segment of the employed population. The third is a newsletter to management, on industrial health and hygiene.

"We have in mind and now have developed the idea that we are going to be entirely self-supporting. That is another new attitude in health education. We hope to be self-supporting from the income from these three implements we are going to use in our program, the radio, the magazine, and the newsletter."

The radio program entitled *It's Your Life* was explained by Mr. Ben Park. Speaking for Johnson and Johnson, Mr. Edward G. Gerbic, director of merchandising for that company, explained why the company was willing to pay for that kind of radio show. Mr. Edward Moran, of Young & Rubicam, analyzed the elements in the show which make women like it. He said: "The woman listener is getting situations and stories which are actually her own or could be. Straight through the first 13 weeks of programming we followed the course of her life from birth to old age, and in every sequence, in almost every show, there was some point at which the woman at home could say to herself, 'That's my story; I am that woman.'

"The second thing was the inclusion of serious problems—problems which were actually part and parcel of daily life, not extraneous or exotic or impossible situations. We know that the questions asked and the stories unfolded were gripping and colorful to the extreme, and there was no mistaking their ring of honesty and of truth.

"Third, we made sure we had a happy solution. Every daytime show must have that. The whole burden of this series was that the happy solution was the intelligent and logical solution, that in nearly every case hope and help were close at hand and that those who asked nearly always received. *It's Your Life* carried as a daily message, urgently and confidently worded, the news that assistance was there if our listeners would only ask for it.

"Fourth, suspense—that daily carryover, if you will, of excitement and interest from one broadcast to another."

Concluding speakers on the panel were Mr. E. P. Lichty, who told the group about the monthly pictorial magazine planned as a popular vehicle for health education, and Mr. Park, who described the newsletter for management. He said: "In this twice-a-month newsletter we are going to include boiled-down, carefully and expertly edited items of practical interest to management and to organized labor on the general subject of health and hygiene in industry."

Dr. Parran summarized the comments and conclusions of the panel at the evening meeting of the entire Congress.

(Not all papers presented were available at this time for review.)

Nurses Stress Better Health, Greater Safety in Kansas City Forum

The meeting of the Industrial Nurses' Section of the Central States Safety Congress was held in Kansas City, Mo., February 11, 1949. Ninety-two persons attended this meeting, including industrial nurses, safety engineers, doctors, representatives from management and labor, and a group of student nurses.

The topic discussed was "To Better Health: To Greater Safety—The Aim of the Industrial Nurse." Speakers were Miss Anne Fogg, R. N., American Can Co., Kansas City, Mo.; Mr. Joe Williams, assistant personnel director of the Vendo Co.; and Mr. Burt Phillips, a machinist of Black, Swall and Bryson, who represented the employees.

The fourth speaker was Mr. Gifford D. Mullins, director of the Safety Council of Lincoln and Lancaster Counties in Nebraska. Mr. Richard Page, industrial hygiene engineer with the United States Public Health Service, spoke on the interests of the official agencies in health and safety. Mrs. Thelma Welch, R. N., president of the Greater Kansas City Industrial Nurses' Club, was coordinator and discussion leader.

Age: Help or Hindrance

(Continued from page 3)

The challenge to industrial medicine is multifaceted. In the area of preventive medicine, industrial medical services stand in much the same relation to millions of adults as school medical services stand in relation to children. The educational opportunities are immense; the need for lay health education can not be over-emphasized, for the chronic degenerative disorders of later years are largely endogenous and arise as a result of unwise habits of living. Prevention of these progressive disorders (now responsible for most of the terrible load of partially disabled senescents) is dependent upon aging individuals making efforts on their own behalf. Health can not be given; it, like esteem, must be earned (*6*).

Industrial medicine, furthermore, has a specific responsibility in the health maintenance of key personnel or those individuals who by reason of special knowledge, experience, or skill are replaceable only with difficulty. Such key individuals are always mature (*7*). The leaders in every field are older men.

The opportunity for constructive medicine, actual improvement in health rather than the treatment or prevention of single disease entities, in industrial medicine is almost unlimited. There is urgent need for research into methods for the clinical mensuration of health, and concomitantly of biologic age. Health is more than the absence of disease. It has quantitative attributes involving reserve functional capacities for stresses of all sorts. Evaluation of such reserves is essential to prognostication of present and future work competence.

As motivation is vital to accomplishment, let us not forget that we, ourselves, are likewise growing older, and that these problems will be even more serious for the next generation than they are today.

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W. SCOTT JOHNSON DIES

Mr. W. Scott Johnson, Director of the Section of Environmental Sanitation, Division of Health of Missouri, died March 13 after a heart attack.

Mr. Johnson had been in industrial hygiene work for many years and will be missed in professional circles. Only recently he had celebrated his twenty-fifth year as a sanitary engineer with the State of Missouri. During an interlude when he worked in St. Louis he became interested in industrial health, an interest he maintained and developed thereafter.

Air Pollution

(Continued from page 5)

sume the responsibility in regard to areas not so provided. Many such State bureaus have already been compelled by requests from a higher authority to investigate local air pollution problems. Investigations of this nature are often very complex and time-consuming and might, under present conditions, cause neglect of industrial hygiene work. Here, too, an expansion of staff is indicated to handle these air pollution problems, and should include a combustion engineer to deal with fuel-burning devices. The counsel of thought reorientation given at the local level applies equally well at the State level.

To sum up, a challenge is being offered to official industrial hygienists and my considered recommendation is that they should accept it.

Vacancies For Industrial Hygiene Positions

The second annual canvass of vacancies for industrial hygiene positions in State and local agencies was made in March 1949, by the Division of Industrial Hygiene, Public Health Service. According to this canvass, 23 State and local agencies have 46 vacancies for industrial hygiene personnel for which funds are available or are expected to be made available.

Of the 46 current vacancies, 3 are for medical director, 1 for assistant director, and 5 others for staff physicians. Six vacancies exist for consultant nurse positions. The largest category of unfilled positions is among engineers, of whom 21 are needed. The rest of the vacancies reported are four industrial hygienists, that is, either engineers or chemists; four chemists; and two X-ray technicians.

Lists of these vacancies giving the name and address of the agency, title of position, and annual salary range have been mailed to educational institutions interested in notifying students of openings. These lists are also available upon request from the Division of Industrial Hygiene, Public Health Service, Washington 25, D. C.

Third Course Given in Use of Radiation Measuring Instruments

The third class given by the Division of Industrial Hygiene, USPHS, in the use of radiation measuring instruments was held the week of February 14 to 18. Mr. Duncan Holaday who was in charge of the classes held in October and December, 1948, also directed the February class.

Those attending the course in February were Arthur Heubner and Dr. Roy Seideman, Connecticut; R. H. Fetz, Georgia; J. F. Keppler, Indiana; Russell Frazier, Minnesota; John D. Vaden, Missouri; Kenneth R. Doremus, Pennsylvania; Sarto Plamonden, Quebec; W. G. Crosby, South Carolina; John Molos, St. Louis; J. C. Johnson, Virginia; Dr. I. L. Berman and Eugene Ernest, Government Printing Office; and C. P. Bergtholdt, Navy, Washington, D. C.

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