

UNITED STATES DEPARTMENT OF LABOR

JAMES J. DAVIS, Secretary

BUREAU OF LABOR STATISTICS

ETHELBERT STEWART, Commissioner

MINISTRY OF THE UNITED STATES
FOR STATISTICS

No. 518

MISCELLANEOUS SERIES

PERSONNEL RESEARCH AGENCIES

1930 EDITION



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BOMBAY

JUNE, 1930

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1930

Acknowledgment

This bulletin has been prepared by Estelle M. Stewart, of the United States Department of Labor.

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BULLETIN OF THE
U. S. BUREAU OF LABOR STATISTICS

NO. 518

WASHINGTON

JUNE, 1930

PERSONNEL RESEARCH AGENCIES

Introduction

THE Bureau of Labor Statistics published in 1921 a bulletin (No. 299) on Personnel Research Agencies, which was designed as "a guide to organized research in employment, management, industrial relations, training and working conditions."

Personnel research was defined as studies and investigations of all kinds concerned with any of the problems of (a) employment management and industrial relations (such as selection and placement of employees, job analyses and specifications, rating and grading, lines of promotion, labor turnover, absenteeism, wage and other incentives, joint control, etc.); (b) vocational psychology, including the development and standardization of intelligence and trade tests; (c) training of managers, foremen, and workmen, either in schools and colleges, in the factory, or under schemes of cooperation between educational institutions and industrial establishments; (d) working conditions in relation to output, including hours of labor, fatigue, lighting, ventilation, food; (e) health hazards and occupational diseases; (f) safety codes and appliances; and (g) the special problems connected with the employment of women and young persons, foreign-born workers and colored workers, the handicapped or disabled, and the mentally deficient or unstable.

Since 1921 the whole field of organized research has expanded enormously, both in amount and in scope. Organizations whose major activity is research in the general field of employment relations and working conditions have grown in number and importance, and many other groups are extending their activities into the same field. A revision of Bulletin No. 299 was therefore undertaken to bring the directory of these agencies to date, and the result is presented herewith as Bulletin No. 518.

The bureau relied for the completeness of this revision largely upon the cooperation of the agencies involved with whom it was in touch. It is of course possible that the bureau has missed some organizations active in personnel research work, for want of avenues of contact. It is hoped that if such agencies have been overlooked in this compilation the bureau will be informed to that effect.

Most of the organizations engaged in personnel research work who were asked for data for inclusion in the revised bulletin have responded fully and freely. Others, however, submitted incomplete statements, and still others failed to give any information at all. Hence among all groups—official State agencies, universities and colleges, and the nonofficial organizations—there are omissions which the bureau regrets but could not avoid.

This bulletin must be considered as a continuation of Bulletin No. 299, which brought the data down to 1921. All of the organizations listed therein which have continued to function since 1921 are included, but it has not been the purpose to repeat the references to studies and publications contained in the previous work. Rather the purpose has been to carry on the story of the activities of these various organizations from the point at which Bulletin No. 299 leaves off, and to present later developments in the field. Some of the early experimental agencies which were active in 1921 have disappeared entirely, sometimes through absorption into other continuing organizations; sometimes by new ones taking their places. Moreover, many of the publications and other data referred to in Bulletin No. 299 are out of print or otherwise unavailable, and many changes have taken place in organization and mode of procedure of some of the agencies listed. Accordingly, reproduction of the data in the earlier bulletin has not been considered worth while. It has, however, been necessary for clarity to refer to it occasionally.

The same plan of presentation which Bulletin No. 299 followed is given here—that is:

First. Division into two main heads:

1. Official agencies—(a) Federal; (b) State; (c) Municipal.
2. Nonofficial agencies—(a) Associations, foundations, research bureaus, and institutions, to which has been added manufacturing and business establishments; (b) universities and colleges.

Second. Classification of personnel research activities and the various agencies engaged therein, thus:

Employment management (personnel work); industrial relations; working conditions (hours of labor, fatigue, and efficiency); employment (placement); unemployment; turnover; safety (accidents, standards, codes); industrial hygiene (occupational diseases); industrial morbidity and mortality; industrial psychology; intelligence, trade and aptitude tests; training (vocational education); cost of living (budgets); pension plans (retirement systems); employment of women; child labor (vocational guidance, juvenile placement); handicapped and disabled workers; psychopathic and mentally deficient workers; foreign-born workers; colored workers; public employment.

It has been possible to present this classification as a reference list only. A plan to classify the data under group headings descriptive of the major activity of the group had to be abandoned because of the physical difficulties involved, since that plan would have necessitated dismembering many organizations which are equally concerned with several different activities. Therefore an alphabetical arrangement of the text is the best that can be made.

An effort to extend the scope of the study to manufacturing and business establishments which are doing extensive personnel work

has not been very successful. In the first place the response to requests for information was far from general.* In the second place, while concerns of this kind engaged in personnel work among their own employees often follow up their personnel activities with elaborate research work, much of this research is wholly internal and confidential, and is available only for very limited distribution. However, much of this type of research work is published and given a fair circulation through the medium of the conferences and publications of the American Management Association (p. 56), of which many of the companies are members.

For the purpose of staying within the field of employment relations some rather arbitrary lines have been necessary. This is especially true with respect to placement and personnel work and research courses in colleges and universities. Much of the former class of work must be regarded—as in the case of business enterprises—as internal in nature and having no real bearing on personnel research in its wide application. Also, research courses are often purely educational, and such actual research as is done is essentially laboratory work, which only occasionally makes any definite contribution to the field of personnel research. School work of this character has not been included in this compilation. On the other hand, similar organizations, such, for example, as the department of industrial research of Wharton College, University of Pennsylvania (p. 176), are not only college research classes in an educational sense but research bureaus for the use of industry generally as well.

Experimental work of colleges and universities in applied psychology, intelligence and aptitude tests, and the like has also been eliminated except in cases where it has a direct application to industry and personnel.

* Such outstanding instances as Eastman Kodak Co. and R. H. Macy & Co., for example, failed to reply to requests for information.

I. FEDERAL AGENCIES

(a) IN THE DEPARTMENT OF LABOR

Bureau of Labor Statistics.

1712 G Street NW., Washington, D. C. Ethelbert Stewart,
Commissioner.

ORGANIZED January 1, 1885, under act of Congress approved June 27, 1884, as the Bureau of Labor in the Department of the Interior, it was given independent status as the Department of Labor (without Cabinet representation) in 1888. It again became the Bureau of Labor in 1903 under the Department of Commerce and Labor, from which it was transferred, with change of name to Bureau of Labor Statistics, to the present Department of Labor upon its establishment in 1913.

The function of the bureau as stated in the law creating it is to "collect information upon the subject of labor, its relation to capital, the hours of labor and the earnings of laboring men and women, and the means of promoting their material, social, intellectual and moral prosperity."

The bureau is primarily a fact-finding agency whose field of work covers not only purely statistical data but many other subjects of vital human welfare, a large part of which comes within the scope of personnel research.

An abridged classified list of bulletins published by the bureau will be found following the subject index to this bulletin. Those dealing specifically with personnel research will be found under these classifications: Employment and unemployment; industrial accidents and hygiene; industrial relations and labor conditions; safety codes; wages and hours.

The wages and hours series include, in addition to union wage scales, studies of wages and hours in foundry and machine shops; slaughtering and meat packing; the manufacture of worsted and woolen goods, cotton goods, hosiery and underwear, men's clothing, and boots and shoes; the motor vehicle industry; the lumber industry; the iron and steel industry; and of common street laborers, etc.

In addition to the bulletins on employment progressive studies are published monthly in the Labor Review showing the trend of employment in selected manufacturing industries, in coal and metal-liferous mining, in public utilities, in wholesale and retail trade, and in the hotel industry.

A labor turnover rate is also published currently in the Labor Review based on data from the reporting agencies, showing quits, lay offs, and discharges, accession rates, and net turnover rates.

Data on changes in the cost of living are published every six months, in the February and August issues of the Labor Review.

The industrial accident division of the bureau had its origin in a special investigation of accidents in the iron and steel industry authorized by resolution of the United States Senate in 1910. The purpose of all accident inquiries conducted by the bureau is:

1. To set up the average experience as a standard by which a given section of the industry may determine its relative standing in the matter of accident occurrence.
2. To determine by year-by-year presentation whether the trend of accidents is in the direction of increase or decrease.
3. To show by suitable examples the possibilities of accident prevention when the problem is attacked with intelligence and vigor.
4. To afford illustrative material for use in the prosecution of accident-prevention campaigns.

For the past four years the bureau has been gathering information regarding the experience of the State jurisdictions dealing with industrial accidents in order to determine accident rates for industrial groups other than iron and steel.

Closely connected with the work of the industrial accident division are the bureau's activities in the development of industrial safety codes, with which it works in cooperation with the American Standards Association (p. 65). The bureau is the authorized representative of the Department of Labor on the executive and main committees of the American Standards Association, and as such is delegated to furnish representatives on all sectional committees having to do with industrial safety codes from the ranks of workers actually employed to use the tools and machines to which the codes refer. The bureau publishes the safety codes as they are developed and also undertakes to urge upon the States the adoption thereof.

The work of the bureau in the field of industrial hygiene includes the publication of occasional bulletins and of articles in the Labor Review dealing with industrial poisons or diseases. The most recent studies in this line are concerned with the use of radium and radioactive substances in the manufacture of clock dials and other articles and the use of the spray method in painting.

Special studies in the personnel field not classified under the list above referred to include health and recreational activities in industrial establishments (Bul. No. 458) and apprenticeship in building construction (Bul. No. 459).

The Labor Review carries advance summary accounts of most of the studies published as bulletins, as well as special studies made by the bureau staff which do not appear as bulletins, and occasional articles contributed by students and investigators, which frequently deal with some specific phase of personnel research.

Two publications of the bureau, Bulletin No. 439 and Bulletin No. 491, are reference works presenting digests of all the recent material published by the bureau.

Children's Bureau.

Twentieth and D Streets NW., Washington, D. C., Grace Abbott, Chief.

ESTABLISHED by act of Congress approved April 9, 1912, the Children's Bureau is directed "to investigate and report * * * upon all matters pertaining to the welfare of children and child life,"

including "dangerous occupations, accidents, and diseases of children, employment."

The publications issued by the bureau dealing with the special problems connected with the industrial aspects of child welfare have related particularly to:

1. Employment of children and young persons: (a) The extent, distribution, causes, and effects of child labor; (b) Vocational opportunities for young workers; (c) Current statistical reports of child employment; and (d) Vocational guidance, placement, and supervision of young persons in industry.

1a. The first group of studies of the employment of children and young persons, which have emphasized the work of children and its effects, as well as legislative and other methods of meeting the special problems presented, have been made in the fields of child labor in rural communities, in canneries, in coal-mining communities, in street trades, and in industrial home work; the employment of school children; and the safety and health of working minors. The reports issued are:

Child labor in rural communities:

Publication No. 115. Child labor and the work of mothers in the beet fields of Colorado and Michigan. 122 pp. 1923.

Publication No. 123. Child labor on Maryland truck farms. 52 pp. 1923.

Publication No. 129. Child labor in North Dakota. 67 pp. 1923.

Publication No. 130. Child labor and the work of mothers on Norfolk truck farms. 27 pp. 1924.

Publication No. 132. Work of children on truck and small-fruit farms in southern New Jersey. 53 pp. 1924.

Publication No. 134. The welfare of children in cotton-growing areas of Texas. 83 pp. 1924.

Publication No. 151. Child labor in fruit and hop growing districts of the northern Pacific Coast. 52 pp. 1925.

Publication No. 155. Child labor in representative tobacco-growing areas. 42 pp. 1926.

Publication No. 163. Work of Children on Illinois farms. 49 pp. 1925.

Publication No. 167. Children in agriculture. 81 pp. 1929.

Child labor in canneries:

Publication No. 98. Child labor and the work of mothers in oyster and shrimp canning communities on the Gulf Coast. 114 pp. 1922.

Publication No. 198. Children in fruit and vegetable canneries—A survey in seven States. (In press.)

Child labor in street trades:

Publication No. 183. Children in street work. 354 pp. 1923.

Publication No. 188. Child workers on city streets. 74 pp. 1929.

Children in industrial home work:

Publication No. 100. Industrial home work of children: a study made in Providence, Pawtucket, and Central Falls, R. I. 80 pp. 1922.

Publication No. 165. Child labor in New Jersey. Part 2. Children engaged in industrial home work. 62 pp. 1928.

Child labor in coal mining communities:

Publication No. 106. Child labor and the welfare of children in an anthracite coal mining district. 94 pp. 1922.

Publication No. 117. The welfare of children in bituminous coal mining communities in West Virginia. 77 pp. 1923.

The employment of school children:

Publication No. 192. Child labor in New Jersey. Part 1. Employment of school children. 140 pp. 1929.

Safety and health of working minors:

Publication No. 79. Physical standards for working children. 24 pp. [4th ed.] 1926.

Publication No. 152. Industrial accidents to employed minors in Wisconsin, Massachusetts, and New Jersey. 119 pp. 1926.

b. The second class of inquiries in the field of the employment of minors has dealt with the requirements of different occupations and industries and the returns which they offer to the young worker. A report already published in this field is No. 126, "Minors in automobile and metal manufacturing industries in Michigan." Reports are in preparation of studies covering the printing and the women's clothing trades and certain clerical, commercial, and other occupations. In addition to such special surveys of selected industries, statistical studies have been made of what jobs are actually held by boys and girls going to work at different ages and with different educational and special training and the extent to which such factors may affect their industrial lives.

Publications issued in this field are:

Publication No. 74. Industrial stability of child workers—A study of employment-certificate records in Connecticut. 86 pp. 1920.

Publication No. 89. The working children of Boston. 374 pp. 1922.

Publication No. 199. Child labor in New Jersey. Part 3. The working children of Newark and Paterson. (In press.)

Reports are in preparation covering the industrial histories of minors in Milwaukee, Wis., and in Rochester and Utica, N. Y., as well as a study of the work histories of minors of subnormal mentality in selected localities.

c. Current reports of employment certificates or permits issued to children going to work are obtained by the bureau from cooperating State or local officials responsible for the issuance of these certificates or for the supervision of certificate issuance. A brief analytical summary of these reports is included in the annual report of the chief and is also published in leaflet form.

d. The report of a study of vocational guidance and placement undertaken with the cooperation of the junior division of the United States Employment Service, which covers the development, organization, and status of vocational guidance in certain selected cities in the United States, was issued as Publication No. 149, "Vocational guidance and junior placement."

Women's Bureau.

Twentieth and C Streets NW., Washington, D. C. Mary Anderson, Director.

THIS bureau, an outgrowth of the war-emergency body organized under the name of "Women in Industry Service," was established as a permanent bureau of the Department of Labor by act of Congress approved June 5, 1920. Its duties as stated in the act are "to formulate standards and policies which shall promote the welfare of wage-earning women, improve their working conditions, increase their

efficiency, and advance their opportunities for profitable employment," and "to investigate and report * * * upon all matters pertaining to the welfare of women in industry."

The publications of the bureau consist of annual reports of the director, a series of Bulletins (Nos. 1 to 77, 1919-1929), charts of labor legislation affecting woman workers, and exhibit material of various kinds—motion pictures, miniature stage sets, posters, etc.—which is lent to organizations. The bulletins include a series of studies of labor laws and their effects (Nos. 2, 5, 6, 7, 16, 40, 61, 63, 65, 66, 68); standards for employment of women in industry (No. 3); and a large number of reports upon special investigations. Included in the last-mentioned group are general surveys of woman workers in the industries of Kansas, Rhode Island, Georgia, Maryland, Arkansas, Kentucky, South Carolina, Alabama, New Jersey, Missouri, Ohio, Oklahoma, Illinois, Mississippi, Tennessee, and Delaware; studies of industrial poisons (No. 57) and industrial accidents affecting women (No. 60); two studies of absenteeism and labor turnover (No. 52, lost time and labor turnover in cotton mills; No. 69, causes of absence for men and for women in four cotton mills); a special study of immigrant working women, and one of negro women in industry in 15 States.

Studies in process of completion have to do with women in Florida industries, in laundries, in meat-packing plants, and in Hawaiian pineapple canneries, and a summary of the bureau's wage material. Current field investigations deal with output in relation to hours, conditions in the cigar industry, and certain occupational hazards.

United States Employment Service.

1800 D Street NW., Washington, D. C. Francis L. Jones,
Director General.

A PUBLIC employment service was organized in a limited way in the Bureau of Immigration in 1907, under the direction of its Division of Information. By the provisions of the organic act creating the Department of Labor, March 4, 1913, this function was designated United States Employment Service, and by order promulgated January 3, 1918, by the Secretary of Labor in pursuance of an act approved October 6, 1917, the administration of this service was transferred to the office of the Secretary of Labor and made a distinct and separate unit of the Department of Labor.

State and municipal cooperation.—It is in cooperation with and coordinates the public employment offices throughout the country for the purpose of bringing together the worker and the job and maintaining a system for clearing labor between the several States to the end that labor will be properly distributed in relation to supply and demand.

JUNIOR DIVISION.—This division deals with the youth of the country, both sexes, between legal working age and 21, by cooperation with the public schools or other agencies, State or city, for the placement of juniors in employment.

INDUSTRIAL DIVISION.—Publishes the Monthly Industrial Employment Information Bulletin giving current comment on items affecting employment tendencies, possibilities, and development in the important industrial centers throughout the United States.

FARM LABOR DIVISION.—Recruits, directs, and distributes seasonal labor for wheat harvesting, cotton picking, potato harvesting, apple and berry picking, corn husking, and work in the sugar-beet fields and factories.

(b) IN OTHER EXECUTIVE DEPARTMENTS, BOARDS, AND COMMISSIONS

Department of Agriculture. • Bureau of Chemistry and Soils.

Washington, D. C. David J. Price, Principal Engineer in Charge of the Chemical Engineering Division.

THE Bureau of Chemistry and Soils has had leadership in this country in the work being carried on to develop methods of dust explosion prevention in industrial plants. Studies have been made to determine the causes of dust explosions in grain elevators, feed, cereal, and flour mills, and starch factories. Recently this work has been expanded to include other industrial plants such as cork mills, hard rubber grinding mills, woodworking plants, aluminum, zinc, and magnesium plants, spice mills, powdered milk plants, chocolate and cocoa plants, sugar refineries, and similar plants producing or handling dusty material. There are approximately 28,000 manufacturing establishments in the United States subject to the hazard of dust explosions. These plants employ more than 1,324,000 persons and manufacture products having an annual value in excess of \$10,000,000,000.

The bureau is cooperating with the National Fire Protection Association in the preparation of safety codes for dust explosion prevention in industrial plants. Codes have already been prepared for terminal grain elevators, flour and feed mills, starch factories, sugar and cocoa pulverizing plants, and pulverized fuel systems, and have been approved by the American Standards Association.

The methods of preventing dust explosions developed by the bureau have been instrumental in reducing the losses from dust explosions in grain threshing machines and in the grain-handling industries. Progress is being made in the development of explosion preventive measures in other industries.

In addition to the safety codes referred to there are a number of publications describing the dust explosion prevention measures developed by the bureau.

Bulletin 379. Dust explosions and fires in grain separators in the Pacific Northwest. D. J. Price and E. B. McCormick.

Bulletin 681. Grain-dust explosions; investigation in the experimental attrition mill at Pennsylvania State College. B. W. Dedrich, R. B. Fehr, and D. J. Price.

Circular 98. The installation of dust-collecting fans on threshing machines for the prevention of explosions and fires and for grain cleaning. H. E. Roethe and E. N. Bates.

Circular 171. Unprotected electric lights. D. J. Price and H. R. Brown.

Dust explosions—Theory and nature of, phenomena, causes, and methods of prevention. 320 pages. D. J. Price, H. H. Brown, H. E. Roethe, and H. R. Brown. Published by the National Fire Protection Association, Boston.

Bulletin 1373. Dust control in grain elevators. H. R. Brown and J. O. Reed.
Technical Bulletin 44. The value of inert gas as a preventive of dust explosions in grinding equipment. H. R. Brown.

More than 100 articles on dust explosions have been prepared for publication in trade journals.

The bureau has also made investigations of cotton-gin fires and has found that the main cause of ignition is static electricity. Publications on this subject are:

Circular 28. Cotton-gin fires.

Circular 271. Grounding cotton gins to prevent fires. H. E. Roethe.

Circular 76. Fires in cotton gins and how to prevent them. H. E. Roethe.

Department of Commerce. Bureau of Mines.

Washington, D. C. Scott Turner, Director.

ESTABLISHED by act of Congress, approved May 16, 1910 (37 Stat. 681), this bureau is authorized to conduct investigations designed to improve health and safety in the mineral industry and to promote efficient development and utilization of mineral resources. Its work is organized under (a) the technologic branch, consisting of the mechanical, mining, metallurgical, petroleum and natural gas, experiment stations, helium, and explosives divisions; (b) the economic branch, including the coal, mineral statistics, petroleum economics, rare metals and nonmetals, and common metals divisions; (c) the health and safety branch, comprising the health division and the safety division; and (d) the administrative branch, consisting of the office administration and information divisions. The principal experiment station and central laboratories are at Pittsburgh, Pa.; other experiment stations are located at Bartlesville, Okla. (petroleum); Berkeley, Calif.; Minneapolis, Minn.; Salt Lake City, Utah; Seattle, Wash.; Tucson, Ariz.; Tuscaloosa, Ala.; New Brunswick, N. J.; Rolla, Mo.; and Reno, Nev. The bureau has an experimental mine at Bruceton, Pa., for explosion tests, etc. Investigations are also carried on under cooperative agreements with various State universities, mining schools, bureaus and commissions, and other agencies. Each annual report of the director contains a record of investigations completed or in progress.

For purposes of safety work the country is divided into 9 safety districts, each with a district engineer in charge; and the bureau maintains in them 11 mine-rescue cars and 11 safety stations, which render aid at mine disasters, and at which about 80,000 miners each year are trained in first-aid and mine-rescue methods.

The publications of the bureau are the bulletins and the technical papers (containing the results of investigations), the miners' circulars (written in nontechnical English and dealing with accident prevention, rescue and first-aid methods, the safeguarding of health, and other topics that directly concern the workers in mines, mills, and metallurgical plants), the economic papers (analytical studies of production statistics, sources, resources, distribution, and industrial flow of mineral commodities), the annual report entitled "Mineral resources of the United States" summarizing the production and consumption of the different minerals, the annual reports of the director, and miscellaneous handbooks on special subjects, posters, charts, and schedules. A printed list of them may be obtained on application. A mimeographed series of brief reports, presenting results of minor investigations on special phases of major investigations, is also issued

and distributed to the technical press and to Government organizations, companies, or individuals interested.

Among the studies which have been published as bulletins or technical papers are many dealing with mine hazards, rescue and first-aid training for miners, health and safety conditions in mines, quarries, metallurgical plants, and in the oil and gas industries, explosives and equipment used in mines and quarries, and related subjects, viz:

Coal dust, explosion tests, etc.:

Bulletins Nos. 20, 50, 52, 56, 102, 141, 167, 242, 268; Technical Papers Nos. 386, 448, 464; Serials Nos. 2606, 2638, 2649, 2793; Information Circulars Nos. 6008, 6039, 6085, 6112, 6153, 6178.

Mine gases, explosibility, testing, etc.:

Bulletins Nos. 42, 72, 197, 277, 279, 287; Technical Papers Nos. 39, 43, 119, 121, 134, 150, 190, 249, 320, 355, 357; Miners' Circulars Nos. 14, 33, 34, 35; Serials No. 2207, 2275, 2282, 2303, 2427.

Prevention of explosions:

Technical Papers Nos. 21, 56, 84; Bulletin No. 225; Miners' Circulars Nos. 21, 22, 27; Serial No. 2856; Information Circular No. 6070.

Safety of mine electrical and other equipment:

Bulletins Nos. 46, 68, 74, 240, 258, 305, 313; Technical Papers Nos. 19, 44, 75, 101, 103, 133, 228, 237, 271, 306, 402, 429, 454; Serials Nos. 2224, 2258, 2303, 2371, 2541, 2626, 2813, 2859; Information Circulars Nos. 6005, 6037, 6046, 6052, 6053, 6096, 6098, 6108.

Accident prevention in metal mines:

Bulletin No. 257; Technical Papers Nos. 30, 229, 244, 400; Serials Nos. 2255, 2259, 2863.

Safety in stone quarrying:

Technical Paper No. 111; Serial No. 2299.

Mine rescue and first aid, gas masks, oxygen-breathing apparatus, etc.:

Bulletin No. 62; Technical Papers Nos. 11, 62, 77, 82, 122, 248, 272, 277, 292, 300, 334, 348, 373, 433; Miners' Circulars Nos. 25, 30, 32; Serials Nos. 2209, 2234, 2360, 2445, 2473, 2489, 2494, 2591, 2719, 2750; First Aid Manual; Handbook on Self-Contained Oxygen Breathing Apparatus.

Occupational diseases:

Miner's nystagmus (Bulletin No. 93); pulmonary diseases due to rock dust in metal mines (Bulletin No. 132; Technical Papers Nos. 105, 260, 372); control of hookworm infection (Bulletin No. 139); compressed air illness (Technical Paper No. 285); lead poisoning (Technical Paper No. 389); mercury poisoning (Serial No. 2354).

Blast furnaces, hazards, and accident prevention:

Bulletins Nos. 130, 140; Technical Paper No. 136; asphyxiation by blast-furnace gas (Technical Paper No. 106).

Steel plants:

Health conservation (Technical Paper No. 102); dust hazards (Technical Paper No. 153); carbon monoxide poisoning (Technical Paper No. 156).

Explosibility of acetylene (Technical Paper No. 112); inflammability of aluminum dust (Technical Paper No. 152); gasoline hazards (Technical Papers Nos. 115, 127).

Hazards and safety measures in oil and gas industries:

Bulletins Nos. 231, 272; Technical Papers Nos. 352, 382, 332, 419, 422, 462; Serials Nos. 2219, 2400, 2557, 2611, 2738, 2772, 2776, 2814, 2847, 2956; Information Circular No. 6064).

Sanitation in mining communities:

Miners' Circular No. 28; Technical Papers Nos. 261, 289; Serials Nos. 2391, 2646.

Mine ventilation:

Bulletins Nos. 204, 285; Technical Paper No. 251; Serials Nos. 2355, 2426, 2554, 2563, 2584, 2637; Information Circulars Nos. 6086, 6089, 6126, 6136.

Mine fires, prevention, means of fighting, etc.:

Bulletins Nos. 188, 229; Technical Papers Nos. 24, 314, 330, 363; Miners' Circular No. 36; Serials Nos. 2240, 2262, 2325, 2335, 2499, 2801, 2914; Information Circular No. 6073.

Industrial dusts, mitigation, respirators, etc.:

Technical Papers Nos. 153, 394; Serials Nos. 2213, 2291, 2337.

Safety education and organization:

Technical Paper No. 452; Serials Nos. 2223, 2245, 2251, 2260, 2361, 2366, 2372, 2457, 2704, 2838; Information Circulars Nos. 6020, 6045, 6055, 6063, 6095, 6117, 6130, 6153, 6191, 6194.

Accident statistics for coal mines, coke ovens, metal mines, quarries, and metallurgical works are also published.

Department of Commerce. Bureau of Standards.

Washington, D. C. George K. Burgess, Director.

SAFETY work of the Bureau of Standards subsequent to that presented in Bulletin No. 299 of the United States Bureau of Labor Statistics (pp. 30-32), in so far as it concerns personnel, has been in connection with the hazards in the use of gas appliances and the hazards from ultra-violet radiation, on which the bureau has published a number of technologic papers.

The bureau cooperates with the various State commissions in the preparation of safety regulations, and it is represented upon a large number of sectional committees which are developing safety codes for which various engineering societies and other organizations are sponsors.

Department of the Interior. Bureau of Education.

Interior Building, Washington, D. C. Wm. John Cooper, Commissioner.

SPECIAL studies on educational subjects by its own staff and other specialists are published by this office in its series of bulletins. Those covering personnel research include the following:

Biennial surveys and industrial education studies:

- 1923, No. 28. Vocational education, 1920-1922.
- 1925, No. 37. Industrial education, 1922-1924.
- 1927, No. 29. Industrial education, 1924-1926.
- 1929, No. 21. Industrial education, 1926-1928.
- 1922, No. 24. Functions and administration of school janitor service.

- 1923, No. 3. History of the manual training school of Washington University.
 1924, No. 2. Statistics of industrial schools for delinquents, 1920-1922.
 1924, No. 11. Manual arts in the junior high school.
 1928, No. 10. Statistics of industrial schools for delinquents, 1926-27.
 1928, No. 18. Private and endowed schools offering trade and industrial courses.

1929, No. 30. The general shop.

Industrial education circulars:

- No. 16. March, 1923. Studies about occupations in public schools.
 No. 17. April, 1923. Development of plans for the preparation of teachers.
 No. 22. March, 1923. The preparation of teachers.
 No. 23. June, 1924. Vocational education in Geneva, Switzerland.
 No. 24. January, 1926. Dr. John de la Howe Industrial School, Willington, S. C.
 No. 25. July, 1926. Relating foreman programs to the program for vocational education.
 No. 26. July, 1926. Time allotment to manual arts work.
 No. 28. December, 1929. Grading in industrial schools and classes, with an annotated general bibliography.

Miscellaneous:

- 1922, No. 32. A program of education in accident prevention.
 1929, No. 26. Commercial education, 1926-1928.

Library leaflets:

- No. 12. October, 1920. Educational surveys.
 No. 15. January, 1922. Vocational education.
 No. 17. February, 1923. Project method in education.
 No. 19. April, 1923. Education of women in the United States.
 No. 30. January, 1925. Education for citizenship.
 No. 32. October, 1925. Vocational guidance.
 No. 33. May, 1927. Vocational guidance.
 No. 36. May, 1929. Vocational guidance.

Post Office Department.

Service Relations, Washington, D. C. Louis Brehm, Director.

A WELFARE DIVISION was organized by the department in June, 1921. The name was changed to service relations on January 1, 1923. Extensive welfare and personnel activities are carried on through this division, the objectives of which "are to help in securing the best possible combination of satisfaction to the users of the postal service and to the workers in the service." The division functions through local city and county organizations, called "councils." Monthly bulletin letters are issued to the local service councils and quarterly bulletin letters to the county service councils. These letters pertain principally to health and welfare subjects.

The United States Public Health Service has cooperated in making several surveys, one dealing with lighting standards and lighting equipment applicable to the needs of post-office work. Other studies relate to dust hazard in mail bags; the dangers of carbon monoxide in garages; the best type of shoulder straps for letter carriers; and the relationship of illumination to ocular efficiency and ocular fatigue.

Treasury Department. Public Health Service.

Division of Scientific Research, Washington, D. C. Assistant Surgeon General A. M. Stimson in Charge.

OFFICE OF INDUSTRIAL HYGIENE AND SANITATION.—Under the direction of Surgeon L. R. Thompson, this office investigates health hazards and occupational diseases; working conditions in relation to fatigue, ventilation, lighting, etc.; occupational morbidity and mortality; and other phases bearing on the health of the industrial worker. Only research in progress at the present time will be mentioned.

Recently attention has been devoted particularly to the health hazards of the dusty trades. A series of investigations has been conducted in the field, including determination of the extent of dustiness, observation of disabling sickness, physical examinations, X rays of the chest, etc., of workers exposed to certain dusts as exemplified in granite-cutting, a Portland cement plant, a cotton-cloth manufacturing plant, hard and soft coal mines, a silver-polishing plant, and street sweeping in a large city. Bulletins covering each of these investigations are in course of preparation, two having already been published. In view of the close bearing which ventilation has on the mitigation of the dust hazard, that phase received special consideration.

Publications in this series include two bulletins on the health of workers in dusty trades: Health of workers in a Portland cement plant (Bul. No. 176, 1928) and Exposure to siliceous dust (granite industry) (Bul. No. 187, 1929); and the following reprints from Public Health Service reports: Dust inhalation in its relation to industrial tuberculosis (Reprint No. 990, 1925); a review of the methods used for sampling aerial dust (Reprint No. 1004, 1925); a study of the efficiency of dust-removing systems in granite-cutting plants (Reprint No. 1324, 1929); effect of inhaling siliceous dust on quiescent tuberculous lesion (Reprint No. 1351, 1930):

Utilizing the same method of continuous observation, an investigation has been made of the lead hazard in a battery-making plant, particular attention being paid to the blood picture derived from laboratory analysis. (Reprint No. 1299, 1929.) Another study in which a unit has been kept in the field over a period of time is that in regard to the high rate of pneumonia among steel workers, which includes a measurement of radiant energy in its effect on skin temperatures.

Investigations are being conducted as to the practical efficiency of ventilating devices used in the removal of hazardous substances, such as dusts, fumes, gases, and sprays. So far these studies have related particularly to granite cutting, chromium-plating, and sand-blasting. One report is given in Reprint No. 773, "Efficiency of various kinds of ventilating ducts" (1929). A further study was in regard to the danger of benzol poisoning in chemical laboratories, published as Reprint No. 1237 (1928).

The office is continuing an investigation of the possible harmful effects of tetraethyl lead as used in gasoline for automobiles, with respect to distributors, garage men, and individual users. Reports already completed and published are: Proceedings of a conference to

determine whether or not there is a public-health question in the manufacture, distribution, or use of tetraethyl lead gasoline, held at Washington, D. C., May 20, 1925 (Bul. No. 158, 1925); the use of tetraethyl lead gasoline in its relation to public health (Bul. No. 163, 1926); changes in the regulations proposed for tetraethyl lead gasoline (Reprint No. 1260, 1928). Publications covering studies of gasoline fumes, automobile exhaust gas, and carbon monoxide are: The effect of gasoline fumes on dispensary attendance and output in a group of workers (Reprint No. 786, 1922); the elimination of carbon monoxide from the blood (Reprint No. 865, 1923); the problem of automobile exhaust gas in streets and repair shops in large cities (Reprint No. 1217, 1928); effects of repeated daily exposure of several hours to small amounts of automobile exhaust gas (Bul. No. 186, 1929).

Studies of the distribution of daylight in buildings have been continued experimentally, with the hope of establishing satisfactory standards of lighting for factories, hospitals, and schools. A special study has also been made as to the loss of light in a large city due to smoke, a continuous record having been obtained for a year. Publications in this field include "A survey of natural illumination in an industrial plant" (Reprint No. 741, 1922) and two studies in illumination made for the United States Post Office Department: The hygienic conditions of illumination in certain post offices, especially relating to visual defects and efficiency (Bul. No. 140, 1924); and relationship of illumination to ocular efficiency and ocular fatigue among the letter separators in the Chicago Post Office (Bul. No. 181, 1928).

The possible health hazards connected with radium dial painting in watch factories are being investigated, special attention being given to the manner in which the workers are exposed to radium or its emanations, and the possible methods of protection of the workers.

For a number of years the office has secured and published current reports of disease prevalence among wage earners in different plants, industries and occupations, based primarily on the records of sick benefit associations, and has also analyzed more intensive data relating to the incidence of disease according to diagnosis among wage earners of different sexes, ages, races, and occupations. Morbidity studies are covered in the following reprints: Disabling sickness among employees of a rubber-manufacturing establishment, 1918-1920 (No. 804, 1922); incidence of serious morbidity among a group of wage earners (No. 807, 1922); sickness among 21,000 automobile workers (No. 914, 1924); disabling sickness in cotton-mill communities of South Carolina (No. 929, 1924); a 10-year record of absences from work on account of sickness and accidents—experiences of employees of the Edison Electric Illuminating Co. of Boston, 1915-1924 (No. 1142, 1927); sickness among persons in different occupations of a public utility (No. 1207, 1928); sickness among industrial employees, frequency of disability lasting longer than one week from important causes among 165,000 persons in industry in 1927 and a summary of the morbidity experience from 1920 to 1927 (No. 1266); sickness among industrial employees during the first three months of 1929 (No. 1316, 1929); sickness among a group of industrial employees, 1928 (No. 1347, 1930); and Bulletin No. 165—Economic

status and health—a study and review of the relevant morbidity and mortality data (1926).

Analyses of occupational mortality are carried out in so far as data are available, and include at this time a study of deaths by occupation among life-insurance policyholders, based on an investigation by actuaries and insurance medical examiners. Studies are also being made of the rate of physical impairment among workers in broad industrial groups and in a few specific occupations.

Surgeon R. R. Sayers, of the Public Health Service, acts as chief of the health and safety branch of the United States Bureau of Mines and also as chief surgeon of the health division of the same organization.

Articles on various phases of industrial hygiene by staff members of the Public Health Service appear frequently in magazines, notably the Nation's Health and the Journal of Industrial Hygiene.

War Department. General Staff.

State, War, and Navy Building, Washington, D. C.

1. UPON the reorganization of the General Staff, in 1921, the advisory board and training branch of the operations and training division had charge of the training work of the Army previously carried on by the education and recreation branch of the war plans division, to which the duties of the committee on education and special training (organized February, 1918) were transferred in September, 1919. The advisory board, consisting of civilians (C. R. Mann, chairman), formulated the plans for training to be carried out by the training branch.

2. The method adopted by the board has been outlined in a mimeographed memorandum "The technique of Army training" (8 pp.). It involves the preparation by the Army authorities of minimum specifications of the personal characteristics, skill, and knowledge needed to meet the requirements of each of the many grades and ratings of the Army; the preparation of standardized tests for selecting and assigning men; the analysis of the required skill and knowledge into unit operations and information topics which make good instruction units, and the combination of these into a practical school program; the preparation of students' manuals and instructors' guides; the determination of the average time required for men to qualify for each grade or rating.

The personnel of the division of testing and grading (D. Edgar Rice, director) of the research and development service was engaged in administering tests for selection and assignment of men in the various Army camps and posts. Up to May, 1921, about 58,000 men had been tested and classified on the basis of several elementary educational and vocational tests.

From 1922, until it was dissolved in 1925, the advisory board was engaged in the preparation of minimum specifications and index for occupational specialists (A. G. O. Doc. No. 1121, 1923), and certain training manuals for Army specialists.

Army intelligence test—Vocabulary.—This is a test given by line officers, which may be used as a group test, known as the reading vocabulary test; as an individual test (the verbal vocabulary test); and as a literacy test. It is composed of 10 sheets, any one of which

may be used in the test. Instructions are issued that they be used in irregular rotation. It provides for a possible score of 45. Recruits making a score of 36 have a mental age of between 10 and 11 years (Stanford revision of the Binet-Simon test) and may be accepted, if otherwise qualified, without further mental test. A score of 22 to 32, inclusive, places the applicant in a doubtful group so far as the line officer is concerned, and further intelligence tests are conducted by a medical officer. A score of 20 or less indicates that the applicant is below the mental age of 9 years and is ground for unqualified rejection by the line recruiting officer. The literacy test on the same sheet is not given to applicants making a score of 36 or more on the third vocabulary test. All other accepted applicants are given this test. The test consists of copying three simple questions and giving a written answer for each. It has purposely been made very easy.

Performance test for the use of line and medical officers in testing general intelligence of applicants for enlistment.—This is an individual test. It is used in the examination of those who do not understand English or who have learned too little English to take satisfactorily the Binet-Simon test.

The abbreviation of the Stanford revision of the Binet-Simon test for use of medical officers in testing general intelligence.—This is an individual test and is given to applicants whose score on the vocabulary test is below 34, unless the applicant is rejected for other causes. The rough score is divided by 12 to give the mental age in years and months. A mental age of 10 years or less by this test is cause for rejection because of deficiency in general intelligence. Applicants having a mental age of from 10 years and 1 month to 10 years and 6 months, inclusive, are accepted if generally very desirable. Above this mental age they are accepted if otherwise qualified.

Classification.—Tentative mobilization classification regulations (A. G. 381, July 17, 1926) have been prepared. The purpose of these regulations is to insure as far as practicable that the Army, during a national emergency, will use to the best advantage the training, experience, and other qualifications that recruits bring with them from civil life.

Civil Service Commission.

Research Division, Washington, D. C. L. J. O'Rourke,
Director.

THE research division was established in 1922, when appropriation was made available for the purpose of investigating the character, training, and experience of applicants for positions in the classified civil service.

The research programs undertaken have been concerned primarily with problems of selection and management. The improvement of selection methods is necessarily accompanied with consideration of related problems of personnel administration. In developing selection devices the duties of each type of position are carefully studied under actual working conditions, the results forming a basis for reducing fatigue and conserving the energy of the worker and for

improving methods of selection and training, transfer and promotion procedure, wage adjustment, organization of work, and coordination of activities. The study of positions in the Postal Service, conducted during 1923, 1924, and 1925, is an outstanding example of the extent to which such analysis of duties may result in relieving unnecessary expenditure of energy, and at the same time increasing production and leading to better relations between employees and management.

For many positions general adaptability tests have been substituted for an educational requirement where the requirement was intended to insure a degree of general adaptability rather than a degree of educational attainment. These tests are advantageous in that they not only distinguish between those who are and those who are not eligible, but they also differentiate among the abilities of the applicants. The tests have been so constructed as to make possible a method of interpreting a score made on one examination, in terms of other examinations, and thus of guiding individuals to positions for which they are qualified.

Special aptitude tests have been established for certain positions which require that appointees have aptitude for particular types of work, such as the distribution of mail, which is peculiar to the Government service, and in which applicants can not, therefore, have had previous training. Research studies have indicated that the aptitude tests predict with a high degree of accuracy which applicants will be most efficient in the occupation in question. Officials of the departments concerned have also reported a much higher efficiency in personnel secured through the new examinations.

Research procedure in connection with selection includes the following steps:

1. Study of the duties of the position in question.
2. Determination of the proficiency necessary to perform each of these duties.¹
3. Analysis of the qualifications necessary to attain such proficiency.¹
 - a. Skill and knowledge—training and experience.
 - b. General intelligence—ability to learn and to adapt to new situations.
 - c. Special aptitudes, including such qualities as ingenuity and constructive ability.
 - d. Personality, including tact, perseverance, aggressiveness.
 - e. Physical qualifications—general and special.
4. Study of the relative importance of these qualifications as far as fitness for performing duties is concerned.¹
5. Selection of a group of typical employees now performing these duties, including both satisfactory and unsatisfactory workers, concerning whom accurate ratings of individual efficiency are obtained.
6. Construction of examinations, oral, written, or both, to measure the essential qualifications.

¹ In connection with these steps the relative efficiency of satisfactory and unsatisfactory workers is studied in order to facilitate ascertaining the qualities that determine the worker's success or failure. This study varies in importance with the type of position and with the possibility of securing a criterion of efficiency in that position.

7. Determination of the best method of giving examinations; of the importance of sample questions, specific directions, and various methods of scoring; of the possibility of making several series of an examination which will be equal in difficulty.

8. Trials of proposed tests upon groups whose relative efficiency is known; in other words, tests of the tests.

9. Selection, revision, or rejection of tests on the basis of statistical evaluation of the results of the trials.

10. Assignment of relative weights to the several tests included in the examination, and determination, on the basis of statistical evaluation, of the score to be required as a passing grade.

Present research programs include the major steps listed below. This research is basic for improving selection, placement, and adjustment in the Federal service. The coordination of the work with schools and industries represents not additional research but rather a greater utilization of the materials developed for the service.

1. Study of a selected number of civil-service positions, with regard to actual duties performed.

2. Determination, on the basis of actual case histories, of opportunities and of present and possible lines of promotion in those positions.

3. Critical study of present examination standards in relation to each other and to the requirements of the positions.

4. Improvement of the validity and the practicability of examinations.

5. Study, in industry as well as in Government, of factors, such as experience, not measured by tests.

6. Release of tests to industries, to determine industrial standards of selection and to secure a clearer understanding of the limitations, as well as the values, of our methods and measures.

7. Establishment of national standards, making test scores more meaningful to placement officers.

8. Release of tests to schools, and development of cooperative relations with research, guidance, and personnel directors in universities and secondary schools.

9. Release to schools of tables showing relationship between test scores on our general intelligence tests and the intelligence tests used in schools and colleges.

10. Development of a guidance card which will enable the applicant to analyze opportunities in relation to his qualifications.

11. Preparation of sample tests, showing the nature of the examinations used for the positions listed on the guidance card.

12. Coordination of the use of eligible registers, after determining the extent to which eligibility for one position signifies ability to fill other positions.

13. Dissemination, among present employees, of information concerning lines of promotion, possibilities of transfer, and requirements which must be met in order to secure such promotion or transfer.

Results of research undertaken have been published as follows:

O'Rourke, L. J. Selective tests. Proceedings of the forty-second annual meeting of the National Civil Service Reform League, 1922.

Filer, Herbert A. Progress in civil service tests, Part I.

O'Rourke, L. J. Progress in civil service tests, Part II. *Journal of Personnel Research*, Vol. 1, No. 11, Mar., 1923.

— Report of the Director of Research, Fortieth Annual Report, U. S. Civil Service Commission, pp. 14-64.

— Report of the Director of Research, Forty-first Annual Report, U. S. Civil Service Commission, pp. 45-62.

— Personnel work in the Federal Government. *Vocational Guidance Magazine*, Vol. III, No. 4, p. 126, January, 1925. Reprinted in *Principles and Problems of Vocational Guidance*, edited by Frederick J. Allen; McGraw-Hill Book Co.

— Research in Federal personnel work. *Psychological Bulletin*, Vol. 22, No. 2, pp. 115-116, February, 1925.

— Report of the Director of Research, Forty-second Annual Report, U. S. Civil Service Commission, pp. 44-74.

— Saving dollars and energy. *The Journal of Personnel Research*, Vol. IV, Nos. 9 and 10, pp. 351-364, January-February, 1926, and Vol. IV, No. 11, pp. 433-450, March, 1926.

— Building an eligible register. *Postmaster's Gazette*, Vol. 3, No. 2, pp. 24-25, November, 1926.

— Selection tests for police. Proceedings of the thirty-third convention of the International Association of Chiefs of Police, 1925, p. 126.

— Report of the Director of Research, Forty-third Annual Report, U. S. Civil Service Commission, pp. 49-68.

— The value of personnel research. Proceedings of Eighth International Congress of Psychology, 1927, p. 403.

— Limitations of psychological studies as at present utilized by management. Proceedings of International Management Congress, 1927.

— Report of the Director of Research, Forty-fourth Annual Report, U. S. Civil Service Commission, pp. 31-49.

— Measuring judgment and resourcefulness—An interview technique. *The Personnel Journal*, Vol. VII, No. 6, pp. 427-440, April, 1929.

— The use of scientific tests in the selection and promotion of police. *The Annals of the American Academy of Political and Social Science*, Vol. CXLVI, pp. 147-159, November, 1929.

— Report of the Director of Research, Forty-fifth Annual Report, U. S. Civil Service Commission, pp. 43-57.

— A new emphasis in Federal personnel research. Government Printing Office, 1930.

— Office employment tests. Proceedings of the Personnel Administration Conference, American Management Association, January, 1930.

Bureau of Efficiency.

Winder Building, Seventeenth and F Streets, Washington, D. C. Herbert D. Brown, Chief.

ESTABLISHED as a division of the Civil Service Commission by authority of the legislative, executive, and judicial appropriation act approved March 4, 1913 (37 Stat. 750); made an independent establishment under present name by the urgent deficiency appropriation act approved February 23, 1916 (39 Stat. 15).

The functions of the Bureau of Efficiency are to investigate the methods of business in the Government service, to investigate the duplication of statistical and other work, to investigate the personnel needs of the executive departments and independent establishments, and to establish and maintain a standard system of efficiency ratings for the classified civil service in the District of Columbia. The duties and powers of the bureau with reference to investigations in the executive departments and independent establishments of the Federal Government were extended by the act of Congress approved May 16, 1925 (43 Stat. 576), to include the municipal government of the District of Columbia.

By Executive order of October 24, 1921, the bureau was directed by the President to prescribe a system of rating the efficiency of employees in the classified service in the District of Columbia. Under these instructions the bureau prescribed a uniform procedure for rating the efficiency of employees engaged in clerical or routine work. This system covered about 75 per cent of the total number of employees in the departmental service. The principal features of the system are described in the report of the bureau for the period from November 1, 1921, to October 31, 1922.

During 1923 the bureau assisted the Director of the Bureau of Engraving and Printing in the establishment of a system of efficiency ratings for employees engaged in such clerical-mechanical processes as counting, examining, assorting, pressing, and trimming. A formula was also devised for rating plate printers which was used in selecting surplus employees for dismissal.

In 1924 the Bureau of Efficiency completely revised the system of efficiency ratings applicable to departmental employees and extended the system to embrace virtually all employees in the classified departmental service. The first rating under the amended system was made as of November 15, 1924. A detailed description of the system is printed as an appendix to the report of the bureau for the period November 1, 1923, to October 31, 1924.

An investigation of the methods and procedures of the Civil Service Commission, authorized by the legislative, executive, and judicial appropriation act of March 3, 1917 (39 Stat. 1080), was submitted to the President on April 7, 1922, and later transmitted to Congress. The principal recommendations were for more practical methods of examining candidates and for a modification of the commission's policy in the selection of eligibles for promotion. In 1923, the bureau made another study of the organization and methods of the Civil Service Commission at its request. A number of reports containing recommendations for improving and simplifying the work of the commission and expediting its business have been submitted.

By the act of March 3, 1917, referred to above, the bureau was directed to make an investigation of the classification, salaries, and efficiency of Federal employees in the District of Columbia and a comparison of the rates of pay of employees of the Federal Government with those of State and municipal governments and commercial institutions performing similar services. This work, suspended during the war and again during the life of the Joint Commission on Reclassification of Salaries,² was resumed at the beginning of 1920 at the direction of members of the House Committee on Appropriations. Moreover, it was necessary to classify all employments in the departmental service as a preliminary step to the application of salary standards in connection with the efficiency rating system. Such a classification was specifically directed by the Executive order of October 24, 1921. Under this requirement a classification schedule was formulated by the bureau with the concurrence of the heads of the executive departments. All employees were allocated to their proper grades in the classification schedule on the basis of the charac-

² The report of this joint commission, created Mar. 1, 1919, by section 9 of the legislative, executive, and judicial appropriation act for 1919-20, submitting a classification of positions on the basis of duties and qualifications, and schedules of compensation for the respective classes, was printed as House Doc. 686, 66th Cong., 2d sess.

ter of the work to which they were assigned and the qualifications required for its satisfactory performance.

The act providing for the classification of civilian positions within the District of Columbia and in the field services was approved March 4, 1923 (42 Stat. 1488). That act created an ex-officio board known as the Personnel Classification Board, which consists of the Director of the Bureau of the Budget, a member of the Civil Service Commission, and the chief of the Bureau of Efficiency, or alternates designated by those organizations. The act provides that the Bureau of Efficiency shall render the board such cooperation and assistance as may be required for the performance of its duties. Accordingly a part of the staff of the bureau has been regularly detailed to the board during the last seven years.

Prior to the retirement act of 1920, the bureau collected elaborate statistics on the personnel of the Government service and from these made actuarial calculations for the Senate Committee on Civil Service and Retirement as to the cost of retiring civil employees of the Government under the various plans proposed. On July 1, 1925, the chief of the Bureau of Efficiency was appointed a member of the Board of Actuaries, authorized by section 16 of the act approved May 22, 1920, for the retirement of employees in the classified civil service (41 Stat. 620). During recent years the bureau has made a number of actuarial valuations of various existing and proposed retirement plans covering various groups of employees in the service of the Federal Government and the District of Columbia government. The bureau is now cooperating with the Board of Actuaries and the General Accounting Office in devising a uniform procedure for the several departments and independent establishments for compiling historical, statistical, and accounting data concerning employees coming within the provisions of the civil service retirement and disability act.

Federal Board for Vocational Education.

Washington, D. C. J. C. Wright, Director.

THE Federal Board for Vocational Education was created by the act of Congress, approved February 23, 1917, which provided Federal aid for schools and classes and teacher training carried on under the direct supervision or control of State boards of vocational education, in accordance with plans approved by the Federal Board. Its primary function is the administration of this act. In addition, it is charged with the administration of the act of Congress, approved March 10, 1924, which extends the benefits of the vocational education (Smith-Hughes) act of 1917 to the Territory of Hawaii; of the act of Congress (George-Reed), approved February 5, 1929, which provides for the further development of vocational education in agriculture and home economics; and of the act of Congress, approved June 2, 1920, and amended June 5, 1924, which provides for the promotion of vocational rehabilitation of persons disabled in industry, or otherwise; and it is commissioned by the act of Congress approved February 23, 1929, to provide for the vocational rehabilitation of disabled residents of the District of Columbia. By each of these acts the board is authorized to make studies, investigations, and reports.

At the present time a number of important studies are under way in all of the fields of vocational education for which the board is responsible, and practically without exception these studies have been instituted as a result of specific requests from (1) the States, (2) national business and industrial organizations interested in vocational training, and (3) from the various departments of the Government. Certain studies which appear to be necessary because of the knowledge which the Federal board has of general conditions prevailing in different fields of vocational education have also been made, and others are now under way.

The results of the research work undertaken to promote the efficiency of trade and industrial education are made available to the States through regional conferences held annually with representatives of State boards and through the publication of bulletins. The special types of service to State boards, as described in the fourth annual report, 1920 (pp. 28-40), includes studies of training of trade and industrial teachers and development of methods of educational trade analysis, effective programs for foremen's conferences, and methods of conducting local surveys. Short training courses on these subjects have been given at the regional conferences. Recent bulletins containing the results of studies in this field are:

No. 73. Part-time schools. A survey of experience in the United States and foreign countries, with recommendations. 1922. 462 pp.

No. 78. Part-time cooperative courses. Suggestions for the information of administrators and teachers interested in the organization of cooperative courses, the duties and responsibilities of the coordinator, and the organization of a curriculum. 1922. 31 pp.

No. 85. Program for training part-time teachers, organization and content of a training program to prepare teachers for effective service in part-time schools. 1923. 50 pp.

No. 87. Apprentice education. A survey of part-time education and other forms of extension training in their relation to apprenticeship in the United States. 1923. 521 pp.

No. 92. Apprentice education in the construction industry. 1924. 45 pp.

No. 95. Bricklaying. An analysis of the trade of bricklaying, together with suggestive courses of training for apprentices and journeymen workers. 1924. 140 pp.

No. 99. Directory of trade schools. Classified by trades taught in day unit and part-time trade courses which offer instruction in trade and industrial education, excluding evening trade extension classes. 1925. 38 pp.

No. 102. Paper hanging. An analysis of the paper-hangers' trade, together with suggestive courses of training for apprentices and journeymen workers. 1925. 69 pp.

No. 106. Stone setting. The setting of cut-stone trim in brick buildings. Specimen instruction material for use with advanced bricklayer apprentices and journeymen workers. 1927. 114 pp.

No. 109. Layouts and equipment for automobile school shops, information and suggestions regarding shop layouts and equipment for schools giving training in automobile repairing. 1926. 27 pp.

No. 114. Training for leadership in trade and industrial education. 1927. 29 pp.

No. 125. The training of foremen conference leaders. Suggestions as to methods to be followed and types of subject matter recommended by a committee of experienced conference leaders. 1927. 120 pp.

No. 127. Progress in foreman training. A study of the results of 11 leader-training conferences conducted by the Federal Board for Vocational Education during the years 1926 and 1927. 1928. 27 pp.

No. 128. Bibliography on foreman training. A selected and annotated list of references on recent books, pamphlets, and magazine articles. 1928. 29 pp.

No. 130. Cooperative part-time education. The present status of cooperative schools and classes in the United States with suggestions as to methods by which such work may be organized. 1928. 35 pp.

No. 131. Foremen training in the United States. A translation of a report by a Swedish engineer on foreman training in the United States. 1928. 28 pp.

The results of the research work undertaken to aid the States in the establishment of vocational schools and classes in commerce and commercial pursuits are made available through such investigations and reports as the situation with the States requesting such aid has required; by conferences and special studies in the field of commercial education in States and large cities; and by outlining and promoting the educational programs of national trade associations. The results of these studies and investigations constitute the following subseries of bulletins:

No. 107. Vocational education for those engaged in the retail grocery business. The program developed in cooperation with the National Association of Retail Grocers. 1926. 179 pp.

No. 119. Elements of an educational program for laundry salesmen. Developed by a committee of the Laundryowners National Association in cooperation with the Federal Board for Vocational Education. 1927. 188 pp.

No. 123. A manual for conference leaders. For use in an educational program for men engaged in the retail meat business. 1927. 39 pp.

In the field of vocational rehabilitation the results of the studies, investigations, and surveys, which are described in the thirteenth annual report, 1929 (p. 25 ff.), are made available through national and regional conferences that are held in alternate years and constitute the following subseries of bulletins:

No. 72. Vocational rehabilitation in rural communities. 1923. 13 pp.

No. 76. Vocational rehabilitation and workmen's compensation. Interrelation of the program of vocational rehabilitation and workmen's compensation. 1922. 25 pp.

No. 80. Vocational rehabilitation. Its purpose, scope, and methods, with illustrative cases. 1923. 46 pp.

No. 93. Proceedings of the national conference on vocational rehabilitation of civilian disabled. Washington, D. C. February 4-8, 1924. 1924. 23 pp.

No. 96. A study of occupations at which 6,097 physically disabled persons are employed after being vocationally rehabilitated. 1925. 67 pp.

No. 104. Proceedings of the national conference on vocational rehabilitation of the disabled civilian. Cleveland, Ohio, September 29-October 2, 1925. 1926. 152 pp.

No. 110. Employment training in civilian vocational rehabilitation; definition, characteristics, and possibilities of employment training as a means of effecting rehabilitation of the physically disabled. 1926.

No. 120. Vocational rehabilitation in the United States. The evolution, scope, organization, and administration of the program of the vocational rehabilitation of disabled persons. 1927. 98 pp.

No. 121. Proceedings of the fourth national conference on the vocational rehabilitation of the disabled civilian. Memphis, Tenn. March 28-31, 1927. 1927. 144 pp.

No. 126. Workmen's compensation legislation in relation to vocational rehabilitation. An analysis of certain provisions of workmen's compensation laws showing their relation to the administration of vocational rehabilitation of disabled persons. 1927. 146 pp.

No. 132. A study of rehabilitated persons. A statistical analysis of the rehabilitation of 6,391 disabled persons. 1928. 46 pp.

No. 133. Vocational rehabilitation of the disabled. Salient facts. 1928. 10 pp.

No. 134. Proceedings of the fifth national conference on vocational rehabilitation of disabled persons. Milwaukee, Wis. September 26-28, 1928. 1928. 216 pp.

Federal Reserve Board.

Washington, D. C.

PERSONNEL studies covering Federal reserve bank employees have been continued in recent years for administrative guidance in formulating reserve bank personnel policies, but without publication of results. In 1921 a report prepared by the committee on personnel appointed at the governors' conference with the Federal Reserve Board in April, 1920, was published, giving a survey of personnel activities in Federal reserve banks.

Personnel Classification Board.

Washington, D. C. C. C. Van Leer, Chairman.

THE Personnel Classification Board was created on March 4, 1923, through the enactment of the classification act of 1923. It is an ex-officio board, which consists of the Director of the Bureau of the Budget, or an alternate from that bureau designated by the director; a member of the Civil Service Commission, or an alternate from that commission designated by the commission; and the Chief of the United States Bureau of Efficiency, or an alternate from that bureau designated by the chief of the bureau. The director of the Bureau of the Budget, or his alternate, is named in the statute as chairman of the board.

The board has no specific appropriation of its own, but its staff is composed of persons employed by the various other governmental departments and establishments and detailed to the board for service. For the fiscal year ending June 30, 1929, it received an appropriation of \$75,000 for the conduct of a classification and compensation survey of some 106,000 positions in the field service.

The fields of personnel administration covered in the activities of the board are:

1. The classification of governmental positions in the District of Columbia according to their duties and responsibilities, and the allocation of these positions to salary grades contained in compensation schedules enacted by Congress.

2. The review and revision of efficiency or service rating systems prepared by the Bureau of Efficiency, and certain phases of the administration of these efficiency rating systems in cases of proposed dismissals or reductions for inefficiency and in cases of proposed reductions in force because of cessation or diminution of activities.

3. The study of rates of compensation provided in the act with a view to reporting conclusions and recommendations to Congress as to readjustments deemed just and reasonable.

4. The preparation of class specifications showing the title of each class of positions, the duties and responsibilities involved, and the minimum qualifications required for the satisfactory performance of such duties and the discharge of such responsibilities.

A study under way at present is the field survey authorized by section 2 of the act of May 28, 1923. (45 Stat. 776.) This involves the study of the duties and responsibilities of some 106,000 positions in the field service, the preparation of a classification plan for those positions, a study of wage data as to positions in private employment

as well as in the Government service, and the preparation of a compensation plan for Government positions.

Exclusive of circulars and forms of a routine nature, the publications of the board are as follows:

Form No. 12. Class specifications for positions in the departmental service. Government Printing Office, 1924. (Out of print.)

Report of wage and personnel survey, field survey division, Personnel Classification Board, February, 1929. (H. Doc. 602, 70th Cong., 2d sess.) Government Printing Office, 1929. Price, 60 cents.

Form No. 18. Preliminary class specifications of positions in the field service. (In press.)

The board also has in preparation a supplemental or final report on the field service.

United States Shipping Board.

New Navy Building, Washington, D. C.

ANNUAL reports of the Shipping Board devote a chapter to the industrial relations division of the bureau of operations, which is based on the report of the division on industrial relations in the marine and the dock departments.

II. STATE AND MUNICIPAL AGENCIES

(a) STATE AGENCIES *

California. Industrial Accident Commission.

State Building, San Francisco, Calif. Will J. French, Chairman.

THIS commission, organized January 1, 1914, administers the workmen's compensation, insurance, and safety act. It is a division of the department of industrial relations created in 1921.

DEPARTMENT OF SAFETY. C. H. Fry, director.—The work of the safety department is divided into divisions: Boiler, construction, electrical, elevator, logging and shipbuilding, mechanical, mining, and oil. Surveys of the special hazards of the various industries are made and general safety orders issued. Accident-prevention work and safety campaigns are carried on by the department, a recent campaign on prevention of accidents in building and engineering construction having been especially successful.

In addition to its regular safety orders, which are revised and reissued from time to time, the safety department has published:

Organization of safety committees in industry.

Hazards ordinarily found in garages and automobile service shops.

Hazards in the dry-cleaning industry.

Special problems under consideration at present are the fumigation by hydrocyanic acid, spray coating, storing and use of photographic films, and the special problem which has been brought up by the erection of steel or reinforced-concrete buildings where it is necessary to hoist steel close to high-tension power lines.

California. Industrial Welfare Commission.

620 State Building, San Francisco, Calif. A. B. C. Dohrmann, Chairman.

CREATED by act of the legislature approved May 26, 1913 (Laws, 1913, c. 324), to regulate working conditions and establish minimum wages in occupations, trades, and industries in which women and minors are employed, this commission administers the division of industrial welfare of the department of industrial relations created by section 364c, Political Code.

Recent publications of the commission contain results of investigations as follows:

* Not all State departments of labor act as research agencies, and in a number of instances departments which engage in some research work in connection with their other duties do not publish reports of studies. Most of the State departments of labor are in fact engaged chiefly in administration of the labor laws, and only in the larger industrial States is research work in connection therewith attempted.

General conclusions as to effect of minimum wage regulation.

Report of factory and home work in the Chinese quarters, San Francisco and Oakland.

Report of conditions in the fruit and vegetable canning industry. Fifth Report, 1922-1926, pp. 13, 28, and 119.

Results of minimum wage regulation in California and investigations in various industries. Sixth Biennial Report, 1926-1928, pp. 14 and 106-134.

Connecticut. Department of Labor and Factory Inspection.

Hartford, Conn. Charlotte Molyneux Holloway, Industrial Investigator.

RESEARCH activities of the State department of labor are conducted through the industrial investigator, who is directed by statute to study the conditions of wage-earning women and girls. Reports of the investigating division of the department comprise one part of the biennial report of the department and deal with all wage earners of the State, but with especial emphasis on working women.

Illinois Department of Labor.

State Capitol, Springfield, Ill. Barney Cohen, Director of Labor.

CREATED under the act of March 7, 1917, known as the Civil Administrative Code, the department of labor superseded numerous agencies having to do with labor, which successive legislatures had established since 1879. The duties of most of the surviving agencies were brought under the jurisdiction of a single department head. Jurisdiction over mines, however, was given to a department of mines and minerals. The act of 1917 abolished the former separately functioning bureau of labor statistics (also known as the board of commissioners of labor), the industrial board, the State factory inspector, the State board of arbitration, and the general advisory board for the free employment offices, and transferred their duties to the department of labor.

The present work of the department of labor is organized into five main divisions, as follows: Industrial commission, division of factory inspection, division of inspection of private employment agencies, division of free employment offices, and division of general advisory board for the free employment offices. Much important work in the field of personnel research in Illinois was done by State agencies which existed before the establishment of the department of labor in 1917. Work in this field now falls under the bureau of statistics and research of the industrial commission.

INDUSTRIAL COMMISSION, 205 West Wacker Drive, Chicago, Ill. Clarence S. Piggott, chairman.—This division, which in 1917 succeeded the industrial board, administers the workmen's compensation act, furnishes the personnel and funds for most of the work of the bureau of statistics and research, and has jurisdiction over the mediators and conciliators of labor disputes. It is nominally a division of the department of labor but in its administration of the workmen's compensation act and of the arbitration and conciliation act it is not subject to the director of labor. Its annual report, however, is in-

cluded in the annual report of the department of labor. Publications of the industrial commission since 1917, aside from annual reports, are listed under the bureau of statistics and research.

BUREAU OF STATISTICS AND RESEARCH, 205 West Wacker Drive, Chicago, Ill. Howard B. Myers, chief.—In 1917 the division of labor statistics of the department of labor took over the work of the former bureau of labor statistics, especially in regard to industrial accident statistics. In 1921 the general advisory board for the free employment offices began publication of employment statistics and of the monthly *Employment Bulletin*, which since July, 1923, has been known as the *Labor Bulletin*. On July 1, 1925, the general advisory board was given funds by the general assembly with which to carry on statistical and research work for the department of labor, including accident statistics. A bureau was formed, which has been known successively as the bureau of industrial accident and labor research (1925-1927), the bureau of labor statistics (1927-1929), and by its present name since July, 1929. The bureau was transferred July 1, 1927, to the industrial commission, though it still serves the rest of the department of labor as well as the commission. It compiles the annual reports of the department of labor, prepares industrial accident statistics, edits the monthly *Labor Bulletin*, the official publication of the department, which contains figures and articles on employment conditions, industrial accidents, occupational disease, child labor, woman workers, hours of work, wages, labor turnover, cost of living, and subjects dealing with the work of the various divisions of the department of labor. Besides regular press releases on employment and building it has published one special bulletin and several pamphlets:

Bulletin No. 1. Accidents to employed minors in Illinois. A study of injuries which occurred in 1923 to workers under 18 years of age. 1927. 52 pp.

Reprint from *Labor Bulletin*, March and April, 1928. The compensation trend since 1913. The industrial commission watches compensation payments. 1928. 10 pp.

Pamphlet. Woman and child workers of Illinois. Why children should be required to obey the child labor law. 1928. 15 pp.

DIVISION OF FACTORY INSPECTION, 608 South Dearborn Street, Chicago, Ill. W. H. Curran, chief inspector.—Service established in 1893. Directly responsible to the governor until the consolidation of activities in 1917. This division enforces the child labor law, women's 10-hour law, health, safety, and comfort act, garment law, blower law, washhouse law, basement blower law, structural law, occupational disease law, and bedding law. Statistics concerning its work are published in the annual report of the department of labor.

DIVISION OF INSPECTION OF PRIVATE EMPLOYMENT AGENCIES, 608 South Dearborn Street, Chicago, Ill. John J. McKenna, chief inspector.—Continues the work of licensing private employment agencies, which was begun in 1899 under the secretary of state, given in 1903 to the bureau of labor statistics (board of commissioners of labor), and carried on from 1909 to 1917 by a chief inspector. In 1917 this work was brought into the department of labor by the Civil Administrative Code. The division issues licenses and enforces regulations concerning private employment agencies. Its work is summarized in the annual report of the department of labor.

DIVISION OF FREE EMPLOYMENT OFFICES, State Capitol, Springfield, Ill. Frank Unger, State superintendent.—Service established in 1899, and was directly under the governor until 1917, when it was brought into the department of labor. At present there are offices in 16 Illinois cities. Its statistics and reports are published in the monthly Labor Bulletin and in the annual report of the department of labor.

DIVISION OF THE GENERAL ADVISORY BOARD FOR THE FREE EMPLOYMENT OFFICES, 116 North Dearborn Street, Chicago, Ill. Benjamin M. Squires, chairman.—Established under the free employment reorganization act of 1915 to advise and cooperate with the former bureau of labor statistics and the general superintendent of the free employment offices in Chicago. In 1917 it became a division of the department of labor. In 1921 the work of the present bureau of statistics and research was begun under the board, but was transferred in 1927 to the industrial commission. Its reports are published in the annual reports of the department of labor.

Iowa. Bureau of Labor.

Des Moines, Iowa. H. V. Hoyer, Commissioner.

IN ADDITION to regular inspections of factories and workshops in connection with the administration of State labor laws, the Iowa Bureau of Labor publishes monthly the Iowa Employment Survey, showing trend of employment in identical establishments. Biennial reports contain wage and accident statistics and factory inspection reports. A special investigation of children in industry attending part-time school has been published as Bulletin No. 17 (1926).

Kansas. Commission of Labor and Industry.

State House, Topeka, Kans. C. J. Beckman, Commissioner.

THE commission has recently made a study of hours and wages of women employed in hotels and restaurants and is planning an industrial survey of three cities in the State.

Maine. Department of Labor and Industry.

Augusta, Me. Charles O. Beals, Commissioner.

CREATED in 1911 to succeed the bureau of labor and industrial statistics. Industrial surveys are made from time to time in connection with the administration of factory inspection and labor laws. Data are now being compiled showing number and causes of industrial accidents, looking toward the establishment of safety codes and practices and the inauguration of a program of accident prevention.

Maryland. Board of Labor and Statistics.

16 West Saratoga Street, Baltimore. Dr. J. Knox Insley, Commissioner.

CREATED as the bureau of statistics and information by article 89, chapter 211, sections 1 and 2; effective June 1, 1884.

In addition to the administration of the various labor laws of the State, it is the duty of the commissioner of labor and statistics to:

- (a) Collect statistics concerning and examine into the conditions of

labor in the State, with especial reference to wages and the causes of strikes and disagreements between employers and employees; (b) Collect information in regard to the agricultural conditions and products of the several counties of the State, the acreage under cultivation and planted to the various crops, the character and price of lands, livestock, etc., and all other matters pertaining to agricultural pursuits which may be of general interest and calculated to attract immigration to the State; (c) Collect information in regard to the mineral products of the State, the output of mines, quarries, etc., and of the manufacturing industries; (d) Collect information in regard to railroads and other transportation companies, shipping, and commerce; (e) Investigate the extent and the cause or causes of unemployment in the State, and the remedies therefor adopted and applied in the States of this country and in other countries.

Results of current and continuing investigations and studies are published in the annual reports of the commissioner, and reports of trend of employment in selected industries in Maryland are issued monthly. Studies under way at present include: Child labor in Maryland canneries; survey of unemployment in Baltimore; age limits for employment in Maryland; age distribution of industrial workers in Maryland; and trend of child labor in Maryland.

In addition to annual reports and monthly reports on trend of employment, the board has issued the following reports of special studies: Unemployment in Baltimore, February, 1928; unemployment in Baltimore, February, 1929; the mentally and educationally retarded child laborer (April, 1929); berry and vegetable pickers in Maryland fields (April, 1929); and child labor in vegetable canneries in Maryland (April, 1929).

Massachusetts. Boston Psychopathic Hospital.

74 Fenwood Road, Boston, Mass. C. Macfie Campbell,
Director.

PSYCHOLOGICAL DEPARTMENT. F. L. Wells, chief.—Personnel activities of the department subsequent to those stated in Bulletin No. 299 (pp. 50-51) have been through the cooperation of the psychological laboratory with various organizations in vocational adjustment problems. The most notable of these organizations are the General Electric Co. and the Boston Y. M. C. A. and Y. W. C. A. The work with the General Electric Co. has been of a developmental and research nature essentially. With the other two organizations the immediate "clinical" standpoint has been uppermost. Studies covering various topics in the field are in progress; some have been completed. Very little of this material is published. Publications of related material include: Mental tests in clinical practice (World Book Co., 1927) and the psychometric factor in medical problems (in the American Journal of Psychiatry, 1928, vol. 8, pp. 235-249).

The department has frequently participated in conferences dealing with personnel adjustment problems from a variety of angles.

Massachusetts. Department of Education.

Division of Vocational Education, State House, Boston,
Mass. R. O. Small, Director.

THE continuation schools of the Commonwealth of Massachusetts concern themselves very definitely with the following problems affecting young workers in industry: (1) Organized employment placement, (2) job analyses and specifications for purposes of upgrading and making more valuable the services of such young employees, (3) lines of promotion, (4) safety measures, and (5) special problems of the young worker. The procedure includes an organized survey of each job, accomplished by systematic follow-up on the part of the teachers in the places of employment of the working minors.

The division sponsors a program for the training of foremen. Training groups are organized on request by industry. The trainees are afforded training which will fit them as conference leaders, so that they may take charge of conferences and classes for the foremen on returning to their respective plants.

The rehabilitation service is conducted by the division of vocational education for those persons who have suffered a handicap which unfits them for continuance of specific employment. This service is rendered on the individual basis in established schools or by a plan of placement for training in industry.

In the field of trade and industrial education a concerted effort is being made to place all the boys and girls who leave the school, whether by graduation or otherwise, in the type of employment for which training has been given. That a measure of success has been attained might be claimed from the statistics of graduates for 1926 which would be a fair average. During this year 372 boys graduated from the day industrial schools, 240 of whom are known to have entered the trade for which each was trained, at an entering wage which averaged \$21.12.

During the same year there were 182 graduates from the girls' day industrial schools, 164 of whom entered occupations definitely related to the trade for which trained. Figures are not available as to the average entering wage, but it is known that all started on a living wage.

The vocational agricultural education service because of its "earning and learning" and "home project" methods and because farming is both a means of making a living and a mode of life concerns itself with the upgrading of both living and working conditions and achievement of steadily improving returns on capital, labor, and management. Graduates are followed up for their encouragement and guidance at least five years after their formal training courses end.

Massachusetts. Department of Labor and Industries.

State House, Boston, Mass. E. Leroy Sweetser, Commissioner.

THE department of labor and industries, through its reorganization in 1919, supersedes the board of labor and industries, the board of conciliation and arbitration, the minimum wage commission, the bureau of statistics, and the bureau of standards. By authority of

the commissioner, it is divided into five divisions, as follows—industrial safety, statistics, conciliation and arbitration, minimum wage, and standards. During the year 1929 the Massachusetts Industrial Commission was created and placed in the department, making a sixth division. (See annual reports for a description of the work of the department and its several divisions.)

DIVISION OF INDUSTRIAL SAFETY. John P. Meade, director.—This division is charged with the inspection work in industrial establishments, the enforcement of protective labor laws, and the rules and regulations of the department concerning the health and safety of industrial employees. Its work includes the inspection of building operations for the purpose of maintaining safe scaffolding and work platforms for employees and the enforcement of laws with regard to employment in the construction of public works.

Special investigations by this division include establishments engaged in the manufacture of storage batteries, chromium plating, and plants using radioactive substances. More recent investigations included tanneries and leather-finishing establishments.

Industrial injuries are investigated regularly. These include diseases of occupation. In 1929, 554 cases of occupational disease were investigated, affecting 493 men and 61 women. This number included 345 cases of dermatitis. There were 70 cases of lead poisoning investigated, affecting 68 men and 2 women. No child under 18 years of age was included in the cases afflicted with lead poisoning, cyanide poisoning, silicosis, or pneumoconiosis.

Rules and regulations and suggestions to employers and employees are prepared and published through the following bulletins:

- No. 7. Rules and regulations governing compressed-air work.
- No. 9. Safety rules and regulations and machinery standards.
- No. 10. Rules and regulations relating to safe and sanitary working conditions in foundries and the employment of women in core rooms.
- No. 12. Rules and regulations for the prevention of accidents in building operations.
- No. 13. Revised rules and regulations pertaining to the painting business.
- No. 14. Requirements for the care of employees injured or taken ill in industrial establishments.
- No. 16. Rules and regulations for safeguarding woodworking machinery.
- No. 17. Rules and regulations for safeguarding power-press tools.
- No. 18. Lighting code for factories, workshops, manufacturing, mechanical, and mercantile establishments.
- No. 19. Rules and regulations for the common drinking cup and common towel.

Other bulletins contain suggestions for the protection of the eyes and the prevention of accidents; for the prevention of anthrax; rules and regulations for safety in the manufacture of benzene derivatives and explosives; and rules and regulations for toilets in industrial establishments.

BOARD OF CONCILIATION AND ARBITRATION. Edward Fisher, chairman.—The functions of this board in matters pertaining to labor disputes are three in number—conciliation, arbitration, and investigation. The board investigates all labor troubles and disputes arising in the Commonwealth to ascertain the facts causing the same and to endeavor to assist the parties concerned in adjusting their differences or failing thereto to induce the parties to submit the matter to arbitration. The board has no power to arbitrate except by mutual

agreement of the parties concerned, and its decisions remain in effect for a period of six months unless other action is taken. During the last 10 years the board has received 3,388 joint applications for arbitration.

In addition to the investigation of conciliation cases the board has the authority to make an investigation in any industry in which labor trouble exists or is seriously threatened, provided more than 25 employees are involved, and provided that conciliation efforts have been of no avail. Under such circumstances the board has the right to publish a report of its investigation, finding the cause of the trouble and assigning the responsibility or blame for its existence or continuance.

MINIMUM WAGE DIVISION. Ethel M. Johnson, assistant commissioner, acting director.—It is the duty of the commission to investigate occupations where women are employed, if there is reason to believe that the wages paid to a substantial number of the women are not sufficient to meet the cost of living, and to maintain the worker in health. If this is found to be the case, the commission establishes a wage board for the occupation. If the commission approves the determinations of the wage board, it enters a decree based on the findings, after first giving a public hearing for employers who would be affected. There are now 21 decrees in force covering about 35 different occupations.

DIVISION OF STATISTICS. Roswell F. Phelps, director.—The principal branches of the work of this division are the collection and publication of statistics of labor and manufactures and the administration of the four State public employment offices. For the most part the reports of the division are broad in scope and relate to labor and industrial conditions throughout the entire State. The reports issued periodically in print have reference to prevailing rates of wages and hours of labor in the various trades, occupations, and localities; the number and membership of labor organizations; the results of the annual census of manufactures (number of establishments in operation, capital invested, value of stock and materials used, amount paid in wages, number of wage earners employed, value of products manufactured, goods exported, classified weekly wages, and power used) and summaries of the activities of the four public employment offices maintained by the Commonwealth. The division also issues reports in mimeographed form (later summarized in print in annual reports), covering the results of monthly surveys having reference to volume of employment in representative manufacturing establishments, building construction, public utilities, retail and wholesale trade, unemployment of building-trades men, and value represented by building permits granted in the principal municipalities. While these reports may not be considered as strictly within the field of personnel research, they incidentally present data having a direct bearing on problems of personnel. The only reports of the division issued within recent years which could be definitely classified as personnel studies are the following:

Labor Bulletin No. 149. Salaries of office employees in Massachusetts. May 1, 1923.

"Company Houses" in Massachusetts owned or controlled by cotton textile manufacturers. (Mimeographed, 1924.)

DIVISION OF STANDARDS. Francis Meredith, director.—The division of standards, to which has been delegated the enforcement of the statutory provisions pertaining to weights and measures and the issuance of licenses to hawkers, peddlers, and transient vendors, would not properly be considered a personnel research agency.

MASSACHUSETTS INDUSTRIAL COMMISSION. Frederick H. Payne, chairman.—This commission was established by chapter 357, Acts of 1929, for the promotion and development of the industrial, agricultural, and recreational resources of the Commonwealth, and is now engaged in investigating conditions affecting the textile industry in the Commonwealth with a view to devising ways and means to effect an improvement of such conditions and also to investigate as to the best methods of alleviating distress caused by extended periods of unemployment in that and other industries (ch. 54, Acts of 1929).

New Jersey. Department of Institutions and Agencies.

Division of Classification and Parole. Trenton, N. J. C. T. Jones, Director.

THE bureau of education and classification of this division is responsible for the proper functioning of the classification system set up in each of the penal and correctional institutions. This system provides for careful consideration of each individual case by a committee composed of the institution superintendent, physician, psychiatrist, psychologist, educational director, industrial or vocational supervisor, social investigator or field officer, and disciplinary officer. At the meetings of this committee recommendations for medical care, training within the institution, transfer to another institution, or other disposition as indicated are made, based upon the reports of each of the above-mentioned specialists. This bureau also assists in the development of the educational and vocational programs in the several State institutions.

This bureau considers all applications for admission to the State institutions for mental defectives and classifies each case for the institution which will be best suited to its needs. After commitment by court it arranges for admission to the institution as classified. It also makes arrangements for all transfers from correctional to charitable, from correctional to correctional, and from charitable to charitable institutions. In its classification work this bureau makes use of psychological and psychiatric examinations made by the mental hygiene clinics which are conducted by the Trenton and the Greystone Park State hospitals at various centers throughout the State.

The details of the New Jersey classification system are described in the following publications:

Classification as the basis for institutional training, treatment, and parole. Paper read by William J. Ellis, commissioner of institutions and agencies, at the fifty-ninth annual congress of American Prison Association, Toronto, Canada, September 24, 1929.

The problem of the feeble-minded in New Jersey. By Dr. C. T. Jones, director division of classification and parole, New Jersey Department of Institutions and Agencies.

The New Jersey plan. By William J. Ellis. Welfare Magazine, January, 1927.

The problem of mentality while in the institution. Paper read by William J. Ellis, commissioner of institutions and agencies, at twenty-first annual session of National Conference of Juvenile Agencies, Salt Lake City, Utah, 1924.

Experience in classifying defective delinquents and some results effected by transfer from correctional institutions to hospitals and institutions for feeble-minded. By William J. Ellis, at the forty-eighth annual session of American Association for Study of the Feeble-Minded, Washington, 1924.

Classification of prisoners for purposes of training work and parole. By E. A. Doll, from Journal of Criminal Law and Criminology, May, 1923.

The place of State institutions in the field of social hygiene. By E. A. Doll. An address before the Women's Social Hygiene Committee, Trenton, N. J., January, 1923.

New Jersey. Department of Labor.

Trenton, N. J. Charles R. Blunt, Commissioner.

THE New Jersey Department of Labor as now constituted, according to the provisions of Public Laws, 1916, chapter 40, and amended by Public Laws, 1922, chapter 252, is organized into eight bureaus as follows: Bureau of general and structural inspection and explosives; bureau of hygiene and sanitation; bureau of electrical and mechanical equipment; bureau of child labor and women's welfare; workmen's compensation bureau; bureau of statistics and records; bureau of engineers' license, steam boiler, and refrigerating plant inspection; bureau of employment.

Recent numbers of the industrial bulletin of the department include special articles, summaries of special investigations, text of regulations, etc., made by the various bureaus, viz:

1927—May, Organization, functions, and duties of the department of labor; July, Importance of safety appliances; August, Safeguarding hazardous machine equipment; September, Benzol poisoning; October, Commutation of compensation payments; November, Promotion of safety education; December, Safety devices and protective clothing for workers in industry.

1928—January, Foundry hazards; March, Importance of the use of safety goggles in industry; April, Safety education for the alien worker; May, Benzol poisoning; June, Importance of regulating spray brush and coating operations when poisonous compounds are used.

1929—February, The safety job of the State; May, The value and necessity of chemical control in accident prevention; June, Industrial poisons; July, Should trade products be labeled so that poisonous contents are indicated; September, Placement of the juvenile worker; October, Health conservation in industry.

BUREAU OF GENERAL AND STRUCTURAL INSPECTION AND BUREAU OF EXPLOSIVES. Charles H. Weeks, deputy commissioner.—This bureau has prepared and published the following safety codes and regulations:

Schedule of approval fees. 1926. 2 pp.

Specifications for fire towers, fire escapes, fireproofing of doors and windows in connection with fire-escape construction. 1926. 15 pp.

Standard specifications for elevators located in factory buildings. 1913. 4 pp.

Passenger elevator interlock specifications. 1916. 9 pp.

Building code for the construction of theaters, grandstands, and buildings used for motion-picture purposes and other public entertainments located in municipalities having no local building inspection. 1927. 17 pp.

Safety standards for the manufacture and storage of explosives. 1925. 20 pp.

BUREAU OF HYGIENE AND SANITATION. John Roach, deputy commissioner.—This bureau has prepared and published the following codes:

- Sanitary and engineering industrial standards. 1916. 35 pp.
- Sanitary standards for the felt-hatting industry. 1915. 94 pp.
- Safety standards for lead corroders and lead oxidizers, paint grinders, dry-color manufacturers. 1917. 23 pp.
- Safety standards for the manufacture of nitro and amide compounds. 1919. 18 pp.
- Instructions for the inspection of plants where aniline is produced or handled. 1917. 6 pp.
- Standards for the promotion of safety education. 1925. 11 pp.
- Safety standards for steam-power laundries. 1927. 11 pp.

BUREAU OF ENGINEERS' LICENSE, STEAM BOILER AND REFRIGERATING PLANT INSPECTION. Joseph F. Scott, chief examiner.—This bureau has prepared and published the following codes:

- Standard boiler code. 1918. 164 pp.
- Rules and regulations of bureau. 1924. 13 pp.

BUREAU OF ELECTRICAL AND MECHANICAL EQUIPMENT. Charles H. Weeks and John Roach, deputy commissioners, temporarily in charge.—This bureau has prepared and published the following codes:

- Code for the safeguarding of mechanical power transmission apparatus. 1924. 29 pp.
- General rules for the construction and installation of fire alarm signal systems. 1927. 23 pp.
- Code of lighting for factories, mills, and other work places. 1924. 33 pp.
- Rules and requirements for the installation and maintenance of engine stops and speed-limit governors. 1916. 9 pp.
- Safety standards relating to the use and care of abrasive wheels. 1922. 27 pp.
- Safety code for power presses and foot and hand presses. 1924. 50 pp.
- Safety code affecting point of operation hazards on rubber mills and calendars. 1923. 3 pp.
- Safety code for laundries. 1927. 11 pp.
- Safety code for woodworking plants. 1927. 18 pp.
- Electrical safety rules. 1927. 6 pp.
- Safety code for window cleaning operations. 1927. 4 pp.
- Instructions for factory chiefs. 1926. 7 pp.
- Rules and regulations for conducting fire drills and organizing fire brigades. 1922. 30 pp.

New York (State). Department of Education.
Albany, N. Y.

DIVISION OF VOCATIONAL AND EXTENSION EDUCATION. Lewis A. Wilson, Assistant Commissioner.—This division maintains the following services:

1. The training of conference leaders for industry.
2. The development of vocational and educational guidance in junior and senior high schools, part-time schools, and evening schools.
3. Industrial and technical education, including cooperative relationship with industry in the establishment of apprentice training programs and other types of plant training work.
4. Adult education, including the organization of special courses for workers in industry.
5. The rehabilitation of physically handicapped, including training, placement, and follow-up.

6. Research, including industrial surveys, job analyses, and preparation of instructional material, analyses of changing conditions in trades and occupations, and studies of working children.;

Research includes the making of special industrial surveys to determine the needs of industrial education of the various communities in the State. In some cases it involves a detailed study of a particular industry to determine the courses to be offered to meet the particular needs of the industry.

The work in trade analyses is basic in the preparation of courses of study for the all-day, part-time, and evening industrial schools. A number of the courses of study which have been prepared as a result of trade and job analyses are available for distribution.

This division is just completing a very detailed survey of about 140,000 working children in New York State. This study includes information in regard to the education of the group, number of jobs held, wages, savings, contribution to family support, use of leisure time, previous vocational training, educational training in employment, and other information in regard to the education and economic status of this group. This study will be printed and available for distribution.

Studies have been made of changing economic conditions and industrial trends in the State to serve as a basis for determining the occupational training needs of the State. Some of this material has been published in a paper entitled "Some Industrial Needs of New York State," by Mr. Wilson.

New York (State). Department of Labor.

124 East Twenty-eighth Street, New York, N. Y. Frances Perkins, Industrial Commissioner.

THIS department is now under the administration of the industrial commissioner, an office created by chapter 50, Laws of 1921, abolishing the State industrial commission which had administered the labor laws since 1915.

BUREAU OF INDUSTRIAL CODE, 124 East Twenty-eighth Street, New York, N. Y.—This bureau is concerned with rules for safety and sanitation in industrial and mercantile establishments and is charged with the revision and enlargement of the New York State industrial code (the latest edition complete in one volume was published in 1920). Industrial codes now numbering 30 are published separately. The bureau conducts the safety exhibits in connection with the annual industrial safety congress of New York State which has been held in various cities (twelfth, at Syracuse, N. Y., December 4 to 6, 1928; proceedings published in 1929).

DIVISION OF ALIENS (until 1921 the bureau of industries and immigration), 125 East Twenty-seventh Street, New York, N. Y. Lillian R. Sire, director.—Complaints by alien employees in New York industries are investigated by this bureau, including wage claims, exploitation by employment agencies, and the like. It has also made community surveys of immigrant living and labor conditions in a large number of the towns of the State and studies of the relationship between alien illiteracy and mental defect and industrial accidents.

BUREAU OF INDUSTRIAL HYGIENE (from 1913 until 1924 the division of industrial hygiene), 124 East Twenty-eighth Street, New York, N. Y. J. D. Hackett, director.—The following publications have been issued as special bulletins:

- 112. Economic value of clean windows and lighting fixtures. 1922. 16 pp.
- 128. Dust-collecting systems adapted for use in connection with the granite-cutting industry. 1924. 31 pp.
- 129. Health hazards of wet grinding. 1924. 56 pp.
- 130. A study of hygienic conditions in steam laundries. 1924. 110 pp.
- 131. An analysis of 100 accidents on power punch presses with suggestions as to the installation of guards. 1924. 27 pp.
- 139. An analysis of 300 accidents in woodworking factories with suggestions as to safe practice and suitable machine guards. 1925. 63 pp.
- An analysis of 100 accidents in paper and pulp factories.
- Pneumoconiosis.—Three cases, two of silicosis and one of anthracosis.
- Silicosis, a résumé of the literature arranged for the use of physicians in the State of New York.
- Silicosis in New York State, a study of 15 cases of silicosis from the standpoint of compensation.
- The lead hazard and compensation, a compend.
- An analysis of 300 accidents in plants manufacturing or preparing food products, with suggestions as to safe practice and suitable machine guards. 1928.
- Lead poisoning in New York State, a study of the health of 381 lead workers.

DIVISION OF MEDIATION AND ARBITRATION (until 1923, bureau). A. J. Portenar, chief mediator.

BUREAU OF STATISTICS AND INFORMATION, 124 East Twenty-eighth Street, New York, N. Y. E. B. Patton, director.—This bureau has published, in the series of special bulletins, various issues dealing with statistics of unemployment, trade-unions, wages and hours, strikes and lockouts, and industrial accidents; compilations of New York labor laws; court decisions on workmen's compensation, labor laws, and industrial disputes; No. 76, European regulations for prevention of occupational diseases (77 pp.), and the results of special investigations, as follows:

- 137. Course of employment in sugar refineries in New York State, 1914–1925. 24 pp.
- 143. Employment and earnings of men and women in New York State factories, June, 1924–June, 1925. 208 pp.

It also publishes monthly the *Industrial Bulletin* (until 1921 the *Labor Market Bulletin*) giving current information about the extent of employment in factories and building work, average earnings, and food prices, labor supply and demand at State employment offices.

BUREAU OF WOMEN IN INDUSTRY, 124 East Twenty-eighth Street, New York, N. Y. Frieda S. Miller, director.—Results of special investigations relating to women in industry made by this bureau have been published in the following special bulletins:

- 109. Employment of women in 5 and 10 cent stores, 1921. 68 pp.
- 110. Women who work. 1922. 40 pp.
- 116. Children's work accidents. 1923. 42 pp.
- 117. Outer wear knit goods industry. 1923. 19 pp.
- 121. Hours and earnings of women in five industries. 1923. 116 pp.
- 122. Trend of child labor in New York State, 1910–1922. 1923. 18 pp.
- 127. Some social and economic effects of work accidents to women. 1924. 67 pp.
- 132. The trend of child labor in New York State—supplemental report for 1923. 1924. 8 pp.
- 134. The health of the working child, 1924. 91 pp.
- 136. Wages and hours of organized women in New York State. 1925. 11 pp.

138. Vacation policies in manufacturing industries. 1925. 23 pp.
 141. First principles of industrial posture and seating. 1926. 13 pp.
 144. Some recent figures on accidents to women and minors. 1926. 70 pp.
 147. Homework in the men's clothing industry in New York and Rochester. 1926. 69 pp.
 150. Chronic benzol poisoning among women industrial workers. 1927. 64 pp.
 153. Hours and earnings of women employed in power laundries in New York State. 1927. 72 pp.
 154. The paper box industry in New York City. 1928. 90 pp.
 158. Some social and economic aspects of homework. 1929. 40 pp.
 Women in Binghamton industries. 1928. 113 pp.
- A study of women in Newburgh industries has recently been issued in mimeographed form. An investigation of double compensation to minors and a study of the effect of noise on hearing are in process of preparation.

JUNIOR PLACEMENT BUREAU for minors in industry was established in 1929, and monthly reports of the work of the bureau appear in the Industrial Bulletin of the department of labor.

New commissions.—Governor Roosevelt, in cooperation with Industrial Commissioner Perkins appointed in June, 1929, a committee composed of representatives of organized wage earners to endeavor to reduce industrial accidents. John Sullivan, president of the New York State Federation of Labor, is chairman of this commission. It is engaged in enlisting the interest of organized wage earners in New York State in the matter of prevention of industrial accidents.

In October, 1929, Industrial Commissioner Perkins appointed an advisory committee on employment. The purpose of this committee is to make a study of public employment offices operated by the State department of labor. At first the work of the committee will be devoted to the study of public employment offices in New York City, and later it will be extended to the up-State offices and also to a study of the existing legislation for the regulation of private employment agencies. Mr. F. A. Silcox of the Industrial Relations Counselors is chairman of the committee and Miss Mary LaDame has been engaged to make the study under the supervision of the advisory committee.

New York. Commission on Old Age Security.

261 Broadway, New York, N. Y. Senator Seabury S. Mastick, Chairman; Luther Gulick, Director of Research.

AN INVESTIGATING commission appointed by the governor and the State legislature, under chapter 664 of the Laws of 1929, to deal with the problem of old-age security in its relation to pension legislation. The duties of the commission are outlined as follows:

1. To conduct an investigation in order to ascertain and report to the legislature in February, 1930, the most practical and efficient method of providing security against old-age want.
2. To investigate the industrial condition of aged men and women with respect to security against old-age want.
3. To study the subject of district infirmaries.
4. To propose a method of financing any problem of old-age assistance.

In its industrial aspect the work of the commission will include an age analysis of the gainfully employed in the State and the securing of data with regard to retirement and insurance compensation of

every industry, for correlation with the employment age factors developed through the age analysis of employees, additions and separations.

North Dakota. Workmen's Compensation Bureau. Bismarck, N. Dak.

MINIMUM WAGE DEPARTMENT. Alice Angus, secretary.—Organized in 1919 to take charge of the administration of the minimum wage law enacted in that year, this department makes investigations of the hours of labor, working conditions, and wages of employed women in the State. These investigations are reported upon biennially, the latest being that of June 30, 1928.

Ohio. Department of Industrial Relations and Industrial Commission of Ohio.

Columbus, Ohio. William T. Blake, Director of Department of Industrial Relations; Wellington T. Leonard, Chairman Industrial Commission.

IN 1913, the legislature created the Industrial Commission of Ohio, superseding the State liability board of awards which was created in 1911. The duties of the following departments were also taken over by the commission, which were independent prior to that time: Commissioner of labor statistics; inspector of workshops, factories, and public buildings; inspector of mines; examiner of steam engineers; board of boiler rules; State board of arbitration and conciliation; and the Ohio Board of Censors.

On July 1, 1921, the legislature created the department of industrial relations, which has all power and duties previously vested in the Industrial Commission of Ohio except the hearing of claims under the workmen's compensation law, the arbitration of labor disputes, the supervision and appointment of the board of boiler rules, and the prescribing of standards, devices, safeguards, etc., in places of employment, which duties are still vested in the Industrial Commission of Ohio. The board of censors was transferred to the department of education on July 1, 1921.

The Industrial Commission of Ohio is a part of the department of industrial relations for administrative purposes. All employees for the execution of the powers and duties of the commission are under the supervision and direction of the director of industrial relations except as noted in section 154-45, General Code.

The director of industrial relations is ex officio secretary of the Industrial Commission of Ohio.

The principal duties of the department are the administration of the workmen's compensation act; the inspection of workshops, factories, and public buildings; the enforcement of labor laws; the collection and tabulation of labor statistics; the arbitration of labor disputes; the licensing of private employment agencies and providing for the free employment system; the inspection of mines; the inspection of steam boilers; and the licensing of steam engineers and boiler operators.

Research work is carried on by the following divisions:

DIVISION OF LABOR STATISTICS AND EMPLOYMENT OFFICES. George F. Miles, chief.—This division of the department in 1921 succeeded the division of investigation and statistics of the industrial commission, which had in 1913 succeeded the office of the commissioner of labor. The fields of work covered include:

1. The collection, compilation, and publication annually of statistics relating to classified wages, fluctuations in numbers employed, total wages paid, etc., in all establishments employing five or more persons. Statistics for mines and quarries include the above items and also annual production.

2. The collection, compilation, and publication annually of union rates of wages and hours of labor in 16 cities of the State.

3. Supervision of public employment offices and publications of monthly and yearly summaries of the work of those offices.

4. Licensing and supervising all private employment offices.

DIVISION OF SAFETY AND HYGIENE. Thomas P. Kearns, chief.—This division of the industrial commission was created in 1925 by authority of a constitutional amendment and an act of the General Assembly of Ohio.

The efforts of the division are directed to the promotion of education, both of employers and of workers, in safe and hygienic good practice in places of employment. The division functions as a service bureau for the employers of the State to make surveys of industrial plants; submits recommendations for compliance with State codes and the elimination of accident and disease hazards; assists in installing safety organizations and accident records. The division assists in conducting community safety campaigns and utilizes other means and methods for the advancement of industrial safety and hygiene. The preparation and revision of safety codes are conducted by this division in collaboration with committees appointed by the industrial commission. An annual safety congress and exhibit is conducted by the division and brings together from 1,500 to 2,000 employers and workers.

The statistical laboratory of the division compiles detailed statistics of all injuries and diseases reported to the industrial commission and publishes such data monthly and annually. Special statistical studies of particular groups, classifications, or industries are also made.

The publications of the division include a monthly safety periodical called the Ohio Industrial Commission Monitor, a monthly series of safety posters, and the following reports:

- Accident prevention and first-aid suggestions.
- Proceedings of Ohio quarry operators' safety conference.
- Proceedings of Ohio electric light and power safety conference.
- Special Bulletin No. 1. Statistical reports of injuries to minors under 18 years of age, occupational disease claims, and additional award claims.
- Information regarding the workmen's compensation law of Ohio.
- Organization and operation of the division of safety and hygiene of the Industrial Commission of Ohio.
- Organization of safety committees in industry.
- General safety precautions for traveling cranes.
- Proceedings of the first all-Ohio safety congress.
- Proceedings of the second all-Ohio safety congress.
- Proceedings of the third all-Ohio safety congress.

This division is directly under the control and supervision of the industrial commission and is maintained by an annual appropriation from the State insurance fund, not to exceed 1 per cent of the annual contribution paid by employers to the fund, to be expended in the investigation and prevention of industrial accidents and diseases.

DIVISION OF WORKMEN'S COMPENSATION. Ross Hedges, chief.—This division of the department was created in 1921 following the enactment of the administrative code. It is charged with the administrative detail theretofore devolving on the Industrial Commission of Ohio pertaining to claims for workmen's compensation, excepting that of the maintenance of the State insurance fund and disbursements therefrom which are still wholly within the jurisdiction of the industrial commission.

A report covering the activities of the division is issued annually as a part of the report of the department of industrial relations and industrial commission of Ohio.

Pennsylvania. Department of Labor and Industry.

Harrisburg, Pa. Peter Glick, Secretary.

CREATED by an act of the legislature, approved June 2, 1913 (P. L. 396). Component units of the department engaged in research are:

The industrial board and the following bureaus: Executive, inspection, employment, industrial relations, industrial standards, statistics, women and children.

The executive bureau comprises three sections, one of which—the editorial and publicity section—issues a monthly bulletin *Labor and Industry*; issues special bulletins from time to time; edits and publishes the decisions of the workmen's compensation board and of the courts in workmen's compensation cases annually; issues all industrial standards; examines and distributes all newspaper clippings concerning the department.

BUREAU OF INDUSTRIAL RELATIONS. David Williams, director.—This bureau studies the conditions existing between employer and employee in the industries of the State to the end that misunderstandings may be avoided, or adjusted if they arise.

INDUSTRIAL BOARD. J. S. Arnold, secretary.—The industrial board consists of five members who are representatives of the interests concerned and affected by the scope of activity of the department of labor and industry. The chairman is the secretary of labor and industry, and the four other members are appointed by the governor to represent employers, employees, women, and the public. The board meets once a month.

The industrial board approves all regulations promulgated by the department of labor and industry as well as safety devices required by law or by departmental regulations. It also serves as an appellate body to which recourse may be had when undue hardship is imposed on anyone through enforcement of a particular regulation of the department.

Since its creation the board has approved approximately 50 codes of rules or regulations in addition to many individual regulations and interpretations that could not be classified under any particular code. Approximately 750 safety devices have been approved. Two advisory boards are available to the industrial board for expert

technical advice—one for the boiler code and one for the elevator code. These advisory boards conduct examinations for boiler and elevator inspectors, authorizing them to inspect boilers and elevators in Pennsylvania.

BUREAU OF INSPECTION. Harry D. Immel, director.—In the last two years (1928 and 1929) the bureau of inspection has made a distinct departure from former practice of governmental enforcement agencies for promotion of safety and health in industry. While maintaining its obligation for enforcement of laws and regulations, the bureau has developed an educational safety service. Factory inspection is conducted mainly on a basis of individual plant accident records with a view to solution of individual plant problems. In 1929 the bureau conducted a year long state-wide industrial safety campaign, in the course of which formation of plant safety committees, foremen's clubs, and community safety councils was encouraged. Many community safety meetings were sponsored by the bureau in an effort to interest the general public in the accident situation. Benefits already noted are the cooperation of many other agencies with industry in efforts for general safety advancement and a better attitude on the part of both labor and industry in the State toward all of the work of the bureau of inspection.

BUREAU OF EMPLOYMENT. S. S. Riddle, director.—Established by act of assembly, approved June 4, 1915, for the purpose of aiding unemployed persons to obtain suitable employment and employers to obtain workers. To accomplish that purpose the bureau of employment operates free employment exchanges in 14 cities of Pennsylvania.

Cooperation is maintained with the United States Employment Service and with various agencies and organizations throughout the Commonwealth. Information is compiled from the recorded experience of the employment exchanges.

The bureau of employment also supervises the fee-charging private employment agencies licensed under the laws of Pennsylvania.

BUREAU OF INDUSTRIAL STANDARDS. John Campbell, director.—This bureau initiates the formulation of health and safety regulations, through the use of national codes, representative committees, and through its own research, and presents tentative drafts to the industrial board for approval after public hearing. It conducts any investigations that might be requested by the industrial board and investigates the merits of all safety devices submitted for approval. It prepares inspection information for the bureau of inspection on the enforcement of laws and regulations.

The following health and safety regulations have been developed and published:

Abrasive and polishing wheels; bakeries; brewing and bottling; canneries; cereal mills; malt houses and grain elevators; compressed air apparatus; construction and repairs; cranes and hoists; dry color industry; elevators, escalators, dumbwaiters, and hoists; employment of women; employment of minors; electrical safety; foundries; handling, storage, and use of explosives in pits, quarries, and mines other than coal mines; head and eye protection; heating boilers; industrial lighting; industrial home work; industrial sanitation;

labor camps; ladders; laundries, lead corroding and lead oxidizing; logging, sawmill, woodworking, veneer, and cooperage operations; machine tools; manufacture of nitro and amido compounds; mechanical power transmission apparatus; mines other than coal mines; miniature boilers; operation of motion-picture projectors; paint grinding; pits and quarries; plants manufacturing or using explosives; plant railways; power, foot, and hand cold-metal presses; power boilers; printing and allied industries; protection from fire and panic; railings; toe boards, open-sided floors, platforms, and runways; safe practices recommendations; spray coating; stationary engines; textile industries; tunnel construction and work in compressed air; and window cleaning.

The regulations covering spray coating were developed after an extensive study by this bureau, the results of which are found in Special Bulletin No. 16, "Spray painting in Pennsylvania."

BUREAU OF STATISTICS. William J. Maguire, director.—The powers and duties of the bureau of statistics as defined by law are to collect, compile, and submit for publication statistics relating to labor and industry, to organizations of employees, and to organizations of employers. The bureau now publishes and submits for publication regularly reports relating to industrial accidents, compensation, employment, wages, building activities, and departmental records. The statistics relating to industrial accidents have been greatly enlarged during the past few years so as to provide data for the direction of the accident prevention and safety activities of the department.

BUREAU OF WOMEN AND CHILDREN. Sara M. Soffel, director.—This bureau was established in 1925. Its work has been developed in the following ways: First, research, making studies of the conditions under which women and children are employed in the industries; second, administrative, enforcing home-work regulations; third, educational, bringing to the attention of the public, the employers, and the workers pertinent facts concerning women and children in industry.

During the five years of its existence the bureau has published many bulletins dealing with specific problems. In the year 1928 the bureau began a series of studies of the hours and earnings of men and women in the textile industries. Special Bulletin No. 29, "Hours and earnings of men and women in the silk industry," appeared in June, 1929. The other studies in this series, one dealing with hosiery and the other with knit goods, are in preparation and will be released shortly. A pamphlet, "Some facts about Pennsylvania women wage earners," has recently been released.

Texas. Department of Labor.

Austin, Tex. Charles McKemy, Commissioner.

RESEARCH work of the Texas State Department of Labor is largely incidental to its routine administrative work, but some special studies have been made and published in the industrial bulletin, which is issued quarterly by the State bureau of labor statistics. A study of "Wages of women in relation to cost of living" and a "Survey of labor conditions in State eleemosynary institutions" are included in the August 1, 1928, issue, and a "Survey of rest and recreation

facilities for female employees" and a "Survey of the lumber-manufacturing industry" appear in the issue of February 1, 1928. Factory inspection reports cover wages, hours, and general working conditions.

Virginia. Department of Labor and Industry.

Richmond, Va. John Hopkins Hall, jr., Commissioner.

RESEARCH work of the Virginia Department of Labor and Industry is wholly in connection with administration and enforcement of labor laws, and studies are not published. The annual reports of the department cover salary and wage statistics and hours of labor in classified industries, accident statistics, and child-labor data.

Washington. Department of Labor and Industries.

Olympia, Wash. Claire Bowman, Director.

CREATED by act of February 9, 1921, which reorganized the administrative departments of the State and brought together under a single director various offices, boards, and commissions dealing with labor. It comprises three divisions: Industrial insurance, safety, and industrial relations.

INDUSTRIAL WELFARE COMMITTEE.—This committee, consisting of the director of labor and industries, the supervisor of industrial insurance, the supervisor of industrial relations, and the supervisor of women in industry, was created by act of March 24, 1913, and is charged especially with enforcing labor laws for women and minors.

Field investigations are carried on in connection with industrial insurance and safety and the special laws governing women and children, and are reported upon in the biennial reports of the department.

Wisconsin. Industrial Commission.

Madison, Wis. Fred M. Wilcox, Chairman.

THE Industrial Commission of Wisconsin was created by chapter 101, Wisconsin Statutes, in 1911, as successor to the bureau of labor and industrial statistics. It functions through the divisions of safety and sanitation; workmen's compensation; woman and child labor; employment; mediation and arbitration; apprenticeship; and statistics.

Studies and investigations in relation to the administration of the labor laws of the State are made continually. The industrial commission's activities and the results of various investigations are in part reported by its publications, Biennial Report, 1926-1928; Wisconsin Labor Market, issued monthly; Wisconsin Labor Statistics, issued by serial numbers (about 10 to 15 reports annually), Wisconsin Apprentice, fire prevention bulletins, etc.

The industrial commission has promulgated 19 codes covering as many separate fields of safety and sanitation in industry. Such codes are generally prepared and recommended by expert advisory committees working in cooperation with the commission's staff.

The Wisconsin Labor Market and Wisconsin Labor Statistics, in addition to reporting standard tabulations in their respective fields, have reported some 30 special studies within the past two years.

For example, the Wisconsin Labor Market of June, 1928, reported hours and wages of women, girls, and boys in Wisconsin pea canneries, 1925-1927; the July, 1928, issue reported trade-union scales of wages and hours for 92 local unions located in La Crosse, Madison, and Milwaukee as of May 15, 1928; the February, March, and April, 1928, issues reported employees' length of service, covering employees on pay rolls in January, 1928; the January, 1930, issue covered the ages of applicants registered by the Milwaukee and Green Bay public employment offices, in January, 1930, etc. There is no attempt to list all special topics covered from time to time. Reference to the commission's publications will serve to guide students to the various studies made.

(b) MUNICIPAL AGENCIES

New York (City). Department of Health.

The Division of Industrial and Adult Hygiene. Elwood S. Morton, M. D., Chief.

THE division of industrial hygiene in the bureau of public health education was abolished at the end of 1924 and reorganized February 1, 1926, as the division of industrial and adult hygiene, a part of the field medical bureau.

It is now a medical division and the work done is similar to that formerly performed by this division, to wit: The inspection of industrial establishments with special reference to the improvement of the general health of the employee at his work; physical examinations of various kinds of employees; special investigations of industrial hazards in factories from which illness due to the industry have been reported; special investigations of cases of illness from occupation with the consent and cooperation of the attending physician.

Special investigations, physical examinations, and research work were carried on in paper-box factories, tobacco factories, spray-gun work in painting, paint and varnish manufacturing, fur dyeing and dressing, brass foundries, laundries, the rayon silk industry, sand blasting, anilin dyeing, doll and toy factories, needle workers, automobile refinishing, glass-decorating establishments, department stores, candy factories, motion-picture projection booths and theaters, electroplating industry.

An eye conservation study was conducted and examinations made showing a considerable number of cases of progressive myopia.

Public-service corporations and hotels were visited with reference to electrical shock, giving individual talks and demonstrations of the prone pressure method of resuscitation from shock.

A study of the adolescent in industry covering a 3-year period has been conducted in the continuation schools in the city of New York by physical examination, follow-up, reexamination, and instruction in health guidance. In the printing trade adolescents were examined before being made apprentices in the composing room.

Special studies were conducted in the mental and psychological effects of working under the mercury vapor lamp, methyl chloride in

domestic refrigerators, and radium poisoning in dial painters and others.

Cancer in its relation to the topography and density of population was studied.

Publications in the department of health monthly bulletin:

Hygiene of brass foundries. By Samuel W. Greenbaum, M. D. September, 1923.

Investigation of 24 cases of human anthrax in New York City, October, 1920, to December, 1923. By William Jacobsohn, M. D. March, 1924.

Investigation of 61 cases of human anthrax for five years, 1919-1923, inclusive, in New York City. (A summary.) By William Jacobsohn, M. D. July, 1924.

Reprint series. Department of health. Nos. 102 and 103.

Reprint No. 102. Cancer death rates. Smoke, topography, and population. By Jerome Meyers, M. D. May, 1928.

Reprint No. 103. Medical and industrial findings among spray painters and others in the automobile refinishing trade in Manhattan, Greater New York. By Jerome Meyers, M. D. December, 1928.

Oakland (Calif.). Public Schools.

Department of Research and Auxiliary Agencies. Richard E. Rutledge, Director.

This department includes departments of research, guidance, mental testing, child welfare, curriculum, and health. It is engaged in a constant study of all the factors pertaining to individuals in the public schools who need either adjustment in school or placement in industry or vocational guidance. A staff of counselors is provided in every junior and senior high school. The program of work is outlined in the bulletin "Handbook for school counselors," issued in 1927.

III. NONOFFICIAL AGENCIES

(a) ASSOCIATIONS, SOCIETIES, FOUNDATIONS, RESEARCH BUREAUS, INSTITUTIONS, AND MANUFACTURING AND BUSINESS ESTABLISHMENTS

Amalgamated Clothing Workers of America.

Suite 701-715, 31 Union Square, New York, N. Y.

RESEARCH DEPARTMENT.—Established July, 1920, partly as an outgrowth of the economic research work done in connection with an injunction suit against the union at Rochester, N. Y., April-May, 1920. (*Michael Stern v. Amalgamated Clothing Workers of America.*)

The department collects data on industrial and economic conditions with particular reference to (1) the men's clothing and related industries, (2) the cost of living, (3) wages and employment conditions, (4) the labor banking movement in the United States; prepares the economic briefs submitted by the union in wage arbitration cases and makes the necessary investigations upon which the union briefs and arguments are based. It is frequently called upon by the officers of the union and the other departments (e. g., the organization, editorial and publicity departments) to furnish information in connection with their activities and to make investigations on wages, production standards, week-work and piece-work systems, and other similar problems relating to working conditions in the industry.

American Academy of Political and Social Science.

3622-24 Locust Street, Philadelphia, Pa. Thorsten Sellin,
Editor of the Annals.

ORGANIZED in December, 1889, to provide a national forum for the discussion of political and social questions. The academy does not take sides upon controverted questions, but seeks to secure and present reliable information to assist the public in forming an intelligent and accurate opinion. The annual membership fee is \$5. The academy publishes annually six issues of the Annals dealing with the most prominent current social and political questions, each issue containing from 20 to 25 papers upon the same general subject, largely solicited by the editorial office or presented at meetings of the academy. Personnel questions frequently appear in the Annals. Articles dealing therein can be found in the published indexes—Twenty-fifth anniversary index, July, 1890, to January, 1916; thirtieth anniversary index, March, 1916, to July, 1921; and the thirty-fifth anniversary index, September, 1921, to July, 1926. These indexes are issued as supplements to the Annals.

Articles covering personnel subjects which have appeared since the latest index are:

The legal minimum wage in Massachusetts. Supplement to vol. 130, March, 1927.

Standards in industry. May, 1928, vol. 137.

Public construction and cyclical unemployment. Supplement to September, 1928, vol. 139.

Women in the modern world. May, 1929, vol. 143.

American Association of Industrial Physicians and Surgeons.

Volney S. Cheney, M. D., Secretary-Treasurer; care Armour & Co., Union Stockyards, Chicago, Ill.

ORGANIZED at Detroit, Mich., in 1915, to foster the study and discussion of the problems peculiar to the practice of industrial medicine and surgery; to develop methods adapted to the conservation of health among workers in the industries; to promote a more general understanding of the purposes and results of the medical care of employees; and to unite into one organization members of the medical profession specializing in industrial medicine and surgery for their mutual advancement in the practice of their profession. There are 240 members (annual dues \$5). Meetings are held annually.

The official organ of the association, in which its proceedings are published, is the *Bulletin of the American Association of Industrial Physicians and Surgeons*, issued bimonthly by the secretary of the association.

American Association for Labor Legislation.

131 East Twenty-third Street, New York, N. Y. John B. Andrews, Secretary.

ORGANIZED in 1906 to serve as the American branch of the International Association for Labor Legislation, the object of the association is to investigate conditions underlying labor legislation and to collect and disseminate information leading to the enactment and efficient enforcement of laws for the promotion of the comfort, health, and safety of employees. In 1928 there were 3,141 members (minimum annual dues, \$3). The annual meeting is held in the last week of December in conjunction with one or more of the American economic, sociological, statistical, and political science associations.

Investigations and studies have been made and conferences held by the association for the purpose of determining standards for legislation and furnishing data for the drafting of bills introduced in Congress and the State legislatures and for briefs in support of them on the following subjects: Workmen's compensation (including Federal employees, longshoremen, and seamen), vocational rehabilitation for industrial cripples, occupational diseases, health insurance, maternity protection, regulation of fee-charging employment agencies, one day rest in seven, women in industry, national public employment service, unemployment insurance, administration of labor laws.

In 1925 the International Association for Social Progress was formed by merging the International Association for Labor Legis-

lation, the International Association on Unemployment, and the International Social Insurance Committee. The American section is the American Association for Labor Legislation.

A publication, the American Legislation Review, is issued quarterly and contains the proceedings of annual meetings, annual reviews of labor legislation, comparative digests, results of investigations, and other papers.

American Chemical Society.

Mills Building, Washington, D. C.

COMMITTEE ON HAZARDOUS CHEMICALS AND EXPLOSIVES. G. St. J. Perrot, chairman, Pittsburgh Experiment Station, United States Bureau of Mines, Pittsburgh, Pa.—Organized in April, 1923, at the request of and to cooperate with a similar committee of the National Board of Fire Underwriters. A tentative report, amended to January, 1929, representing progress of the work to date, is contained in "A table of common hazardous chemicals," published by the National Fire Protection Association (p. 105).

JOINT COMMITTEE ON ATMOSPHERIC POLLUTION BY AUTOMOBILE EXHAUST GASES. Alexander Silverman, chairman, University of Pittsburgh; Pittsburgh, Pa.—A delegate body created in 1927 with the following organizations represented: American Automobile Association, American Chemical Society, American Medical Association, American Petroleum Institute, American Public Health Association, Motor Truck Association of America, National Association of Taxicabs, National Safety Council, Society of Automotive Engineers, United States Bureau of Mines, and United States Public Health Service. Problems connected with the discharge of carbon monoxide into the atmosphere of public and private garages and loading stations for trucks and taxicabs are under consideration, as well as those involving congested traffic areas. Reports and recommendations are not yet available.

American Electric Railway Transportation and Traffic Association.

292 Madison Avenue, New York, N. Y. Guy C. Hecker, General Secretary.

ORGANIZED in 1908 as one of the affiliated associations of the American Electric Railway Association for the interchange of ideas, consideration of operating and transportation problems, methods of promoting traffic, and all other matters incident thereto. The work of committees of this association has covered reports relating to general operating methods in detail, rules, freight and express timetables, the hiring and training of employees, block signals, multiple-unit operation, traffic and safety, motor-bus operation, and other matters relative to traffic and safety.

COMMITTEE ON THE TRANSPORTATION EMPLOYEE. R. W. Emerson, chairman.—The report of this committee presented at the annual convention, September 28 to October 4, 1929, deals with the selection, training, informational education, and accident proneness of transportation department employees, and has been printed in pamphlet form.

COMMITTEE ON TRAFFIC AND SAFETY. R. W. Emerson, chairman.—The report of this committee presented at the annual convention, September 22 to 28, 1928, deals with men and their accident tendencies, high-accident men, treatment, selection, turnover, follow-up, bonus plans, welfare work, etc. This report is contained in the volume of 1928 proceedings, pages 13-64.

COMMITTEE ON BONUS AND AWARD SYSTEMS. G. T. Hellmuth, chairman.—This report deals with the subject of bonus and award systems in connection with safety work and accident-prevention programs of electric railways. This report is contained in the volume of 1927 proceedings, pages 151-159. (Joint report with American Electric Railway Claims Association.)

COMMITTEE ON BUS OPERATION. R. N. Graham, chairman.—This report contains, among other things, suggested rules and instructions for the guidance of bus operators and collectors. This report is contained in the volume of 1927 proceedings, pages 14-96.

Earlier reports include those of the committee on personnel and training contained in the volumes of proceedings, 1922, pages 334-401; 1921, pages 197-221; 1915, pages 285-301; 1912, pages 331-364

American Engineering Council.

26 Jackson Place, Washington, D. C. L. W. Wallace,
Executive Secretary.

AMERICAN Engineering Council was organized in Washington, D. C., June, 1920.

The object of the organization is to "further the public welfare wherever technical and engineering knowledge or experience are involved and to consider and act upon matters of common concern to the engineering and allied technical professions."

The membership of the council is composed of representatives of National, State, and local engineering and allied technical societies. There are 26 such member organizations having a composite membership of 57,653. Each member organization contributes on the basis of \$1 per year for each member.

Council gives consideration to all proposed National legislation and all regulations projected by the Federal departments affecting engineering and allied technical employees of the Federal Government.

From time to time council makes important studies some of which have a direct bearing upon personnel matters. Among these are the following:

Waste in industry, published in 1921, contains a large body of fact material with respect to personnel records, procedure of employment, unemployment and efforts to overcome seasonal fluctuations; records of discharges and lay-offs, practice of temporary shutdowns, investigation of resignations; labor turnover; determination of wage scales; hours of labor; methods of shop representation; labor difficulties due to strikes, lockouts and stoppages; accidents; safety and welfare work.

Twelve-hour shift in American industry is a careful analysis of the advantages and disadvantages of the 12-hour shift.

Industrial coal—purchase, delivery, and storage, among other phases of the problem, points out how production schedules might be

stabilized, hence eliminating a large degree of seasonal employment obtaining in coal mines.

Safety and production is based upon a large amount of factual material and sets forth the relationship between the rates of production and accidents. The general conclusion is drawn that the prevention of accidents is of major consequence and should receive executive attention and direction. The report also lays down the general principle that the efficient factory as measured in production per man-hour is also a safe factory, or vice versa.

In addition to the foregoing the council has actively participated in the several studies of the President's unemployment conference in so far as such effort has related to the elimination of unemployment and projected means for bringing about more uniform production schedules in American industry.

American Federation of Labor.

A. F. of L. Building, Washington, D. C.

A STATISTICAL and information service is maintained by the American Federation of Labor to supply information at the request of its affiliated organizations. While its research work is largely of a secondary nature, several studies have been published in a "Research series," among which are:

No. 1. Organized labor's modern wage policy.

No. 2. Wages and labor's share. By Jurgen Kuczynski and Marguerite Steinfeld.

No. 3. Wages and labor's share in the value added by manufacture.

No. 6. Wages in manufacturing industries, 1899 to 1927.

Current data on unemployment, compiled from reports of union secretaries in 24 industrial centers, appear monthly in the *American Federationist*.

Recent publications are "A Scientific basis for shorter hours of work," and "A Comparison of wages, North and South." A survey of the unemployment provisions and old-age pensions of various affiliated unions has been published under the title, "Trade Union Benefits," by George W. Perkins and Matthew Woll.

A survey of the extent of the 5-day week and its effect on wages is now being made.

The official organ of the American Federation of Labor, the *American Federationist*, published monthly, covers the broad field of which personnel relations are a part.

American Gas Association.

420 Lexington Avenue, New York, N. Y. Alexander Forward, Managing Director.

FORMED JUNE 6, 1918, by the union of the American Gas Institute (founded 1906) and the National Commercial Gas Association (founded 1905); incorporated, 1919.

GAS SAFETY CODE.—Prepared under the auspices and rules of procedure of the American Standards Association by the American Gas Association and the United States Bureau of Standards.

APPLIANCES.—The association with the governmental bureaus cooperating has developed minimum safety requirements for the fol-

lowing gas appliances: Ranges, water heaters, tubing, incinerators, house heating, and clothes dryers. The association maintains a laboratory for the testing and approval of appliances based on these requirements.

ACCIDENT PREVENTION COMMITTEE.—The functions of the committee are: To investigate preventable causes of casualties and damage in the gas industry and to recommend methods, safe practices and safety appliance for avoidance; to devise and promulgate plans for interesting and educating employees and the public in accident prevention; to be helpful to the members of the association in their individual accident problems. The yearly reports are included in the proceedings of the association; some of the reports, however, are available separately.

AWARDS.—The association yearly offers a gold medal and button in recognition of the outstanding meritorious act performed in the gas industry. The McCarter medal is also presented to employees of member companies in recognition of the saving of human life from gas asphyxiation by application of the Schaeffer prone-pressure method of resuscitation.

COMMITTEE ON EDUCATION OF GAS COMPANY EMPLOYEES.—The purpose of the committee is to make a thorough study of the educational needs of gas-company employees and to recommend that form which it is felt will be of greatest practical value to the employees and which can be most successfully applied. The yearly reports of the committee are included in the proceedings of the association; some of the reports are available separately.

American Heart Association (Inc.).

370 Seventh Avenue, New York, N. Y. Dr. I. C. Riggin,
Executive Secretary.

THE American Heart Association, organized in 1922, was incorporated in 1924 to coordinate the work of prevention and care of heart disease which had been carried on independently by associations in various parts of the country and to encourage and assist in the organization of new centers for this work. It is directing its energies to the maintenance of a central office through which all the work of its constituent groups can be coordinated and made more productive; to the organization of membership; to education; and to field work. The association is financed by voluntary contributions.

By gathering statistical data and acquiring additional knowledge effective measures for the prevention and relief of heart disease may become more widely known and intelligently applied, to the end that (1) the etiological factors may be better controlled; (2) many hearts may be saved from damage; (3) hearts already diseased may be protected from further injury; (4) the disease may be arrested before its victim is materially incapacitated; (5) a larger proportion of those with serious heart defects may be brought to economic independence. A series of pamphlets is issued by the association dealing with prevention and care of heart disease.

The Heart Council of Greater Cincinnati, an affiliated association, has recently made a study of the predisposing factors in heart disease at middle age and beyond. Physical examination of 1,000 male clerical workers, ranging in age from 25 to 65 years and representing

cross sections of those engaged in various types of industrial employment, formed the basis of this study.

American Management Association.

20 Vesey Street, New York, N. Y. W. J. Donald, Managing Director.

IN 1922 the National Association of Corporation Training (see Bul. No. 299, p. 118) and the Industrial Relations Association of America (Bul. No. 299, p. 105) were merged into the National Personnel Association. The name of this organization was changed in 1923 to the American Management Association. The National Association of Sales Managers joined the American Management Association in 1925.

Special Paper No. 17 of the association, entitled "The American Management Association and Its Predecessors," by W. H. Lange, of the Industrial Relations Counselors (Inc.), is a history of the organization and of each of the component organizations out of which it grew. This paper is the first interim report of the committee on personnel administration,⁴ which is making a study of the development of practices in personnel management and industrial relations in American industry during the past 25 years, in which "an attempt will be made to establish trends and to outline current practices."

Since 1923 "the American Management Association has lessened its emphasis on personnel management, recognizing it only in so far as it is a general management problem." However, personnel still "bulks very large in the whole program of the association" and is "included in the activities of each of the major divisions." These divisions are: Marketing management, production management, office management, financial management, and general management. In addition, there are several subject groups, such as employee tests, employee representation, training of salesmen, industrial training, and salary administration.

In general, it is the policy of the association not to undertake research within its own offices, but rather to stimulate research in the field of personnel on the part of its members. The results of studies made by members are brought to the attention of the general membership through the publications and conventions of the association. In specific cases in which the association desires to have a study made, it subsidizes an investigation by or through a member, a university professor, or some expert research student.

Publications of the American Management Association covering studies in the field of personnel research are:

- 1923: Discipline and its maintenance.
- Vacations for office employees.
- The negro in industry.
- Wage payments—in cash or by check.
- Employee stock ownership plans.
- 1924: Introduction of new employees.
- Business suggestions from employees.
- Rewards for inventions.

⁴ Final report will be published by the Industrial Relations Counselors (Inc.) as part of its research series.

1925: Compensating retail salespeople.

Training retail salespeople.

Payment for employees' civil and military duties. ^{SER}

Vaccination of employees against smallpox.

Disseminating information among employees.

Pensions for industrial and commercial employees.

How New York employers treat absence for sickness.

Recent and forthcoming publications are:

General management series—

Trends in personnel health service. By W. H. Lange (second interim report of committee on personnel administration).

The pension plan of the Atlantic Refining Co. By P. G. Wharton, assistant general auditor of the Atlantic Refining Co.

How Bethlehem Steel Co. and other companies deal with cases of men who must be retired, but who can not qualify under a pension plan. By George W. Vary, superintendent of relief department, Bethlehem Steel Co.

Age in relation to employment. By C. R. Dooley, personnel manager of the Standard Oil Co. of New York.

Training older employees for continued employment. By C. R. Dooley.

Extra incentives for executives in the American Rolling Mill Co. By S. R. Rectanus, assistant to general manager.

The pension, retirement, and benefit plan of the Eastman Kodak Co. By M. B. Folsom, assistant to the chairman.

Executive training programs. By Harold B. Bergen, manager personnel department of Henry L. Doheny Co.

Training executives to train. By Morse Dell Plain, vice president Northern Indiana Public Service Co.

Office executives series—

Extra incentives for billing machine operators in the Public Service Co. of northern Illinois. By T. P. Johnson, assistant to the comptroller.

Measuring shop clerical work. By W. M. Smith, Western Electric Co.

Measuring office output—Summary of studies. By John Mitchell, General Electric Co.

Functions and relations of office planning, personnel, and service departments. By H. C. Pennicke, manager planning and personnel, American Central Life Insurance Co.

The office supervisor as a trainer. By Byron F. Field, superintendent training division, Commonwealth Edison Co.

Incentives for office workers. By C. A. Bethge, vice president Chicago Mail Order Co.

Office management in branches. By W. Henry Smith, assistant vice president, Retail Credit Co.

Standardizing, measuring, and compensating for office operations, by Marion A. Bills, assistant secretary, Aetna Life Insurance Co.

Production executives' series—

The time study department: Its place in the factory organization. By A. L. Kress, head of central planning department, United States Rubber Co.

Institute of management series—

A method of determining who shall participate under a managerial profit-sharing plan. By J. S. Keir, economist, and E. P. Hayes, of Dennison Manufacturing Co.

How to prepare and validate an employee test. By Eugene J. Bengel.

Publications of the association "are printed primarily for the benefit of members. They are not made available for purchase by nonmembers until six to eight months after members have received them."

In addition to special publications and proceedings of conventions the American Management Association issues the Management Review, a monthly magazine, and Personnel, issued quarterly. Per-

sonnel began as the official organ of the Industrial Relations Association, and after a lapse in publication it was reestablished by the American Management Association in May, 1927, since when it has been issued quarterly. It contains "articles on all sorts of personnel problems, including selecting, training, compensating, transferring, promoting, organizing and pensioning employees, including office and factory workers, retail and field salesmen, junior executive, and even other executives." It is available to members only.

Studies under way at present are:

Supervision of salesmen. By J. L. Palmer, assistant professor in marketing, University of Chicago.

Selecting, recruiting, training, and compensating men in specialized positions. By Dr. R. W. Stone, professor of industrial relations, University of Chicago.

The sales executive's job. By Dr. Harry R. Tosdal, professor of marketing, Harvard Business School.

American Medical Association.

535 North Dearborn Street, Chicago. Dr. Olin West, Secretary.

ONE of the sections of the Scientific Assembly of the Association is the section on preventive and industrial medicine and public health, of which Dr. W. G. Smillie, Boston, is the secretary. Subjects pertaining to public health and industrial medicine are discussed before that section through papers formally presented by individual authors and through general discussion participated in by the members of the section. Scientific papers dealing with industrial medicine and surgery are also presented from time to time before other sections of the scientific assembly. Most of these contributions to the annual programs of the association are published in the *Journal of the American Medical Association* or in the *Transactions of the Sections*.

The section on ophthalmology and the section on laryngology, otology, and rhinology have considered at various sessions important subjects pertaining to vision, hearing, etc., with especial reference to the bearing of defective vision and hearing on the efficiency of employees.

There are two important committees of the association engaged in studying the dangers of poisonous gases and anesthesia accidents, and various other committees of the association are devoting themselves directly or indirectly to the study of questions involving health and human efficiency. From time to time there are published in the *Journal of the American Medical Association* or in its other publications scientific articles having a bearing on industrial medicine and surgery.

American Posture League.

1 Madison Avenue (Metropolitan Tower), New York, N. Y.
L. E. LaFetra, M. D., Secretary.

A NATIONAL health organization organized in 1913 and incorporated the following year to do scientific and educational work in the standardization and improvement of conditions affecting the posture of the human body.

While the principal activities of this organization have been in the field of personal, public, and school hygiene, its technical committee on seating has made anatomical studies for the improvement of the design of chairs, stools, etc., for industrial establishments and offices, so as to promote correct posture and help to eliminate fatigue.

Lists of reprints of articles on posture, wall charts, lantern slides, and other educational material issued by the league may be obtained on application.

American Public Health Association.

Penn Terminal Building, Seventh Avenue and Thirty-first Street, New York, N. Y. Homer N. Calver, Secretary.

ORGANIZED in 1872 for the advancement of sanitary science and promotion of organizations and measures for the practical application of public and personal hygiene, it has grown steadily until today it is the largest and best-known public health organization on this continent. There are now 10 sections. They are health officers section, laboratory section, vital statistics section, public health engineering section, industrial hygiene section, foods, drugs, and nutrition section, child hygiene section, public health education section, public health nursing section, epidemiology section.

Meetings are held annually at a time and place determined by the governing council. The fifty-ninth annual meeting will be held in Fort Worth, Tex., the week of October 27, 1930.

The American Journal of Public Health is the official monthly publication of the association, in which its proceedings and papers and reports presented before its sections are published. This periodical has a department on industrial hygiene and occupational diseases, consisting of abstracts of current literature, conducted by Emery R. Hayhurst, M. D., and Leonard Greenburg, Ph. D.

SECTION ON INDUSTRIAL HYGIENE. Carey P. McCord, M. D., 34 West Seventh Street, Cincinnati, Ohio, secretary.—This section was organized in 1914 and now has about 200 members. A sketch of the development of industrial hygiene and protective legislation was prepared by Dr. George M. Kober and appeared as a chapter in the semicentennial volume, "A half century of public health," published by the American Public Health Association in 1921. Studies and reports made by the section in the last few years have been published in the American Journal of Public Health as follows:

- Extension of industrial hygiene, March, 1925.
- Industrial anthrax, January, 1926.
- Industrial fatigue, December, 1929.
- Lead poisoning, June, 1929, and December, 1929.
- Skin irritants, April, 1929.
- Silicosis, June, 1929.
- Industrial morbidity data and the physician, July, 1927.
- Carbon monoxide poisoning in industry, February, 1927.
- Relation of health departments to industrial hygiene, February, 1926.
- The medical consultant in industry and his value to the State, December, 1926.
- The promotion of industrial hygiene, March, 1925.
- Industrial promotion in small plants, April, 1925.

The committee on industrial hygiene, a subcommittee of the committee on administrative practice of the association, has prepared a

form for the collection of the essential data with respect to health conditions and health services of industries. The report will be published in a forthcoming issue of the American Journal of Public Health.

American Museum of Safety.

120 East Twenty-eighth Street New York, N. Y. Albert A. Hopkins, Director. Office address, 141 East Twenty-ninth Street, New York, N. Y.

THE American Museum of Safety, formerly the Safety Institute of America, is an educational corporation maintained for the prevention of accidental injury and loss of life and the elimination of hazards to the health of industrial workers and of the public. Exhibits in the museum present opportunity to visualize industrial safety engineering and to study safety devices, materials, and methods with a view to promoting development and standardization.

The organization publishes *Safety*, a bimonthly magazine, and administers the award of the Scientific American medal and the E. H. Harriman memorial medals, the latter of which are given for progress in safety in railroad operation. A special bulletin on Guarding Machine Tools was published in 1925.

American Railway Association.

30 Vesey Street, New York, N. Y. H. J. Forster, Secretary.

THE OBJECT of this association is the discussion and recommendation of methods for the management and operation of American railways. Its membership consists of common carriers which operate American steam railways.

The activities of the association are conducted under eight divisions, the names of which indicate their scope, as follows: Operating, transportation, traffic, engineering, mechanical, purchase and stores, freight claims, motor transport.

Three of these divisions are vitally concerned with standards; namely, operating, which deals with problems of operation; engineering, which deals with the location, construction, and maintenance of railroads; and mechanical, which deals with construction and maintenance of rolling stock.

American Society of Heating and Ventilating Engineers.

29 West Thirty-ninth Street, New York, N. Y.

ORGANIZED in 1895 for the promotion of the arts and sciences connected with heating and ventilating in all branches, the society now has local chapters in Cleveland, Chicago, Kansas City, Boston, Detroit, Minneapolis, New York, Buffalo, Toronto, Seattle, Philadelphia, Pittsburgh, St. Louis, and Madison.

The annual and semiannual meetings are held at times and places determined by the council. The annual meeting is usually held in January and the semiannual meeting in June. Annual dues, \$25; initiation fee for members and associates, \$15; for junior members, \$12.

The research laboratory is located at the United States Bureau of Mines Experiment Station, Pittsburgh, Pa., and F. C. Houghten

is director of research. This laboratory was established under an agreement for cooperation in certain investigations between the United States Bureau of Mines and the society, executed in July, 1919, by which the bureau furnishes at its Pittsburgh plant the necessary office and laboratory space, light, power, heat, water, and other general facilities, and the services of certain engineering assistants, and the society provides the salaries of the director of research, assistant director, and such other assistants as may be required. Official reports of the research laboratory are published in the monthly Journal of the society, and papers containing the results of the investigations are presented at research sessions of the society's meetings.

The publications of the society include the Journal, which is now a part of Heating, Piping, and Air Conditioning, the annual Transactions of the society, the annual Guide, and the Code of Minimum Requirements for the Heating and Ventilation of Buildings.

American Society of Mechanical Engineers.

29 West Thirty-ninth Street, New York, N. Y. Calvin W. Rice, Secretary.

THE American Society of Mechanical Engineers was organized in April, 1880, to promote the art and science of mechanical engineering and the allied arts and sciences. Local sections of the society have been established in 70 industrial centers of the United States. Sixteen professional divisions have been organized on the basis of a common interest in a branch of engineering within the scope of the society. These are: Aeronautic, applied mechanics, fuels, hydraulic, iron and steel, machine-shop practice, management, materials handling, national defense, oil and gas power, petroleum, power, printing industries, railroad, textile, wood industries. The society has a membership of more than 18,000.

MANAGEMENT DIVISION.—Organized as the management section on October 15, 1920, this division now has an enrollment of 6,325 members and holds sessions devoted to management topics at the semiannual and annual meetings of the society.

The division also holds yearly a national meeting on management either alone or in cooperation with the materials handling division of the society or other management groups. A number of these sessions are held in cooperation with the production executives section of the American Management Association. In January, 1929, the division, with the American Management Association cooperating, organized a national elimination of waste committee. This committee is sponsoring in April of each year a nation-wide campaign to reduce factory waste.

A bibliography of management literature to February, 1927, was published in that year under the auspices of the management division.

BOILER CODE COMMITTEE. M. Jurist, acting secretary.—In 1914 the committee prepared and issued the American Society of Mechanical Engineers boiler code, and revised editions were published in 1918, 1924, and 1927. It contains standard specifications for the construction, equipment, and use of power boilers. The committee

has also formulated rules for boilers of locomotives, low-pressure heating boilers, miniature boilers, inspection, unfired pressure vessels, and the care of power boilers in service. They have been adopted officially by many States as well as by many boiler-insurance companies, boiler manufacturers, and consulting engineers. The committee meets monthly and formulates "Interpretations of the boiler code," which are published in data sheet form with index.

SAFETY COMMITTEE. C. B. LePage, secretary.—For many years the society has taken a part in encouraging the movement for safety in industry and the development of safety codes by representative committees. In October, 1921, the American Society of Mechanical Engineers council appointed a standing committee to extend the knowledge of safety, to promote operation in this field and to supervise all safety code activities of the society with the exception of those of the boiler code group of committees. The society is now joint sponsor for five sectional committees, organized to develop safety codes for mechanical power transmission apparatus, elevators, machinery for compressing air, conveyors and conveying machinery, and cranes, derricks, and hoists under the procedure of the American Standards Association. The safety code for mechanical power-transmission apparatus was approved in 1923 as a tentative American standard, and in November, 1927, was raised to the status of an American standard by the American Standards Association. The safety code for elevators, including dumb-waiters and escalators, was approved in April, 1925, by the American Standards Association. The safety codes of the other three sectional committees are now in various stages of development.

In addition to the sectional committees for which it is a sponsor, the American Society of Mechanical Engineers has representation on committees forming safety codes for abrasive wheels, floor openings, railings and toe boards, industrial sanitation, lighting factories, mills, and other work places, forging and hot metal stamping, ladders, laundries, logging and sawmill machinery, machine tools, paper and pulp mills, power presses, rubber machinery, walkway surfaces, amusement parks, window washing, colors for the identification of gas-mask canisters, ventilation for metal mines, ventilation in coal mines, ventilation, textile safety code, and low-voltage electrical hazard.

Safety in industry.—Another important contact of the society in safety work is with the National Safety Council through its engineering section, the American Society of Safety Engineers. Under the auspices of the American Society of Safety Engineers a joint conference was held in New York in November, 1927, to discuss safety in its relation to the activities of each of the participating organizations. As an outgrowth of this conference, the four national engineering societies are developing a plan to coordinate safety work throughout the country by the appointment of safety representatives in their local sections and student branches, and by the dissemination of printed lectures on the subject of safety in schools and colleges. The American Society of Mechanical Engineers is one of the first to put this plan into operation.

Talks on safety in industry have also been incorporated in the programs of recent meetings of the American Society of Mechanical Engineers, under the auspices of the American Society of Safety

Engineers and authors in general are urged to emphasize the safety features of their work and plants in papers presented at American Society of Mechanical Engineers meetings.

Engineering education.—In addition to the work of the management division and the safety and boiler code committees, the society has two standing committees—namely, the committee on relations with colleges and the committee on education and training for the industries—devoted to educational work. The former deals with the activities of the student branches of the society, of which there are now 96, and the latter acts in various ways to further industrial engineering education. A group of 17 papers presented at sessions sponsored by the committee was published in pamphlet form under its auspices in 1927. The committee on education and training for the industries is also cooperating with the Society for the Promotion of Engineering Education in its present important study of engineering education of noncollege type. The society also has direct representation on the board of investigation and control of the Society for the Promotion of Engineering Education.

Publications.—The regular publications of the American Society of Mechanical Engineers—Mechanical Engineering, its monthly journal, and the Transactions of the Professional Divisions—contain many papers devoted entirely or in part to the various phases of personnel research. A list of these, many of which are available in pamphlet form, can be secured from the headquarters of the society.

American Society of Safety Engineers—Engineering Section of National Safety Council.

20 North Wacker Drive, Chicago, Ill. W. Dean Keefer, Secretary.

ORGANIZED in May, 1911, as the United Association of Casualty Inspectors; reorganized and incorporated as American Society of Safety Engineers in 1915; amalgamated with engineering section of the National Safety Council (see p. 117) in 1924. It has more than 1,100 members.

Participation of the National Safety Council in the formulation of safety codes is largely through the membership of the American Society of Safety Engineers, engineering section. Engineering representatives have helped to formulate such codes as those dealing with:

- Ladders.
- Forging and hot-metal stamping.
- Paper and pulp mills.
- Identification of piping systems.
- Power presses.
- Rubber mills and calenders.
- Textile mills.
- Abrasive wheels.
- Aeronautics.
- Building exits.
- Dust explosion.
- Electrical equipment in coal mines.
- Elevators and escalators.
- Foundries.
- Gas safety code.

Protection of heads and eyes of industrial workers.
 Ladders and stairs for mines.
 Laundry machinery.
 Lighting.
 Logging and sawmill machinery.
 Mechanical loading in underground metal mines.
 Mechanical power-transmission apparatus.
 Miscellaneous outside coal handling equipment.
 National electrical safety code.
 Pulverized fuel systems.
 Rock dusting of coal mines.
 Underground transportation in metal mines.
 Wire rope for mines.
 Woodworking.

The society is also represented on 28 other committees for codes that have not yet been completed.

Special committees are appointed from time to time to study and prepare reports on unusual accident problems such as:

The effect of annealing on chains.
 Noise and its relation to accidents.
 Low voltage electrical hazards.
 Static electricity.
 Wire rope attachments and connections.
 Woodworking circular saws.

The society has undertaken the enormous task of formulating at least one special report in pamphlet form on every industry in the United States. Ultimately, this will mean a minimum of 300 pamphlets in this series. Reports have already been published on such subjects as:

Brick making.
 Leather tannerles.
 Milk-bottling plants.
 Food preserving and canning.
 Candy, chocolate, and cocoa manufacture.
 Dry cleaning and dyeing establishments.
 Paper-box making.
 Rayon manufacture.
 Structural and sheet-metal fabrication.

More than 25 committees have been organized to study other industries.

Each year regional safety conferences are organized to bring safety information and inspiration to thousands of people who can not attend the annual safety congress. Last year regional conferences were held in more than 25 communities in different parts of the country. Each is a one or two day conference. The average attendance is about 500 persons.

Special activities are carried on not only to prevent accidents in engineering colleges but also to create a safety consciousness in the minds of student engineers, many of whom after graduation become managing and operating executives in industrial concerns. Accident-prevention lectures have been prepared for presentation to engineering students, and a local contact man has been appointed in each engineering college community to cooperate with the college authorities in inaugurating and maintaining accident-prevention activities.

Four chapters of the American Society of Safety Engineers, engineering section, have been organized in New York, Boston, Worcester,

and Newark to afford the members in these communities the additional opportunity of holding monthly meetings.

The annual meeting of the American Society of Safety Engineers, engineering section, is held each year during the week of the annual safety congress of the National Safety Council.

American Standards Association.

29 West Thirty-ninth Street, New York, N. Y. P. G. Agnew,
Secretary.

THE American Standards Association is a national industrial standardization body composed of representatives of 41 national organizations, including 25 trade associations, 9 technical societies, and 7 departments of the Federal Government. Any national organization which has an important interest in industrial work is eligible to become a member body of the association.

The chief purpose of the organization is to bring together manufacturers, distributors, consumers, technical specialists, and any others directly concerned with a particular standardization project, providing a procedure under which these agencies may work together to establish standards satisfactory to all. Such standards, properly prepared and approved by the interested groups, are given the status of American standards by the association.

The standards already approved include a large group of national safety codes, and many other safety codes are now in course of preparation. Some of these codes, such as the national electrical safety code, the elevator safety code, and the safety code for abrasive wheels, serve as the authoritative guides for the industries which they concern.

Over 400 organizations, represented by more than 2,100 individuals, have cooperated under American Standards Association procedure in the establishment of standards. A large share of the work of these organizations has been in the safety code field.

Any responsible organization may bring about the initiation of a standardization project under American Standards Association procedure. The request for initiation of a standard is approved by the American Standards Association standards council, on which all of the member bodies of the American Standards Association are represented. In the standards council are also vested the approval of the personnel of the technical committees organized to establish standards and the final approval of the standards submitted by the technical committees to the American Standards Association. Not until such approval is granted does a standard become an American standard. The control of finances and administrative policy of the American Standards Association is in the hands of a board of directors composed, for the most part, of industrial executives nominated by the member bodies.

The procedure of the association provides four general methods for the establishment of American standards. These are:

1. *Sectional committee method.*—A sectional committee is a joint technical committee made up of designated representatives of all vitally interested groups concerned with the subject being considered for standardization. Such technical committees may work either:

(a) Under the administrative support and direction of a sponsor body, or, (b) autonomously (without such specific direction).

2. *Existing standards method.*—Existing standards may be approved when it is shown by proper exhibits of the submitting body that the standard represents a true, competent, industrial opinion with respect to its suitability for national adoption.

3. *Proprietary method.*—Proprietary standards, or standards developed by a body having an outstanding and controlling interest and importance in the field of the standard, may be approved by the American Standards Association when it is shown by methods set down in the procedure that such a standard is supported by a consensus of those substantially concerned with its development and use.

4. *General acceptance method.*—A fourth method, especially applicable to simple cases not requiring continued technical consideration, is known as the general acceptance method. Under this procedure a conference of those principally concerned—producers, consumers, and other important interests—is held. The decision of the conference is authenticated and supported by a sufficiently large number of written acceptances of the conference's recommendation from those substantially concerned with the scope and provisions of the recommendation.

Under all these methods of procedure the project is undertaken, as has been outlined, only upon the formal proposal of a responsible industrial, commercial, governmental, or technical group.

The American Standards Association acts as the official channel for international cooperation in standardization work with the similar national standardizing bodies in each of 20 foreign countries. It is also the regular channel for the distribution of standards and information concerning standardization activities originating both in the United States and abroad.

The association was organized as the American Engineering Standards Committee in 1918 by five major engineering societies. As the work of the committee grew and its activities extended into new industrial fields, additional member bodies were added. In November, 1928, the committee was reorganized along broader and more flexible lines and renamed the American Standards Association.

The following list shows those safety codes which have been approved by the American Standards Association and those which are now in the course of preparation.

Approved safety codes

Building exits.
 Lighting: Factories, mills, and other work places.
 Ladders.
 Elevators and escalators.
 Lighting of school buildings.
 Use, care, and protection of abrasive wheels.
 Protection of industrial workers in foundries.
 Power presses and foot and hand presses.
 Logging and sawmill machinery.
 Mechanical power-transmission apparatus.
 Forging and hot-metal stamping.
 Rubber mills and calenders.
 National electrical safety code.
 Protection against lightning.
 Gas.
 Woodworking plants.

Paper and pulp mills.
 Protection of the heads and eyes of industrial workers.
 Laundry machinery and operations.
 Prevention of dust explosions:
 Installation of pulverized-fuel systems.
 Pulverizing systems for sugar and cocoa.
 Prevention of dust explosions in starch factories.
 Prevention of dust explosions in flour and feed mills.
 Prevention of dust explosions in terminal grain elevators.

Safety codes in course of preparation

Construction work.
 Floor and wall openings, railings, and toe boards.
 Walkway surfaces.
 Window washing.
 Mechanical refrigeration.
 Machine tools.
 Compressed-air machinery.
 Conveyors and conveying machinery.
 Plate and sheet-metal working.
 Rubber machinery.
 Cranes, derricks, and hoists.
 Electrical fire and safety code.
 Colors for gas-mask canisters.
 Textiles.
 Industrial sanitation.
 Ventilation.
 Exhaust systems.
 Amusement parks

The following are the member-bodies of the organization:

American Electric Railway Association.
 American Gas Association.
 American Gear Manufacturers' Association.
 American Home Economics Association.
 American Institute of Architects.
 American Institute of Electrical Engineers.
 American Institute of Mining and Metallurgical Engineers.
 American Mining Congress.
 American Railway Association, engineering division.
 American Society of Civil Engineers.
 American Society of Mechanical Engineers.
 American Society for Testing Materials.
 Association of American Steel Manufacturers.
 Cast-Iron Pipe Research Association.
 Common Brick Manufacturers' Association of America.
 Electric light and power group:
 Association of Edison Illuminating Companies.
 National Electric Light Association.
 Fire protection group:
 Associated Factory Mutual Fire Insurance Companies.
 National Board Fire Underwriters.
 National Fire Protection Association.
 Underwriters' Laboratories.
 Gas group:
 Compressed Gas Manufacturers' Association.
 International Acetylene Association.
 Laundryowners' National Association of the United States and
 Canada.

National Association of Mutual Casualty Companies.
 National Automatic Sprinkler Association.
 National Bureau of Casualty and Surety Underwriters.
 National Electrical Manufacturers' Association.
 National Machine Tool Builders' Association.
 National Safety Council.
 The Panama Canal.
 Portland Cement Association.
 Society of Automotive Engineers.
 Telephone group:
 Bell Telephone System.
 United States Independent Telephone Association.
 United States Department of Agriculture.
 United States Department of Commerce.
 United States Department of the Interior.
 United States Department of Labor.
 United States Navy Department.
 United States War Department.

In addition to its member bodies there are also about 400 sustaining members, for the most part manufacturing organizations.

Associated Industries of Massachusetts.

Park Square Building, 31 St. James Avenue, Boston, Mass.
 E. Grosvenor Plowman, Industrial Relations Adviser.

A MANUFACTURER'S association embracing in its membership manufacturers in all lines of industry having plants in Massachusetts organized to solve their common problems.

The personnel work of the Associated Industries is handled through a staff of advisers on industrial relations and industrial medicine. In addition, this association has assisted in the formation and works with the New England Industrial Relations Conference. This conference is an organization of 25 personnel managers who meet regularly to exchange information on personnel subjects.

In general the Associated Industries of Massachusetts and the Industrial Relations Conference do not carry on research projects. Both organizations study industrial relations subjects of current interest and prepare reports for confidential use. Studies of this sort have been prepared on old-age pensions, workmen's compensation, vocational education, and similar subjects. These reports are not available for distribution.

The Associated Industries of Massachusetts acts as one of the cooperative agents of the United States Department of Labor in collecting information with respect to the actual turnover situation in Massachusetts industry.

Association of Governmental Officials in Industry of the United States and Canada.

Louise E. Schultz, Industrial Commission of Minnesota,
 St. Paul, Minn., Secretary-Treasurer.

FORMERLY the Association of Governmental Labor Officials of the United States and Canada; present name adopted at the 1928 convention held in New Orleans, La. The membership of this associa-

tion consists of employees of Federal, State, Provincial, county, or municipal departments having to do with the enforcement of supervision of labor laws. The annual dues of departments are determined upon the following basis: When the department staff consists of 1 to 5 persons, \$5; 6 to 25 persons, \$10; 26 to 75 persons, \$15; and where the staff exceeds 75 persons, \$20. Meetings are held annually, the place being decided upon at the preceding convention and the time fixed by the executive committee.

The proceedings of the annual conventions are published each year as bulletins of the United States Bureau of Labor Statistics and contain papers and discussions on labor topics. A history of the organization is given in the *Labor Review* for October, 1929. (Vol. 29, No. 4, p. 25.)

Boston Chamber of Commerce.

80 Federal Street, Boston, Mass. M. D. Liming, Secretary.

A CONFERENCE group of operating office managers, serving as one of the committees of the bureau of commercial and industrial affairs of the Boston Chamber of Commerce, has made several studies with especial reference to the employment, training, and working conditions of office employees. Among these studies may be mentioned: Workable classification of office jobs (8 pp.)—a summary of standards adopted by factories, stores, insurance houses and banks, etc., for the classification of office jobs and the regularization of salaries; Practical experience in office management (48 pp.), showing the organization and administration of a modern office and outlining the selection and training of new employees, assignment of tasks, the line of promotion, hours, discipline, absenteeism, etc. (also includes the physical organization of the office and types of service rendered by various classes of employees).

The retail trade board (Daniel Bloomfield, manager), which is the merchants' section of the Boston Chamber of Commerce, has a personnel group composed of personnel managers and training directors of the representative stores in the city. This group studies the problems of personnel in the retail stores and arranges cooperative training courses for executives and nonexecutives under a plan known as the merchants' institute of the retail trade board.

Brooklyn Chamber of Commerce.

66 Court Street, Brooklyn, N. Y. Grant Elbert Scott, Secretary.

THE statistical and research department of the Brooklyn Chamber of Commerce carries on continuous studies of employment, wages and hours, safety and health, industrial welfare legislation, and age limit in industry, for the use of members and "industry in Brooklyn generally." Reports are not published, but information is available upon application to the office of the chamber.

Brotherhood of Maintenance of Way Employees.

61 Putnam Avenue, Detroit, Mich.

DEPARTMENT OF STATISTICS AND RESEARCH. L. E. Keller, statistician.—Activities of the Brotherhood of Maintenance of Way Em-

ployees in personnel research are confined to studies of the occupations over which the organization has jurisdiction. Results of these studies are published from time to time for the use of officials of the brotherhood and systems divisions.

The research department is at present engaged in studies of the hazards of employment; training and skill required; the growth and development of new machines and devices; relation of wages paid maintenance of way employees to the wages paid similar classes in other industries; and the living standards and conditions of the craft under existing wages.

A study is planned of the health hazards in maintenance of way work, based primarily on the death benefit records of the brotherhood, to determine the extent of hazard due to exposure to severe weather conditions and to the handling of heavy materials.

Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees.

Brotherhood of Railway Clerks Building, Cincinnati, Ohio.

RESEARCH DEPARTMENT. E. L. Oliver, director.—Established by order of the convention of the Brotherhood of Railway Clerks in 1928 and supported by appropriation from the brotherhood treasury. The purpose of the department is primarily to assist in the handling of negotiations and arbitration of disputes between the organization and the various railroad managements. Its work, therefore, involves principally the collection and compilation of statistics and other data bearing on wages, working conditions, labor efficiency, railroad operating conditions, and the general economic and financial facts of American industry. While the results of studies made by the department are available in bulletin form for the use of local and systems officers, they have not been published for general distribution.

Bureau of Applied Economics.

1523 L Street NW., Washington, D. C. W. Jett Lauck, President; C. V. Maudlin, Managing Director.

ORGANIZED in 1914 and incorporated under the laws of Maryland, this bureau is a private organization established for the purpose of doing research and statistical work in the field of industrial, commercial, and general economic activities. Its labor-research work includes compilation of data regarding prices, cost of living, wages, and other statistical information (e. g., for use in labor cases before wage boards, etc.), original investigations of industrial and commercial conditions, plant and industrial surveys, memoranda on industrial and labor legislation, etc.

Bureau of Municipal Research of Philadelphia.

311 South Juniper Street, Philadelphia, Pa. William C. Beyer, Director.

ORGANIZED experimentally in November, 1908, with the aid of a staff detailed from the New York bureau; employed its own staff on and after July 1, 1909; incorporated in September, 1910. It is

a citizens' research agency, supported by voluntary contributions and equipped to serve officials and citizens in solving technical problems of government.

Supplements to its report on "Workingmen's standard of living in Philadelphia" (published in 1919 by Macmillan Co.), bringing the cost-of-living figures down to November, 1919, August, 1920, March, 1921, and March, 1923, respectively, were published as Nos. 393, 433, 463, and 567 of *Citizens' Business*, a weekly publication of the bureau.

The bureau conducted an inquiry into the changes in salaries of municipal employes in 12 of the larger cities in the United States during the period 1915-1925. The results of this inquiry were published in a supplement to the *National Municipal Review* of March, 1926. It is engaged at present in a study of separations from the competitive class in the city service of Philadelphia. Some of the results of this study have been published in *Citizens' Business*.

Bureau of Personnel Administration.

Graybar Building, 420 Lexington Avenue, Room 1745, New York, N. Y. Henry C. Metcalf, Director.

THE Bureau of Personnel Administration, an adult education and research organization, carries on four interrelated functions:

1. Private and group conferences or training courses in the philosophy, principles, and technique of personnel administration.
2. Research dealing with employment, health and safety, service features, joint relations, and education and training.
3. Personnel analysis, counseling and vocational placement.

4. Labor audits: Systematic analysis and statement of the facts and forces in a company which affect employer-employee relations, with recommendations for the improvement of the human relations.

Under the training division, the bureau has conducted seven conference series for business managers, factory, office, and sales executives, personnel directors, research specialists, social workers, and professional groups and students interested in management as a life problem. From these conferences on business management as a profession the following volumes have been printed;

Linking Science and Industry. Williams & Wilkins Co., Baltimore, Md. 1925.

Scientific Foundations of Business Administration. Williams & Wilkins Co., Baltimore, Md. 1926.

Business Management as a Profession. A. W. Shaw Co., Chicago, Ill. 1927.

The Psychological Foundations of Business Management. A. W. Shaw Co., Chicago, Ill. 1927.

Leadership and the Fundamental Objectives of Business Management will be published during 1930.

In its research division the bureau has conducted many labor audits of industrial corporations.

The Research Study on Employee Representation, by E. R. Burton (published by Williams & Wilkins Co., Baltimore, Md., in 1926), was made under the direction of the Bureau of Personnel Administration.

Bureau of Railway Economics.

Transportation Building, Washington, D. C. Julius H. Parmelee, Director.

ESTABLISHED in 1910 by the principal American railroads for research and dissemination of information in the general fields of economics and transportation statistics and accounting. Personnel research is incidental to the general work of the bureau but is touched upon in most of its major activities. The bureau maintains files covering information with regard to the employment of railway personnel, wages, hours, labor turnover, etc., and in addition has been interested in the question of education for railway work and has prepared a number of informal reports on that question. The bureau is active in the work of the Harriman committee of award, which each year grants medals to individual railway companies for progress in the safety field and has made a number of studies on safety as applied to railway operation.

Bureau of Safety.

20 Wacker Drive, Chicago, Ill. Charles B. Scott, President.

THIS bureau was incorporated March 2, 1915, and is supported by contracts which it has with its several public utility company clients, particularly the Inter-Company Insurance Trusteeship of the Middle West Utilities Co. These contracts provide that the Bureau of Safety shall direct and supervise the accident-prevention work of the several clients, which include light and power, street car, gas, ice, and water companies.

Its service includes inspection (survey, analysis, and report of operating conditions, recommendations regarding operating hazards and accident hazards caused by physical condition of the plant, regular reinspection); organization of safety committees; statistics of accidents (compilation, analysis, charts); instructional and educational work (to committees and to employees, by lectures, shop bulletins for posting, safety bulletins for each employee).

The bureau makes studies of the effect of safety rules tentatively adopted and of contrivances devised by men working in the plants for their individual protection.

Business Research Corporation.

79 West Monroe Street, Chicago, Ill. Stanley P. Farwell, Vice President.

THE Business Research Corporation is a client service, the primary function of which is to give consulting management service to the companies under the control of Mr. Samuel Insull and his associates and secondarily to render similar service to industry generally on a fee basis. Its employee relations work covers employment methods, rating, promotion, trade tests, etc.; benefit and thrift plans and pension systems; training and education; general working conditions; employee representation systems; personnel surveys; and so on. The reports of its studies are confidential, but a monthly bulletin is issued under the title "Better Business Methods."

Business Training Corporation.

350 Madison Avenue, New York, N. Y.; Tribune Tower, Chicago, Ill.

THIS corporation prepares and conducts training courses for retail and wholesale salesmen. Among recent courses are those for American Gas Association, Sterling Silversmiths Guild, Hartford Fire Insurance Co., Bigelow-Hartford Carpet Co., General Motors Truck Co., and many others. This corporation also conducts a course in modern production methods for the training of foremen. An outline of the subject matter and method of procedure may be obtained on application.

Carnegie Foundation for the Advancement of Teaching.

522 Fifth Avenue, New York, N. Y. Clyde Furst, Secretary.

A CHIEF interest of the Carnegie Foundation for the Advancement of Teaching is the pensioning of superannuated teachers, and this subject is covered in each of its annual reports.

In addition the foundation has issued two separate bulletins on the subject within recent years. Bulletin No. 17, published in 1926, "Retiring allowances for officers and teachers in the Virginia public schools," is a study made by staff officers of the foundation at the request of the Virginia State Teachers' Association and the State board of education. In 1928 a comprehensive report and plan covering Colorado was published as Bulletin No. 22, under the title "A retirement plan for Colorado public schools." This work was done with the cooperation of the Colorado Education Association, by Howard J. Savage, of the foundation staff, and Edmund S. Cogswell, consulting actuary. The officers of the Carnegie Foundation present the Colorado plan as "a successful and practical adaptation of the fundamental principle of pensions to the present needs of those concerned with education and the present possibilities of meeting those needs."

Chamber of Commerce of the United States of America.

1615 H Street, NW., Washington, D. C. William Butterworth, President.

THIS is a national organization of commercial organizations and trade associations. Its activities are threefold: (1) To serve American business in the study and solution of its national problems; (2) to interpret to the American business public those acts of the National Government which affect business; (3) to present to the various branches and departments of the National Government the opinion of American business on business and economic questions. In the formulation of this opinion on any subject it proceeds either by a vote of delegates assembled in annual meeting or by the method of referendum.

Several of the departments of the chamber, such as those dealing with natural resources, manufactures, and transportation, have been responsible for studies resulting in bulletins of information. Ex-

amples are the following bulletins issued by the department of manufacture:

Pensions: Fundamentals in the development of pension and other retirement plans. 1929.

Foremanship: Fundamentals in the development of industrial foremen. 1925.

Growth of foremanship courses in the United States. 1927.

Apprenticeship: Information and experiences in the development of industrial training. 1926.

Cooperative apprenticeship programs. 1927.

Employee representation or works councils. 1927.

Cincinnati Chamber of Commerce.

Cincinnati, Ohio. W. C. Culkins, Executive Vice President.

RESEARCH DEPARTMENT. C. Edythe Cowie, manager.—The research department of the Cincinnati Chamber of Commerce is engaged in the business of commercial research, securing data on any subject required, furnishing statistical information on Cincinnati, and handling all trade inquiries.

It is at present engaged in a study of employment opportunities for the colored population of Cincinnati; and one, in cooperation with civic organizations, for a central clearing agency among employment agencies. The reports of the department are not published.

College of Physicians.

15 South Twenty-second Street, Philadelphia, Pa. Alex. Heron Davison, M. D., 4514 Springfield Avenue, Clerk.

SECTION ON PUBLIC HEALTH AND INDUSTRIAL MEDICINE.—This section of the College of Physicians was organized in 1917. The average membership has been 50 Fellows. Meetings are not held on any schedule but three or four meetings are usually arranged for and held during the year. Its proceedings have been published annually—either in full or by title—in the Transactions of the College of Physicians, beginning with third series (vol. 39, pp. 421–459), 1917). The scope and aims of the section are described in a paper by Dr. James M. Anders in third series (vol. 39, p. 461).

Conference Board of Physicians in Industry.

247 Park Avenue, New York, N. Y. Dr. F. L. Rector, Secretary.

ORGANIZED in April, 1914, for cooperative effort in introducing into industrial establishments the most effective measures for the treatment of injuries or ailments of employees; for promoting sanitary conditions in workshops; and for prevention of industrial diseases. It also acts as adviser on medical problems in industry to the National Industrial Conference Board.

Membership is limited to 40 and is confined to the medical directors of industrial establishments who are on a full-time basis. It is financed by contributions from the firms represented by the members.

The board meets bimonthly, five times a year, the midsummer meeting being omitted. Questions of administration of industrial medical departments, the scope and value of medical records, methods of treating industrial accidents and illness occurring within the

plant, and related subjects are discussed at these meetings. Suggested methods are tried out by different board members, under actual conditions, and their experiences discussed at subsequent meetings. Methods of first-aid treatment of industrial injuries, the contents of first-aid outfits, the minimum size and equipment of first-aid rooms, methods of physical examination and classification of physical findings, and medical terminology used in industrial work have been promulgated and standardized by this board. These standardized methods and classifications have been published in Research Report No. 34 of the National Industrial Conference Board, which contains also a list of members. During past years the board has made a study of physical examinations among industrial workers, medical aspects of workmen's compensation laws, medical care of industrial workers, and the cost of industrial medical work. Its members have contributed extensively to medical literature and to industrial personnel problems.

CONSUMERS' LEAGUES

THE various consumers' leagues, organized either as State or as city bodies, while not primarily research agencies, often do a great deal of research work in connection with their major activities. Studies by these groups deal principally with women and minors and are made for the purpose of furnishing data and first-hand information for use in promoting legislation and specific standards in industry which consumers' leagues are organized to promote.

Consumers' leagues most active in investigating work, with a statement of their recent activities, follow:

Consumers' League of Cincinnati.

1024 Provident Bank Building, Cincinnati, Ohio. Frances R. Whitney, Executive Secretary.

In 1925 the league made an investigation of the vacation policies of 111 factories, stores, and miscellaneous establishments in Cincinnati, which was printed under the title of "Vacations with Pay for Production Workers," by Annette Mann.

During 1927 a study was made of injuries to those minors employed in Cincinnati during 1926 whose names appeared on the records of the Industrial Commission of Ohio as claiming workmen's compensation, and printed under the title, "A Study of Industrial Injuries to Working Children in Cincinnati during 1926," by Frances R. Whitney, assisted by Nellie J. Rechenbach (September, 1927. 40 pp.).

The various types of employment agencies, both fee-charging and free, and other means of establishing contact between the worker and the job were investigated during the winter and spring of 1928. The facts collected by this investigation were of service in drafting an ordinance regulating the licensing and practices of private employment agencies which was passed by the city council in December, 1928. This study was entitled "Employment Agencies in Cincinnati," by Frances R. Whitney (December, 1928. 80 pp.).

During the spring and summer of 1929, 100 working girls each earning not more than \$25 a week were personally interviewed as to

their earnings and living costs. The results of this study will become available by publication during 1930.

Minor studies are outlined briefly in the reports of the league for 1922-23 and 1923-24.

Consumers' League of Connecticut.

36 Pearl Street, Hartford, Conn.

RECENT studies and publications of the Consumers' League of Connecticut in personnel research are:

1925. A study of wage-earning women, published in Pamphlet No. 15: Answers to arguments against a shorter workday.

1927. A detailed study was made of all the child laborers who were out of school in September, 1926, in Meriden, Middletown, Torrington, and Waterbury, and published in Pamphlet No. 16: 1,353 child laborers in four manufacturing cities.

1927. A study of accidents to children in the State during the period of one entire year, so far as incomplete records permitted, and published in Pamphlet No. 18: Accidents to children under 13 years of age in the first compensation district of Connecticut.

Consumers' League of Eastern Pennsylvania.

818 Otis Building, Philadelphia, Pa. A. Estelle Lauder, Executive Secretary.

RECENT published studies of the Consumers' League of Eastern Pennsylvania in personnel research include:

Vacations with pay for factory workers.

Casualties of child labor—10 children illegally employed in Pennsylvania, and what happened to them.

Accidents to working children in Pennsylvania in 1923 (pub. 1925).

Save the children—advocates double compensation for children illegally employed who suffer accidents, and quotes experiences of several States with such a law.

Pennsylvania's rank in child labor legislation.

Tragedies in industry—diseases of occupation in Pennsylvania.

A current study is an investigation of the candy industry, with special reference to wages and hours of employment of women, sanitary and health conditions, with a view to publishing a white list of factories that meet definite standards adopted by a committee of the National Consumers' League.

Consumers' League of Massachusetts.

3 Joy Street, Boston, Mass. Marion W. Raymenton, Executive Secretary.

THE Consumers' League of Massachusetts has since its inception been active in original investigations of conditions of work, wages, sanitation, and health, in support of its program for improved industrial conditions, and publishes the results of its studies at irregular intervals.

Its most recent publications in the personnel research field are:

The evolution of the modern food shop. June, 1921.

Occupational risks in the dry-cleansing trade. October, 1924.

Some types of industrial poisoning. July, 1929.

Consumers' League of New Jersey.

56 New Street, Newark, N. J. Katherine G. T. Wiley,
Executive Secretary.

THE Consumers' League of New Jersey has interested itself recently in industrial diseases and industrial poisoning. Through its secretary it instituted the first investigation of radium poisoning in the manufacture of luminous watch dials. More recently Miss Wiley has investigated cases of mercury poisoning in felt-hat manufacture in New Jersey, the results of which are now in the hands of the New Jersey Department of Labor.

A study of conditions affecting migratory children employed in farm labor has been published under the title "Child Farm Workers Increase Delinquents," by Katherine G. T. Wiley.

Consumers' League of New York.

150 Fifth Avenue, New York, N. Y. Elinore M. Herrick,
Executive Secretary.

RECENT activities of the Consumers' League of New York in the personnel field have been a study of the hotel industry, published under the title "Behind the Scenes in a Hotel," and a similar study of the candy industry. The results of the latter investigation were published in March, 1928, as "Behind the Scenes in Candy Factories," and as an outgrowth of this investigation a "white list" has been issued of candy manufacturers in New York who conform to the league's standards of sanitation, wages, and hours.

Toledo Consumers' League.

305 Commerce Guardian Building, Toledo, Ohio. Amy G. Maher, President.

THE league is organized to investigate conditions surrounding wage-earning women and to create public opinion to support improved legislation. It has made a recent study of conditions surrounding social workers in Toledo.

Detroit Bureau of Governmental Research (Inc.).

51 Warren Avenue West, Detroit, Mich. Lent D. Upson,
Director.

ORGANIZED in 1916 "to further effective government for Detroit and Wayne County through improvement in administrative procedure." Funds are obtained by specially designated subscriptions made through the Detroit Community Fund.

Studies conducted by the bureau are reported upon to the chiefs of the municipal or county departments immediately concerned and are available for reference in mimeograph form. Among its more important reports are:

- Establishment of a police training school.
- Suggested specifications for standardizations of grades and salaries in city service.
- Rating of examination papers.
- Administration of civil service in Detroit.
- Service records.

Standardization of police practice.
 Police pensions.
 Cost of establishing a pension system for the employees of the Detroit Public Library.

Suggested revision of charter re civil service.

The teachers' retirement fund.

Pension systems of the city of Detroit.

Studies in progress at present are: Detroit pension program; tests for selecting patrolmen; and civil-service procedure.

Engineering Foundation.

29 West Thirty-ninth Street, New York, N. Y. Alfred D. Flinn, Secretary and Director.

THIS foundation, established in 1914 by the American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers, and American Institute of Electrical Engineers, is based on a gift by Ambrose Swasey, of Cleveland, Ohio, subsequently increased by him and other donors (present amount, \$625,000). The income is used "for the furtherance of research in science and in engineering, or for the advancement in any other manner of the profession of engineering and the good of mankind." It is administered by the engineering foundation board, composed of members of the societies named and members at large.

Besides researches relating to the physical aspects of engineering, the foundation assisted in establishing and supporting the Personnel Research Federation and has aided a few researches, the latest being "Interests of engineers, a basis for vocational guidance," by Edward K. Strong, jr., at Stanford University, a report on which was printed in the Personnel Journal, April, 1929.

Federal Council of the Churches of Christ in America.

105 East Twenty-second Street, New York, N. Y.

DEPARTMENT OF RESEARCH AND EDUCATION. F. Ernest Johnson, executive secretary.—Established in 1924. The major activities of the department are in the field of social problems and movements. The chief publication, the weekly Information Service, presents information gathered from a great variety of sources, including reports of researches and investigations by public and private agencies. Thus the work of the department is largely in the field of secondary rather than primary research. At the same time the department makes studies of specific problems "when there is no other agency ready to make it, and when there is an urgent demand from the constituency." Chief emphasis is placed on economic problems.

Department publications in the field of personnel research are:

Industrial relations in a hosiery mill. Information Service, May 19, 1928. A study of industrial relations at the Real Silk Hosiery Mills (Inc.), Indianapolis, Ind., and of relations between employers and the American Federation of Full Fashioned Hosiery Workers in the Philadelphia district; made jointly by the department of research and education of the Federal Council of Churches and the Social Justice Commission, Central Conference of American Rabbis.

Unemployment; the problem and some proposed remedies. Information Service, March 17, 1928. A monograph setting forth the present unemployment situation.

The 12-hour day in the steel industry. Research Bulletin No. 3. A summary of the results of a number of investigations by industrial experts showing the extent and character and social effects of the 12-hour day. 1923.

The coal strike in western Pennsylvania. Department of research and education. Research Bulletin No. 7. A study based in part upon original field investigation and also in part upon an analysis of economic data gathered previously by expert students and the United States Coal Commission.

The enginemen's strike on the Western Maryland Railroad. An analysis of a significant industrial controversy and its effect upon the churches. Made in cooperation with the social action department of the National Catholic Welfare Conference and the Central Conference of American Rabbis.

A study of industrial relations in the coal-mining district of Colorado is in progress, and publication of the report is expected shortly.

Illuminating Engineering Society.

29 West Thirty-ninth Street, New York, N. Y.

ORGANIZED January 10, 1906, for the advancement of the theory and practice of illuminating engineering and the dissemination of knowledge relating thereto. The affairs of the society are managed by a council consisting of the officers, two junior past presidents, six directors, and the chairmen of the sections of the society. As of December 1, 1929, sections are established with headquarters in Boston, Chicago, Detroit, Los Angeles, New York, and Philadelphia; chapters in Baltimore, Md.; Buffalo, N. Y.; Cleveland, Ohio; Dallas, Tex.; Pittsburgh, Pa.; Providence, R. I.; San Francisco, Calif.; Seattle, Wash.; and Toronto, Canada.

Income is derived principally from membership dues (members \$15, associate members, \$7.50) and from contributions from sustaining members of which there are approximately 175.

The scope of the society's work includes all phases of light and illumination, and is such that it embraces the interest and aims of the scientific investigator as well as the practitioner. The Transactions, the official publication, contain about 1,000 pages per year devoted to technical papers and 200 pages devoted to illuminating engineering news items and to the work of the society. Technical papers presented in the Transactions cover a wide range of topics and present a comprehensive view of the latest investigations and studies in lighting, including the application of light to specific problems over a wide field.

Research and investigation in specialized subjects is carried on by committees including such topics as lighting legislation, light, and safety, nomenclature and standards, etc. Under the auspices of the committee on lighting legislation has been prepared the code of lighting factories, mills, and all other work places, which has been adopted by the American Standards Association and which is now being revised, and also the code of lighting school buildings, jointly with the American Institute of Architects, which also has been adopted by the American Standards Association. Both of these codes are effective in a number of States, legislation based upon their requirements having been enacted by law.

Industrial Relations Counselors (Inc.).

165 Broadway, New York, N. Y. Arthur H. Young, Industrial Relations Counsel; Glenn A. Bowers, Director of Research.

FOUNDED and incorporated in 1926, this organization has a two-fold function—first, research in the general field of human relations in industry, which is entirely underwritten by Mr. John D. Rockefeller, jr.; and second, consulting service on a nonprofit-fee basis, principally for industrial corporations. The industrial surveys made by the service department for clients include wages and hours, employment procedure, administration, accident prevention, and labor relations in general; these surveys and services are strictly confidential.

The research department conducts original researches and in addition maintains an information service concerning activities in the field of industrial relations and personnel administration and cooperates with other research organizations in the same field.

The only study published so far is "Vacations with pay for industrial workers," by C. M. Mills. Forthcoming publications include a 6-volume report on unemployment compensation—the first one being "Unemployment compensation in the United States," prepared by Bryce M. Stewart; the second, "Unemployment compensation in Great Britain," by Mary B. Gilson; the third, "Unemployment insurance in Germany," by Mollie Ray Carroll; the fourth, "Unemployment insurance in Belgium, Holland, and Denmark," by Constance Kiehel; the fifth, "Unemployment insurance in Switzerland," by Thomas G. Spates; and sixth, "An international summary and survey of unemployment compensation," by Bryce M. Stewart.

There is also a forthcoming publication on "Pensions for industrial workers in the United States," by Bryce M. Stewart and Murray W. Latimer. Subsequent volumes in this series will include financial aspects of pensions, pensions in foreign countries, and possibly an industrial pensions handbook. A study of employee death benefits is also planned for the immediate future.

Bibliographies are issued in connection with these researches.

Information Bureau on Women's Work.

305 Commerce Guardian Building, Toledo, Ohio. Rachel Gallagher, Executive Secretary; Amy G. Maher, Director.

THE bureau is a continuation of the research section of the Ohio Council on Women in Industry,⁶ organized at the close of the war. It is supported by private contributions. Its purpose is the study of industrial conditions, especially as they affect woman workers, and the education of public opinion. It has published the following studies:

Factory inspection.

Jobs and workers: The need for an extension of the free-employment service. Ohio's women workers, an analysis of the census figures.

Are women's wages a special problem?

Rooms: A study of rooming conditions in Toledo for nonfamily women (based on interviews with landladies).

⁶ U. S. Bureau of Labor Statistics Bul. No. 299, p. 142.

The floating world: A study of rooming conditions in Toledo for nonfamily women (based on interviews with employed women).

Is unemployment a personal or social problem?

Industrial accidents: A study of the Women's Bureau findings for Ohio.

Wage rates, earnings, and fluctuation of employment: Ohio, 1914-1926 (inclusive), with supplement bringing data on earnings through 1928.

Ohio wage earners in the manufacture of textiles and textile products, 1914-1927.

Institute for the Crippled and Disabled.

245 East Twenty-third Street, New York, N. Y. John Culbert Faries, Director.

ESTABLISHED by the American Red Cross in 1917 as the Red Cross Institute for Crippled and Disabled Men. In November, 1919, it was turned over to a board of trustees to be continued as a private philanthropic institution under its present name.

Its purpose is primarily to help men who, through the loss of limb or limbs or the impairment of use, find difficulty in earning a living. As a means appropriate to its aim it maintains a shop for the manufacture of artificial limbs and appliances; a training school for giving instruction in a variety of trades; an employment bureau for finding suitable employment for handicapped men; a sheltered workroom for crippled men and women who are unemployable under ordinary conditions; and home work for those who can not work outside the home.

A report of the activities of the institute, by the director, entitled "Three years of work for handicapped men," published in July, 1920, covered three branches of its work and also contains a list of its publications.

The institute publishes five times a year a 4-page paper entitled "Thumbs Up" which from time to time contains articles on various phases of work for cripples.

Institute for Government Research.

26 Jackson Place, Washington, D. C. W. F. Willoughby, Director.

THIS institute was incorporated under the laws of the District of Columbia, March 16, 1916, for the purpose of conducting scientific investigations into the theory and practice of governmental administration, including the conditions affecting the efficiency and welfare of governmental officers and employees, and to perform such services as may tend to the development and application of the principles of efficiency in governmental administration. On July 1, 1923, the institute, without any change in respect to its general functions, became a part of the newly created organization known as the Brookings Institution and now operates as a subordinate agency of that institution.

The institute publishes the results of its researches in three series of volumes under the general titles of "Principles of administration," "Studies in administration," and "Service monographs of the United States Government." The first-named series attempts to determine and make known the most approved principles of administration. The second consists of detailed and critical studies of particular problems of public administration or administrative systems

in the United States and foreign countries. The third has for its purpose to give a detailed description of the history, organization, and activities of the several administrative services of the National Government. All three series as a necessary part of their work deal with problems of personnel. Special mention may be made, however, of the following publications that deal more particularly with personnel matters:

- Principles of public personnel administration. By Arthur W. Procter. 1921.
 The Federal Service: A study of the system of personnel administration of the United States Government. By Lewis Mayers. 1922.
 Principles of public administration. By W. F. Willoughby. 1927.
 Teachers' pension systems in the United States. By Paul Studensky. 1921.

International Association of Industrial Accident Boards and Commissions.

Ethelbert Stewart, United States Commissioner of Labor Statistics, Secretary-Treasurer.

ORGANIZED as the National Association of Industrial Accident Boards and Commissions at the first national conference of industrial accident boards and commissions held at Lansing, Mich., in 1914; present name adopted in 1916.

This association holds meetings once a year (now usually in September), or oftener, for the purpose of bringing together the officials charged with the duty of administering the workmen's compensation laws of the United States and Canada to consider, and, so far as possible, to agree on standardizing (*a*) ways of cutting down accidents; (*b*) medical, surgical, and hospital treatment for injured workers; (*c*) means for the reeducation of injured workmen and their restoration to industry; (*d*) methods of computing industrial accident and sickness insurance costs; (*e*) practices in administering compensation laws; (*f*) extensions and improvements in workmen's compensation legislation; and (*g*) reports and tabulations of industrial accidents and illnesses.

Annual conventions have been held since the association was formed in 1914, the proceedings of which since 1916 have been published by the United States Bureau of Labor Statistics. These proceedings have been indexed, and form a series of valuable references to problems of workmen's compensation.

Even more important than the compensation of the workmen for accidents after they occur is the prevention of industrial accidents; and the association has devoted a large portion of its time and activities to this subject. The proceedings of each convention contain papers and discussion by experts on various phases of industrial accident prevention—factory inspection, safety education, mechanical safeguarding of machinery, etc.

The association has representatives on the safety code correlating committee of the American Standards Association (formerly the American Engineering Standards Committee). Under the auspices of the American Standards Association it has been joint sponsor for a safety code for the use, care, and protection of abrasive wheels, a safety code for woodworking plants, and a safety code for rubber mills and calenders. It has had representatives on the sectional committees formulating the safety codes issued by the American Stand-

ards Association, which have been published by the United States Bureau of Labor Statistics.

Eye injuries and the percentage of impairment therefrom constitute another problem that has confronted those administering the workmen's compensation laws. After much study and discussion at its annual conventions, the association adopted the report of the committee on compensation for eye injuries of the section on ophthalmology of the American Medical Association as a guide for its members in making awards for eye injuries. This report is published in Bulletin No. 406 of the United States Bureau of Labor Statistics (pp. 81-86).

At its 1924 annual convention the association appointed a committee to cooperate with a committee of the National Association of Legal Aid Organizations to consider the extent to which legal aid organizations could assist industrial accident boards and commissions in the task of administering the workmen's compensation laws. This committee has submitted a report each year since the 1925 meeting, and its work has done much to acquaint the compensation officials with the possibilities and advantages of cooperation between the two organizations in connection with the administration of workmen's compensation legislation.

An article covering the history and accomplishments of the association will be found in the November, 1928, issue of the Labor Review.

International Brotherhood of Electrical Workers.

1200 Fifteenth Street NW., Washington, D. C.

RESEARCH DEPARTMENT (founded November, 1923). M. H. Hedges, director.—It is supported by union funds. It undertakes to gather, organize, and classify all information bearing upon the daily problems of local and international unions. It has built up complete wage files for electrical workers in United States, Panama, and Canada, and collected and analyzed data relative to deaths by accident and occupational disease. It has made studies of ownership in the power field and the effect of machine production on employment. It functions as an educational bureau for 1,000 local unions.

International Labor Office, Washington Branch.

Lenox Building, Washington, D. C. Leifur Magnusson, Director.

THE Washington Branch of the International Labor Office, which opened in 1920, is an agency of the International Labor Office of the League of Nations at Geneva and is supported out of the general budget of the league voted annually by the assembly of the league.

Research work of the Washington branch is rather incidental and secondary. Its main task is to coordinate labor and industrial information in the United States for the convenience of the main office at Geneva, to add interpretative comment to that information, and to be a personal contact for those in the United States who are interested in the work of the International Labor Office.

Publication of reports and memoranda produced by the Washington branch is through the International Labor Office only, although

manuscript copies are filed in the Washington office, and the Washington branch contains a complete file of the publications of the International Labor Office. Studies in manuscript form in the Washington office are:

- Right of association in the United States.
- Settlement of industrial disputes in the United States.
- Wage earners' health insurance in the United States.

International Industrial Relations Association (For the Study and Promotion of Satisfactory Human Relations and Conditions in Industry).

American Office, 130 East Twenty-second Street, New York, N. Y. Mary van Kleek, Vice President.

THIS organization was formed at an international congress held at Flushing, Holland, in June, 1925, initiated by a voluntary committee of persons in various countries concerned both directly and indirectly with the human aspect of industry. The aim of the association is indicated by its title. Membership is on an individual basis and is open to all who are engaged in any undertaking involving the employment of persons or who are occupied in work of scientific research or social significance bearing on industry and who are in sympathy with the aims of the association. Funds are derived from contributions from members and donors.

The activities of the association may be summarized under three main headings:

1. Providing possibilities for study and for the interchange of ideas and experience through the organization of meetings, summer schools, and congresses.
2. Maintaining and extending the established contact, particularly through the interchange of information and visits between members of the various countries.
3. Creating industrial and public opinion by means of publications from time to time.

The association has a considerable group of members in the United States and Canada. In preparation for its report to the congress of 1928, held in Cambridge, England, a committee in the United States, under the chairmanship of Glenn A. Bowers, of the Industrial Relations Counselors (Inc.), prepared a report on industrial relations in this country. This report has been published as "The development of fundamental relationships within industry in the United States" (116 pp., reprinted from Vol. I of the Cambridge Proceedings). Vol. II of the proceedings contains addresses before the congress and round-table discussions on foreman training, the place of personnel work, problems of research, etc. These two volumes and the report of the summer school held at Baveno, Italy, June, 1927, on the elimination of unnecessary fatigue in industry are available through the New York office of the organization.

International Typographical Union.

Indianapolis, Ind.

THE BUREAU OF STATISTICS is a department of that organization which primarily functions in the interests of its affiliated local unions

when engaged in wage-scale negotiations or arbitration proceedings relating to wages, hours, and working conditions.

Unions in wage-scale controversies are supplied with the record of advertising lineage of the newspapers in their jurisdiction, together with advertising rates and circulations.

Advice as to business conditions in each locality is tendered in so far as same is available.

Record is made of the wage scales and working hours of all affiliated unions and a pamphlet published annually which contains a record of local union membership, date of meeting, newspaper and job scales and working hours, the ratio of apprentices to journeymen provided in each contract and the effective and expiration dates of all contracts. Each change is registered so that unions may be supplied with up-to-date information.

These changes are published monthly in a booklet known as the Bulletin which contains chiefly statistical matter gathered from various sources and tabulated for easy and ready reference.

The work of the bureau of statistics of the International Typographical Union is necessarily confined to questions relative to the gathering and preparation of material relating to the activities and working conditions of its own membership and is not a research agency in the general acceptance of that term.

Judge Baker Foundation.

40 Court Street (Scollay Square), Boston, Mass. William Healy, M. D., Augusta F. Bronner, Ph. D., Directors.

ESTABLISHED in 1917, this foundation was founded primarily for the study of the problems of delinquency and in that connection has to do with better educational and vocational adjustments. The work on psychological tests has been extended to include a study of personality problems and the carrying on of research in allied fields in cooperation with other agencies. Publications include: "Individual variations in mental equipment," by Augusta F. Bronner; "Mental hygiene" (vol. 4, No. 3, pp. 521-536) (Reprint No. 90 of the national committee on mental hygiene); "Special abilities and disabilities." Healy and Bronner: "A series of twenty case studies." "Delinquents and criminals; their making and unmaking," "A manual of individual mental tests and testing."

The Labor Bureau (Inc.).

Rooms 404-405, 2 West Forty-third Street, New York, N. Y. Sara Bernheim, Executive Secretary.

THIS BUREAU was established in May, 1920, to furnish professional services to labor organizations or joint groups consisting of both employers and employees working in the interest of the industry and to public movements of benefit to labor.

The work of the Labor Bureau (Inc.) has consisted in the preparation of research material for use in arbitrations or negotiations with employers. Such material usually includes studies of comparative wages, working conditions, health hazards, job analyses, economic and financial status of the industry, the cost of living, changes in the standard of living, etc. In this connection the bureau has

rendered assistance to unions in organization campaigns, agreements and contracts, choice of arbitrators, negotiations and arbitration proceedings. Members of the staff have appeared and furnished testimony at public hearings, including the United States Railroad Labor Board, United States congressional committees, State and municipal investigating bodies.

The Labor Bureau (Inc.) publishes a monthly economic newsletter, *Facts for Workers*, which is primarily designed for republication in trade-union journals and labor papers and for the use of individual members of labor organizations who desire comprehensive and concise information on developments which are of significance to labor. Each issue contains one article on some phase of the bureau's work, current items of economic interest, and regular reports on wages, employment, the cost of living, as well as statistical data showing the changes in prices, production and distribution, with especial emphasis on six important industries—railroads, fuel, textiles, building, iron and steel, paper and printing.

The Labor Bureau (Inc.) also maintains an auditing department, the services of which have included the installation of bookkeeping and accounting systems, periodic audits, and special examination of books when some emergency or particular problem has arisen within a union. Besides accounting and bookkeeping assistance, the bureau has made numerous financial analyses of industries and business firms whose financial strength, earnings, and economic policies have been of interest to organized labor. It has also worked out an old-age pension and insurance system and rendered other assistance where the point of view and technical ability of a trained accountant was required.

The following is a list of some of the other more specialized studies prepared during recent years:

- Case book on industrial arbitration.
- Brief summary of the electrical industry in New York City.
- Analysis of the premium wage situation in New York City job printing composing rooms.
- Brief to support a 48-hour law for women submitted to the New York State Legislature.
- Investigation of the activities of "free-loan" associations inside and outside the labor movement to be used as a guide for a lending fund to be established for a labor union which wants to tide its membership over the summer slack work.
- Summary of pension plans in operation in industrial plants.
- Publicity direction and strike-strategy advice furnished during a New England textile strike.
- Labor sections of a political campaign handbook.
- A study of the theater as a business, which includes an exhaustive survey of the economic history as well as an economic analysis of the present-day legitimate theater.
- Data on subway construction work affecting New York City carpenters.
- Shoe industry strike mediation. This included the establishment of machinery for negotiating prices and working conditions by a general manager directly responsible to the union.
- Preparation of a handbook on labor's share in prosperity.

Labor Research Association.

80 East Eleventh Street, New York, N. Y. Robert W. Dunn,
Executive Secretary.

ESTABLISHED in 1927 "to conduct research into economic and social questions in the interests of the American labor movement and to publish its findings in articles, leaflets, and books." It has rendered research service to a large number of labor unions, benefit societies, fraternal organizations, and labor and progressive publications. The principal employment of the association, however, has been the preparation of a series of books on Labor and Industry, the first two of which have been published by International Publishers (381 Fourth Avenue, New York City). These two are Labor and Automobiles, by Robert W. Dunn, and Labor and Silk, by Grace Hutchins. The aim of these studies is "to present a picture of the development of the important American industries in relation to the workers employed in them." They give "primary emphasis to the workers and their problems." Other volumes now in the course of preparation will deal with coal, lumber, steel, tobacco, and other textiles. Still other industries will be dealt with in later volumes.

In addition to this series members of the association are now preparing books for worker readers and written from the workers' point of view. They will deal with the conditions and problems of the woman workers, the workers' struggle for health and safety, rationalization in the United States, and the problems of the industrial South. A handbook, "Facts for workers," is also being prepared under the editorship of Solon De Leon. In all of these studies, as well as those in the labor and industry series, special attention will be paid to working conditions, hours, fatigue, health hazards, and occupational diseases. The association is carrying on through a subcommittee some of the activities under the direction of the Workers' Health Bureau,* which discontinued its work in 1928.

The association has printed and distributed the safety code for workers in the construction industry which was prepared by the Worker's Health Bureau, the national trade-union safety standards committee for the building trades, and the committee on public health and safety of the American Institute of Architects. The studies of the association are also giving much consideration to the problems of young workers, woman workers, foreign-born workers, and negroes.

Life Extension Institute.

25 West Forty-third Street, New York, N. Y. Harold A. Ley,
President; Eugene Lyman Fisk, M. D., Medical Director.

THE Life Extension Institute was organized in 1913 as a self-sustaining, public-service institution with a hygiene reference board of 100 leading physicians and public-health authorities under the chairmanship of Prof. Irving Fisher, of Yale University. Its purpose is to conserve health and prolong human life. To this end, it has organized health services for individual subscribers, for groups of employees, and for life-insurance companies which are interested.

* See U. S. Bureau of Labor Statistics Bul. No. 299, p. 164.

in prolonging the lives of their policyholders. These services include periodic health examinations, reports based on the findings covering physical disabilities or faults in living habits, educational health literature, and a monthly health journal.

At the head office in New York, and also at the branch offices of the institute in Chicago and Boston, complete equipment is available for making health examinations according to life-extension standards. More than 9,500 especially trained physicians conduct life-extension examinations in the principal cities and towns throughout the United States and Canada.

In its industrial service the institute examines between 1,000 and 1,500 employees a month. The purpose of this service is to improve the efficiency of the working force and reduce the sickness rate and the turnover. It includes examination of employees at the plant by a trained head-office examiner, a report to the employee covering his exact physical condition, advice as to any medical treatment indicated, and hygienic counsel. In the services of the institute generally no medical treatment is given in connection with the industrial health service, and the results of the examination are held as strictly confidential between the employee and the institute.

Analyses of the examinations of typical industrial and commercial groups have been made disclosing the extent of the prevalence of various impairments in the working population. The findings in 100,000 insurance health examinations made by the Life Extension Institute between the years 1922 and 1927 have been tabulated and the results incorporated in studies by the United States Public Health Service and the Milbank Memorial Fund. It is understood that these studies will be published by the United States Public Health Service and the *Journal of Hygiene*. One of these studies is especially concerned with the relative prevalence of impairments in four principal classifications of occupations, viz: Agricultural, professional, business, and skilled trades.

A statistical survey of 1,000 industrial workers examined in three successive years, made with a view to determining the definite results of these yearly examinations, disclosed the fact that at the time of the third examination 50 per cent of the impairments found at the time of the first examination had been eliminated.

A plan for mutual benefit associations, combining the health service of the institute with group life and sickness insurance, has been developed by Mr. Harold A. Ley, president of the institute, and such associations have been organized in a number of industrial plants.

Reprints bearing upon these matters may be procured upon application to the Institute.

List of Publications

Health building and life extension. By Eugene Lyman Fisk, M. D. New York, The Macmillan Co., 1923.

Survey of health conditions in industry. Made by the Life Extension Institute for the committee on the elimination of waste in industry of the Federated American Engineering Societies.

Periodic physical examination: A national need. By Eugene Lyman Fisk, M. D. 1921.

Fatigue in industry. By Eugene Lyman Fisk, M. D. 1921.

Extending the health span and life span after forty. By Eugene Lyman Fisk, M. D. 1923.

Life extension: Its personal and industrial importance. By Eugene Lyman Fisk, M. D. 1925.

Why not make a business of health? By Eugene Lyman Fisk, M. D. 1925.

Physical defects as revealed by periodic health examinations. By Louis I. Dublin, Eugene Lyman Fisk, M. D., and Edwin W. Kopf. 1925.

Power. By Eugene Lyman Fisk, M. D. 1926.

The value of complete routine examinations in supposedly healthy people. By Eugene Lyman Fisk, M. D. 1926.

Prevention of waste from ill health in industry. By Harold A. Ley. 1926.

The maintenance of human power. By Eugene Lyman Fisk, M. D. 1927.

Industrial health. By Harold A. Ley. 1927.

Mutual benefit associations for employees. By Harold A. Ley. 1927.

Periodic health examinations. By Eugene Lyman Fisk, M. D. 1928.

Industrial fatigue. By Eugene Lyman Fisk, M. D. 1928.

How long will you live? By Eugene Lyman Fisk, M. D. 1929.

Are you using the benefit association for better cooperation? By Harold A. Ley. 1929.

Possible extension of the human life cycle. By Eugene Lyman Fisk, M. D. 1929.

Periodic health examinations in industry. By Eugene Lyman Fisk, M. D. 1929.

Loyal Legion of Loggers and Lumbermen.

500 Concord Building, Portland, Oreg. W. C. Ruegnitz,
President.

THE FOUR L is an industrial relations organization of employees and employers in the Pacific Northwest lumbering industry, supported and controlled jointly by men and managements, established in 1918 to handle their common problems.

It publishes the Four L Lumber News, which is issued three times a month, a magazine edition the first of the month and a newspaper or supplement edition on the 10th and 20th of each month. The Four L Lumber News is a publication devoted to the lumber industry and gives special attention to common problems of men and management. Surveys of Pacific Northwest employment conditions are regularly made and the findings published in the Four L Lumber News.

In addition to its employment studies the Four L organization has made special studies concerning old age and pension systems, both public and industrial. It also issues annual tabulations of wages, showing high, low, and average wages paid for all occupations in the logging and sawmilling industry of Oregon, Washington, and Idaho.

Management and Engineering Corporation.

327 South La Salle Street, Chicago, Ill.

A SUBSIDIARY of Utilities, Power & Light Corporation, which owns or controls a considerable number of electric light and gas companies in various parts of the United States, and in addition two coal-mining companies, a blast-furnace company, and a company engaged in the manufacture of lumber and wood products. The Management and Engineering Corporation serves all these operating companies in a managerial and engineering capacity.

SAFETY DEPARTMENT. Gordon Wilson, director of safety.—Organized in April, 1928, for accident prevention and first-aid work among the operating companies and among the construction crews of the Management and Engineering Corporation. Statistical studies are

made of the causes leading to personal injuries and of the best methods and equipment for eliminating these causes. This latter task involves the testing of many items of plant equipment and the establishment of standards for each item which appears to be the most desirable in specific instances. First-aid instruction in artificial respiration by the Schaeffer prone-pressure method has been developed and presented in an article in the October, 1929, issue of *National Safety News*, entitled "When the utility employee can help the doctor."

A proposed study for the immediate future is the relationship between labor turnover and high injury rates in the coal fields of eastern Kentucky.

Results of studies made by the safety department are not generally available for distribution but appear in standard practice letters which are issued to the operating subsidiaries and in the minutes of quarterly conferences of the safety directors of all these operating companies.

Manufacturers Research Association.

80 Federal Street, Boston, Mass. R. L. Tweedy, Secretary-Treasurer.

ORGANIZED in 1921. This association is composed of 11 industrial companies and Harvard University. Its founders "were actuated by a desire to improve their managements and management methods; insure the future growth of their companies, and increase profits." Income is derived from dues assessed against the member organizations.

The actual work of the association is carried on almost exclusively by means of committees organized on a functional basis. Personnel work has been taken up at various times by special committees appointed to consider specific problems. Some of the personnel subjects investigated and reported on are:

- Wage-payment methods.
- Time study.
- First weeks of the new employee.
- Foreman training.
- Suggestion systems.
- Workmen's compensation insurance.
- Contact between management and employees.
- Old-age pension plans.

These reports are circulated among the member organizations in mimeographed form.

Massachusetts Society for Mental Hygiene.

5 Joy Street, Boston, Mass. Henry B. Elkind, M. D., Medical Director.

ORGANIZED and incorporated in 1913 for the conservation of mental health and the prevention of mental disease and defect, this society is at present largely confining itself to educational work through public lectures, the preparation and distribution of literature, and conferences. It is making a special effort in the field of mental hygiene in business and industry and in that connection publishes

quarterly a special bulletin called *The Human Factor*. Recent publications on personnel subjects are:

- Mental hygiene in industry. *Journal of Industrial Hygiene*, July, 1924.
- Industrial psychiatry. *Journal of Industrial Hygiene*, October, 1924.
- Behavior studies in industry. *Journal of Industrial Hygiene*, January, 1925.
- Personnel science and administration from the standpoint of a hygienist. *Journal of Industrial Hygiene*, September, 1925.
- Industrial psychiatry. *Mental Hygiene*, April, 1929.
- Personal factors in relation to the health of the worker. *Mental Hygiene*, July, 1929.

(The first five of the above articles were written by Dr. Henry B. Elkind, and the last one by Dr. C. Macfie Campbell.)

Merchants' Association of New York.

Woolworth Building, 233 Broadway, New York, N. Y. S. C.
Mead, Secretary.

INDUSTRIAL BUREAU.—In addition to other activities of an industrial nature, the bureau carries on for the association a consultation service in the field of industrial relations. Through this service, which is in charge of an experienced staff, members of the association and others are given active assistance in the solution of specific problems.

A great part of the research work undertaken is for the purpose of establishing data for use in the above connection. Where information of public interest is discovered it is given publicity in printed reports or in the columns of the association's organ, *Greater New York*, and the public press.

Below are listed the more recent, important reports:

- Luncheon and locker facilities for employees. 1929. 5 pp.
- Practice of rewarding employees for inventions and patentable ideas. 1928.
- Holiday practices of offices, stores, and factories in New York City. 1925. 21 pp.
- Report on payment of employees by check. July, 1924. 11 pp.
- Personnel organization chart. 1926.

Industrial relations leaflets (series):

- No. 1. What is industrial relations work? 1927.
- No. 2. The industrial relations policy. 1927.
- No. 3. The employment department. 1927.
- No. 4. Effective employment control. 1927. 58
- No. 5. The interview. 1927.
- No. 6. Introduction and follow-up. 1927.
- No. 7. Training the worker. 1928.
- No. 8. Transfers and promotions. 1928.
- No. 9. The exit interview. 1929.
- No. 10. Labor turnover. 1929.

Articles in *Greater New York*:

- Hours of labor in candy industry. Vol. X, No. 21. 1921. 11 pp.
- Factory hours shorter in New York City. Vol. X, No. 25. 1922. 7 pp.
- Office hours and practices in New York City. Vol. XIII, No. 12. 1924. 5 pp.
- How about summer closing all day Saturday? Vol. XIV, No. 23. 1925. 12 pp.
- Practice varies widely in Saturday closing. Vol. XIV, No. 27. 1925. 4 pp.
- Saturday closing in two fields. Vol. XIV, No. 28. 1925. 11 pp.
- The five-day week during the summer. Vol. XIV, No. 29. 1925. 12 pp.
- New York City business practice on holidays. Vol. XIV, No. 8. 1925. 17 pp.; Vol. XIV, No. 9. 1925. 9 pp.
- Continuation schools throughout the United States. Vol. X, No. 23. 1921. 7 pp.

- How New York workers fare in illness. Vol. XIV, No. 25. 1925. 2 pp.
 Unemployment insurance in the United States. Vol. XIII, No. 20. 1924. 11 pp.
 Poll shows city workers favor daylight saving. Vol. X, No. 7. 1921. 11 pp.
 Payment of employees by check. Vol. XIII, No. 30. 1924. 2 pp.
 Industrial plants reducing wages. Vol. XIII, No. 20. 1924. 11 pp.
 Some interesting figures concerning salaries. Vol. XVI, No. 7. 1929. 20 pp.

Metropolitan Life Insurance Co.

1 Madison Avenue, New York, N. Y.

PERSONNEL researches are conducted by four separate divisions and bureaus of the Metropolitan. Those studies which are of wide interest and available in published form, emanate chiefly from the policyholders' service bureau and the statistical bureau. But as a large employer of clerical and field forces the company also conducts for its own guidance certain personnel researches, which for the sake of completeness are outlined below but are not available in form for circulation. These internal unpublished studies are carried on chiefly by the business research bureau and the personnel division.

STATISTICAL BUREAU. Louis I. Dublin, statistician.—A second report on the occupational mortality experience of white male wage earners in the industrial department of the Metropolitan Life Insurance Co. has been prepared for the three years 1922 to 1924, and published by the United States Bureau of Labor Statistics as Bulletin No. 507. It is a companion volume to an earlier study covering the years 1911 to 1913 published by the United States Bureau of Labor Statistics as Bulletin No. 207.

Occupation hazards and diagnostic signs: A guide to impairments to be looked for in hazardous occupations. Published by the United States Bureau of Labor Statistics as Bulletin No. 306. Available also as a pamphlet and published by the Metropolitan Life Insurance Co.

Mortality, morbidity, and working capacity of tuberculous patients after discharge from the Metropolitan Life Insurance Co. Sanatorium between 1914 and 1927. By Augustus S. Knight and Louis I. Dublin.

Shifting of occupations among industrial insurance policyholders. A study for the United States Bureau of Labor Statistics. Published in the Labor Review, April, 1924.

How dental statistics are secured in the Metropolitan Life Insurance Co. A study by Thaddeus P. Hyatt and A. J. Lotka. Published in the Journal of Dental Research, June, 1929.

Sickness census in Montreal, December, 1926. By Lee K. Frankel and Louis I. Dublin, reprinted by the Metropolitan Life Insurance Co., 1927.

POLICYHOLDERS' SERVICE BUREAU. James L. Madden, third vice president in charge.—The Metropolitan Life Insurance Co. is interested not only in the health of its policyholders but also in their economic welfare, and the policyholders' service bureau is charged with the responsibility of cooperating with industry to the end that Metropolitan policyholders might have greater stability of employment. The relationship between stability of employment and good health as well as steady premium income to the company is obvious. The bureau's economic services are rendered by eight divisions; namely, economic and business research, marketing and distribution, management, publicity and advertising, manufactures, industrial relations, industrial health, and safety. There are two types of service—those which pertain to whole industries or employers in a

common geographical area for the purpose of contributing toward the economic welfare of Metropolitan ordinary and industrial policyholders, and specific services designed to assist group insurance policyholders of the Metropolitan.

Industrial Relations Service. Roderic Olzendam, director.—The activities cover the fields of employment management, selection, and placement of employees, job analyses, wage plans, promotion policies, labor turnover, absenteeism, suggestion systems, managerial profit-sharing plans, profit-sharing arrangements for employees, mutual benefit associations and remuneration, training of executives, junior executives, managers, foremen, workers, working conditions in relation to output (hours, fatigue, food), and psychological matters in the realm of human relations in industry. Broadly classified, the above would read as follows: The activities cover the subjects of employment and discharge, joint relationships, working conditions, training and education, economic security, and psychology. Publications available to business executives, upon request.

Industrial Health Service. Dr. A. J. Lanza and Dr. Wade Wright, directors, and assistant medical directors of the company.—Studies and analyses of health and morbidity of employees, by industries, and for group policyholders of the company are conducted. Surveys of the methods of organization and administration in the field of industrial medical service are made, the results of which are published in the booklets of the "Industrial health series." Special studies of occupational hazards are carried out and information on all subjects connected with industrial hygiene is constantly collected and distributed. A completely equipped industrial hygiene laboratory, in charge of Mr. J. William Fehnel, chemist, is operated by this service for the investigation of particular problems in industrial sanitation, the intensive study of temperatures and air conditions, and for the analysis of injurious dusts, gases, and fumes and their effect upon the health of workers. Publications available to business executives and others interested in industrial hygiene, upon request.

Industrial Safety Service. W. Graham Cole, director.—Studies of safety methods applicable to specific industries are conducted in cooperation with State and National trade organizations. Industrial accident prevention surveys, including a review of mechanical guarding and educational activities, are made. Publications prepared for executive attention and dealing with industrial safety activities and special hazards incident to industrial operations are available to business executives and others interested in industrial safety, upon request.

Consulting assistance is given to city administrations and community safety organizations in the conduct of street-traffic surveys and the development of public safety work, including the introduction of safety education material in grade-school curricula. Reports of specific studies are printed and available to city officials and others interested in traffic and public safety.

BUSINESS RESEARCH BUREAU. William A. Berridge, economist.—Makes for, or in cooperation with, other divisions of the company internal studies of salesman performance, labor turnover, remuneration, and familiar field-force personnel problems influenced by

economic factors. Also works upon indices of those changes in external economic conditions having a bearing thereon—indices such as national employment, employment advertising, employment-office operations, industrial wage rates, and the like. Issues findings only occasionally in the form of articles for professional journals and has nothing available for distribution.

PERSONNEL DIVISION. William F. Dobbins, third vice president.—Conducts from time to time, for company use, special investigations and studies in various phases of personnel management as applied to home office clerical employees, including such subjects as wage-payment methods, job analyses, work standards, labor turnover, wage scales, ratings, employment tests, absenteeism and its control, etc. This information is not in published form and is not available for distribution.

Michigan Housing Association.

Buhl Building, Detroit, Mich. Dr. S. James Herman, Executive Secretary.

THE Michigan Housing Association was founded February 4, 1928, incorporated March 7, 1928. Income is derived largely from individual membership fees of \$5 each. The efforts of the association "are devoted exclusively to a study of the housing needs of the lower income group—those earning \$150 per month or under, which families, particularly in the large industrial centers, are to-day denied the opportunity for home ownership or even the rental of modern housing facilities in keeping with American standards."

This study has required consideration of other elements closely related to housing, either as causal factors or as the resultants of failure for its proper provision. Accordingly the following social problems have had consideration in so far as they relate to housing: Delinquency and crime; public and individual health; problems of family integration and stabilization of the American home; stabilization of employment as well as problems of unemployment and unemployment insurance; old-age and widow's pensions; economic balance between income and living cost; improvement in the standard of American citizenship, including Americanization. These various correlated subjects have necessarily been covered in a rather desultory fashion, owing to limited income, and have consisted largely in gathering information rather than in making specialized studies.

The results of the work of the association for its first year, which embraced a city-wide census of room density in Detroit, have been published in the July-August, 1929, issue of *City Health*, the official bulletin of the Detroit Department of Health.

Work outlined for the coming year includes besides a legislative program dealing with housing codes and housing plans, a sociological inquiry, conducted by means of a questionnaire, to find why families live in apartments rather than single dwellings. This study is intended to bring out the changed social attitude behind this movement and the probable economic reasons therefor and other relative causal factors.

The Home Index is the official publication of the Michigan Housing Association. Other publications include:

Public credits and mass construction as a solution to the housing needs of the lower-income group. Address before the Michigan Academy of Science, Arts, and Letters.

Why public credits is the logical and practical solution of the housing problems of the lower-income group. Address before the Conference of Town Planning Institute of Canada.

Public credits versus subsidies for housing. Address before National Conference of Municipal Leagues.

National Association for the Benefit of Middle Age Employees.

507 Fifth Avenue, New York, N. Y. William Henry Roberts, Executive Director.

THIS organization was established in 1929 as a propaganda and publicity medium to work toward "the breaking down of the barrier against employing men and women over 40 years of age." It is supported by membership fees and voluntary contributions.

It has inaugurated its program by undertaking a survey to determine the extent to which middle-aged workers are being displaced, the influence of group insurance and industrial pensions on the employment of older workers, and the extent to which an age limit for new employees is maintained.

National Association of Manufacturers.

11 West Forty-second Street, New York, N. Y.

INDUSTRIAL RELATIONS DEPARTMENT. Noel Sargent, Manager.—Studies conducted by this department include: (a) Age distribution of employees in American industries; (b) unemployment insurance; (c) effect of industrial employment upon the health of woman factory workers. A study is in progress designed to show the relative costs of building construction under open and closed shop conditions, and one is contemplated on the relation of age to industrial accidents.

These studies, which are usually made at the request of member bodies, are not generally published or distributed, although publication is sometimes made.⁷

National Bureau of Casualty and Surety Underwriters.

1 Park Avenue, New York, N. Y. Albert W. Whitney, Acting General Manager.

ESTABLISHED in December, 1910, by a group of stock casualty insurance companies to classify compensation and liability risks, regulate commissions, and construct a standard manual. In May, 1911, the Bureau of Liability Insurance Statistics (organized 1896) was merged with it. The original name Workmen's Compensation Service and Information Bureau was changed to Workmen's Compensation Service Bureau in March, 1913, and to National Workmen's Compensation Service Bureau in June, 1916. The bureau was reorganized in 1921 and 1929 with a further change of name as above. Membership is open to stock companies engaged in casualty insurance and suretyship.

⁷ The National Association of Manufacturers did not submit a list of publications.

The bureau at the present time makes rates for employers' liability insurance, miscellaneous public liability and property damage insurance, plate glass, burglary, automobile, and steam-boiler insurance, and administers rates for workmen's compensation insurance in certain States. Commissions are regulated in the casualty and surety fields through separate organizations which operate, however, through the office of the bureau.

In addition to establishing manual or basic rates for particular classifications for workmen's compensation insurance the bureau has prepared, tested, and published plans of (1) "schedule rating," for modifying the manual rates by giving credits or debits for respectively good or bad physical conditions (e. g., in regard to use and efficiency of safety appliances) in the individual plant as revealed by inspection; and (2) "experience rating," for a further modification based on the actual accident experience of the plant. Both of these exert an important influence in the direction of accident prevention because they offer to the employer a pecuniary inducement for improving his risk and his experience. Experience rating is used also in several other fields.

The bureau is fundamentally interested in the subject of safety standards. It is represented on the board of directors and the council of the American Standards Association and on 36 sectional committees functioning under the American Standards Association procedure on safety code projects. At the present time the bureau is joint sponsor for the following four safety-code projects: (1) Safety code for amusement parks, with the National Association of Amusement Parks; (2) safety code for conveyors and conveying machinery with the American Society of Mechanical Engineers; (3) safety code for mechanical power-transmission apparatus, with the American Society of Mechanical Engineers and the International Association of Industrial Accident Boards and Commissions; and safety code for woodworking plants, with the International Association of Industrial Accident Boards and Commissions.

The bureau, since 1922, has financed the work of the education division of the National Safety Council. This includes the publishing of a magazine on safety education and numerous pamphlets, as well as the stimulation of safety education work in the schools through the help of a field secretary and in other ways.

The bureau has also in its own name maintained a series of graduate fellowships in the field of safety education and has published the resulting theses in a series of monographs. The fellowship for the current year is at Teachers College, Columbia University, and deals with the subject of safety, hygiene, and sanitation in camps.

The American Engineering Council at the request of the bureau and through its support has recently made a study of the relationship between industrial safety and efficiency of production, the results of which have appeared in a book entitled "Safety and Production" published by Harper & Bros.

The library of the bureau, organized December, 1916, makes a speciality, in addition to gathering material pertaining to the casualty-insurance business, of accumulating and minutely indexing data on safety engineering and accident prevention, health service in industry, occupational hazards and diseases, State safety regulations and standards, and industrial and manufacturing processes. During the

past few years the library has issued annually a library bulletin giving a cumulative index to current literature dealing with casualty insurance, suretyship, and related subjects. Since May, 1929, this service has been supplemented by issuing to the insurance company members of the bureau a monthly bulletin giving abstracts of the most important current contributions to the subject of industrial safety and hygiene. From time to time the library issues special lists of references on subjects of particular interest to the public as well as to those engaged in the casualty-insurance business. Some of the publications issued are:

A list of references on State insurance, particularly workmen's compensation insurance funds, competitive and monopolistic. 8 pp.

A selected reading list on casualty insurance. 4 pp.

An outline of source material on industrial safety (which appeared in the *Labor Review* of September, 1927, pp. 236-245).

A review of general literature on industrial accidents, factory management, hours of work, fatigue and rest periods, lighting, heating, ventilation and sanitation, and literature on these subjects in their relation to safety and production. 43 pp.

A tentative list of State regulations, orders, advisory pamphlets, and labor laws relating to safety and industry. 18 pp.

A ready reference to compulsory automobile insurance. 6 pp.

A selected list of books and articles on aeronautics for the insurance underwriter. 29 pp.

A bibliography of camp safety, hygiene, and sanitation. 12 pp.

These publications are issued free of charge, upon request, to public libraries, universities, and other organizations and individuals interested in these subjects.

The bureau has also published the following:

Industrial safety standards. 120 pp.

Final report on benzol of committee on chemical and rubber sections of the National Safety Council. 123 pp.

And four volumes on safety education, namely:

Safety education in the elementary schools. By Ruth Streitz. 142 pp.

Positive versus negative instruction. By James Vaughn. 168 pp.

Safety education in the vocational school. By Max S. Henig. 110 pp.

Safety education in the secondary schools. By Herbert J. Stack. 157 pp.

National Bureau of Economic Research (Inc.).

474 West Twenty-Fourth Street, New York, N. Y. Wesley C. Mitchell and Edwin F. Gay, Directors of Research; G. R. Stahl, Executive Secretary.

ORGANIZED in January, 1920, "on the initiative of a small group of economists and statisticians * * * to find facts divested of propaganda and to make these facts generally available." Its membership consists of business firms, trade-unions, universities, trade and employers' associations, Federal reserve banks, and individuals. Income is derived "in part from annual grants made by certain of the large foundations, in part from extraordinary grants made by the Government or an organization for some special piece of research to be carried out, in part from sale of its reports, and largely from the sustaining members." (Annual subscriptions, \$25 to \$1,000.)

The board of directors, which is the governing body, is made up of three classes: Directors at large, directors by university appointment, and directors by appointment of other representative organizations.

No research project may be undertaken and no report may be published without the consent of the board of directors, and any director dissenting from the findings and conclusions of a study approved by the majority of the board for publication may submit a minority report. The research staff "consists regularly of from seven to nine economists and statisticians, besides clerical assistants."

In the special field at present under consideration the outstanding studies conducted by the National Bureau of Economic Research have grown out of the President's conference on unemployment. The first of these studies was *Business Cycles and Unemployment*, which was followed by *Employment, Hours and Earnings in Prosperity and Depression*, by Willford I. King.

The second and more recent study (May, 1929) is *Recent Economic Changes*, the basic investigations for which, to quote the foreword of the committee on recent economic changes of the President's conference on unemployment, "were made under the auspices of the National Bureau of Economic Research (Inc.), with the assistance of an unprecedented number of governmental and private agencies."

Studies in progress are the American labor market, by Leo Wolman, and mechanization and restriction of immigration, by Harry Jerome. The first "will be devoted to the discussion of wages in the manufacturing industries, in the coal industry, and in rail transportation, the building trades, and trade-union rates of wages." The second deals with "the effects of immigration restriction and the causes of changing productivity."

The fourth volume of the projected statistical encyclopedia will deal with labor statistics.

National Child Labor Committee.

215 Fourth Avenue, New York, N. Y. Gertrude Folks
Zimand, Director of Research and Publicity.

THE National Child Labor Committee was organized April 15, 1904, and incorporated by act of Congress in 1907, "to promote the welfare of society with respect to the employment of children in gainful occupations; to investigate and report the facts concerning child labor; to raise the standard of parental responsibility with respect to the employment of children; to assist in protecting children by suitable legislation against premature or otherwise injurious employment; to aid in promoting the enforcement of laws relating to child labor; to coordinate, unify, and supplement the work of State or local child-labor organizations and encourage the formation of such committees where they do not exist."

The committee works in all sections of the United States. It deals with child labor as a community, State, or national problem. It conducts investigations in local communities, promotes legislation, advises on administration, and maintains a general information service on child-labor matters.

Since its organization the National Child Labor Committee has published about 350 pamphlets, and since 1912 it has issued a child-labor bulletin now called *The American Child*. These publications contain occasional reports of the investigation of the employment of children in various occupations and in various localities. Among the important studies of this kind published since 1921 are:

Rural child welfare. E. N. Clopper. 1922.

Child labor in the sugar beet fields of Michigan. Walter Armentrout, Sara A. Brown, and Charles E. Gibbons. 1923.

Children working in the sugar beet fields of the North Platte Valley of Nebraska. Sara A. Brown and R. O. Sargent. 1924.

Child labor among cotton growers of Texas. Charles E. Gibbons and Clara B. Armentrout. 1925.

Children working on farms in certain sections of the western slope of Colorado. Charles E. Gibbons and Howard M. Bell. 1925.

Enforcement of the child labor law in Kentucky. Charles E. Gibbons. 1925.

Children working in the sugar-beet fields of certain districts of the South Platte Valley, Colorado. Sara A. Brown, R. O. Sargent, and Clara B. Armentrout. 1925.

Children working in Missouri. Charles E. Gibbons and Harvey N. Tuttle. 1927.

Fourteen is too early: Some psychological aspects of school-leaving and child labor. Raymond G. Fuller. 1927.

School or work in Indiana. Gibbons and Tuttle. 1927.

Child labor in Mississippi. Gibbons and Stansbury. 1928.

Child workers in two Connecticut towns (New Britain and Norwich). Claude Robinson. 1929.

Child workers in Oklahoma. Gibbons and Stansbury. 1929.

Child workers in Tulsa. Gibbons and Stansbury. 1929.

Child labor in agriculture and farm life in the Arkansas Valley of Colorado. Bertram J. Mautner and W. Lewis Abbott. 1929.

Joint Board of Sanitary Control in the Cloak, Suit and Skirt, and Dress and Waist Industries.

31 Union Square, New York, N. Y. George M. Price, M. D.,
Director.

ORGANIZED October 31, 1910, pursuant to the protocol entered into after the strike in the summer of that year between the Cloak, Suit and Skirt Manufacturers' Protective Association, and the Cloak, Suit and Skirt locals of the International Ladies' Garment Workers' Union to establish standards of sanitary conditions, to which the manufacturers and the unions shall be committed. In 1913 a protocol was also established in the dress and waist industry which then joined in the work of the board, and has since been under its jurisdiction. The board consists of three representatives of the public, two representatives of each of the two labor unions, viz, the joint board of the Cloak, Skirt and Reefer Makers' Union, and the joint board of the Ladies' Waist and Dressmakers' Union, and two representatives from each of the employers' organizations.

A summary of the activities of the board in supervising fire drills, first-aid work, sanitation and general health education, and a list of its publications, together with an account of the Union Health Center which has taken over and carries on as a cooperative enterprise the health, medical and dental services initiated by the board, are given in "Ten years of industrial sanitary self control: tenth annual report of the joint board of sanitary control," 1921.

The fifteenth anniversary was celebrated by a public dinner and the issue of the fifteenth anniversary special report, 1925.

National Civic Federation.

Thirty-third Floor, Metropolitan Building, New York, N. Y.
Ralph M. Easley, Chairman Executive Council.

AN ORGANIZATION of representatives of capital, labor, and the general public. Its purpose is "to organize the best brains of the Nation

in an educational movement seeking the solution of some of the great problems related to social and industrial progress; to provide for study and discussion of questions of national import; to aid thus in the crystallization of the most enlightened public opinion and, when desirable, to promote legislation in accordance therewith."

The federation is composed of the following: Department on industrial relations; commission on industrial inquiry; department on active citizenship; industrial welfare department; department on current economics; industrial round table department; and woman's department.

In connection with its pension program, the industrial welfare department has issued a number of pamphlets dealing with the general subject of industrial pensions, notably the report on the old-age pensions conference held under the auspices of the department in April, 1927. It also conducted a field survey on the extent of old-age dependency in the States of New York, New Jersey, Connecticut, and Pennsylvania and published a report on January 1, 1928, under the title "Extent of old-age dependency."

A current study in the industrial field is conducted by the commission on industrial inquiry, one phase of which, that of "Forms of employment contracts," can be regarded as coming within the scope of personnel research. This inquiry is concerned with the various types of contractual relations, either oral or written, between an employer and an employee, which fix the individual workmen's rights and duties in relation to his employment, as distinguished from collective trade agreements.

The official organ of the federation, the National Civic Federation Review, deals occasionally with various aspects of personnel problems and programs.

National Committee for Mental Hygiene.

370 Seventh Avenue, New York, N. Y. Clifford W. Beers, Secretary.

THE National Committee for Mental Hygiene is a voluntary association of physicians, psychiatrists, neurologists, psychologists, educators, judges, lawyers, clergymen, social and civic workers, business men, and others interested in the conservation of mental health and the reduction and prevention of mental and nervous disorders.

The national committee was founded in 1909 and incorporated in 1916 and is dependent upon voluntary contributions for its support. In the beginning its program dealt largely with the improvement of conditions among the insane, and through its surveys and studies, at the invitation of governors, State legislatures, and other official bodies responsible for the care of the insane, the committee helped to eliminate abuses, abolish jail and almshouse custody and mechanical restraint, and raise standards of care and treatment in institutions to a humanitarian and medical level—in short, to make insane asylums into mental hospitals.

In later years the national committee's work took on a more preventive character. Activities were undertaken and studies engaged in dealing with the mental factors involved in various medical, legal, industrial, educational, social, and other problems related to the broad field of human behavior, on the theory that mental abnormal-

ity and deficiency were responsible for a great deal of social and individual misery, and that the general improvement of mental health would do much to mitigate existing evils and contribute substantially to the betterment of human relationships.

In line with this view the national committee has sought to bring about greater attention on the part of the medical profession to the problems of mental disease and mental defect as well as to the mental side of physical disease, and, as part of its program of education, to enlist the interest of employers in the human factor—that is, the mental, emotional, and “personality” elements entering into the problem of work efficiency.

The national committee publishes a quarterly magazine, *Mental Hygiene*, and a monthly *Mental Hygiene Bulletin*, as well as numerous pamphlets and other publications dealing with the subject of mental hygiene in all its ramifications. Among these are included the following pamphlets dealing with the mental hygiene of industry:

Campbell, Dr. C. Macfie. *Mental Hygiene in Industry*. Reprint from *Mental Hygiene*, 1921.

— Personal factors in relation to the health of the individual worker. Reprint from *Mental Hygiene*, 1929.

Cobb, Dr. Stanley. *Application of psychiatry to industrial hygiene*. Reprint from *Journal of Industrial Hygiene*, November 1919.

Fisher, Boyd. *Has mental hygiene a practical use in industry?* Reprint from *Mental Hygiene*, 1924.

Jarrett, Mary C. *Mental hygiene of industry*. Reprint from *Mental Hygiene*, 1920.

— *The practical value of mental hygiene in industry*. Reprint from *Hospital Social Service*, May, 1921.

— *The psychopathic employee; a problem of industry*. Reprint from *Medicine and Surgery*, September, 1917.

Pratt, Dr. George K. *The problem of the mental misfit in industry*. Reprint from *Mental Hygiene*, 1922.

Pruette, Lorine, and Douglas Fryer. *Affective factors in vocational maladjustment*. Reprint from *Mental Hygiene*, 1923.

Scott, Dr. Augusta. *Neuropsychiatric work in industry*. Reprint from *Mental Hygiene*, 1923.

Wherever possible the committee has stimulated research and study by others in a position to undertake fruitful activities in the field of industrial relations and has cooperated with State societies for mental hygiene, universities, industrial organizations, and other groups and individuals engaged in various projects tending to promote knowledge of the subject.

In contradistinction to the work done by the industrial psychologists on the experimental side, with reference to work methods, individual output, mass production, waste motion, fatigue, and other problems of work efficiency, the contribution of the psychiatrist and the mental hygienist in industry has been largely on the emotional and “personality” side of human study, concerned primarily with the mental health of the worker, with problems of morbid preoccupation, mental conflict, emotional instability, labor unrest, class antagonism, excessive turnover, and friction in human relations in the shop, store, office, or factory.

Among personnel research activities undertaken by the national committee in its own field are a study of salary schedules for psychiatrists and psychologists in child-guidance clinics; a study of standards of training for psychiatric social workers with special reference to the needs of child-guidance clinics; and a comparative study of

vacation schedules and related policies in a selected group of mental hygiene and child-guidance clinics.

National Committee of Bureaus of Occupation.

1111 Nicollet Avenue, Minncapolis, Minn. Katherine Woodruff, Secretary.

A FEDERATION of occupational bureaus for trained woman workers was organized in April, 1917, the purpose of which is "to promote among women and girls a better understanding of occupational and professional requirements, to advance their interests and their efficiency in vocations, to secure suitable employment for trained woman workers—to the end that women may render increasingly valuable service in all vocations and professions."

Among the standards of eligibility for membership in the National Committee is the requirement that member organizations "shall provide in their constitutions not merely for placement work but also for work of educational value such as investigations, research, the opening up of new lines of occupation, and vocational and educational guidance."

The present member organizations are: The Appointment Bureau, Boston, Mass.; Chicago Collegiate Bureau of Occupations, Chicago, Ill.; Collegiate Bureau of Occupations, Denver, Colo.; Bureau of Vocational Service, Los Angeles, Calif.; Woman's Occupational Bureau, Minneapolis, Minn.; Bureau of Employment, Y. W. C. A., New York, N. Y.; Pasadena Vocation Bureau, Pasadena, Calif.; Women's Employment Service, Y. W. C. A., Pittsburgh, Pa.

A study is being made of one section of the placement work to determine what advantage a college-trained woman has over one who has not had any college work or full college training. This will also show the employer's viewpoint on the employment of college-trained people.

National Committee on Prisons and Prison Labor.

4 West Fifty-seventh Street, New York, N. Y. Dr. E. Stagg Whitin, Director.

ESTABLISHED in August, 1909, for the purpose of studying the problem of labor in prison with a view to causing the abolition of the contract system of convict labor and the development of methods of employing prisoners which are just to the State, industry, and workers outside the prison, and to the prisoner and his family.

The committee has worked out a practical program which includes the employment of prisoners in farming, public works, and in the production of commodities for State use, with the sale of surplus goods above those which a State itself can consume to other States, also for government use. This program aims to make the prisons training schools for life after release and includes classification of prisoners by psychiatric examination to determine appropriate treatment, industrial training, placement by trade tests, payment of wages based on individual efficiency and other incentives, and industrial parole.

During the years 1924-1927 the committee held six zone conferences on the allocation of prison industries at which this program

was approved by the official representatives of 25 States. Reports of progress have been made each year on behalf of the committee to the conferences of the governors.

Impetus has been given to the work of the committee by the passage, in 1929, of the Federal convict labor bill, which divests prison-made goods of their interstate character and will render the prison-contract system unprofitable to the contractors who have been exploiting the prisoners. The committee is now working with the governors of many of the States in the reorganization of prison industries in preparation for the time (five years after passage) when the bill becomes effective.

The committee has conducted research into the market for prison-made goods and the selection of industries to meet the needs of this market.

Among recent publications of the committee are:

The classification system in the New Jersey State Prison.

The survey of industries for correctional institutions for women.

National Education Association.

1201 Sixteenth Street NW., Washington, D. C.

RESEARCH DIVISION. John K. Norton, director.—Established March 1, 1922, to collect and disseminate information on the financing of public education, the curriculum, teachers' salaries, tenure, retirement systems, and other school problems. It regularly collects the latest studies from bureaus of educational research throughout the country and issues the Research Bulletin five times a year. It functions as an information service agency for the departments, committees, affiliated organizations, and individual members of the association.

Representative topics covered by the Research Bulletin are: Salaries in city school systems; the scheduling of teachers' salaries; efficient teaching and retirement legislation; the problem of teacher tenure; practices affecting teacher personnel.

Material other than the Research Bulletin issued during the past year includes tabulations of salaries paid teachers, principals, and certain other school employees in specified cities and a series of mimeographed bibliographies on the following subjects:

Apportionment of State aid to public schools.

Teacher certification.

The county unit.

The organization of State departments of education.

The problem of teacher tenure.

State control of textbooks.

Teacher retirement.

State sources of revenue for public education.

National Electric Light Association.

420 Lexington Avenue, New York, N. Y. Paul S. Clapp,
Managing Director.

This association was organized at Chicago in 1885, and its object is to advance the art and science of production, distribution, and use of electricity for light, heat, and power for public service, in furtherance of which its activities are largely educational. It is a

voluntary organization of companies engaged in, and individuals affiliated with, or interested in, the electric light and power industry. The association has four national sections—accounting, commercial, engineering, and public relations—and 13 geographic divisions, under which are grouped State associations and sections; also company sections and local clubs. The functions and personnel of its numerous committees, subcommittees, etc., are given in a pamphlet, "Organization personnel of the national electric light association," published annually. Committee reports are printed and subsequently published in the volumes of proceedings. Among the subjects which have been studied through committees are accident prevention, resuscitation from electric shock, education of employees in the industry, compensation and wage incentive plans, pensions, medical and health, thrift plans, recruiting and selection of employees, and job specifications.

ACCIDENT PREVENTION COMMITTEE.—The major functions of this committee are: To promote accident prevention throughout the electric light and power industry; to study accident occurrence, cause, and results; to develop and promote safe methods and practices; to promote resuscitation and first aid; to administer the Insull award for the National Electric Light Association; to study fire prevention in its relation to human safety. This committee has presented reports since 1914. It was at first concerned with the preparation of accident prevention rules relating to operating methods of companies and workmen, later with the details of operating methods and safety specifications for tools and appliances, such as safety belts, rubber gloves, ladders, first aid kits, etc.

One of the outstanding achievements of the accident prevention committee has been to cooperate with a number of other associations in establishing rules and methods for resuscitation. The rules for resuscitation by the prone-pressure method have been approved by the following: American Gas Association; American Red Cross; American Telephone & Telegraph Co.; Bethlehem Steel Corporation; National Safety Council; United States Army, office of the Surgeon General, War Department; United States Bureau of Mines; United States Bureau of Standards; United States Navy, Bureau of Medicine and Surgery; United States Public Health Service. Thousands of copies of these rules and charts descriptive of the method have been distributed each year, and this method has been recommended and urged upon member companies for adoption. Training courses and instructions on this method of resuscitation are continually being impressed by the member companies on their employees.

In 1920 its scope was extended to include also health promotion and morbidity statistics and fire prevention and extinguishment. Its reports cover these subjects in addition to material on operating methods, organization methods, and apparatus.

Since 1920 this important phase of the activities of the association has been contemporary with the general movement for the prevention of industrial accidents.

Publications:

Accident prevention course for linemen.
Charts and booklets on resuscitation.
Common sense (4-page folder).

Suggestion systems.

Safe practices for construction and operating men in power system construction and alteration.

How to set up an accident-prevention organization.

Safety of operation in the steam plant.

First-aid talks.

EDUCATIONAL COMMITTEE. Fred R. Jenkins, Commonwealth Edison Co., Chicago, Ill., chairman.—The scope of this committee is: To prepare fundamental and specialized courses for the education of employees of member companies and others who desire to subscribe; to conduct these courses among the member companies and allied industries; to work closely and advise with all companies interested in the education of employees; and to cooperate with all sections and committees in the matters of education. The courses prepared by this committee are: Practical electricity, bookkeeping and accounting, advanced course in electric utility accounting, electrical metermen's course, lighting sales, merchandise sales, and power sales.

INDUSTRIAL RELATIONS COMMITTEE (PUBLIC RELATIONS NATIONAL SECTION).—In 1924 the employee relations with the public committee and the company employees' organizations committee were merged to form the Industrial Relations Committee. The scope of the committee is: To work for the attainment of mutual understanding and confidence between employers and employees and to make available records of experience with plans and methods designed to accomplish such purposes; to foster, through the executives of member companies, the proper education of employees in the fundamental economic principles of the light and power business in the proper understanding of the interrelations of the public and the industry, and in the proper handling of complaints and courtesy to the public; to foster the activities of company employees' organizations. The committee has reported annually.

Publications.—In 1925 the report of the committee covered the subjects of employment, compensation, education and training, and pensions. The 1926 report of the committee covered recruiting and selection of employees, job specifications, incentive forms of compensation, pensions, medical and health. In 1927 the report covered thrift plans, education and training. In 1928 and 1929 the committee published the following reports:

Health promotion in the public utility industry—Its necessity and importance.

Training for better public contact—Its necessity and importance.

Analysis of public contact work.

Building and conducting the training program.

Measurement of public contact training methods.

National Fire Protection Association.

60 Batterymarch Street, Boston, Mass. Franklin H. Wentworth, Managing Director.

ORGANIZED in 1895 to promote the science and improve the methods of fire protection and prevention, to obtain and circulate information on these subjects, and to secure the cooperation of its members in establishing proper safeguards against loss of life and property by fire. There are 150 members (annual dues, \$60) and about 4,700 associates (annual dues, \$10). The members are national institutes, societies, and associations (e. g., of engineers and manufacturers).

having a direct interest in protection of life and property against fire, State associations for reduction of fire waste, insurance boards and associations; associates are other organizations, corporations, and individuals.

A 4-day convention is held annually, at which reports on the various standards for protection against fire are presented by committees of experts and discussed by the convention before adoption. The following committees are especially concerned with investigations of industrial hazards: Safety to life, manufacturing risks and special hazards, gases, hazardous chemicals and explosives, flammable liquids. Other committees are concerned with fire-prevention apparatus. The committee reports, with discussion and action thereon, are published in the proceedings of the annual meetings.

The association employs seven field engineers—six to organize, stimulate, and encourage local fire-prevention committees to study and improve general fire-hazard conditions, and the other to promote general recognition of the national electric code governing the safe installation of electric wiring and equipment. The advice and experience of these field men are available to local chambers of commerce, city officials, and fire-prevention organizations.

The 1929 revision of the national electric code adopted by the electric committee of the association has been approved as "American standard" by the American Standards Association.

The Safety Codes for the Prevention of Dust Explosions, drawn up by the committee on dust explosion hazards, have been published as Bulletin No. 433 of the United States Bureau of Labor Statistics. These codes, for which the National Fire Protection Association and the United States Department of Agriculture are joint sponsors, were approved as "tentative American standard" by the American Standards Association in July, 1926.

The 1929 edition of the Building Exits Code of the association covers exit requirements for schools, department stores, and factories as well as public buildings and public institutions.

A list of the standard regulations for fire protection and the safeguarding of hazards, recommended by the association and adopted as the official standard of the National Board of Fire Underwriters, and other publications available for free distribution or for sale, is contained in a pamphlet entitled "The story of the National Fire Protection Association, and list of its publications," obtainable on application at the executive office.

National Founders' Association.

29 South La Salle Street, Chicago, Ill. J. M. Taylor, Secretary.

ORGANIZED in January, 1898, the original purpose of this association was to provide machinery for bargaining collectively with the Iron Molders' Union. A joint board of conciliation was established under the so-called New York agreement which was in force until 1904, when it was abrogated. Since that time the association has operated independently of the union and has adopted the open-shop policy. In conjunction with the National Metal Trades Association it publishes the Shop Review in advocacy of this policy.

It is a member association of the National Industrial Conference Board.

COMMITTEE ON INDUSTRIAL EDUCATION.—This committee has set up "Minimum standards for foundry apprentices," which have been adopted by the National Founders' Association and the American Foundrymen's Association's members. The committee, recognizing the need of proper text material, has compiled a text, "Elementary foundry technology," for the use of foundry apprentices. Another publication by the committee, "Human engineering and industrial economy," covers the field of personnel relations.

National Industrial Conference Board (Inc.).

247 Park Avenue, New York, N. Y. Magnus W. Alexander,
President.

A COOPERATIVE body composed of representatives of National and State industrial associations and of closely allied engineering societies of a national character, organized in May, 1916, to provide a clearing house of information, a forum for discussion, and machinery for cooperative action on matters that vitally affect the industrial development of the Nation. The stated objects of the board are:

1. To make impartial investigations in the field of industrial economics, and to cooperate to this end with individuals, institutions, associations, and agencies of Government.
2. To aid in securing, on the basis of established economic facts underlying and affecting industrial conditions, joint deliberation of manufacturers and associations of manufacturers in the United States.
3. To secure, analyze, and disseminate information concerning industrial problems and experience in the United States and other countries.
4. To promote good understanding and friendly relations between employees and employers for the benefit of both, and between those engaged in industry and the public for the general good of the community.
5. To make the results of its research and collective experiences available to governmental agencies when industrial and economic legislation and policies are being formulated, in an endeavor to secure sympathetic consideration of its views and opinions, and
6. In general, to encourage and promote the sound development of American industry by all proper and legitimate means.

The affiliated organizations (1929) are:

American Cotton Manufacturers Association.
American Electric Railway Association.
American Gas Association.
American Paper and Pulp Association.
Associated Corn Products Manufacturers.
Bolt, Nut and Rivet Manufacturers Association.
Manufacturing Chemists' Association of the United States.
National Association of Flat Rolled Steel Manufacturers.
National Association of Manufacturers.
National Association of Wool Manufacturers.
National Automobile Chamber of Commerce.
National Electric Light Association.
National Electrical Manufacturers Association.
National Founders' Association.
National Metal Trades Association.
Rubber Manufacturers Association (Inc.).
Silk Association of America.
Tobacco Merchants Association of the United States.
Associated Industries of Massachusetts.
Associated Industries of New York State.
Illinois Manufacturers' Association.

Manufacturers Association of Connecticut.
 Manufacturers Association of New Jersey.
 Air Service, United States Army.
 Military Intelligence Division, United States Army.
 Ordnance Department, United States Army.
 Bureau of Ordnance, United States Navy.

The publications of the board consist of research reports dealing with a variety of industrial-economic subjects, including the field of industrial relations. Periodical publications include the Conference Board Bulletin, a monthly journal presenting statistical and other information regarding important economic conditions and changes affecting American industry; and the Service Letter on Industrial Relations, published semimonthly, one issue of which each month contains the results of the board's monthly investigations of wages, hours of work, employment, and cost of living, while the other is devoted to a discussion of important industrial relations questions and activities.

Research reports in the field of industrial relations include a series of studies of "Wages and hours in American manufacturing industries," issued annually from 1922 to 1925 and covering the years from 1914; another series of wage studies, "Wages in the United States," issued in 1926, 1927, and 1928; "Cost of living in the United States, 1914-1926," issued in 1927 and revised in 1928; five studies in "Changes in the cost of living after July, 1914," published periodically during 1922 and 1923; "Cost of living in New York City, 1926," and "Cost of living in 12 industrial cities," published in 1928.

Special reports on varied topics include:

Clerical salaries in the United States. 1926.
 Wages and hours in anthracite mining, June, 1914-October, 1921. 1922.
 Minimum wage legislation in Massachusetts. 1927.
 Medical care of industrial workers. 1926.
 Legal restrictions on hours of work in the United States. 1924.
 Experience with mutual benefit associations in the United States. 1923.
 A manual for mutual benefit associations. 1924.
 Industrial pensions in the United States. 1925.
 Employee magazines in the United States. 1927.
 Industrial group insurance. 1927.
 Night work in industry. 1927.
 Supplemental bonuses for wage earners, supervisors, and executives. 1927.
 Employee stock purchase plans in the United States. 1928.
 The economic status of the wage earner in New York and other States. 1928.
 Industrial relations programs in small plants. 1928.
 Industrial lunch rooms. 1928.
 Employee thrift and investment plans. 1929.
 The workmen's compensation problem in New York State. 1927.
 Experience with works councils in the United States. 1922.
 The growth of works councils in the United States. 1925.

National Institute of Public Administration.

261 Broadway, New York, N. Y. Luther Gulick, Director.

THE Bureau of Municipal Research was incorporated in 1907. The Training School for Public Service was affiliated with the bureau in 1911, and both of these organizations were fused with the National Institute of Public Administration in 1921. The purpose of the institute is to promote efficient and economical government and the adoption of scientific methods in the transaction of public business.

The institute is financed by contributions from citizens interested in the improvement of government administration.

The National Institute of Public Administration has made the following studies in the field of personnel research.

City employment policies. Prepared for the Cincinnati city survey committee. 1924. The Government of Cincinnati and Hamilton County, pp. 149-178.

County employment policies. Prepared for the Cincinnati city survey committee. 1924. The Government of Cincinnati and Hamilton County, pp. 431-449.

Civil service administration in the State of New Jersey.* Prepared for the governor and the State audit and finance commission. 1929. 17 pp.

Classification of positions in the city of Camden, N. J.* Prepared for the board of commissioners, Camden. 1923. 182 pp.

The employment policy of the city of Camden, N. J.* Prepared for the board of commissioners, Camden. 1923. 23 pp.

Employment policy of the city of Charleston. Prepared for the city council, Charleston, S. C. 1924. Report on Survey of the Government and Audit of Finances of the City of Charleston, pp. 33-41.

Personnel supervision in the State of Virginia. Prepared for the governor and his committee on consolidation and simplification. 1927. Organization and management of the State Government of Virginia, Chap. IV, pp. 31-36.

The institute has now under way a study for the New York State Commission on Old-Age Security on the age factor in industrial employment. It will be the object of this study to determine the extent to which employment is open to older men and women. A further object of the study is to examine the influence of labor-saving machinery, welfare legislation, pension plans, and other innovations in labor management, upon the employment opportunities of middle-aged and older men and women.

The National Junior Personnel Service (Inc.).

32 Waverly Place, New York, N. Y. Anna Y. Reed, Director.

INCORPORATED in April, 1923, in order:

1. To provide nonpartisan auspices for the discovery of facts bearing upon problems of vocational and life adjustment and to issue such findings in the form of fact-reports divorced from propaganda, in order that discussions of, and efforts to solve, such problems may be based upon objective knowledge as distinguished from subjective opinion.

2. To afford national leadership in instituting and evaluating experiments in the guidance and personnel field.

3. To aid individual communities, institutions, and organizations in interpreting such experiments in terms of better and more adequate service to its own youth.

4. To act as a national clearing house on personnel and guidance information and practices.

The research division of the organization has the following completed studies to its credit:

Analysis of secretarial duties and traits. By W. W. Charters and I. B. Whitley.

Human waste in education. By Anna Y. Reed.
Adjustment problems of employed young men. Made by the research staff of the organization under subvention from the Carnegie Foundation.

The young man and his career series. Pamphlets on occupational and training opportunities for young men of Greater New York which are being distributed by the Kiwanis Club of New York City. (Four issued to date.)

* Available to students and research workers in the library of the National Institute of Public Administration.

A long-term experiment in vocational selection is under way in cooperation with the employer and union organizations in the printing trades of New York City. The purposes of this study are:

1. To discover, if possible, objective measures which may be employed at least to guide away from the printing trade young men who are obviously unsuited for the work.
2. To provide a demonstration experiment in the preparation and evaluation of objective means of guidance and selection for different occupations.

The information division has responded in the past two years to 791 specific calls for service from business or educational institutions. Seventeen foreign countries were represented among the organizations requesting help.

The training division maintained in cooperation with New York University (see p. 171) has developed rapidly. Seven students enrolled in three courses in 1924 when the program was instituted. This year there are 270 students enrolled in 11 courses dealing with various aspects of the personnel field.

National Machine Tool Builders' Association.

1415 Enquirer Building, Cincinnati, Ohio. Ernest F. DuBrul, General Manager.

This association is joint sponsor for the safety code on power drive of machine tools which is being prepared under the auspices and rules of procedure of the American Standards Association.

The association encourages apprentice training by issuing certificates to apprentices who complete a training course in the shops of the members.

National Metal Trades Association.

122 South Michigan Avenue, Chicago, Ill. Homer D. Sayre, Commissioner; J. E. Nyhan, Secretary.

AN EMPLOYERS' association organized in 1899 "to secure and preserve equitable conditions in the workshops of members for the protection of both employer and employee"; for "investigation and adjustment of questions arising between members and their employees which may come within the jurisdiction of the association"; and "to introduce and encourage constructive educational efforts in the fields of economics, training, safety, industrial relations, and such other subjects as shall add to the efficiency and advancement of employees and furnish a better understanding of the problems of industry."

An active advocate of the open-shop principle of industrial relations operating through 28 branch organizations located in the northeastern States. More than 1,100 members constitute the active membership. Preventive and defensive activities, safety, educational, industrial relations programs, special operative service, executive placement, the collection of wage and employment data, and like services are administered by the commissioner, secretary, and staff under the direct guidance of an executive committee of 5 elected officers and an administrative council composed of the elected officers and 12 elected representatives of the membership. By constitutional provision the administrative council meets in April and October of each year, and the entire membership assembles in convention each

April. Research through the national office is carried on under the general direction of departmental committees. Ordinarily, each committee is composed of four major executives, representing as many member plants. Each committee employs a field force to carry out its program.

Branch organizations are autonomous, each being governed by an elected board with a secretary and staff administering branch affairs. Chief among the activities of the branches are the operation of employment departments, the collection and tabulation of wage, employment and labor data, sponsoring of superintendents' and foremen's clubs, employment executives' clubs, and similar clubs, and the administration of educational and other programs sponsored by the national office. Branches utilize departmental committees in much the same manner as the national office.

The principal national departmental committees are:

INDUSTRIAL RELATIONS.—The function of the committee on industrial relations is twofold in purpose. The first division of its effort is in the conduct of special surveys and research studies on personnel subjects of general interest to the entire membership. "Experience with group insurance," "Methods of wage payment," "Employee medical service," and "Meeting the cost of employee superannuation" are typical of the general research reports issued by this committee.

The second phase of this committee's work is the operation of a consulting service and clearing house for information on industrial relations. To make this service practical the field man carries on a continuous program of individual plant investigation and study.

Upon completing an individual plant study the field man has a written record of that plant's organization, personnel, operating conditions, and the methods and procedures of its personnel practice. It is these records of plant visitations that enable the committee to render its informational service. At each annual convention the committee makes a formal report of its activities and one or more sessions are devoted to discussion of new projects within its field.

INDUSTRIAL EDUCATION.—The committee on industrial education, which has functioned and reported annually since 1919, is concerned with the formulation of policies and the development of standard reference texts and other supplementary instructional material for the use of members of the association.

Upon the urgent request of the membership, the committee developed a general apprentice-training program with a standard manual as the basis of operation. This was done with the sincere desire of affording greater facilities for teaching the machinists' trade, and for aiding those who are anxious to enter this field of activity. The primary purpose of publishing the manual, "Apprenticeship in the metal trades," is to establish uniformity in a subject which heretofore has been left more or less to individual effort. Diplomas and individual pocket certificates are provided for those completing the course.

Another industrial training publication is *Elementary Machine-shop Practice*, a series of reference books. These books are not intended to be exhaustive treatises, but may be used in the shop where the instructor can demonstrate on the actual machine and not be obliged to depend on illustrations or drawings to make his points

clear. They also serve as handbooks for beginners, apprentices, and others who appreciate material of this kind in simplified form. The series now consists of three volumes.

Sensing the need of the membership for competent leadership in the shop, the committee on industrial education made an exhaustive study, requiring approximately two years, in preparation for the publication of material to be used in the discovery, training, and development of foremen, particularly for use in the metal trades industries.

This publication, entitled "Foremanship," consists of (a) the introduction, containing information for management; (b) the conference leader's manual, in two parts, containing outlines and suggestions for the leadership of foreman conferences; (c) 52 conference outlines which serve as study assignments for foremen who are enrolled in conference groups.

This work was first published in December, 1927, and a second edition was published in 1929.

PREVENTION OF INDUSTRIAL ACCIDENTS.—The industrial accident prevention activities of the National Metal Trades Association have been continuously conducted since 1911 by a committee of prominent manufacturers selected from the membership. A competent safety engineer visits the members and makes surveys and analyses of plants with improved safety conditions as an objective.

In recent years the work of the committee has been extended to include assistance in reducing the amounts paid for workmen's compensation insurance.

"Shop Safety," an illustrated folder, issued at intervals by the committee, is "for the consideration of executives and others" with whom safety, to be successful, must originate. It deals with specific accident prevention problems in an informative and interesting manner. The committee also sends out to members attractive posters to be displayed in shops for the edification and warning of the workmen.

Periodic publications.—The Bulletin, issued semimonthly by the national office for the entire membership, reviews matters of significance to executives in the industry and serves as a source of information as to the activities of the association.

The Shop Review, a monthly magazine for employees in machine shops, factories, and foundries, designed to give its readers a wider comprehension of industrial problems, particularly employers' and employees' mutual problems, is published in conjunction with the National Founders' Association.

The Labor Barometer, prepared monthly by the statistician of the national staff, graphically shows the employment trends in the chief metal trades centers and industries.

The Wage Survey, based on information from metal trades centers and showing hourly earnings for key classifications of metal trades occupations, is published semiannually.

National Research Council.

B and Twenty-first Streets, Washington, D. C. Vernon Kellogg, Permanent Secretary.

ESTABLISHED in 1916 under the congressional charter of the National Academy of Sciences and with the cooperation of the national

scientific and technical societies of the United States. The National Research Council was organized as an emergency measure in connection with the World War and has been continued by the national academy in response to an Executive order of President Wilson for the encouragement of research in the biological and physical sciences. During the war the research council received a considerable part of its support from the Government, but since its reorganization after the war the council derives its support wholly from private sources.

As now constituted the research council is organized in 11 divisions which are coordinated through a central executive board. Four of these divisions are concerned with the more general aspects and contacts of research, the divisions of Federal relations, foreign relations, States relations, and educational relations. The remaining 7 divisions are concerned with particular fields of science and technology, viz; physical sciences, engineering and industrial research, chemistry and chemical technology, geology and geography, medical sciences, biology and agriculture, and anthropology and psychology. The personnel of these divisions and of numerous committees appointed under them is given in a pamphlet entitled "National Research Council, organization and members, 1929-1930" (64 pp.).

The activities of the National Research Council in matters relating to vocational training and the personnel of industry are summarized below:

DIVISION OF ENGINEERING AND INDUSTRIAL RESEARCH. Elmer A. Sperry, chairman, 1929-30:

Highway research board.—In connection with investigations on problems of highway construction sponsored by the highway research board, this board has published a summary of training specifications for highway engineering positions prepared in cooperation with the American Association of Engineers.

Minimum specifications for highway engineering position. By the committee on specifications for highway engineering positions, American Association of Engineers. A. B. McDaniel, chairman. National Research Council, Bulletin No. 45. 1924. 105 pp.

Hatt, W. K. Research in highway education. Good Roads, No. 63, app. 179-181, 1922. Excerpt in Engineering News-Record, No. 90, p. 154. 1923.

American bureau of welding.—In the development of the art of welding on a scientific basis it has been found necessary to prepare special courses of training for welders. The following have been published:

Spraragen, William. What technical foundation should foreman welders possess? Journal of the American Welding Society, vol. 1, pp. 24-26. 1922.

Training course for oxyacetylene welders. Report of the committee on training of welding operators, American Bureau of Welding. Journal of the American Welding Society, vol. 2, No. 4, pp. 31-57. 1922. Reprinted as Bulletin No. 4, American Welding Society. 1923. 30 pp.

Training course for electric arc welders. Report of the committee on training of welding operators, American Bureau of Welding. Journal of the American Welding Society, vol. 3, No. 2, pp. 15-47. 1924. Reprinted as Bulletin No. 7, American Welding Society. 1924. 35 pp.

Industrial lighting.—This committee has made exhaustive factory and laboratory tests relating to the fatigue, efficiency, and health of industrial workers under varying conditions of lighting. A comprehensive report on these investigations is in the course of preparation.

Farree, C. E., and Rand, G. The effect of mixing artificial light with daylight on important functions of the eye. Transactions of the Illuminating Engineering Society. Reprint. 1925. 22 pp.

DIVISION OF MEDICAL SCIENCES. Ludvig Hektoen, chairman, 1929-30:

Problems of industrial medicine.—Special investigations have recently been conducted in cooperation with organizations of granite workers and manufacturers and of manufacturers of fan machinery on the effects of the inhalation of dust from pneumatic drilling and cutting tools in the granite industry and on means for reducing the dust hazard in this industry below the hygienic limit of tolerance.

DIVISION OF BIOLOGY AND AGRICULTURE. C. E. Allen, chairman, 1929-30:

Atmosphere and man.—A joint committee of this division and of the division of medical sciences of the research council on the effects of the atmosphere on human activity has made investigations of mortality rates in New York City, of variations in the virulence of influenza epidemics in various cities, and of atmospheric conditions in about 20 factories in several industries.

Huntington, Ellsworth. Causes of geographical variations in the influenza epidemic of 1918 in the cities of the United States. A report of the committee on atmosphere and man, of the National Research Council. National Research Council, Bulletin No. 34. 35 pp.

— Temperature and mortality in New York City. Metropolitan Life Insurance Co., Statistical Bulletin, vol. IV. 1923.

— Influenza and the weather in the United States in 1918. Scientific Monthly, vol. 17, pp. 462-471. 1923.

— Civilization and climate. Third edition. 1924. Yale University Press, xix, 453 pp.

— Weather and health. A comparative study of daily mortality in New York City in relation to temperature, atmospheric humidity, and interdiurnal changes of temperature. National Research Council, Bulletin No. 75.

DIVISION OF ANTHROPOLOGY AND PSYCHOLOGY. Fay-Cooper Cole, chairman, 1929-30:

The division of anthropology and psychology is the successor to the psychology committee which was formed in April, 1917, to organize and supervise psychological research and service in the war emergency and of which various committees on problems of military personnel appointed by the American Psychological Association became subcommittees.

During the past 10 years work has been conducted by committees of this division of the research council upon the following subjects related to problems of personnel:

Psychology in aviation.—The committee on aural structure and function (formerly the committee on vestibular research) has conducted investigations upon the balancing function of a portion of the inner ear with a view to developing tests which can be applied to aviators.

Dodge, Raymond. Work of the committee on vestibular research. Journal of Experimental Psychology, vol. 4, pp. 247-269. 1921.

Dunlap, Knight. Psychological research in aviation. Science, N. S., vol. 49, pp. 94-97. 1919.

— Nystagmus test and practice. Journal of the American Medical Association, vol. 73, pp. 54-55. 1919.

Holsopple, J. Q. Reliability of scores in steadiness tests. Journal of Experimental Psychology, vol. 5, pp. 203-213. 1922.

Problems of military psychology.—Advice has been given from time to time to the War and the Navy Departments in regard to personnel problems, particularly in the use of job specifications.

Personnel research in business and industry.—The early work of this committee resulted in the organization in 1921 of the Personnel Research Federation (p. 123), for the systematic study of problems of personnel in industry. The committee has also been called upon to advise the United States Civil Service Commission and the junior employment service of the Children's Bureau of the Department of Labor and has cooperated with the Institute for Government Research in the organization of the Bureau of Public Personnel Administration and with the American Council on Education which has undertaken the continuation of certain work initiated by the committee.

Thurston, L. L., and Mann, Charles R. Vocational guidance for college students. National Research Council, reprint and circular series, No. 62. 1925. 28 pp.

Scientific problems of human migration.—Members of this committee have compiled tests for mechanical ability, nonlanguage intelligence tests for persons of different nationalities, and tests for certain traits of personality.

Tests of comparative abilities of whites and negroes:

Graham, James L. A comparison of white and negro college students in a variety of mental tests. Doctoral dissertation.

Lanier, Lyle H. Prediction of the reliability of mental tests and tests of special abilities. *Journal of Experimental Psychology*, vol. 10, pp. 69-113. 1927.

Peterson, Joseph. Problems, methods, and some results in race testing. Hanover Conference Report. Social Science Research Council, pp. 34-53. 1927.

— Problems and results of testing negro intelligence. Report of conference on racial differences, held under auspices of committee on problems and policies, Social Science Research Council, and division of anthropology and psychology, National Research Council, pp. 36-41. 1928.

— Comparison of white and negro children in the rational learning test. Twenty-seventh Yearbook of the National Society for the Study of Education, Part I, pp. 333-341. 1928.

Mechanical ability:

Anderson, L. D. Objective measurements in shop courses. *Industrial Arts Magazine*, vol. 15, pp. 263-267. 1926.

— Environment and mechanical ability. *Industrial Psychology*, vol. 3, pp. 179-180. 1927.

— The Minnesota mechanical-ability tests. *Personnel Journal*, vol. 6 pp. 473-478. 1928.

— The relationship of certain environmental factors to measures of mechanical ability. Yearbook of the National Education Association, Nature and Nurture, Part II, pp. 137-150. Bloomington, Ill., Public School Pub. Co., 1928.

Carter, Harold D. The organization of mechanical intelligence. *Pedagogical Seminary and Journal of Genetic Psychology*, vol. 35, pp. 270-285.

Edgerton, Harold A., and Paterson, Donald G. Tables of standard errors and probable errors of percentages for varying numbers of cases. *Journal of Applied Psychology*, vol. 10, pp. 378-391. 1926.

Hubbard, Ruth M. A measurement of mechanical interests. *Pedagogical Seminary and Journal of Genetic Psychology*, vol. 35, pp. 224-254. 1928.

Paterson, Donald G. The Minnesota mechanical-ability tests. *Vocational Guidance Bulletin*, Minneapolis Public Schools, vol. 2, No. 9, pp. 1-2. 1928.

Paterson, Donald G.; Elliott, R. M.; Anderson, L. D.; Toops, H. A.; and Heidreder, Edna. Minnesota mechanical ability tests. (To be published by the University of Minnesota Press.) About 500 pp.

Rogers, H. W. Research on mechanical ability. *Vocational Guidance Magazine*, vol. 11, pp. 178-180. 1924.

Analysis and measurement of human personality:

Cleaton, Glen U. Originality: A summary of experimental literature. *Journal of Abnormal and Social Psychology*, vol. 21, pp. 304-315. 1926.

Cook, Helen E., and Manson, Grace E. Abilities necessary in effective retail selling and a method of evaluating them. *Journal of Personnel Research*, vol. 5, pp. 74-82. 1926.

Manson, Grace E. Group differences in intelligence tests. *Journal of Applied Psychology*, vol. 9, pp. 156-175. 1925.

— Personality differences in intelligence test performance. *Journal of Applied Psychology*, vol. 9, pp. 230-255. 1925.

— A bibliography of the analysis and measurement of human personality up to 1926. National Research Council, reprint and circular series, No. 72, 59 pp. 1926.

Yoakum, C. S., and Manson, Grace E. Self ratings as a means of determining trait relationships and relative desirability of traits. *Journal of Abnormal and Social Psychology*, vol. 21, pp. 52-64. 1926.

Research on problems of the deaf and hard of hearing.—Special attention has been given to the industrial occupation of the deaf and to methods for the training of the deaf for trades and for commerce; also to the requirements for the training of teachers of the deaf.

Research recommendations of the second conference on problems of the deaf and hard of hearing. Washington, D. C., February 1 and 2, 1929. National Research Council, reprint and circular series, No. 88, 53 pp. 1929.

Psychology of the highway.—In addition to advising in the designing of signals and signs for use on streets and highways, this committee has developed tests for automobile drivers in cooperation with certain taxicab companies and in cooperation with the University of Ohio, and the State Department of Highways of Ohio is now conducting investigations on tests for the range and acuity of vision of automobile drivers.

National Retail Dry Goods Association.

225 West Thirty-fourth Street, New York, N. Y. William A. Fitzgerald, Director Bureau of Research and Information.

PERSONNEL GROUP.—The personnel group of the National Retail Dry Goods Association is composed of employment managers, personnel directors, and training directors of member stores. It was organized to provide a clearing house where personnel activities and problems of retail stores may be presented and discussed. Data relative to these activities and problems is collected, analyzed, and distributed to members.

Members are entitled to copies of all personnel group studies, a copy of the *Bulletin*, which is issued monthly, and any information which the personnel group may be able to secure for them on their particular problems.

Each year the personnel group makes research studies of several important subjects. The committees carrying on these investigations are men and women actually doing personnel work in stores, consequently the studies are not only of a practical nature but they are directed and executed in a practical way. After these studies are completed reports are available to members.

Following is a list of the reports thus far distributed by the group:

Functions of the personnel department.

The cost of personnel departments in stores of various sizes.

An experiment in measuring the effect of personnel work.
 Recommended reading for personnel workers.
 The scope of training for retail store service.
 The use of outside agencies in training retail salespeople.
 How to approach a common maximum of individual sales production.
 Methods of dealing with the long-service employee.

BUREAU OF RESEARCH AND INFORMATION.—This division of the National Retail Dry Goods Association also deals with and reports upon personnel questions. Among its most recent reports are:

Personnel work—Its place in the stores. By B. Eugenia Lies.
 Reports on policies of stores paying employees absent due to illness.
 Pension plans.

STORE MANAGERS' DIVISION.—Published reports of this division dealing with personnel are:

Bonus systems for floor men.
 Budgetary control of personnel expense.
 Compensation methods in nonselling departments.
 Procedure for recording labor turnover.

National Safety Council.

20 West Wacker Drive, Chicago, Ill. W. H. Cameron, Managing Director.

THE National Safety Council was formed as a result of a meeting of the Association of Iron and Steel Electrical Engineers held in Milwaukee in 1912. There are now 5,300 members in the United States, Canada, and several other countries.

It functions for the prevention of accidents in factories, in the streets, schools, the air, mines, the home, and also for the health, sanitation and general safety welfare of the public at large. The work is carried on not only through the executive offices but also through 60 affiliated local councils in as many leading cities of the country.

The council's activities are supported from income supplied by members and, in the industrial division, all pay dues in proportion to their size. The council also receives financial aid from the Rockefeller Foundation in addition to its paid memberships.

Safety work was continuously carried on in hundreds of industrial plants embracing 150 different lines of industry during 1929. It is estimated that 10,000,000 industrial workers receive regular safety instruction through the various channels conducted by the council.

Affiliated with the national council is the education division located in New York, which receives financial support from the National Bureau of Casualty and Surety Underwriters. The division maintains a trained staff which devotes its entire time to serving the schools of the Nation and to accident prevention fundamentals.

The council maintains a large publication service which includes four monthly publications: The National Safety News, for industry; Public Safety, for public officials, police chiefs, etc.; Safety Education, for school children and the schools; and the Safe Worker, which is distributed each month to 200,000 workers throughout the country.

Another outstanding feature is the publication of safe practices pamphlets for specific industries. These are published for 23 different sections represented in the industrial division.

Pamphlets so far published include:

General safe practices pamphlets

- No. 1. Ladders.
2. Stairs and stairways.
3. Boiler rooms.
4. Overhead traveling cranes.
5. Belt shifters and belt shippers.
6. Knots, bends, hitches, and slings.
7. Belts and belt guards.
8. Shafting, couplings, pulleys, gears, sprockets, and chains.
9. Engine guarding and engine stops.
10. Oiling devices and oilers.
11. Floors and flooring.
12. Scaffolds.
13. Grinding wheels.
14. Goggles.
15. Freight elevators.
16. Safe clothing.
17. Yards.
18. Power presses.
19. Exits, fire alarms, and fire drills.
20. Woodworking machinery and equipment.
21. Industrial accident statistics—How to compile and use them.
22. Shop lighting.
23. Gas and electric welding.
24. Fire extinguishment.
25. Acids and caustics.
26. Manila and wire ropes.
27. Drinking water, wash and locker rooms, and toilet facilities.
28. Commercial explosives.
29. Electrical equipment in industrial plants.
30. Trucks and wheelbarrows.
31. Fire causes and prevention.
32. Exhaust systems.
33. Hoisting apparatus.
34. Industrial explosion hazards.
35. Conveyors.
36. Fire brigades.
37. Industrial ventilation.
38. Safety posters and bulletin boards.
39. Machine shop machinery.
40. Suggestion systems.
41. Hand tools.
42. Industrial safety organization.
43. Passenger elevators.
44. Skin troubles from oils and emulsions.
45. Industrial housekeeping.
46. Fuel handling, storing and firing.
47. Compressed air machinery and equipment.
48. Railroads and industrial plants.
49. Equipment and operation of steam boilers.
50. Practical methods for reducing fatigue.
51. Planning an industrial safety campaign.
52. Static electricity.
53. Checking plans and specifications for safety.
54. Handling material (hand and truck).
55. Handling material (mechanical equipment).
56. Investigation of accidents.
58. Construction of machinery guards.
59. Warehouses and shipping rooms.
60. Chemical laboratories.
61. Refrigeration.
62. Motion pictures in educational work.
63. Storage tanks for oils, acids, and dry materials.
64. Respirators, gas masks, and breathing apparatus.

- No. 65. Teaching safety to new employees.
 66. Pressure vessels, fired and unfired. (Part I.)
 67. Maintaining interest in safety.
 68. Pressure vessels. (Part II.)
 69. Getting safety across to the commercial driver.
 70. Maintenance and repair men.
 71. Safe handling of chlorine.
 72. Safety committees.
 73. Safety in foundries.
 74. Competition as an aid in promoting safety.
 75. Safety inspections.
 76. Portable electric hand tools.
 77. Safety meetings.
 78. Mathematical tables and data.
 79. Engineering, a factor in safety.
 80. Safety rules.
 81. Warning signs.
 82. Caring for injured workers.
 83. Training for first aid.
 84. Safety man in industry.
 85. Safe practices in forging and hot-metal stamping.
 86. Industrial accident statistics—How to analyze and use them.
 87. Safety in the small plant.
 88. Identification of piping systems.
 91. Spray coating.
 93. Topics for safety meetings.

Safe practices pamphlets for special industries

Chemicals:

- No. 1. Pipe lines and tanks as causes of accidents.
2. Fume poisoning from nitric and mixed acids.
3. Chemical burns, their nature and treatment.
4. Safety in rayon manufacture.

Construction: No. 1. Safe practices on construction work.

Foods:

- No. 1. Safety in food preserving and canning.
2. Safety in candy, chocolate, and cocoa manufacture.

Laundries: No. 1. Safety in dry cleaning and dyeing establishments.

Marine: No. 1. Hazards of fumigating ships.

Metals:

- No. 1. Cleaning and finishing rooms in foundries.
2. Blast furnaces.
3. Sheet-metal fabrication.

Mines:

- No. 1. Underground mine cars and haulage.
2. Mine rescue work.

Petroleum:

- No. 1. Safe practices in pulling wells.
2. Safety in gasoline service station operation.
3. Safe practices in loading tank cars (gasoline).
4. Safe practices in handling and laying pipe.
5. Safe sales truck driving.
6. Safe practices in cleaning petroleum stills.
7. Safety for the oil field pumper.

Paper and pulp:

- No. 1. Paper and pulp mills.
2. Safety in paper-box manufacturing.

Public:

- No. 1. Protection of the public.
2. Grounding practices.

Quarries: No. 1. Safety organization for the quarrying industry.

Rubber: No. 1. Compounding materials used in the rubber industry.

Textiles: No. 1. Cotton mills.

Brickyards: No. 89. Safe practices in brickmaking.

Tanneries: No. 90. Safety in leather tanneries.

Milk bottling: No. 92. Safety in milk-bottling plants.

Health practices pamphlets

- No. 1. Chromium.
2. Physical examination in industry.
3. Lead.
4. Dust.
5. Health supervision in industry.
6. Industrial eye hazards.
7. Carbon monoxide.
8. Infected wounds.
9. Gases and vapors.
10. Skin affections.

National Society for the Prevention of Blindness.

370 Seventh Avenue, New York, N. Y. Eleanor P. Brown,
Secretary.

ORGANIZED as the National Committee for the Prevention of Blindness in December, 1914, through the consolidation of the New York State Committee for the Prevention of Blindness and the American Association for the Conservation of Vision, incorporated in 1918. The present name was adopted in 1927.

The society is a volunteer health organization supported entirely by contributions and membership dues, the objects of which as stated in its by-laws are: (1) To endeavor to ascertain, through study and investigations, any causes, whether direct or indirect, which may result in blindness or impaired vision; (2) to advocate measures which shall lead to the elimination of such causes; (3) to disseminate knowledge concerning all matters pertaining to the care and use of the eyes.

Cooperating agencies in the industrial field include the American Federation of Labor, the American Association of Industrial Physicians, the National Safety Council, and the American Medical Association. The proceedings of the 1928 annual conference contain a discussion of eyesight in industry, presented to the conference through the cooperation of the American Association of Industrial Physicians and Surgeons, giving various aspects of eye hazards in industry and the place of proper lighting and equipment in preventing not only accidents but the development of defective vision.

Acting with the National Safety Council the society conducted an investigation of 583 industrial plants to determine the results of mechanical safety devices in eye protection and conservation. The report on this study has been published by the society.

National Tuberculosis Association.

370 Seventh Avenue, New York, N. Y. Kendall Emerson,
M. D., Managing Director.

THE National Tuberculosis Association was organized in 1904 as the National Association for the Study and Prevention of Tuberculosis. The present name was adopted in 1918 when the association was incorporated under the laws of the State of Maine. The following paragraphs summarize the special activities of the association and some of its allied and affiliated agencies in the field of personnel research and relations.

From 1917 to 1924 the National Tuberculosis Association conducted a demonstration in Framingham, Mass., known as the Framingham

Community Health and Tuberculosis Demonstration, financed by special grant from the Metropolitan Life Insurance Co. The results of that demonstration, particularly in the field of industrial relations and personnel research are detailed in a summary report, Monograph No. 10. Particular attention is directed to studies made in industrial health service, studies on ventilation, safety studies, and studies on sanitation and general health conditions in the working population of Framingham.

Since 1917 the National Tuberculosis Association has been especially interested in mortality from dusty trades. Under the auspices of a special committee of which Dr. Edward R. Baldwin, of Saranac Lake, N. Y., was the chairman, studies were made of the marble industries in Vermont, the limestone industries in Indiana, dealing particularly with the prevalence of silicosis, anthracosis, and tuberculosis among workers in these industries. The studies of this committee are reported in a series of papers published in various volumes of the Transactions of the National Tuberculosis Association. References will be furnished on request to the association. These studies have supplemented previous studies made by Dr. Frederick L. Hoffman for the United States Bureau of Labor Statistics and for the Prudential Life Insurance Co.

During the last 10 years especially, the National Tuberculosis Association has stimulated organization of health service in industry through its local and State tuberculosis associations. As early as 1916 the national association published a report entitled "Workingmen's organization in local antituberculosis campaign." In March, 1926, the association published a special industrial health service number of its Monthly Bulletin.

In these and in other ways the activity of associations in Philadelphia, Erie, Pa., Hudson County, N. J., Chicago, and elsewhere have been stimulated to undertake definite health service designed for the smaller industries where full-time health service can not ordinarily be provided. Details concerning activities in these cities will be furnished on request.

Statistical studies of the incidence of tuberculosis in industry and in industrial groups have been made and are now being made by the association. At the present time an extended study in this field is being carried on, the results of which will be reported at a later date. The association through its various agencies has also stimulated the development of sheltered employment for arrested cases of tuberculosis and is now definitely working on a program of after-care including prevocational training, special vocational training, placement, and follow-up of arrested cases of tuberculosis. A special report on sheltered employment in the United States, by Dr. H. A. Pattison and Philip P. Jacobs, was published by the association in 1927.

In various cities of the country, notably Boston, New York, Minneapolis, and Philadelphia, special efforts have been made for the placement of cases discharged from sanatoria with suitable arrest of tuberculosis in normal industrial work. A special report on a 3-year experiment of this character was published in 1928 by the New York Tuberculosis and Health Association, entitled "Employment of the Tuberculous," by Alice Campbell Klein and Grant Thorburn, M. D.

National Urban League.

17 Madison Avenue, New York, N. Y. Eugene Kinckle Jones, Executive Secretary.

DEPARTMENT OF RESEARCH AND INVESTIGATIONS. Ira DeA. Reid, director.—The National Urban League was organized in 1910 “to promote the social and economic well-being of the American negro.” It is supported by voluntary contributions. Efforts of the research department have been directed in the special fields of housing, health, and employment and have resulted in a series of unpublished analyses of work opportunities, efficiency, turnover, skill, and availability of negro workers in selected cities. A study of the negro worker in his relation to trade-unions has just been completed; and a subject which the research department plans to take up is “Opportunities for vocational training for negro youth.”

National Vocational Guidance Association.

Helen Dernbach, Director of Vocational and Educational Guidance, School City of South Bend, Ind., Secretary.

THE ORGANIZATION of this association was completed during a series of meetings held at Grand Rapids, Mich., October 21–24, 1913. (Papers presented were published by United States Bureau of Education as Bulletin (1913, No. 14.) This was the third national conference on vocational guidance, previous meetings having been held at Boston in 1910, and New York City in 1912. Since that time the association has met annually at the same place and during the two or three days previous to the meeting of the department of superintendence of the National Education Association.

There are now about 1,500 members and 29 branch associations. The official organ of the association, the Vocational Guidance Magazine, published by the Bureau of Vocational Guidance, Graduate School of Education, Harvard University, is issued eight times a year from October to May, inclusive. Dr. Fred C. Smith is editor.

The objects of the association as stated in the constitution are as follows:

1. To unite all of those persons engaged in or interested in any phase of vocational guidance in the United States into one national organization and into branch organizations representing specific localities or specific problems of guidance.
2. To encourage the formation of branch vocational guidance associations in the United States which shall be affiliated with the National Vocational Guidance Association.
3. To encourage experimentation in and the establishment of vocational guidance service in communities of the United States.
4. To formulate standards and principles for vocational guidance.
5. To gather and disseminate information regarding problems of and progress in vocational guidance.

Order of Railroad Telegraphers.

3673 West Pine Boulevard, St. Louis, Mo. E. J. Manion, President.

THE STATISTICAL DEPARTMENT of the Order of Railroad Telegraphers carries on continuous studies of wages, hours, and working conditions affecting its members and other workers in railroad telegraphy, train dispatching and allied occupations, and comparative

studies in other fields. Special studies cover vacations, seniority, etc., and a project for the immediate future deals with the relation of unemployment to the introduction of mechanical appliances and changes in operating methods. Results appear occasionally in the official organ of the union, the Railroad Telegrapher.

Personnel Research Federation (Inc.).

29 West Thirty-ninth Street, New York, N. Y. Walter V. Bingham, Director; Paul S. Achilles, Secretary.

A FEDERATION of business firms, national associations, labor organizations, Government bureaus, research and social agencies, and educational institutions for the furtherance of research activities pertaining to personnel wherever such researches are conducted in the spirit and with the methods of science.

Organized March 15, 1921, at a conference on personnel research held under the auspices of National Research Council and Engineering Foundation, with the purpose of bringing about cooperation among the many bodies conducting research relating to men and women in industry and commerce, from management to unskilled labor. Incorporated March 16, 1925, as a nonprofit corporation, for "the scientific study of man in relation to his occupations and his education therefor, and the diffusion of knowledge concerning this relation."

The federation established in 1922 the Personnel Journal, in which many reports of research have appeared, together with book reviews, annotated references to current periodical literature, and news of research activities. Among its other publications are a comprehensive manual of research procedure in vocational selection; a volume on job analysis; bibliographies on psychological tests and on the personal interview; and a series of circulars and reprints dealing with problems and methods of personnel investigation.

Formal and informal conferences have been held each year, bringing together investigators and practitioners in employment and placement, vocational guidance, industrial psychology, and the science of labor.

The central staff has helped plan investigations; arranged for university investigators to secure access to industrial data; brought about some interchange of information between American and foreign research workers; assisted in planning the organization of research departments; advised with advanced students regarding their research training; and advised with executives regarding the application of research findings. It has also carried on original investigations of certain personnel techniques, and of personal factors in accident causation, making practical demonstrations of the value of psychological research in industries under working conditions. Its chief function, however, is as a coordinating and informational center.

Provision is made for several types of membership as follows:

1. Corporate membership (corporations, educational institutions, governmental agencies, other associations, bureaus, etc.):

- (a) Subscribing corporate membership. Minimum annual dues, \$100.
- (b) Sustaining corporate membership. Organizations contributing substantial sums, optional in amount, to the support of the federation or branches of its work. Minimum, \$250.

2. Membership at large (individuals):

(a) Subscribing membership, \$8.

(b) Sustaining membership. Minimum, \$250.

The original membership consisted of 5 educational institutions, 5 national associations and research bureaus, 1 business firm, and 14 individuals. In 1929 the membership included 7 business and industrial firms, 6 governmental agencies, 18 educational institutions, 8 associations and research bureaus, and 185 individuals.

Portland Cement Association.

33 West Grand Avenue, Chicago, Ill.

THIS association issues a bimonthly Accident Prevention Magazine, which contains papers on health and accident hazards of the cement industry. It has prepared annually since 1913 a "Study of accidents" occurring in the plants of member companies. The 1928 report is published in the May-June, 1929, number of Accident Prevention Magazine (vol. 15, No. 3).

Prudential Insurance Co. of America.

Newark, N. J. Frederick L. Hoffman, Consulting Statistician.

UNDER the direction of Doctor Hoffman this office gives special attention to industrial mortality and morbidity and in the course of the last 25 years has accumulated a large collection of data on practically every occupation or industry and the occupational diseases or special mortality problems related thereto, including much material obtained from its own specialized field investigations. Its studies in these fields are made primarily for occupational-rating purposes, but many of the results have a broader scientific value. In connection with its public-health promoting activities some of this material has been made available in bulletins of the United States Bureau of Labor Statistics, among which the most recent are:

Bul. No. 293. The problem of dust phthisis in the granite-stone industry. 1922.

Bul. No. 426. Deaths from lead poisoning. 1927.

Bul. No. 488. Deaths from lead poisoning, 1925-1927. 1929.

Numerous papers on radium necrosis, miners' nystagmus, silicosis, lead poisoning, mule-spinners' cancer, occupational cancer, etc., have also been published. Doctor Hoffman's office readily cooperates with any industrial investigation in which its resources can be utilized. A complete collection of Doctor Hoffman's scientific papers is on file at the Army Medical Library, statistical division, Washington, D. C.

Research Bureau for Retail Training.

University of Pittsburgh, Pittsburgh, Pa. David R. Craig, Director.

THE Research Bureau for Retail Training was organized in May, 1918, as a result of the desire of seven Pittsburgh stores to inaugurate a program for careful study of personnel problems in the field of retailing. These stores agreed to underwrite \$32,000 each year for a term of five years.

The bureau started at Carnegie Institute of Technology where it was part of the division of applied psychology, later the division of cooperative research. The plans of organization provided for the cooperation of the seven supporting stores, the Carnegie Institute of Technology, and the Pittsburgh public schools. In 1923 the bureau became affiliated with the University of Pittsburgh, and in 1924 the services of the bureau were made available to stores outside of Pittsburgh.

Coordinate with this latter development was the endowment of the bureau by 17 Pittsburgh stores as a permanent research organization at the university. When this endowment has been completed, over a period of 10 years, the retail stores of Pittsburgh will have spent approximately \$1,000,000 for the support of research in the field of personnel administration.

The bureau was established with the purpose in mind of applying the principles of psychology, economics, education, and sociology to the solution of department-store problems. Its work may be classified under three heads:

Research.—A systematic program of research in retail personnel field and the adaptation of the results obtained from this study to the needs of the member stores.

Training.—The training of training directors, employment officers, and other personnel workers in retail stores and of teachers of high-school courses in retailing.

Service.—Assistance rendered to the member stores in adapting bureau material to their needs, in providing methods, programs, and forms; in advising with the personnel departments and other executives about the best methods of solving special personnel problems arising in each store.

The present research organization consists of six fields: Training in salesmanship, training in merchandise information and fashion, training in psychology of personality, training in service and operation, training executives, and employment management.

The following is a list of the research studies now in the making:

Executive training:

Store policies, their formulation and use.

Psychology for executives.

Bulletin on psychological principles for the use of training directors.

Salesmanship training:

Psychology for salespeople.

Technique of selling for lower-priced departments.

Training manual for service shoppers.

Technique of handling production records in training.

Technique of selling on the telephone.

Technique of selling for beauty-shop operators.

Technique of ensemble selling.

Coordinating advertising and merchandise information.

Situation cards for specific selling departments.

Nonselling training:

Packing department manual—Preparing the training program.

Packing department manual—Trainers' guides.

Manual of operation for unit stock control clerical.

General training:

Situation cards for store nurses.
 Methods and devices for visual education.
 Improving reading habits of store people.

Art and fashion:

A manual for teaching appreciation of line and design in merchandise.

Employment:

Studies of employment office routines: Employment procedure, timekeeping, pay office.

Development and standardization of tests (for salesmanship, good taste, etc.).

Development of personality rating scales.

The older employees.

Store analysis:

Standard functions of the personnel department.

Methods of distributing store information.

Standards of efficiency in nonselling departments.

Methods of determining and using production standards in receiving, checking, and marking; credit; delivery.

Methods of evaluating equipment in receiving, checking, and marking; credit; delivery.

A survey technique for studying store routines.

Administration of personnel work:

Group insurance for department stores.

Other fields:

Study of assurance.

Curriculum based on duty analysis of group of high schools in various retail jobs.

Development of new personnel records for bureau students and alumni.

Study of success of bureau alumni in relation to items on bureau application blank.

Publications for general distribution consist chiefly of a series of salesmanship and merchandise manuals. Studies of a more confidential nature are usually available only to the member stores.

Retail Research Association.

1440 Broadway, New York, N. Y. P. J. Reilly, Director.

AN ORGANIZATION of large retail establishments (18 firms at present, only one in a city, except in Boston) for cooperative research covering the whole range of department-store functions.

Contributions to meet the financial requirements of its budget are by membership assessment based primarily on sales volume.

PERSONNEL RESEARCH DIVISION.—Organized as a separate research division in July, 1929, by separation from the store operation and personnel division. The chief functions of this division are conducted cooperatively with the personnel directors and training directors of member stores through the research offices of individual stores. Its major activities are: (1) Individual and cooperative research in store employment, training, health, employee activities, pay-roll budgeting and expense control, and selling service; (2) the conduct of annual conferences, one for personnel directors and one for training directors; (3) the conduct of store surveys in the personnel field; (4) the preparation of training manuals, films, etc.;

(5) the collection and dissemination of information on current and leading practices; (6) the promotion and development of executive training; (7) the development of standard personnel practices; (8) administration of market training of assistant buyers in New York.

Investigation is by questionnaire, store study, conference, and field work.

The results of the association's researches are available to member stores only.

Russell Sage Foundation.

130 East Twenty-second Street, New York, N. Y. John M. Glenn, General Director.

INCORPORATED under the laws of the State of New York in April, 1907, with an endowment of \$10,000,000 given in memory of her husband by Mrs. Russell Sage to which she added \$5,000,000 in 1918. The purpose of the foundation as stated in its charter is "the improvement of social and living conditions in the United States of America." Research and publications are means to this end which are being employed.

This research work has been organized under the following departments: Charity organization, child helping, education, industrial studies, recreation, remedial loans, surveys and exhibits. It also maintains a library with a specialized collection of books and pamphlets on each subject.

The publications of the foundation contain the results of original researches carried on by members of its staff, or by experts commissioned for special studies, and also of special investigations such as the Pittsburgh survey which the foundation financed but did not direct. A printed catalogue of publications may be obtained from the publication department.

Industrial studies have been made by several of its departments; for example, they have been included as integral parts of city surveys made and directed by the department of surveys and exhibits under the direction of Shelby M. Harrison. This department also made a study of public employment offices, their organization and administration, the technique of the local service and their place and function in industrial life. The publication containing the results of this study is found in the list given below.

A study of the organization of social case work to deal with unemployment was published in 1923 under the title of "The Burden of Unemployment." This investigation, which was made under the auspices of the charity organization department, was a study of unemployment relief measures in 15 American cities, 1921-22.

DEPARTMENT OF INDUSTRIAL STUDIES.—Mary van Kleeck, director.—This department, organized in 1909, originally limited its studies to women in industry, but in 1916 its present name was adopted and its scope enlarged.

Since 1920 it has had under way a series of investigations of labor's participation in management. The purpose is to make an accurate and impartial record of experiments in industry in the United States in securing for the workers participation in those decisions and practices of management which directly affect conditions of employment and the relationship between employer and

employee. It is believed that such analysis of experience will afford a basis for constructive action by employers and by wage earners and leaders of labor in promoting more satisfactory human relations in industry. The results are being published in the Industrial Relations Series shown in the following list.

The department has also concerned itself with the relation of government to industrial disputes, having made a preliminary study of the operation of the Canadian industrial disputes act in 1916. It again investigated this subject covering the whole period of operation of the act including the war and published the result in the book entitled, "Postponing Strikes."

The director of the department has served as chairman of the committee on governmental labor statistics of the American Statistical Association which has concerned itself with making possible conference and study on the part of statisticians in State and Federal bureaus of labor statistics and in universities, banks and other companies. This committee work is directed toward the improvement and the uniformity of statistics of employment and other aspects of labor conditions. Office space is provided in the department of industrial studies, and through the department budget the expenses of the committee are paid. In *Employment Statistics for the United States* published under the editorship of Ralph G. Hurlin, director of the department of statistics of the foundation, and William A. Berridge of the Metropolitan Life Insurance Co. a plan for governmental collection of statistics of employment formulated through experience in collection of these statistics by State and Federal bureaus was set up and the procedure outlined in detail.

List of industrial studies

Klein, Philip. *The burden of unemployment: A study of the unemployment relief measures in 15 American cities, 1921-22.* 1923. 260 pp., diagrams.

Hurlin, Ralph G. and Berridge, William A., editors. *Employment Statistics for the United States: A plan for their national collection and a handbook of methods recommended by the committee on governmental labor statistics of the American Statistical Association.* 1926. 215 pp., diagrams.

Selekman, Ben M. *Postponing strikes: A study of the industrial disputes investigation act of Canada.* 1927. 405 pp., tables, diagrams.

Harrison, Shelby M. (In collaboration with Bradley Buell, Mary LaDame, Leslie E. Woodcock, and Frederick A. King.) *Public employment offices: Their purpose, structure, and methods.* 1924. 685 pp.; illustrations, forms, tables. (Second printing.)

Bloch, Louis. *The coal miners' insecurity.* 1922. 50 pp. (pamphlet).

Industrial relations series

Selekman, Ben M. *Sharing management with the workers: A study of the partnership plan of the Dutchess bleachery, Wappingers Falls, New York.* 1924. 142 pp., tables.

— Employees' representation in steel works: A study of the industrial representation plan of the Colorado Fuel & Iron Co. in the Minnequa Steel Works. 1924. 293 pp., tables.

— and van Kleeck, Mary. *Employees' representation in coal mines: A study of the industrial representation plan of the coal mines of the Colorado Fuel & Iron Co.* 1924. 454 pp., maps, tables.

LaDame, Mary. *The Filene Store: A study of employees' relation to management in a retail store.* 1930. 547 pp., tables.

Loans to working men and credit unions are dealt with in the pamphlet publications of the department of remedial loans.

Social Science Research Council.

2715 New York Central Building, 230 Park Avenue, New York, N. Y. Robert S. Lynd, Permanent Secretary; Meredith B. Givens, Industrial Relations Secretary.

THE Social Science Research Council consists of 25 representatives, three chosen by each of seven scientific associations, and four members-at-large from the psychological, legal, and public health fields. It was organized in 1923 by representatives of the American Political Science Association, the American Sociological Society, and the American Economic Association. During the two years following its organization the membership of the council was increased by the addition of members chosen by the American Statistical Association, the American Psychological Association, the American Anthropological Association, and the American Historical Association. The council has been concerned with general planning and strategy in research in the social sciences, emphasizing especially the need for joint attack upon common problems by students from various disciplines. As restated in the summer of 1929 at the annual Hanover conference, the objectives of the council include the following: The improvement of research organization; the development of personnel; the enlargement, improvement, and preservation of materials; the improvement of research methods; the facilitation of the dissemination of materials, methods and results of investigations; the facilitation of research work, and the enhancement of the public appreciation of the significance of the social sciences.

Shortly after its organization, the council was intrusted with the administration of funds for research and it has been able to finance selected projects. In the fall of 1929 the first members of a full-time staff were engaged and administrative headquarters were established. The bulk of the council's work is carried on by committees, assisted and coordinated by staff members. The chief of these committees is that on problems and policy, organized in 1925 with a rotating membership on a 3-year tenure. Advisory committees are set up to aid in considering the many proposals for research and other phases of council work.

Various committees of the Social Science Research Council have been concerned with the problems of labor and industry. Among these have been committees on industrial relations, corporate relations, interracial relations, business research, utilization of unpublished social data, and other standing or special committees. The advisory committee on industrial relations, formerly the committee on labor and capital, was organized at the close of 1925. The name was changed in 1927. In the fall of 1929 this committee consisted of the following persons: Mr. Henry S. Dennison, chairman; Dr. Walter V. Bingham, Mr. Morris E. Leeds, Dr. Harlow S. Person, Miss Florence Thorne, Prof. Joseph H. Willits, Dr. Leo Wolman, Prof. Selig Perlman, Dr. John A. Fitch. Under the auspices of this committee a survey of industrial relations research in progress at universities was carried out in 1927. A more elaborate survey of research was completed in 1928 for the committee by Prof. Herman Feldman, of Dartmouth College.

Through the Social Science Research Council grants-in-aid are available annually to help mature scholars of established reputation

who have under way researches of major importance. A limited number of postdoctoral research fellowships are also awarded to further the training and development of promising younger students in the social sciences. The fellowships are open to men and women not over 35 years of age who have the Ph.D. or its equivalent, while the grants-in-aid are available for competent scholars with significant projects.

Major council projects relating to industrial relations and allied problems are the following: Two investigations have been set up under the direction of the National Bureau of Economic Research: A critical survey of statistics relating to the American labor market, by Leo Wolman, and a study of output per man-hour in American industry since 1900, by Harry Jerome. An international study of wage data is in progress, a report to be published by Prof. Henry Clay, of the University of Manchester, following two conferences at Geneva, the final one of which has not yet been held. A study of the administration of labor laws in the United States is being conducted under the auspices of the American Association for Labor Legislation. Two studies have been organized under the Personnel Research Federation. One is a study of restriction of output among workers uninfluenced by unions, briefly called "Conscious restriction of output," by Profs. William Leiserson and S. B. Mathewson, of Antioch College; the other is a study of the technique and reliability of the interview, by Dr. Walter V. Bingham.

Other council projects of interest in this field include studies of penal farm colonies, a survey of research in interracial relations, an investigation of the mental ability of the negro, studies of Mexican immigration and Mexican labor in the United States, and a study of negro migration. In addition, a number of projects have been conducted by Social Science Research Council fellows in the field of labor or industry.

The council, its staff, and advisory committees are continually furnishing advice to researchers and research organizations.

The Society of Industrial Engineers.

Engineering Building, 205 West Wacker Drive, Chicago, Ill. George C. Dent, Executive Secretary.

A NONPROFIT organization founded in May, 1917, composed of executives, engineers, works managers, etc., in industry. Its declared objects are: (1) To reduce waste and to increase efficiency, economy, and good-will in industry and commerce, through the development, dissemination, and application of scientific principles and methods in management; (2) to promote a more general understanding of the rights and interests of the public, investors, consumers, employees, and executives; (3) to assist Federal, State, and local governments in securing efficiency and economy concerning public affairs, and in improving governmental activities affecting the management of industry and commerce; (4) to further the effective coordination of the various functions of management.

The organization has a membership of 1,022, representing 118 different lines of industry, with local chapters in 14 large cities, and student branches at 10 of the leading universities.

The most important research committees are: Wage incentive plans, time study engineering standardization, management terminology, waste elimination, plant maintenance, and elimination of unnecessary fatigue in industry. Special investigations of industrial subjects are carried on by local chapters.

Reports of research committees are published by the society, and a bulletin recording the activities of the local chapters and special papers is published monthly.

In addition, the proceedings of national and special conventions are published and contain valuable reports on research studies as well as papers presented to the conventions on a wide range of subjects. Recent publications of convention proceedings include: Time study engineering conference (1928) and Trends in industry (1929).

Structural Service Bureau.

705 Otis Building, Philadelphia, Pa.

THIS bureau and members of its staff have collaborated with local and national organizations and with governmental agencies in developing basic facts regarding economics of the building and construction industry.

Its consulting architect, D. Knickerbacker Boyd, in collaboration with Warner S. Hays, for the first time in this country, made an investigation of time lost by the various building trades in any given locality. The results were set forth in an address to the Engineers' Club of Philadelphia on April 12, 1921, by Mr. Boyd and were published in the *Journal of the Engineers' Club*, June, 1921, issue, in an article entitled "The elimination of waste in the building industry."

Mr. Boyd was also requested by the industrial relations committee of the Philadelphia Chamber of Commerce to arrange for the presentation of views by labor at the conference on the construction industries held in Philadelphia on February 15-18, 1921. Because he had been officially appointed by all labor organizations in that city as "spokesman" and enjoyed also the confidence of other workers and of organizations of employers, an array of speakers responded to his call and their presentation of views and data occupying 36 pages in the published proceedings of that conference constitute a notable contribution, in connection with that whole conference and the resolutions which it adopted, to the economics of the construction industry.

The Structural Service Bureau also worked out the average number of days' employment which the Philadelphia bricklayer could normally expect in a year and the number of days he would probably lose through unemployment, illness, and other causes beyond his control. The results were published in the *Labor Review* of the United States Bureau of Labor Statistics, May, 1921 (pp. 107-110). Similar figures which it worked out for all the building trades in Philadelphia are given in the October, 1921, issue of the *Labor Review* (pp. 98-100).

Further developments of these statistics including tables of time lost, possible effective working-days, average days' work per year, and annual earnings in the building trades of Philadelphia were also

published in an article, by D. Knickerbacker Boyd of the Structural Service Bureau, entitled "Seasonal employment in building construction," in *Engineering News Record*, issue of January 11, 1923 (pp. 63-65).

The staff of the Structural Service Bureau collaborated with the committee on elimination of waste in industry of the Federated American Engineering Societies and was instrumental in providing much material for Chapter V, the building industry, by Sanford E. Thompson, in the book, *Waste in Industry*, published by McGraw-Hill Co. for the Federated American Engineering Societies in 1921. D. Knickerbacker Boyd, of the bureau, collaborated with the committee on seasonal operation in the construction industries of the President's conference on unemployment, as referred to in the book by this title, published in 1924.

Taylor Society (Inc.).

29 West Thirty-ninth Street, New York, N. Y. H. S. Person,
Managing Director.

ORGANIZED in 1911 as the Society to Promote the Science of Management; name changed in 1916 to honor the memory of Frederick W. Taylor, pioneer in the development of science in management, who had died in 1915.

Its objects are: First, to secure—for the common benefit of the community, the worker, the manager, and the employer—full understanding and the adoption of the principles of administration and management which, intelligently applied to organized effort, are conducive to the gradual elimination of unnecessary labor and unduly burdensome toil; second, to promote a general recognition of the fact that evaluation and application of those principles and the mechanisms for their adaptation are the mutual concern of the community, the worker, the manager, and the employer; and third, to inspire in each a constant adherence to the highest ethical conception of their individual and collective responsibility.

The membership now consists of about 800 manufacturing and merchandising executives, industrial, mechanical and management engineers, personnel managers, students and teachers of management, psychologists, economists, sociologists, journalists, and labor leaders, classed into seven grades: Honorary members (elected for distinguished service); life members (who have prepaid all dues by payment of \$500 or more); contributing members (firms or individuals who contribute \$100 or more annually); personal members (initiation fee, \$15; annual dues, \$20); junior members (initiation fee, \$5; annual dues, \$10); student associates (annual dues, \$3); and firm members, with two designated representatives who have all rights and privileges of membership except the right to vote and hold office (annual dues, \$40).

National meetings bring the membership together at least twice a year for the common consideration of noteworthy new ideas and practices of management. In several cities throughout the country the members have formed local sections, which meet as frequently and regularly as the constituents desire.

The society names special committees from time to time to investigate specific problems of management and to report at meetings. In

May, 1928, it called a 2-day conference in Detroit for the consideration of the subject of time study in connection with the automobile industry, the result of which was a significant review of prevailing technique in that field in the light of the most advanced practices in American industry generally. (Cf. Bulletins, Vol. V, No. 5, October, 1920; Vol. VI, Nos. 5 and 6, October and December, 1921; Vol. XIII, No. 3, June, 1928.) Likewise, it was active with other American interests in organizing the International Management Institute at Geneva, Switzerland; it served on the American Committee on Participation in International Management Congresses and helped organize the program and secure American papers for the Prague Congress, 1924, and the Rome Congress, 1926. It organized a conference in 1926 to promote the investigation undertaken in this country and Canada by the British Industrial Mission to the United States; in the spring of 1927, by invitation of the world economic conference, Geneva, Switzerland, it sent Edward Eyre Hunt abroad to present facts concerning the contribution of scientific management to the organization and regulation of cartels; and it has been active in cooperating with the International Society for the Promotion of Human Relations in Industry, at The Hague. (Cf. Bulletins, Vol. XII, No. 5, October, 1927; Vol. XII, No. 3, June, 1927.)

The Taylor Society cooperated in April, 1927, in a labor convention on the elimination of waste in industry, held under the auspices of the Central Labor College of Philadelphia; it met in the spring of 1928 with the United Textile Workers in Passaic, on unemployment as a problem in management; in the winter of 1928, it assisted the foreman's and superintendent's division of the Metal Trades Association in laying out a program for the study of management. (Cf. Bulletin, Vol. XII, No. 3, June, 1927.)

The main office of the Taylor Society acts in an advisory relation to executive members on managerial problems throughout this and nearly every other country. Stimulated by numerous requests from students of scientific management in various countries, it completed in 1929, a comprehensive treatise of the principles, history, and status of scientific management in American industry, the chapters being contributed by different members of the society. Simultaneous with publication in this country, it is to be translated into several languages and printed in Europe.

Papers devoted to various aspects of personnel work and problems, to be found in the files of the Bulletin of the Taylor Society, include:

Shop committees and trade-unions. By Theodore M. Ave-Lallemond. Vol. 5, No. 3, pp. 97-99.

Wage adjustment based on cost of living changes. By J. H. Batchelor. Vol. 5, No. 2, pp. 50-51.

Personnel activities of the Delaware & Hudson Railroad. By W. W. Bates. Vol. 11, No. 2, pp. 62-67.

Performance ratings and bonuses for salaried employees. By Howard G. Benedict. Vol. 12, No. 4, pp. 142-152.

Technique of cooperation—Union-management cooperation in the railroad industry. By Otto S. Beyer, jr. Vol. 11, No. 1, pp. 7-20.

Industrial psychology. By W. V. Bingham. Vol. 9, No. 6, pp. 243-248.

Man management. By Meyer Bloomfield. Vol. 6, No. 4, pp. 157-162.

Scientific management and organized labor, by Geoffrey C. Brown (vol. 10, No. 3, pp. 132-154); Workers' participation in job study (vol. 12, No. 3, pp. 415-420); and Workers' participation in management (vol. 14, No. 1, pp. 11-28).

Unemployment scores, by Morris L. Cooke (vol. 6, No. 4, pp. 163-170); Some observations on workers' organizations (vol. 14, No. 1, pp. 2-10); and Who is boss in your shop (vol. 3, No. 4, pp. 3-10).

Taylor and trade-unions. By Frank B. Copley. Vol. 10, No. 4, pp. 182-185.

Industrial relations. By Rolland L. Cornick. Vol. 4, No. 6, pp. 32-48.

How to figure labor turnover. By Frederick S. Crum. Vol. 4, No. 4, pp. 13-18.

Utilization of the maimed for the scientific organization of work. By Ch. de Fremenville, translated by Eleanor B. Cooke. Vol. 3, No. 3, pp. 3-6.

A Dennisonian proposition, by Henry S. Dennison (vol. 5, No. 3, pp. 94-97); and The President's industrial conference of October, 1919 (vol. 5, No. 2, pp. 79-92).

Psychology in the organization of prison industries. By Edgar A. Doll. Vol. 11, No. 4, pp. 219-223.

Methods of computing labor turnover. By Paul Douglas. Vol. 4, No. 4, pp. 19-20.

The 3-shift system on the steel industry, by Horace B. Drury (vol. 6, No. 1, pp. 2-49); and Scientific management and progress (vol. 2, No. 4, pp. 1-10).

A labor leader in scientific management. By Robert Fechner. Vol. 9, No. 2, pp. 90-92.

The engineering approach to the problem of continuous employment, by Richard A. Feiss (vol. 6, No. 5, pp. 187-194); Scientific management during times of depression (vol. 7, No. 4, pp. 126-128); Scientific management and its relation to the health of the worker (vol. 2, No. 4, pp. 11-13); and Taylor the cooperationist (vol. 10, No. 1, pp. 86-88).

The new emphasis in the problem of reducing unemployment, by H. Feldman (vol. 7, No. 5, pp. 176-182); and Unemployment compensation plans and labor turnover (vol. 7, No. 6, pp. 241-243).

The illusion of final authority. By Mary Follett. Vol. 11, No. 6, p. 243.

Industrial relations—Some noteworthy recent developments. By Felix Frankfurter. Vol. 4, No. 6, pp. 12-31.

Production incentives at the Curtis Publishing Co. By Walter D. Fuller. Vol. 11, No. 2, pp. 80-81.

Stop-watch time study: A symposium—An indictment and a defense. By Frank B. and Lillian M. Gilbreth. Vol. 6, No. 3, pp. 97-135.

Scientific management and personnel work. By Mary Gilson. Vol. 9, No. 1, pp. 39-50.

Remedies for unemployment. By J. D. Hackett. Vol. 7, No. 6, pp. 239-241.

Arbitrary management on the defensive. By Joseph K. Hart. Vol. 10, No. 1, pp. 4-5.

Premium and bonus plans. By H. K. Hathaway. Vol. 8, No. 2, pp. 59-65.

Cost of living in relation to wage adjustments—A research made at the Holt Manufacturing Co., Peoria, Ill., under the direction of Ray M. Hudson. By Alfred B. Holt. Vol. 4, No. 5, pp. 29-46.

The supervisor of personnel. By Ernest M. Hopkins. Vol. 1, No. 2, pp. 9-15.

Business cycles and unemployment. By Willard E. Hotchkiss. Vol. 9, No. 2, pp. 86-89.

Safeguarding industry by stabilizing employment. By Willford I. King. Vol. 8, No. 3, pp. 85-95.

A practical plan for rating the efficiency of an office organization. By W. H. Leffingwell. Vol. 8, No. 5, pp. 178-188.

The basis of industrial psychology. By Elton Mayo. Vol. 9, No. 6, pp. 249-259.

A method of evaluating clerical jobs and employees. By R. C. Nyman. Vol. 13, No. 4, pp. 170-173.

International Industrial Welfare Congress. By Louise C. Odencrantz. Vol. 10, No. 5, pp. 231-232.

Vehicular accident prevention. By J. E. Ogara. Vol. 13, No. 5, pp. 215-219.

The futility of lockouts and strikes. By Paul Ogilvie. Vol. 13, No. 6, pp. 219-224.

Industrial psychology, by Harlow S. Person (vol. 9, No. 4, pp. 163-171); The manager, the workman, and the social scientist (vol. 3, No. 1, pp. 1-7); Scien-

tific management, an analysis with particular emphasis on its attitude toward human relations in industry (vol. 13, No. 5, pp. 199-205); Scientific management and unemployment (vol. 6, No. 1, pp. 50-51); and The work-week or the work-life? (vol. 13, No. 6, pp. 230-248).

Current wage theories. By C. A. Phillips. Vol. 1, No. 2, pp. 1-3.

Mills and minds. By Arthur Pound. Vol. 7, No. 3, pp. 83-98.

Principles of wage payments, by A. B. Rich (vol. 11, No. 4, pp. 214-218); and A wage system (vol. 5, No. 4, pp. 138-139).

Recent trends in industrial relations in Great Britain and Germany. By Ben M. Selekman. Vol. 13, No. 5, pp. 178-186.

Mutual rating. By Henry Wood Shelton. Vol. 5, No. 2, pp. 59-67 and vol. 7, No. 1, pp. 34-36.

Raising the plane of industrial relations discussion. By Sumner H. Slichter. Vol. 11, No. 1, pp. 3-4.

Financial incentives. By Elliot Dunlap Smith. Vol. 12, No. 3, pp. 425-431.

Making the most of men. By Ida M. Tarbell. Vol. 10, No. 1, pp. 80-81.

The field of personnel administration. By Ordway Tead. Vol. 8, No. 6, pp. 237-240.

The progressive relation between efficiency and consent, by Robert G. Valentine (vol. 2, No. 1, pp. 7-20), and Two pioneer papers on industrial relations (vol. 8, No. 6, pp. 225-236).

The social meaning of good management, by Mary van Kleeck (vol. 9, No. 6, p. 242); and The interview as a method of research (vol. 11, No. 5, pp. 268-274).

Individuality in industry, by Robert B. Wolf (vol. 1, No. 4, pp. 2-8); and Control and consent (vol. 3, No. 2, pp. 5-18).

Experimental psychology in personnel problems. By C. S. Yoakum. Vol. 10, No. 3, pp. 154-164.

Industrial relations symposium, Cambridge Meeting, October 4, 1919. Vol. 4, No. 6, pp. 12-48.

Technical Association of the Pulp and Paper Industry.

18 East Forty-first Street, New York, N. Y. Ronald G. Macdonald, Secretary.

AN ASSOCIATION organized for the encouragement of original investigation and research work in mill engineering and the chemistry of paper, cellulose, and paper-making fibers generally; affiliated to the American Paper and Pulp Association.

JOINT TEXTBOOK COMMITTEE.—Has drawn up and published (through McGraw-Hill Book Co.) a 5-volume text on the manufacture of pulp and paper. Volumes 1 and 2 deal with related technical subjects such as mathematics, chemistry, and physics, to prepare the nontechnical student for the last three volumes which discuss all phases of pulp and paper making. These texts are used as the basis of correspondence courses offered to the men in the industry by the university extension division of the University of Wisconsin, the Massachusetts division of university extension, and the Institute of Industrial Arts of Canada.

TRAINING FOR INDUSTRY COMMITTEE. H. G. Noyes, chairman.—Has divided the country "into 12 areas with an area director in charge of each section. His duties are twofold—first, to provide summer employment in the mills for college students; and, second, to arrange to have paper-mill superintendents and executives visit the colleges and talk to the groups of men interested in the pulp and paper industry. This makes it possible for technical men to obtain some practical mill experience prior to their final entry into the industry."

The Thompson & Lichtner Co. (Inc.).

Statler Building, Boston, Mass.

THIS is an organization of industrial engineers making investigations chiefly on a professional basis for clients. The organization is made up of six divisions: Marketing, production and management, cost and accounting, industry cooperation, engineering and testing, and research. Personnel problems incident to each of these divisions are covered in its work, but the larger phases of personnel work are handled by the research division. This division includes research studies for manufacturing and merchandising groups, trade associations, and community, regional, or national civic and business organizations. Studies of this character have been made for the Hoover committee on elimination of waste in industry, the United States Coal Commission, the New England Council, and the Boston Chamber of Commerce.

Publications in the personnel field include:

Time study and job analysis.

The building industry (Chap. V) and the boot and shoe industry (Chap. VII) in *Waste in Industry*, published by the Hoover committee on elimination of waste in industry.

The practicability of continuous construction throughout the year (Chap. VIII of *Seasonal Operation in the Construction Industries*).

Underground management in a bituminous coal mine (Chap. VII, sec. 1, of *What the Coal Commission Found*).

Shoe manufacturing industry of New England, survey and report for the Boston Chamber of Commerce, published by the chamber, 1925.

The foundry and machining industries of New England, for the Boston Chamber of Commerce.

The Training School at Vineland, N. J.

Vineland, N. J. E. R. Johnstone, Sc. M., Director.

AN INSTITUTION devoted to the interests of those whose minds have not developed normally (a private institution but the State of New Jersey sends here some of its mentally deficient wards).

THE DEPARTMENT OF RESEARCH. Edgar A. Doll, Ph. D., director.—Established in 1906. Former directors of research, Henry H. Goddard and S. D. Porteus. The work of this department is devoted to (1) diagnosis and classification of mentally deficient children and adults, (2) graduate training of professional students in abnormal and clinical psychology, (3) consultation examinations of a placement and vocational guidance nature, and (4) psychological research. The problems in research include (1) diagnosis, (2) characteristics, (3) causes, and (4) amelioration of mental deficiency. Special attention has been given of late to problems of industrial and vocational classification and training. The present director is consultant on problems of classification and training of inmate personnel in the State institutions of New Jersey with particular reference to correctional institutions.

The publication activities of this department are reported in an extensive series of journal articles, monographs, and books. Many of these publications appear in the *Training School Bulletin*, issued monthly by the institution.

The department has also issued many other publications dealing with numerous aspects of mental diagnosis, classification, and various

types of intelligence and other tests useful in personnel work, including the translation of the writings of Binet and Simon. The department played an important role in developing the army mental tests. The work of the department is also revealed in such publications as Henry H. Goddard's "The Kallikak Family," showing the relation of mental deficiency to industrial problems. Much of the present work of the department is devoted to the improvement of the training of mental defectives by means of job analysis and improved classification with scientific implications for personnel work in general.

The Travelers.

Hartford, Conn. William B. Bailey, Economist.

THE INDUSTRIAL RELATIONS SERVICE of this company was established in 1924 for the purpose of supplying policyholders with information on personnel questions upon request. All work connected with the service is handled in the office of the economist of the company. The attempt is made to cover personnel work in all its phases. The studies at present under way are industrial psychology and suggestion systems.

Researches are not published, but information is available to policyholders upon request in the following specific personnel problems: Safety; methods of paying wages (including premiums, bonuses, and profit sharing); psychological tests and rating scales; education and training; suggestion systems; works councils; unemployment insurance; benefit plans or associations; savings plans; stock ownership; health service for employees; recreation for employees; housing; cafeterias and lunch rooms.

Edward L. Trudeau Foundation.

Saranac Lake, N. Y. Edward R. Baldwin, M. D., Director.

AN ENDOWMENT inaugurated in December, 1916, as a memorial to the American pioneer in tuberculosis research, whose name it bears, and to continue the scientific investigations to which he had devoted his life. The fund now amounts to \$450,000, and the income is devoted to the following purposes:

1. To maintain laboratories and carry on research into the nature, causes, and treatment of tuberculosis.
2. To maintain regular courses of instruction for physicians and others in the most advanced knowledge of the above subject, under the name of The Trudeau School of Tuberculosis.
3. To offer young physicians and others the opportunities for research work, while undergoing treatment for the disease, through the establishment of fellowships.

For the past 10 years the staff of the Saranac Laboratory has been engaged in the experimental study of pneumoconiosis and its relation to tuberculosis. With the cooperation of the United States Public Health Service and that of the Metropolitan Life Insurance Co. it has now become possible to conduct extended investigations of the pathological, chemical, and bacteriological aspects of these conditions. Thus far, the reactions to granite, marble, carborundum, quartz, soft coal, and asbestos dusts have been considered. In addition, the laboratory has cooperated with the Public

Health Service in its study of the Barre granite industry. It is expected that some parts of a study of the Joplin County, Mo., lead and zinc mining industry will also be carried on in this institution.

The plan of experimental procedure is being developed along the following lines: (1) The character and extent of injury by various dusts in the normal lung; (2) the effect of inhaled dusts upon pre-existing and subsequently induced tuberculous infection and disease; (3) the degree of solubility of silica in the body fluids; (4) the effects of various dusts upon the growth of the tubercle bacillus both *in vivo* and *in vitro*.

The following publications have already appeared:

Gardner, L. U. Studies on the relation of mineral dusts to tuberculosis. I.—The relatively early lesions in experimental pneumoconiosis produced by granite dust inhalation and their influence on pulmonary tuberculosis. (Am. Rev. Tuberculosis, December, 1920, iv, 734.) II.—The relatively early lesions in experimental pneumoconiosis produced by marble dust inhalation and their influence on pulmonary tuberculosis. (Ibid., November, 1922, vi, 782.) III.—The relatively early lesions in experimental pneumoconiosis produced by carborundum dust inhalation and their influence on pulmonary tuberculosis. (Ibid., July, 1923, vii, 344.)

— Tuberculous infection and tuberculosis as modified by experimental pneumoconiosis. (Tubercle, 1924-25, vi, 336, 443.)

Cummings, D. E. Studies on experimental pneumoconiosis. IV.—The separation of particulate matter smaller than screen sizes into graded fractions. (Journal of Industrial Hygiene, 1929, xi, No. 7, 245.)

Underwriters' Laboratories.

207 East Ohio Street, Chicago, Ill. Dana Pierce, President.

ESTABLISHED and maintained by the National Board of Fire Underwriters, for service—not profit; incorporated under the laws of the State of Illinois in November, 1901. The object of Underwriters' Laboratories is to bring to the user the best obtainable opinion on the merits of appliances, devices, machines, and materials in respect to life and fire hazards, accident, and theft prevention. Engineers and inspectors are located throughout the United States and Canada.

The New York office (109 Leonard Street) is equipped for the conduct of examinations and tests of all electrical devices under the same conditions as those afforded at the principal office and testing station in Chicago. An electrical laboratory is also maintained at 1014 Merchants' Exchange Building, San Francisco.

Summaries of the laboratories' reports are issued on printed cards filed according to classifications, and cabinets containing these cards are maintained at the offices of the principal boards of underwriters and inspection bureaus in the United States, at many of the general offices of insurance companies, by some insurance firms, certain Federal, State, and municipal departments, and at the offices of the laboratories or of its engineers and inspectors in large cities. The same information is also distributed by the following lists which are, as a rule, revised semiannually:

- List of inspected fire protection appliances. July. 122 pp.
- List of inspected gas, oil, and miscellaneous appliances. July. 112 pp.
- List of inspected electrical appliances. April. 212 pp.
- List of appliances inspected for accident hazard. October. 40 pp.
- List of inspected automotive appliances. April. 48 pp.
- List of inspected burglary protection appliances. January. 34 pp.

The results of the work in many classes of appliances are furnished directly to building owners, architects, users, and other persons interested, by means of the laboratories' engineers and stamps or labels attached to such portion of the output as is found constructed in accordance with standard requirements.

Schedules of fees for examinations and tests and of charges for labels, as well as information regarding the three forms of supervision over goods marketed under the listings, namely, the reexamination, inspection, and label services, and a list of the addresses of engineers and inspectors are given in the following pamphlet, obtainable on application: The organization, purpose, and methods of Underwriters' Laboratories (18 pp.).

Underwriters' Laboratories is one of the cooperating organizations which constitute the electrical-safety conference, and is represented in the fire-protection group of the American Standards Association, the National Fire Protection Association, the American Society for Testing Materials, and many others.

United Typothetae of America.

Tower Building, Washington, D. C. Fred J. Hartman,
Director.

THE United Typothetae of America (Inc.), the trade association of the printing industry, was organized on October 17, 1887. The first convention, held in Chicago on that date, was the result of a general call to employing printers of the United States and Canada for the "interchange of opinion and the adoption of a wise policy" in regard to labor's demand "that nine hours shall constitute a day's labor." Since that time, annual conventions have been held, the forty-third having convened in Washington, D. C., September 16-19, 1929. With the passing of the years and the gradual evolution of the trade association idea, these conventions have drifted away from the discussion of controversial labor questions and have concerned themselves almost entirely with the discussion and adoption of technical measures pertaining to finance, accounting, production, marketing, merchandising, and the training and selection of the personnel.

The association is a somewhat loose federation of some fifty-odd local associations scattered quite generally over the United States and portions of Canada, with the general offices located in Washington, D. C. Each local association has its own constitution and by-laws and legal status, the members of which automatically become members of the United Typothetae of America. The present membership of the United Typothetae of America is approximately 2,100.

The source of income is by dues assessed upon members, based upon the mechanical pay roll of the member-firms. The minimum dues are \$4.50 a month per \$1,000 of the annual mechanical pay roll.

The activities of the association cover the entire field of printing management, along the specialized lines of production, marketing, finance, research, and education.

The research work consists of fact finding, covering every phase or condition in the industry. The association is now concerned with the program for scientific research, covering printing processes, equipment, and materials. This is a part of the general field of

management which is to be given major consideration by the association during the next four years.

The association has developed a far-flung educational program reaching from the apprentice to the executive. It provides for personnel training in and for the industry. Cooperative measures have been worked out with public and private schools of printing in the United States and in Canada, which are the main source of employee supply. A Typothetæ educational foundation, consisting of \$225,000 had been established at the Carnegie Institute of Technology in June, 1927, where two chairs of printing have been endowed. The training at Carnegie is concerned with printing management, rather than with craftsmanship. Local Typothetæ classes are held in estimating, cost finding, and other management subjects. A comprehensive educational literature covering every phase of the industry is Typothetæ's main contribution toward better training of printing personnel.

Typothetæ Bulletin, published each week by the United Typothetæ of America, is the official organ of the association. Its purpose is to furnish constructive and informative material pertaining to the varied and manifold problems of management in the printing business.

U. T. A. Typographic Library.—A set of books ultimately to be composed of 65 volumes when all of the volumes are published, and now containing 43 volumes. These books cover the fundamental processes of the industry, designed specifically as reference books for apprentices.

Standard textbooks and apprenticeship lessons.—Written primarily for use as source material for teachers of printing; any apprentice, however, having the equipment at his disposal can follow in home study the problems and questions in the lessons and books to great profit.

Manuals on apprenticeship.—For the use of employers, foremen, and instructors.

Management courses.—Courses in estimating, cost finding, accounting, advertising, and principles of salesmanship, used principally by local associations in classes on these subjects. They are also adapted to home study by the individual who has had some experience in the particular line.

Printing Education.—A 16-page magazine issued five times the year for teachers of printing in public and private schools.

Vocational Adjustment Bureau for Girls.

336 East Nineteenth Street, New York, N. Y. Mrs. Henry Ittleson, President; Emily T. Burr, Director.

ORGANIZED in 1919 to serve as a research and placement agency for the Big Sister organizations, and other welfare bodies concerned with the problem of the maladjusted girl. It is supported by membership fees, grants from foundations and contributions from interested individuals.

The Vocational Adjustment Bureau limits its field of activity to problem girls between the ages of 14 and 30. About 60 per cent of the cases handled are below normal intelligence; a large percentage are emotionally unstable, some show psychopathic or neurotic tenden-

cies, and some are delinquent. The purpose of the bureau is to attempt, through proper study and placement, to assist these girls to become self-supporting and economically productive.

Publications of the bureau to date are:

An industrial calendar. By Katherine Treat.

A placement bureau and workshop for maladjusted girls. By Emily T. Burr.

Are we testing the right people: A way out for misfits. By Emily T. Burr.

Tests for garment machine operators. By Katherine Treat.

Industrially redeemable. By Emily T. Burr.

Adapting the feeble-minded to industry. By Emily T. Burr.

A technique for job analysis. By Vera E. Dye and Edna W. Unger.

Studies at present under way by the bureau are: Minimum levels of accomplishment; team of tests for electric power machine operators; a report of the Vocational Adjustment Bureau over a 10-year period, 1919-1929; and a study of its therapeutic workroom over a period of four years.

In addition, the two following studies based on the records of the bureau are available for reference in its office: A Study of the psychological and sociological factors concerned in the industrial adjustment of 100 girls of subnormal mentality, by Gertrude Breese, and a Study of placement of 186 problem girls handled by the bureau (giving in detail the kinds of jobs held, requirements, length of service, and reasons for leaving), by Muriel Lanz.

Vocational Service for Juniors.[§]

122 East Twenty-fifth Street, New York, N. Y. Dr. Mary H. S. Hayes, Director.

MAINTAINS a free employment bureau where young people from 14 to 20 are guided into investigated jobs suited, where possible, to their abilities and interests.

Drew up and secured the indorsement of a plan for the improvement of the junior employment service of the State of New York.

Maintains an employment information service that tells adults and juniors which of the nonprofit-making employment agencies of the city is best suited to their particular needs.

Through a 5-year service demonstration of the value of vocational counseling in the junior high schools secured the establishment of the position of "teacher of vocational and educational guidance" in the New York City schools. Now cooperates with the board of education in the further development of this work.

Makes use of mental alertness and achievement tests in connection with educational guidance, scholarship selection, and employment.

Reveals significant facts about vocational guidance and junior placement in New York City through research studies. A study of the records of 28,000 children who have applied at its employment bureaus in the past 10 years will be published in 1930.

Publishes a directory of opportunities for vocational training in New York City, which gives full information about all schools preparing young people for various vocations.

[§] Formerly Vocational Guidance and Employment Service for Juniors.

Directs an apprentice-training program in the major phases of vocational guidance in centers throughout the country for specially qualified graduate students.

Recent publications in the personnel field are:

The fourth edition of the directory of opportunities for vocational training in New York City. Published in September, 1925.

How boys and girls get jobs, by Margaret Barker. Published in the Personnel Journal, August, 1927.

Auto mechanics as a field for junior workers, by Evelyn Heyman. Published in the Personnel Journal, December, 1928.

Some problems in junior placement, by Clare Lewis. Published in the Personnel Journal, August, 1929.

Waterfront Employers of Seattle.

564 Colman Building, Seattle, Wash. F. P. Foisie, Industrial Relations Manager.

ONE OF THE major activities of this organization of employers in the shipping industry is organized accident prevention and the development of safety codes for longshore labor. Studies are carried on continually of earnings of longshoremen, and of the frequency, severity, cost, and causation of accidents. The organization has been instrumental in developing and promulgating the Pacific coast marine safety code for stevedoring operations on board ship.

Woman's Occupational Bureau.

1111 Nicollet Avenue, Minneapolis, Minn. Katherine Woodruff, Director.

THIS is a vocational counseling and placement agency established in 1916, which makes extensive surveys of the employment field both from the standpoint of opportunity offered and of the requirements of the various positions handled by the bureau. Among its most recent publications are:

Women in clerical and secretarial work in Minneapolis. By M. C. Elmer. Opportunities for women trained in home economics (a study of Minneapolis and St. Paul). By William H. Stead.

The profession of social work. By Frank J. Bruno.

Library work as a profession. By Gratia Countryman.

Nursing as a profession. By Ruth Houlton.

Women's Educational and Industrial Union.

264 Boylston Street, Boston, Mass.

ORGANIZED 1877 and incorporated 1880, to promote the educational, industrial, and social advancement of women.

DEPARTMENT OF RESEARCH. Prof. Lucile Eaves, director.—The expense and direction of this part of the union activities are shared with Simmons College (see p. 179). Four fellowships with annual stipends of \$500, three furnished by the union and one by the Savings Banks Association of Massachusetts, are awarded annually to woman college graduates with training in economics and sociology. These graduate students usually engage in cooperation research projects shared by other groups registered at Simmons College. They are given a year's training in preparation for professional research positions, which includes planning schedules and codes, arranging

of statistical tables, the use of punching, sorting, counting and calculating machines, interpretation of statistical data, and literary presentation of results of research. This fulfills the requirements for the degree of master of science in research at Simmons College.

The results of investigations made and published, 1910-1921, mainly by other agencies, have been issued in a series entitled "Studies in Economic Relations of Women" (v. 1-11). A study of Women Professional Workers, made for the union by Elizabeth Kemper Adams, was published in 1921 by the Macmillan Co., New York.

The following investigations have been made since 1921:

Gainful employment for handicapped women. By Lucile Eaves. Pamphlet published by the Women's Educational and Industrial Union, 1921.

The child and the machine (industrial accidents suffered by wage-earning children). By Lucile Eaves. *The Survey*, January 8, 1921.

Savings for old age of women shoe workers. By Alice Channing. *The Survey*, September 16, 1921.

Facts worth knowing about women savers. By Selma Eversole. *The Bankers Magazine*, June, 1922.

Finding work for handicapped women. By Lucile Eaves. *Hospital Social Service*, July, 1922.

A lariat for opportunity (funds available for continuing the education of handicapped children). By Louise A. Schlichting. *The Survey*, December 15, 1923.

Who wants old age pensions? To-day's producers. By Louise Schlichting. *More women than men*. By Mabel P. Taylor. *The Survey*, July 15, 1924.

A legacy to wage-earning women. A study of working women in Brattleboro, Vt. By Lucile Eaves and associates. Published by Women's Educational and Industrial Union, 1925. 135 pp.

The "aged citizens" of Massachusetts (summary of the report of the Massachusetts Commission on Old Age Pensions). By Lucile Eaves. *The Survey*, February, 1926.

Productivity of a New England cotton mill. By Ann Jamba. *Labor Review* (U. S. Bureau of Labor Statistics), October, 1926.

Radcliffe's working wives. By Anne Byrd Kennon. *Radcliffe Quarterly*, January, 1927.

College wives who work. By Anne Byrd Kennon. *Journal of Association of University Women*, XX, 100-106, June, 1927.

Why workers borrow—4,000 credit union loans. By Mildred John. *Labor Review* (U. S. Bureau of Labor Statistics), July, 1927.

Cooperative credit (thrift agencies maintained by the New England Telephone & Telegraph Co.). By Mildred John. *The Survey*, October 15, 1927.

The Christmas club idea in Boston. By Mildred John. *The Bankers Magazine*, December, 1926 (also published in *Our Boston*, October, 1927).

Why workers borrow; a credit-union study. By Mildred John. *Our Boston*, December, 1927.

The school and the working child. By Mary A. Clapp. Published by Massachusetts Child Labor Committee, 1928.

The part-time worker in Boston settlements. By Anne Byrd Kennon. *Journal Sociology and Social Research*, January-February, 1928.

Opportunities for employment of Boston colored girls. By Evelyn C. Klugh. *Opportunity*, October, 1928.

When chronic illness hits the wage-earner. By Lucile Eaves. *The Survey*, July 15, 1929.

Unemployment; a study of the case histories of 1,000 clients of three Boston family relief agencies. By Wilhelmina Luten. *The Family*, 1930.

Unpublished reports of research—usually typewritten manuscripts of master's dissertations prepared under Doctor Eaves' direction by Simmons College students—may be consulted at the rooms of the research department of the Women's Educational and Industrial Union, 264 Boylston Street. The following are of interest to investigators of personnel or industrial topics:

- Positions and salaries of social workers. By Naida L. Curtis and Helen E. Martin. 1920.
- Old-age provision of women shoe workers in Lynn. By Alice Channing and Elna Anderson. 1921.
- Life insurance of women. By Fressa Sample Baker. 1922.
- Thrift education in 24 mutual savings banks of Boston. By Selma A. Eversole. 1922.
- Investments and savings reported by a group of 400 gainfully employed women in Boston. By Selma A. Eversole. 1922.
- Women depositors in Boston savings banks. By Selma A. Eversole. 1922.
- The cooperative bank as a savings institution. By Beatrice McConnell. 1922.
- Loans made by the Industrial Credit Union of Boston. By Marie Russell. 1923.
- Part-time paid work of women in Boston colleges. By Dorothy G. Bancroft, Gertrude McKee, and K. MacLarnie. 1925.
- Skin cases; industrial clinic, Massachusetts General Hospital. By Suzanne Dubreuth. 1925.
- Aged female industrial workers having little or no old-age provision. Reports by Elsie D. Harper, Doris Crouse, Mary M. Haller, edited by Lucile Eaves. 1925.
- Part-time paid work done by women students in colleges of Boston. By Eileen F. Evans. 1925.
- Present economic status of aged women industrial workers. By Eileen F. Evans. 1925.
- Old-age occupations. By Jeannette Dunster Studley. 1925.
- Labor turnover in two Boston confectionery plants. By Isobel G. Goddard. 1926.
- Occupational hazards in the textile industry. By Ann Jamba. 1926.
- Analysis of 500 compensable injuries to women working in Massachusetts nontextile industries. By Katharine G. Pollock. 1926.
- Twenty-five patients given vocational guidance tests, Boston Psychopathic Hospital. By Jessie W. MacNaught. 1928.

Woodward, Fondiller & Ryan, Consulting Actuaries. 75 Fulton Street, New York, N. Y.

FOUNDED in 1923 by Joseph Hooker Woodward.

The firm of Woodward, Fondiller & Ryan employs a large number of Fellows and associates of the various actuarial societies, who are engaged in consulting service on all types of insurance matters and for pension funds. Research on all kinds of problems, including those of a personnel character, is made for clients. Employment management and industrial relations (such as selection and placement of employees, job analyses and specifications, rating and grading; lines of promotion, labor turnover, absenteeism, wage and other incentives, joint control, etc.) are handled for the insurance companies.

In the pension field research activities cover fields of analytical study of the need for pensions at various ages, the fitting of plans to the individual needs of the industry so as to effect the proper economies in (a) not pensioning too quickly if they are efficient, and (b) not deferring retirement if the employee has reached the point where retirement is necessary; analytical studies of the rate of labor turnover in connection with the proper appraisal of the cost of pension plans; analytical studies of mortality and rates of disablement in various industries; studies of the cost of financing pensions according to the method best fitted to the industry's needs; analysis of the cost of retiring employees according to age at entry to show the cost of retiring people coming in at ages 20, 30, 40, 50, etc.; and studies showing that in many industries the cost of pen-

sioning employees taken on at ages 40, 50, or 55 is substantially less as percentage of salary over their term of service, than is the case for employees taken on at earlier ages.

The firm's activities on research are almost entirely for private clients and are the property of those clients. Little is available, except in the form of a few papers and discussions for technical societies, on the pension problem, although the firm expects in 1930 to publish a résumé of its analyses on various important factors in the problem.

Discussions

American Management Association, Bulletin No. 108. Discussion of Kodak retirement annuity, life insurance and disability benefit plan. By Jonathan G. Sharp (p. 18) and by Gilbert E. Ault (p. 28).

The Record—American Institute of Actuaries—October, 1929, Vol. XVIII, Part II. Discussion of Mr. Hohaus' paper on group annuities. By Jonathan G. Sharp (p. 240), by Gilbert E. Ault (p. 243), and by S. F. Conrod (p. 266).

Young Men's Christian Associations, National Council. 347 Madison Avenue, New York, N. Y.

THE PERSONNEL DIVISION of the National Council of the Young Men's Christian Associations, Owen E. Pence, research secretary, is carrying on extensive research work among the employed personnel of the various Y. M. C. A. units. While these researches apply chiefly to Y. M. C. A. staffs, treating Y. M. C. A. work as a distinct profession, they are not wholly of an internal nature, and the scientific method of treatment makes the results of these studies of far wider application.

A series of studies has been made bearing upon selection, training, rating, job analysis, promotion, turnover, etc., of positions within the organizations—executive secretaries, physical directors, and other employed workers. These include analyses of the activities of Y. M. C. A. executive secretaries and physical directors by the Y. M. C. A. College in Chicago and construction of job specifications for association secretaryships by the personnel division of the National Council; personality ratings as instruments of selection, educational status, and a study of promotion methods, made by the personnel division; and a number of studies of personnel records and interview technique.

The Y. M. C. A. College in Chicago is at present making a research study of salaries at the professional level along three lines: (a) A study of Y. M. C. A. secretaries and workers in comparable professions; (b) a study of the bases of compensation in different professions, as civil service, foreign service, etc.; (c) a study of the economic, social, and cultural demands upon secretaries of different types. Professions used for comparative purposes are law, medicine, dentistry, ministry, and teaching. Publication of this survey in 1930 is expected.

The National Council is also conducting certain investigations wholly unrelated to internal organization; for example, a study of the occupational choices of high-school boys, based on data secured from negro high-school boys in Raleigh and Winston-Salem, N. C.; Atlanta, Ga.; Roanoke, Va.; Knoxville, Tenn.; St. Louis, Mo.; and Washington, D. C.; and white high-school boys in Chattanooga,

Tenn.; St. Louis, Mo.; Columbus, Ohio; and Denver, Colo. The findings of this study will be made available "for whatever significance or use they may be for curricula and program building to educators, teachers, Y. M. C. A. secretaries, and others who are working with high-school boys."

The employment of women in the Y. M. C. A. is another current study made by the personnel division, the purpose of which is to ascertain the extent to which women are being employed regularly in local Y. M. C. A.'s in a secretarial capacity. Clerical work is not included in the study. While its direct purpose is simply enumeration, "it will lead also to inquiry as to the description of tasks which it is believed women may perform as satisfactorily as men, and the effect upon the profession of such employment."

Publications connected with Y. M. C. A. personnel work are:

The personnel factor. An occasional journal presenting studies and discussions of interest to the working personnel of the movement. (347 Madison Avenue, New York, N. Y.)

The activities of the executive secretary. By L. W. Bartlett, R. M. Hogan, A. W. Boyd. (University of Chicago Press, 1929.)

The activities of the physical director. By L. W. Bartlett and Alden Boyd. (University of Chicago Press, 1929.)

Series of character and personality tests. By Goodwin B. Watson and others. (Association Press, New York, 1929.)

Annual summary of research and studies published by the conference on research. (Association Press, 347 Madison Avenue, New York.)

A number of the current studies which have been referred to herein will be published during 1930; others will be made available for reference use.

Young Women's Christian Associations of the United States of America, National Board.

600 Lexington Avenue, New York, N. Y. Anna V. Rice, General Secretary.

ORGANIZED in December, 1906, when individual associations heretofore members of one of two national bodies—the International Board of Women's Christian Associations and the American committee affiliated with the World's Young Women's Christian Association—united to form the Young Women's Christian Associations of the United States of America and created the National Board. The biennial convention, a meeting of accredited representatives of all these local associations, is the legislative body for the whole and the National Board its executives committee between successive conventions. Proceedings of these conventions are issued in report form.

Through the work of 17 departments and divisions, and through the studies and service of special councils and committees and by conferences, the National Board acts as a resource and offers an advisory service to 258 affiliated city associations, 139 town associations, 44 rural and district associations, and to 541 student associations representing a total membership of 698,418 women and girls in all groups and classes in the community in more than 2,000 centers.

The service of the National Board to the local units consists of help on organization, program, and personnel matters and work with those dealing with membership groups such as business and professional women, industrial women and girls, foreign-born and In-

dian women, younger girls, both those in school and those employed. The development of work with these groups looks to a better understanding on their part of the communities in which they live, of the social and economic forces which affect their lives to a better informed and therefore more adequately carried citizenship responsibility, and to a better understanding between all groups in the community.

While the National Board is manifestly a service rather than a research organization, certain personnel activities and studies are carried on by its departments and divisions, some continuously, others only occasionally as necessity requires.

The National Board maintains its own personnel bureau which functions for the 3,700 members of the employed personnel and for the local associations in the following ways: (1) It recruits recent college graduates and young women from related professional fields for association work; (2) it offers the service of a specialized employment bureau to local associations and to association workers; (3) it studies the best personnel practices in the local associations, in other organizations, and in industry and offers an advisory service to the local units in matters relating to salary scales, rates of increase, hours of work, vacations, sick leave, leaves for study, conference attendance, and other personnel problems; (4) it studies and experiments with improved methods in references, rating scales, recommendation forms, interview procedures; and (5) with the help of graduate students it has studied the qualifications of workers now in service in the associations of the United States and causes of turnover in this professional group.

On the national staff is one secretary assigned to the task of working with the employment departments of local associations through which 161,174 placements were made in 1928. There is a marked increase in the amount of employment and vocational work done in local associations and an increasing emphasis in all of them on the vocational aspects of employment work. To meet this need the National Board has been building its equipment in this field. Unpublished studies have been made cooperatively by the National Board and local associations in two communities to discover the extent to which the employment service needs of the communities are met.

The publications in the field of personnel research include:

Present trends in the clerical occupations. A study of the history and present status of the clerical occupations, deals particularly with the effects of mechanization on office work and the present conditions of clerical workers, including wages, educational requirements, and opportunities for advancement. 1928. 44 pp.

Jobs and marriage. Contains discussion outlines for the study of married women in the business occupations, with questions and source material for the consideration of the effects of work after marriage in the relations between women and the husbands, the effects on children and on the home, the necessity for the double salary and the influence on the offices themselves of the employment of married women. 1928. 101 pp.

The young employed girl. A study of why girls go to work and what girls go to work, prepared under the direction of the Carola Woerishoffer graduate department of social economy and social research of Bryn Mawr College and of Seybert Institution of Philadelphia. 1927. 124 pp.

Job analysis of industrial secretaries in the Young Women's Christian Association. Preliminary draft. 1928. 64 pp. (Mimeographed only.)

Unemployment. A study outline for leaders of discussion groups on the problems of unemployment, designed especially for use by groups of business or industrial girls, joint business and industrial groups, committees, and boards. 1929. 30 pp.

Study of personnel practices in international institutes. Made by the department of immigration and foreign communities, covering salaries, hours, vacations, training, turnover, and opportunities for further study and professional advancement as applied to nationality secretaries in international institutes. Available for reference only.

Studies in personnel. Deals particularly with causes of leaving, and professional standards in the Y. W. C. A. Published only in the form of a summary in a series of articles in the Woman's Press, January, February, and March, 1928.

Study of hours and wages of household employees. A continuous study, interim reports of which have been published in the Woman's Press in 1929.

Married women in industry. A continuous study made by the industrial department, a report of which has appeared in the Woman's Press, February, 1929, and a summary of which will appear in an early issue of the Survey.

The Young Women's Christian Association as an employer. A study now in process, made in cooperation with the Women's Bureau of the United States Department of Labor, a summary to appear in the April issue of the Woman's Press.

Study of wages in the silk industry in Pennsylvania. Made in connection with the women's and children's bureau of that State, and published by the Commonwealth of Pennsylvania, department of labor and industry. 1929. 74 pp.

Dennison Manufacturing Co.

Framingham, Mass. J. S. Keir, Economist.

THE PERSONNEL WORK of the Dennison Manufacturing Co. is extensive, but research in connection with it is chiefly such as is needed in the development of personnel plans, and is not ordinarily published. A study of occupations and ratings was made to furnish a basis for determining qualifications for managerial partnership, the results of which have been published by the American Management Association under the title "A method of determining who shall participate under a managerial profit-sharing plan." (Institute of Management Series No. 10.)

Norton Co.

Worcester, Mass.

MANUFACTURERS of grinding wheels and grinding machinery.

SERVICE DEPARTMENT. W. Irving Clark, M. D., service director.—The personnel work of the Norton Co. is extensive and is organized under the following departments: Employment, health, sanitation, dental, athletic, catering, safety engineering, visiting nurse, housing, and education.

Published researches lie chiefly in the fields of industrial health and hazards. Health and safety bulletins are issued, and the following articles by Doctor Clark have been published:

A study of back strains.

The dust hazard in the abrasive industry (first study, 1925, second, 1929).

Effects of accidents on cardiac employees.

The fate of old employees.

Fractures.

Foreign body in the eye.

The general management of health in industry.

Heart disease in industry.

Hernia in a grinding-wheel factory.
 Our false standards of disability.
 Old workers remain in industry.
 Industrial medicine.
 The treatment of burns.

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Other publications include:

Relation of industrial surgeon to industry and society, and welfare insurance and the factory, both by Dr. J. F. Curran; and Norton service to employees.

Scovill Manufacturing Co. Waterbury, Conn.

OFFICE OF THE GENERAL SUPERINTENDENT. John H. Goss, vice president and general superintendent.—All activities in industrial relations in the Scovill Manufacturing Co., whether of a research or administrative character, are centralized in this office. These are described briefly in the following paragraphs.

Activities of the employment office, supervised by a graduate psychologist, comprise (1) research in methods of selection of new employees, using psychological tests, physical measurements, and personal-history items; (2) similar research among candidates for transfer and promotion; (3) statistical study of turnover and employment records in collaboration with the company statistician; (4) studies of special occupations with a view to necessary training; and, on the side of administration, an effort (5) for increased accuracy and value of all employment records; and (6) for increased effectiveness in interviewing applicants and candidates for promotion.

The work of the hospital, supervised by a physician, includes (1) care of all injury cases from beginning to end, involving reference to specialists when necessary; (2) free examination and treatment of minor illnesses, not due to injury, upon the application of any employee; (3) investigation of accident conditions, with the collaboration of the compensation supervisor; (4) statistical study of accidents and treatment of records (by the company statistician); (5) study of accident proneness, by occupation and by individual, in collaboration with the employment office; and (6) study of occupational diseases and hazards.

The safety engineer and compensation supervisor, separately or in collaboration, (1) investigate all accidents; (2) plan and install safety appliances, rules, instructions, and campaigns; (3) administer compensation; (4) maintain records; and (5) join with the hospital, employment office, and company statistician in study of accident records.

The training of employees is handled partly by the foremen, partly by special printed instructions prepared for given occupations and used as a basis for certificate examinations, partly through well-established apprentice courses, and partly by a special training course for executive candidates or by a part-time cooperative arrangement with some of the universities. Recreational activities are organized and controlled by a committee of the employees, with a full-time chairman. Training and recreational activities are not at the present time under research.

Publications

Selective placement of metal workers. By M. Pond. *Journal of Personnel Research*, January, February, March, 1927; Vol. V, No. 9, pp. 345-368, No. 10, pp. 405-417, No. 11, pp. 452-466.

Western Electric Co. 195 Broadway, New York, N. Y.

THE personnel research work of the Western Electric Co. is carried on by the personnel organizations of the company. The personnel director, located at New York, is responsible for the coordination of various activities and studies in the field of industrial relations. At plant locations the personnel organizations carry on studies pertinent to their operations.

Studies, reports, surveys, and investigations which may be classified as personnel research are as follows:

Job classification study.—The objectives of the plan are the setting up of labor grades and compensation schedules for office and technical jobs, and criteria to guide and assist supervisors in respect to matters of salary increases and promotions.

Cost of living study.—This study is designed to bring together, examine critically and to interpret existing information on the cost of living, wage differentials, and principles on which to base wages.

Employee census.—This compilation, made biennially, is an enumeration of age, length of service, and weekly earnings which is used to compute the pension liability of the company, changes in the general level of compensation, labor-turnover rates classified by length of service, salary and wage payments for vacations, and similar analyses of specific personnel problems.

College graduate study.—An annual review of college graduate records is compiled. The status of college graduates is examined with reference to salary progress, stability of employment, and development in the ranks of the company.

Rating forms.—A form has been developed and ratings have been made of the supervisory forces of the company. Further attention is being paid to improvement of the form in order to establish an effective method of measuring abilities of individual employees.

Training plans.—Coexistent with the work being conducted in the formation of rating scales, suitable training plans will be worked out for the training of capable employees to meet the need for supervisors.

Report of wage and working conditions survey, March 1929.—The purpose of this survey was to ascertain and compare the wages prevailing in outside companies for selected occupations analagous to those in the Western Electric Co., and to determine whether or not appreciable variations or trends in wage levels had occurred since 1926.

Aptitude tests.—Experimental work is being conducted at our plant locations to determine the practical use which can be made of tests to aid in the selection of office and of factory workers.

An investigation of rest pauses, working conditions, and industrial efficiency.—An experimental test room has been in operation since 1927 to provide information about the optimum working conditions for employees.

Interviewing program.—An experimental program of interviewing shop employees concerning working conditions has been introduced in one plant. The interview is conducted by trained employees who offer each individual interviewed an opportunity of expressing himself confidentially and in full detail about any conditions which affect his job.

Health and safety studies.—Constant attention is paid to the provision of safe working conditions, but the chief emphasis has been placed on the education of employees in regard to favorable health and safety practices. Other features of the health and safety program that are being studied are ventilation, posture, nutrition, treatments for the common cold, and rest homes for employees.

Final reports of studies and investigations are not published, but are kept largely for administrative use, although they are distributed in a limited field. Information concerning the company's personnel activities and researches is, however, given upon request.

(b) UNIVERSITIES AND COLLEGES

Municipal University of Akron.

Akron, Ohio.

COLLEGE OF ENGINEERING. Fred E. Ayer, dean.—Established in 1914, this college has a 5-year cooperative engineering course, patterned after the "Cincinnati plan," in which the students are grouped in two sections, one of which is at work in local engineering shops (at a minimum wage of 30 cents per hour) and the other in attendance at the university, and these sections change places every nine weeks. The shop work and the university work are coordinated by technically trained men experienced in engineering practice.

A cooperative course in municipal engineering has been arranged in which the students work half time in the different engineering departments of the city of Akron.

The large rubber companies in Akron have established well-defined training courses on the cooperative plan in which students spend some time in every department of the plant. The length of this course is 5 years of 11 months each. There is now in operation a course in industrial engineering on the same cooperative basis. There are two men employed by the university who are not only conducting night classes in foremanship training at the university but are also handling the same type of work in the plants of two of the large rubber companies.

Boston University.

525 Boylston Street, Boston, Mass.

VOCATIONAL DEPARTMENT, COLLEGE OF BUSINESS ADMINISTRATION. Horace G. Thacker.—The function of the department is to supervise the required employment of students, conducting personal and group conferences, with general instruction and guidance, and individual criticism. In addition to vocational conferences and a special course in vocational problems, employment during the final year in an approved business is required of day students, under the joint supervision of the employer and the college. The student is understood to be serving in a modified apprenticeship relation to the firm and to be carrying on special laboratory study as part of his college requirement.

LABOR AND PERSONNEL MANAGEMENT. R. G. Wells, director.—An elective course "open to executives and those who demonstrate their ability to profit by the course." A comprehensive course dealing with every phase of the labor problem and the control of employees in commercial and in industrial establishments; based on practical experience and presented from the practical point of view. Special emphasis upon the methods of building up and maintaining an adequate working force and organization, with the concurrent problems of personnel and employment management.

Bryn Mawr College.

Bryn Mawr, Pa.

CAROLA WOERISHOFFER GRADUATE DEPARTMENT OF SOCIAL ECONOMY AND SOCIAL RESEARCH. Dr. Susan M. Kingsbury, director.—Established in 1915 as a graduate school to prepare students for professional service dealing with industrial and social relations. In 1918, with the support and cooperation of the National War Council of the Young Women's Christian Association, courses in industrial supervision, employment management, and labor organization were introduced to meet the demands of industry for trained women to fill positions as supervisors of women's work, employment managers, etc. This division has now been made permanent, as the Grace H. Dodge Foundation, through a fund of \$100,000 recently given to Bryn Mawr College by Mr. John D. Rockefeller, jr., for the endowment of instruction in industrial relations in this department, and additional endowment is being raised to provide scholarships and fellowships.

The instruction in industrial supervision and personnel administration is given by Dr. Eleanor L. Dulles and includes a graduate course dealing with the problems and technique of personnel administration and three seminars in labor organization, research in labor problems, and social economy applied to industrial supervision and personnel administration, respectively (each two hours a week throughout the year). The last-named seminar includes a practicum of 7 or 12 hours' field work per week in industrial experience in or near Philadelphia during the college year, and two months of nonresident work in an industrial or mercantile establishment during the following summer under the supervision of the instructor. More detailed information as to the requirements for the course and as to the work of the year is given in the announcements of the department, which are sent on request. These announcements also describe the scholarships and fellowships available.

The seminar in social and industrial research, offered by the director, is devoted to training in field investigations and the analysis and interpretation of data secured.

Among the subjects of seminar researches recently made are the following:

The young employed girl. By Hazel Grant Ormsbee. The Woman's Press, 1927.

Mothers in industry. By Gwendolyn S. Hughes. The New Republic, 1925.

The mothers' assistance fund; actual and potential costs. By Bessie L. Hall. To be published in 1930.

Skill and specialization. By Mildred Fairchild. To be published in 1930.

University of Buffalo.

Buffalo, N. Y.

BUREAU OF BUSINESS AND SOCIAL RESEARCH. Oliver C. Lockhart, director; Robert Riegel, director of research.—Founded in 1926, with the general purpose of collecting, preparing, and presenting dependable statistical information in the field of economic and social problems, with special reference to the Buffalo territory. Its policy, as stated by Chancellor Samuel P. Capen at its inception, has been "to study significant facts in a detached and scientific spirit * * *

to present studies * * * in an intelligible and impartial manner."

The present work of the bureau consists of two principal types of studies: (1) The bureau publishes a statistical survey monthly which contains an analysis of current economic and business conditions and discusses the local situation in comparison with the national situation. (2) The bureau also publishes from time to time monographs of varying length upon particular economic and social problems. Three of these have been published in book form during the past year in the Buffalo Business Studies. In addition to these monographs, there are studies upon selected problems, issued from time to time as supplements to the Statistical Survey.

Publications in the personnel field have been as follows:

- Labor and employment. Statistical Survey, issues of April and August, 1926.
- Labor turnover. Statistical Survey, October, 1926.
- Comparative employment conditions in Buffalo and the New York State index of employment. Statistical Survey, April, 1928.

University of California.

Berkeley, Calif.

DIVISION OF VOCATIONAL EDUCATION. Edwin A. Lee, director.—Established in 1919 for the purpose of unifying the various activities in the field of vocational education carried on in connection with the university at Berkeley, and at Los Angeles in cooperation with the State Department of Education.

RESEARCH AND SERVICE CENTER. Emily G. Palmer, director.—Established in 1920 under the division of vocational education. Through this center the division has issued the following publications.

Part-time Education Series

- An analysis of clerical positions for juniors in railway transportation. August, 1921.
- Part-time and continuation schools abroad; reprints.
- The work of juniors in the telegraph service.
- The work of juniors in retail grocery stores.
- Third annual report of the director of part-time education. Stockton, Calif., October, 1922.
- The administration of the part-time school in the small community. Part 1, March, 1924. Part 2, May, 1924.
- The part-time school and the problem child: An investment in social insurance. April, 1926.
- A digest of laws for working boys and girls. June, 1927.
- Developments in part-time education in California. March, 1928.

Homemaking Education Series

- A study of occupations, other than homemaking, open to women trained in home economics. February, 1928.

General Vocational Education Series

- A study of vocational conditions in the city of Fresno. November, 1926.

Trade and Industrial Series

- Analysis of the house carpenter's trade. March, 1923.
- Analysis of the cabinetmaker's trade. September, 1923.
- Analysis of the plasterer's trade. April, 1924.
- Analysis of the automechanic's trade. June, 1925.

The problem of apprenticeship in the six basic building trades. September, 1926.

An analytical study of the duties of the chemical laboratory technician. June, 1927.

Selection and purchase of equipment for trade and industrial classes. June, 1927.

Agriculture Education Series

Job analysis applied to the teaching of vocational agriculture. May, 1922.

Farm mechanics for California schools. November, 1922.

Farm mechanics in the agriculture curriculum. June, 1926.

Vocational Education News Notes

Vocational Education News Notes, Vol. II, Nos. 1-7, September, 1922-May, 1924 (Nos. 1, 3, and 5 out of print); Vol. III, Nos. 1-9, October, 1924-June, 1926 (No. 7 out of print); Vol. IV, Nos. 1-4, November, 1926-November, 1927; Vol. V, Nos. 1-4, November, 1928-November, 1929.

DEPARTMENT OF HYGIENE. Robert T. Legge, M. D., professor of hygiene.—In this department two courses in industrial hygiene are given as follows: 1. Principles of industrial hygiene; 2. Organization of industrial health service, the latter being a laboratory and field course. Investigation now under way is the study of ringworm of the feet which has become a public health question and is so common among workers. Doctor Legge has recently contributed the following scientific papers: Industrial hygiene; Carbon-monoxide poisoning; Miners' silicosis; Industrial tuberculosis; and a biography on the life of Bernardino Ramazzini, the father of industrial hygiene.

Problems of industrial nursing are taught by Dr. Edith S. Bryan, professor of public health nursing.

MEDICAL SCHOOL.—Professor Legge delivers a course of lectures on industrial medicine, in which special consideration is given to occupational hygiene for medical students.

University of Chicago.

Chicago, Ill.

LOCAL COMMUNITY RESEARCH COMMITTEE. Leonard D. White, executive secretary.—This committee was organized in 1923, representing the social science departments of the University of Chicago in a cooperative research program. Occasionally the committee engages in research work in cooperation with agencies outside the university.

Investigations in the personnel field under way and planned for the immediate future include housing and population, immigration, history and analysis of manufactures and industry in the Chicago region, organizations of labor, and the Negro.

Completed studies, both published and unpublished, are:

The prestige value of public employment in Chicago. By Leonard D. White. Social Science Studies No. XIV, University of Chicago Press.

Conditions of municipal employment in Chicago. By Leonard D. White. Submitted to Chicago City Council, published by Press of John E. Higgins.

The young cripple and his job. By Marion Hathway. Social Service Monograph No. 4, University of Chicago Press.

Negro home workers in Chicago. By Myra Hill Colson. Social Service Review, September, 1928.

The training and placement of the adult handicapped worker in Chicago. By Cora S. McReynolds. Unpublished.

SCHOOL OF COMMERCE AND ADMINISTRATION. W. H. Spencer, dean.—Included in the general program for business education are several courses of study bearing directly on the general field of personnel research. These include:

Commerce and Administration 245 (Associate Prof. R. W. Stone).—Specific topics treated are:

(1) The factors making for ineffective work, such as labor turnover, absenteeism, withheld effort, personal incapacities of health, training, etc., disharmonies of relationship between management and the worker; (2) methods of securing effective effort, such as the proper administration of the labor supply and the selection of workers, promotion, demotion, transfer, and discharge; the regularization of employment; education and training; safety and health; "welfare work"; hours of labor; wages and rewards; joint relations with employees, whether through shop committees, unions, or industrial councils, etc.; (3) the organization and functions of a personnel department and its place in a business organization. Investigations are assigned on special topics and the student is expected to do field work upon some phases of employment problems.

Economics 340, 341 (Prof. H. A. Millis).—Trade-unionism, collective bargaining, and industrial arbitration.

Economics 343 (Professor Millis).—A course in labor legislation, the main divisions of which relate to the legal minimum wage, social insurance, and woman and child labor.

Economics 440 (Professors Millis, Douglas, and Stone).—Research in labor problems and personnel administration.

Psychology 235 (Associate Professor Kornhauser).—Business psychology.

Psychology 335, 337 (Associate Professor Kornhauser).—Research and special studies in industrial psychology.

Research work completed by members of the teaching staff during recent years include:

Douglas, Paul H. Cases and problems in personnel administration (with A. W. Kornhauser). University of Chicago Press. 77 pp. 1922.

—The worker in modern economic society (with C. N. Hitchcock and W. E. Atkins). University of Chicago Press. 929 pp. 1923.

—Wages and the family. University of Chicago Press. 290 pp. 1925.

—Personnel problems and the business cycle. *Administration*, Vol. IV, 1922, pp. 15-27.

—Factors in making wage determinations. *American Economic Review*, Vol. XIII, 1923, p. 141.

—The practice and theory of labor adjustment. *Journal of Political Economy*, Vol. XXXI, 1923, pp. 288-293.

—Analysis of strike statistics, 1880-1920. *Journal of the American Statistical Association*, Vol. XVIII, 1924, pp. 866-878.

—Labor problems in modern society (with W. A. Orton). Study-outline. Amherst College. 1924. 19 pp.

—The movement of wages and the future of prices. *Proceedings, Academy of Political Science*, 1925, pp. 90-98.

—The amount and nature of the allowances under a family wage system. *Journal of Political Economy*, Vol. XXXIII, pp. 45-59.

—The problem of the basic wage. *University Journal of Business*, Vol. III, pp. 1-17.

—Is industry able to pay all adult workers enough to support a family of five? *University Journal of Business*, Vol. III, pp. 241-254.

—Some precedents for the family wage system. *International Labor Review*, Vol. XI, pp. 3-15.

—The movement of real wages and its economic significance. *Proceedings, American Economic Review*, March, 1926.

Douglas, Paul H. The modern technique of mass production and its relation to wages. *Proceedings, Academy of Political Science*, Vol. XII, No. 3, 1927, pp. 17-42.

— The living wage and the family allowance system. *Proceedings, National Conference of Social Work*. Vol. LIII, 1926, pp. 305-317.

— What is happening to the white-collar-job market. *System*, Vol. L, 1926, pp. 719-721; 782-783.

— Are we suffering from technological unemployment. *Labor Bulletin* (Illinois Department of Labor), Vol. VII, 1928, pp. 135-136.

— Salary increases for civil-service employees. United States congressional hearings on Welch bill (70th Cong., 1st sess., hearings on H. R. 6518, 1928, pp. 15-35).

— Are social services an adequate substitute for family endowment. *Social Service Review*, Vol. III, 1929, pp. 217-223.

— Wages in 1928. *American Journal of Sociology*, Vol. XXXIV, 1929, pp. 1021-1029.

Kornhauser, Arthur W. The psychology of vocational selection. *Psychological Bulletin*, vol. 19, 1922, pp. 192-229.

— Some business applications of a mental-alertness test. *Journal of Personnel Research*, Vol. I, 1922, pp. 103-121.

— A plan of apprentice training. *Journal of Personnel Research*, Vol. I, 1922, pp. 215-230.

— Cases and problems in personnel administration (preliminary edition). University of Chicago Press, 1922. 74 pp. (Paul H. Douglas and Arthur W. Kornhauser.)

— A note on the extent to which systems of character analysis are used in the business world. *Journal of Applied Psychology*, vol. 6, 1922, p. 302.

— Scientific method in constructing psychological tests for business. *Journal of Political Economy*, Vol. XXXI, 1923, pp. 401-432.

— A statistical study of a group of specialized office workers. *Journal of Personnel Research*, vol. 2, 1923, pp. 103-123.

— The motives-in-industry problem. *The Annals*, 1923, vol. 110, pp. 105-116.

— Psychological tests for office occupations. *University Journal of Business*, Vol. II, 1923, pp. 22-51.

— Psychological tests for nonoffice occupations. *University Journal of Business*, Vol. II, 1924, pp. 173-199.

— A reinterpretation of the statistical method of Army trade tests. *Journal of Applied Psychology*, vol. 7, 1923, pp. 339-348.

— Some phases of student personnel work in the School of Commerce and Administration. *The University of Chicago Magazine*, vol. 16, 1924, pp. 301-302 and 315-316.

— Psychological tests in business. Chicago, University of Chicago Press, 1924. 194 pp. (A. W. Kornhauser and F. A. Kingsbury.)

— Intelligence test ratings of occupational groups. *American Economic Review*, vol. 15, 1925, No. 1, supplement, pp. 110-122.

— What are rating scales good for? *Journal of Personnel Research*, vol. 5, 1926, pp. 189-193.

— Reliability of average ratings. *Journal of Personnel Research*, vol. 5, 1926, pp. 309-317.

— A comparison of raters. *Journal of Personnel Research*, vol. 5, 1927, pp. 338-344.

— A comparison of ratings on different traits. *Journal of Personnel Research*, vol. 5, 1927, pp. 440-446.

— The industrial psychology movement. *Bulletin of the Society of Industrial Engineers*, Vol. X, 1928, pp. 9-10.

Associate Professor R. W. Stone will publish in 1930 studies of "Recruiting, selection, and remuneration of workers of specialized positions"; and "Personnel problems in mergers." He has under way a comprehensive investigation of marketing labor in the Chicago region, which is in part a study in economics but which involves also an analysis of personnel administration. Units of this study will be published in 1930.

Columbia University. New York, N. Y.

DEPARTMENT OF PSYCHOLOGY.—Three courses are given in the department of psychology which have a bearing upon personnel work. Applied psychology (Psychology 141-2), given by Prof. A. T. Poffenberger, includes a survey of all applications of psychology to business and industry. Business and vocational psychology (Psychology e145-e146) given by Dr. P. S. Achilles, covers particularly psychological devices used in vocational work. Psychological tests, methods, and results (Psychology 111-112), given by Prof. H. E. Garrett, comprises a survey of all psychological testing and measuring devices.

Following is a list of published reports of work done in the field of personnel work in this department:

Poffenberger, A. T. Applied psychology. New York, D. Appleton, 1927. 575 pp.

— and (V. H. Vartanian). The letter of application in vocational selection. *Journal of Applied Psychology*, 1922, vol. 6, pp. 74-80.

— The selection of a successful secretary. *Journal of Applied Psychology*, 1922, vol. 6, pp. 156-160.

— The effects of continuous mental work. *American Journal of Psychology*, 1927, vol. 39, pp. 283-296.

— The effects of continuous mental work upon output and feelings. *Journal of Applied Psychology*, 1928, vol. 12, pp. 459-469.

— (with M. R. Neifeld) A mathematical analysis of work curves. *Journal of General Psychology*.

Hollingsworth, H. L. Vocational psychology and character analysis. New York, D. Appleton, 1929.

Manzer, C. W. An experimental study of rest pauses. *Archives of Psychology*, No. 90, July, 1927.

Weinland, J. D. Variability of performance in the curve of work. *Archives of Psychology*, No. 87, May, 1927.

Crawley, S. L. An experimental investigation of recovery from work. *Archives of Psychology*, No. 85, October, 1926.

Ackerson, L. A. A correlational analysis of typing proficiency. *Archives* No. 82, February, 1926.

Anderson, R. G. A critical examination of test scoring methods. *Archives* No. 80, August, 1925.

Bregman, E. O. Studies in industrial psychology. *Archives of Psychology* No. 59, September, 1922.

Burr, E. T. Psychological tests, applied to factory workers. *Archives of Psychology* No. 55, May, 1922.

Rogers, H. W. Some empirical tests in vocational selection. *Archives of Psychology*, No. 49, April, 1922.

DEPARTMENT OF INDUSTRIAL RELATIONS, SCHOOL OF BUSINESS.—Five courses are given in the department of industrial relations, School of Business, which pertain to personnel work. Labor administration (Industrial Relations 1), given by Prof. Paul F. Brissenden, presents and evaluates current practice in employment management and personnel administration. Law of the employment of labor (Industrial Relations 2), given by Prof. P. F. Brissenden, includes a study of the legal rights and duties of the employer with respect to his employees and of the workman with respect to his employer. Labor administration (Industrial Relations e2r), given by Mr. Ordway Tead, is a repetition of Industrial Relations 1. The adjustment of labor disputes (Industrial Relations 101-2) consists of the study and discussion of arbitration cases, and all the methods by which disputes are

settled. Personnel and employment problems (Industrial Relations e303) given by Profs. H. D. Kitson, A. T. Poffenberger, and P. F. Brissenden presents an opportunity for the joint consideration of problems in vocational guidance and industrial personnel.

Publications of the department include the following:

Earnings of manufacturing wage earners, 1899-1927. By P. F. Brissenden. United States Government Printing Office, 1929.

Labor turnover in the Federal service. By P. F. Brissenden, Chapter XVII of report of wage and personnel survey of the United States Personnel Classification Board.

College of Physicians and Surgeons.

630 West One Hundred and Sixty-eighth Street, New York, N. Y.

DELAMAR INSTITUTE OF PUBLIC HEALTH.—Earle B. Phelps, professor of sanitary science, is carrying on researches in a newly established air hygiene laboratory. The various electrical properties of the atmosphere, potential gradient, ionization and conductivity, and the simultaneous values of atmospheric transparency, smoke and dust, are being studied, with a view to establishing the variability of these factors, and their possible relation to health and disease.

DEPARTMENT OF PSYCHOLOGY.—Frederic S. Lee, professor of physiology; Ernest L. Scott, associate professor of physiology; Frederick B. Flinn, associate professor of physiology in industrial hygiene. This department carries on research in industrial physiology. The following papers have been published:

Lee, Frederic S., and Van Buskirk, J. D. An examination of certain proposed tests for fatigue. *American Journal of Physiology*, vol. 63, No. 2, January, 1923, pp. 185-206.

Lee, Frederic S., and Aronovitch, B. On Weichardt's supposed "fatigue toxin." *American Journal of Physiology*, vol. 69, No. 1, June, 1924, pp. 92-100.

Lee, Frederic S. Additional data concerning Weichardt's supposed "fatigue toxin." *American Journal of Physiology*, vol. 69, No. 1, June, 1924, pp. 101-106.

—Chemical tests for fatigue in industry. Address before *Première Réunion Internationale pour l'Étude de Problèmes d'Hygiène du Travail*, Geneva, July 19, 1924.

—Fatigue in industry. *Journal of the National Institute of Social Sciences*, vol. 9, 1924, pp. 58-62.

—The physiologist in industry. *Atlantic Monthly*, vol. 132, July, 1923, pp. 53-64.

Flinn, Frederick B. Industrial aspects of human fatigue. *Journal of Personnel Research*, vol. 2, No. 7, November, 1923.

—Some effects of high environmental temperatures on the organism. Reprint No. 1008 from *Public Health Reports*, vol. 40, No. 18, May 1, 1925, pp. 868-896.

—Some of the potential public-health hazards from the use of ethyl gasoline. *Journal of Industrial Hygiene*, vol. 3, No. 2, February, 1926, pp. 51-66.

—The so-called action of acid sodium phosphate in delaying the onset of fatigue. Reprint No. 1094 from *Public Health Reports*, vol. 41, No. 29, July 16, 1926, pp. 1463-1476.

—Radioactive material an industrial hazard? *Journal of the American Medical Association*, vol. 87, December 13, 1926, pp. 2078-2081.

—A case of antral sinusitis complicated by radium poisoning. *Laryngoscope*, St. Louis, May, 1927, pp. 3-11.

—Some of the newer industrial hazards. *Boston Medical and Surgical Journal*, vol. 197, No. 23, January 12, 1928, pp. 1309-1314.

—The blastophoric effect of lead upon the germ cell. *Eugenics*, vol. 2, No. 5, May, 1929.

Flinn, Frederick B., and Von Glahn, William C. A chemical and pathologic study of the effects of copper on the liver. *Journal of Experimental Medicine*, vol. 49, No. 1, January 1, 1929, pp. 5-20.

Schlundt, Herman; Barker, Howard H.; and Flinn, Frederick B. The detection and estimation of radium and mesothorium in living persons. I. *American Journal of Röntgenology and Radium Therapy*, vol. 21, No. 4, April, 1929, pp. 845-854.

Flinn, Frederick B., and Inouye, J. M. Some physiological aspects of copper in the organism. *Journal of Biological Chemistry*, vol. 84, No. 1, October, 1929, pp. 101-114.

Scott, Ernest L. The present status of our knowledge of fatigue products. Reprint No. 465 from U. S. Public Health Reports, vol. 33, No. 17, April 26, 1919, pp. 605-611.

Hastings, A. B. An investigation of changes in the blood and urine resulting from fatigue. U. S. Public Health Reports, 1919, vol. 34, p. 1682.

— Physiology of fatigue: Physio-chemical manifestations of fatigue in the blood. *Public Health Bulletin*, No. 17, May, 1921.

Scott, E. L., and Hastings, A. B. Some phases of protein catabolism and fatigue. U. S. Public Health Reports, 1920, vol. 35, p. 2445.

Researches as to the physiological effects of air conditions were also made by Professor Lee for the New York State Commission on Ventilation, of which he is a member.

Teachers College.

Columbia University, New York, N. Y.

DEPARTMENT OF PSYCHOLOGY. E. L. Thorndike, professor of education.—The Thorndike intelligence examination for high-school graduates is widely used for college admission. It is suitable for use in selecting persons for high-grade positions in which knowledge of many fields and ability for intelligent adjustment is desirable. A new series is issued each year and current and back issues are obtainable from the bureau of publications of Teachers College.

Other intelligence tests made in the department are the Pintner rapid survey test for grades 4 to 8, and the Pintner nonlanguage primary mental test.

INSTITUTE OF EDUCATIONAL RESEARCH.—Established in 1921. A major study has been in vocational guidance, in which the careers of 2,500 boys and girls tested in 1922 are being followed for a 10-year period. The I. E. R. clerical test C1, and I. E. R. clerical test C2, available through the Institute of Educational Research, division of psychology, Teachers College, are prognostic measures of such ability. They can be used in grades 7 to 9.

The I. E. R. girls' assembly test provides a measure of ability in sewing and allied hand-crafts. Suitable for girls in grades 7 to 9. Obtainable from the C. H. Stoelting Co., Chicago, Ill.

The I. E. R. tests of selective and relational thinking, generalization, and organization are useful in measuring ability for these types of thinking. They are designated for high-school use. Obtainable from the Institute of Educational Research.

The I. E. R. intelligence scale, CAVD, intended to measure intelligence of the somewhat academic type, is chiefly suitable for adults of all levels of ability from very low to very high, but may also be used for children of comparable intellectual status. Obtainable in five blanks, levels A to E, levels F to H, levels G to J, levels I to M, levels M to Q, from the Institute of Educational Research.

DEPARTMENT OF EDUCATIONAL ADMINISTRATION.—Publication: *Teacher Turnover in New York State*. By Willard S. Elsbee, Ph. D. Bureau of Publications, Teachers College, Columbia University, 1928.

DEPARTMENT OF GUIDANCE AND PERSONNEL. Harry Dexter Kitson, in charge.—A complete sequence of courses is offered leading to the degree of doctor of philosophy in personnel. This sequence, designed to prepare persons to do personnel work in educational institutions, business and industrial establishments, and social agencies, comprises training in the techniques of interviewing, testing, placement, statistical investigation, clinical diagnosis, occupational analysis, labor administration, etc.

Researches published by Dr. Kitson since 1921 are:

The psychology of vocational adjustment. Philadelphia, J. B. Lippincott Co., 1925. 286 pp.

How to find the right vocation. New York, Harper Bros., 1929. 201 pp.

Industrial psychology in Europe. *Journal of Applied Psychology*, September, 1921, pp. 286-290.

A shift of emphasis needed in personnel research. *Journal of Applied Psychology*, Vol. VI, June, 1922, pp. 141-148.

A critical age as a factor in labor turnover. *Journal of Industrial Hygiene*, Vol. IV, September, 1922, pp. 199-202.

A study of the output of workers under a particular wage incentive. *University Journal of Business*, Vol. I, November, 1922, pp. 54-63.

Height and weight as factors in salesmanship. *Journal of Personnel Research*, Vol. I, October-November, 1922, pp. 289-294.

Second international conference on psychotechnics applied to vocational guidance and to scientific management. *Journal of Applied Psychology*, Vol. VI, December, 1922, pp. 418-424.

Vocational guidance in Europe. *School and Society*, Vol. XVI, December 9, 1922, pp. 645-650.

(With Louise Culbertson.) The vocational changes of one thousand eminent Americans. *Vocational Guidance Magazine*, Vol. I, March, 1923, pp. 128-130.

(With Claude Campbell.) Relation between labor turnover and industrial accidents. *Journal of Industrial Hygiene*, Vol. V, July, 1923, pp. 92-96.

(With Lucille Kirtley.) The vocational changes of one thousand American women. *School and Society*, Vol. XLIX, No. 474, January 26, 1924, pp. 1-3.

Trade and job analysis as an aid in vocational curriculum building. *Twenty-third Yearbook of the National Society for the Scientific Study of Education*, February, 1924, pp. 237-256.

(With Claude Campbell.) Seasonal fluctuations in frequency of industrial accidents. *Journal of Industrial Hygiene*, March, 1924.

Psycho-economics—A name for the borderline activities of psychology and economics. *University Journal of Business*, Vol. II, March, 1924, pp. 248-249.

(With George L. Donham.) A statistical study of the personality of the workers in the metal trades. *Journal of Personnel Research*, vol. 2, April, 1924, pp. 460-466.

Introduction to Choosing your life work, by Douglas Fryer. Philadelphia, J. B. Lippincott Co., 1924.

Policies of vocational guidance. Contributions to vocational guidance; monographs on vocational education, 1924 series. No. 3. The Vocational Education Association, of the Middle West.

More facts about vocational guidance. *The Survey*, January 15, 1925, p. 457.

Extra incentive wage plans from a psychological point of view. *Bulletin, American Management Association*, New York, Production Executive's Series, 1925, No. 9, pp. 3-6.

Article on job analysis. *Encyclopedia Britannica*, supplementary volumes (13th Ed.), Vol. I, 1926, p. 966.

Vocational histories of office workers: A statistical study. *Journal of Personnel Research*, Vol. IV, No. 11, March, 1926, pp. 429-432.

Research in vocational guidance through the bureau of appointments. Address before National Association of Appointment of Secretaries, Washington, February, 1926, pp. 26-33.

Extra-curricular activities as a means of guidance. *Vocational Guidance Magazine*, Vol. IV, No. 8, May, 1926, pp. 357-361.

Psychotechnic in Amerikas Schulwesen, *Handbuch der Arbeitswissenschaft*. Verlag Marhold, Halle, 1926.

A preliminary personnel study of psychologists. *Psychological Review*, Vol. XXIII, July, 1926, pp. 315-323.

Relation between age and promotion of university professors. *School and Society*, Vol. XXIV; September 25, 1926, pp. 400-405.

The scientific compilation of vocational histories as a method to be used in vocational guidance. *Teachers College Record*, Vol. XXVIII, September, 1926, pp. 50-58.

Training leaders for guidance. *Industrial Psychology*, vol. 1, December, 1926, pp. 759-762.

Training for vocational counselors. *Vocational Guidance Magazine*, April, 1927, Vol. V, pp. 313-315.

Quantifying the analysis. Published by American Management Association, 20 Vesey Street, New York, 1927, pp. 15-19.

Vocational guidance in 1927. *The Survey*, Mid-monthly, April 15, 1927, pp. 103-104.

Vocational guidance through school subjects. *Teachers College Record*, Vol. XXXVIII, No. 9, pp. 900-916.

Principles of vocational guidance. Proceedings of the Fourth National Conference on Vocational Rehabilitation of the Disabled Civilian, Bulletin No. 121, No. 14, June, 1927. Conference held at Hotel Peabody, Memphis, Tenn., pp. 79-81.

Determination of vocational aptitudes. Does the typing test measure aptitude as typist or pianist? *Personnel Journal*, Vol. VI, October, 1927, pp. 192-199.

Vocational histories of psychologists. *Personnel Journal*, Vol. VI, No. 4, December, 1927, pp. 276-283.

The school's duty—To prepare for life's occupations. *Nation's Schools*, Vol. I, January, 1928, pp. 37-45. (Translated into Spanish, "La Orientacion Profesional," Ed. Bulletin No. 39, April, 1928.)

Giving pupils information about occupations. *The Nation's Schools*, Vol. I, February, 1928, pp. 27-30.

Introducing occupations into school subjects. *Nation's Schools*, Vol. I, March, 1928, pp. 43-47.

The rôle of the vocational counselor in the school. *Nation's Schools*, Vol. I, May, 1928, pp. 47-55.

Does it pay to change jobs? *Personnel Journal*, June, 1928, Vol. VII, pp. 33-37. (Written with Noel Keys.)

Measuring the interest of teachers in their work. *Teachers College Record*, Vol. XXX, October, 1928, pp. 28-33.

Trends in vocational guidance. In *Objectives and Principles of Vocational Education*, edited by Edwin A. Lee, McGraw-Hill Book Co., N. Y., 1928, pp. 289-310.

An Interneshlp for vocational counselors. *Teachers College Record*, Vol. XXX, April, 1929, pp. 703-708.

At what ages do nurses choose their profession? *American Journal of Nursing*, June, 1929, pp. 649-651.

Finding suitable jobs for pupils who must work. *Nation's Schools*, Vol. IV, July, 1929, pp. 31-36.

Aiding the pupil to orient himself in the world of occupations. *Nation's Schools*, Vol. IV, August, 1929, pp. 25-31.

How deeply are you interested in your work? *American Magazine*, October, 1929, pp. 90-93.

Researches published by students:

Bergen, Harold B. Stability of men and women office workers. *Journal of Personnel Research*, Vol. V, No. 3, July, 1926.

— Social status of the clerical worker and his permanence on the job. *Journal of Applied Psychology*, February, 1927, pp. 42-46.

Barker, Margaret. How boys and girls get work. *Personnel Journal*, Vol. VI, August, 1927, pp. 119-123.

Ho, Ching-Ju, Ph. D. Personnel studies of scientist in the United States. Bureau of Publications, Teachers College, Columbia University, 1928.

Lloyd-Jones, Esther McD. Student personnel work. New York City, Harper Bros, 1929. 253 pp.

Dreese, Mitchell, Ph. D. Personnel studies of messengers in the Western Union Telegraph Co. Bureau of Publications, Teachers College, Columbia University, 1929.

Rankin, Majorie, Ph. D. Trends in educational occupations. Bureau of Publications, Teachers College, Columbia University, 1929.

Anderson, Roy N. Rates of promotion in Army and Navy: A personnel study of officers of highest ranks. *Personnel Journal*, Vol. VIII, June, 1929, pp. 36-46.

—A critical review of the tests proposed for the measurement of clerical ability. *Personnel Journal*, 1930.

Dartmouth College.

Hanover, N. H.

AMOS TUCK SCHOOL OF ADMINISTRATION AND FINANCE. W. R. Gray, dean.—A course on industrial relations is given by Prof. Herman Feldman in the first semester of the first year (three hours). It attempts to combine the administrative approach to labor problems with the more general background of labor relations. A course on the problems of labor policy, also by Professor Feldman, is given in the first semester of the second year (three hours), and is concerned largely with the types of situations arising in the relations of an executive with associates and subordinates. This course may be followed up by a specialized course on personnel management in the second semester of the second year, which is offered only to students who are definitely planning to enter personnel work. In addition, Mr. Whiting Williams gives a 2-week conference course in the second semester of the second year on the psychology of human relations in industry.

As part of the requirements for the degree of master of commercial science, students are required to make investigations and present a thesis in the field of business for which they are preparing. The thesis investigations in the labor field undertaken during the past few years include such subjects as:

Industrial pensions: A constructive analysis. By D. S. Craig. 1925.

The shoe employers' labor problem in Brockton. By T. L. Norton. 1924.

The labor bank movement. By H. L. Riddle, jr. 1924.

The selection and training of college men by department stores. By D. P. Bent. 1926.

Personnel research.—A scholastic aptitude test (at present the American Council on Education test) is given by the department of psychology to the entire freshman class the night before college opens. The scores are used by the dean of freshmen and by the personnel office for educational and vocational guidance. The department of psychology is making a prolonged study of the usefulness of these and other tests in educational prediction.

In determining occupational aptitudes, the personnel bureau takes into account in addition to the scholastic aptitude scores, the individual's physical examination, financial and social status, personal experience (especially in the way of summer jobs), interest in student activities, and intellectual interests.

University of Denver, School of Commerce, Accounts, and Finance.

Bureau of Statistical Research, 2011 Glenarm Place, Denver, Colo. F. L. Carmichael, Acting Director.

FOUNDED in June, 1924, this bureau is supported in part by the school of commerce of the University of Denver, in part by contributions from interested business men and business groups, and in part by funds from the Laura Spelman Rockefeller Foundation. The work is carried on by staff members of the school of commerce assigned to the bureau, by paid "Fellows in statistical research," and occasional assistance by advanced students.

The bureau has been interested primarily in studies, both general and specific, pertaining to business in Colorado and the mountain region in relation to that in the country as a whole, but some attention is also paid to industrial and social welfare studies.

The bureau publishes the University of Denver Business Review. Studies bearing more or less directly on the personnel field which have appeared therein are:

Changes in Denver's social welfare. Vol. 2, Nos. 2 and 3, February-March, 1926.

Changes in economic welfare: Denver and Colorado. Vol. 3, No. 1, January, 1927.

The beet-sugar industry in Colorado and the United States. Vol. 5, No. 5, May, 1929.

Occupational distribution of recent Denver High School graduates. Vol. 5, No. 7, September, 1929.

A study of the automobile industry in Colorado and the mountain region in 1929 is in progress.

Harvard University.

Cambridge, Mass.

BUREAU OF VOCATIONAL GUIDANCE, Lawrence Hall, Kirkland Street. John M. Brewer, director.—This bureau is a department of the graduate school of education. Formerly the Vocation Bureau of Boston, it was transferred to Harvard University in 1917.

In 1921 the bureau took over the publication of the nationally circulated Bulletin of Vocational Guidance, which was later changed to the Vocational Guidance Magazine. This is now published eight months a year, with Dr. Fred C. Smith as editor. The subscription rate is \$2 per year, or it may be obtained through membership in the National Vocational Guidance Association or in one of its branches.

In addition to the publication of the magazine the bureau maintains an extensive library of books, pamphlets, and illustrative materials on educational and vocational guidance, carries on correspondence and holds conferences on matters pertaining to vocational guidance, and renders assistance in the conduct of courses in the graduate school of education during the academic year and in the summer session. The current courses being given include Principles of vocational guidance, Counseling and administration of guidance, Testing and measurement in vocational guidance, Occupational information and labor problems, Seminary, and Education as guidance. The bureau cooperates with other organizations in the furtherance of the

better understanding of the aims of vocational guidance and appropriate methods for its organization and administration.

The bureau assisted in 1921 in drawing up for the National Vocational Guidance Association a brief statement of the Principles of Vocational Guidance, a statement which has since been revised from time to time and is circulated as an authoritative summary of the aims, scope, methods, and administration of vocational guidance.

The publications of the staff of the Bureau of Vocational Guidance, in addition to the magazine and the statement of principles, have recently been issued by commercial publishers or by the Harvard University Press. They include the following:

Cases in the administration of guidance. By John M. Brewer and others. McGraw-Hill Book Co., 1929.

Case studies in educational and vocational guidance. By John M. Brewer and others. Ginn & Co., 1926.

Principles and problems in vocational guidance. By Frederick J. Allen. McGraw-Hill Book Co., 1927.

Practice in vocational guidance. By Frederick J. Allen. McGraw-Hill Book Co., 1927.

A guide to the study of occupations (revised). By Frederick J. Allen. Harvard University Press, 1925.

Training industrial workers. By Roy W. Kelly. The Ronald Press Co., 1920.

Certain publications by students and others have been prepared at the Graduate School of Education with the cooperation of the bureau, as follows:

The vocational guidance of college students. By Lewis A. Maverick. Harvard University Press, 1926.

Counseling the college student. By Helen D. Bragdon. Harvard University Press, 1929.

The orientation of college freshmen. By Henry J. Doermann. The Williams & Wilkins Co., 1926.

Guidance for college women. By Maybelle B. Blake. D. Appleton & Co., 1926.

Occupations. By Enoch B. Gowin, William A. Wheatley, and John M. Brewer. (Revised.) Ginn & Co., 1923.

Teachers' manual for the class in occupations. By Mildred E. Lincoln. Ginn & Co., 1927.

Tests for educational and vocational information: A. Educational information test; B. Vocational information test. By John M. Brewer, Harvard University, and Mildred E. Lincoln, Monroe Junior-Senior High School, Rochester, N. Y., 1929.

GRADUATE SCHOOL OF BUSINESS ADMINISTRATION. W. B. Donham, dean.—The study group in industrial management begins with a general introductory course, during its first year, which deals with executive problems in production management. The significant labor aspects of the problems are stressed, and about one-third of the year is devoted to technical and administrative problems arising from the relationship of employer and employee in industry. The point of view taken is that of the executive responsible for labor policies. Some of the specific subjects are labor supply in connection with the location of an enterprise, methods of wage payment, hours of work, and fatigue; incentives or motivation such as pensions, employee ownership, and working conditions; collective bargaining; and methods of control. In the second year field trips to factories are taken, and during each visit, as well as in the discussions before and after each trip, the significant labor aspects are emphasized. A study of labor policies is the primary object of one or more trips to

factories where particularly successful or unique labor methods have been established.

A research has been undertaken to determine the mental and organic effects of work and working conditions on the employee, including a study of fatigue in its relation to morale, labor turnover, absenteeism, and various disaffections of the worker. The studies are being conducted by laboratory methods as well as under actual working conditions.

The Bureau of Business Research has published Bulletin No. 25, *Labor Terminology*, which gives precise meaning, by definition, to labor terms in general use by labor unions in numerous industries.

JACOB WERTHEIM RESEARCH FELLOWSHIP FOR THE BETTERMENT OF INDUSTRIAL RELATIONSHIPS. James Ford, secretary.—This fellowship, established in 1923, has an endowment of \$100,000, the gift of the family of the late Jacob Wertheim. The income is to be used "for the support of original research in the field of industrial cooperation." The purpose of the fellowship is to enable persons who already have expert knowledge of plans for the betterment of industrial relations to pursue research that may be of general benefit in solving problems in this field.

Studies in progress by Wertheim fellows are:

Industrial relations in the building industry. By William Haber, Ph. D. (in press).

Longshoring. By Frank P. Foisie.

A study of technique for the measurement of executive ability. By Johnson O'Connor.

Publications so far issued by the Wertheim committee are:

What the employer thinks. By J. David Houser.

Wertheim lectures on industrial relations, 1928 (published 1929).

Harvard School of Public Health.

55 Van Dyke Street, Boston, Mass. David L. Edsall, M. D.,
Dean.

In 1918 Harvard University received funds with which to establish facilities for the training of industrial medical personnel and for laboratory, clinical, and field research in matters relating to the health of industrial workers. The work was under the supervision of the governing committee on industrial hygiene of the Harvard Medical School. In 1921 the acquisition of new funds made possible the organization of the Harvard School of Public Health. Since that time the activities in industrial hygiene have been centered in this school.

The courses now offered include the following subjects: Industrial medicine, industrial toxicology, hygiene of ventilation and illumination, physiology, nutrition, sanitary air analysis, ventilation engineering, and air conditioning. Any or all of these courses may be included in a program of work leading to the master or doctor of public health degree. In addition to the regular courses cooperative educational work is carried out extensively with the engineering school and to some degree with the schools of business administration and education. Detailed description of the courses, requirements for admission, etc., are given in a catalogue obtainable from the secretary of the school.

The laboratories of the school make possible studies upon smoke and fumes; studies upon vapors, humidity, and temperature; and studies upon varying atmospheric pressures. Elaborate and expensive apparatus and equipment for all of this work upon atmosphere has been obtained during the past few years and now make it possible to provide artificial situations of almost any type and upon a large enough scale to permit observations upon men. The laboratories are also equipped for fundamental physiological and biochemical work upon men and animals.

In addition to the investigations carried on in the School of Public Health, Mr. Philip Drinker, Dr. Cecil K. Drinker, Mr. C. P. Yaglou, and Dr. Alice Hamilton are concerned with field investigative work of varied types. Graduate students are given opportunity to take part in the field work and to use field problems for theses.

In order to get an estimate of the various activities in industrial hygiene a list of papers published during the last three years is given.

The *Journal of Industrial Hygiene*, published first in 1919 by the division of industrial hygiene and since maintained by the School of Public Health, affords a valuable outlet for papers upon the subject. It contains both original contributions in industrial hygiene and abstracts of articles scattered through various technical, trade, and professional journals.

DEPARTMENT OF VENTILATION AND ILLUMINATION.—Publications of this department dating from 1927 are as follows:

Yaglou, C. P. To gage workroom temperatures. *Industrial Psychology*, 1927, vol. 2, pp. 3-7.

Barreto, J. B., Drinker, P., Finn, J. L., and Thomson, R. M. Masks and respirators for protection against dusts and fumes. *Journal of Industrial Hygiene*, 1927, vol. 9, pp. 26-41.

Sturgis, C. C., Drinker, P., and Thomson, R. M. Metal-fume fever: I. Clinical observations on the effect of the experimental inhalation of zinc oxide by two apparently normal persons. *Journal of Industrial Hygiene*, 1927, vol. 9, pp. 88-97.

Drinker, P., Thomson, R. M., and Finn, J. L. Metal-fume fever: II. Resistance acquired by inhalation of zinc oxide on two successive days. *Journal of Industrial Hygiene*, 1927, vol. 9, pp. 98-105.

— Metal-fume fever: III. The effects of inhaling magnesium oxide fume. *Journal of Industrial Hygiene*, 1927, vol. 9, pp. 187-192.

— Metal-fume fever: IV. Threshold doses of zinc oxide, preventive measures, and the chronic effects of repeated exposures. *Journal of Industrial Hygiene*, 1927, vol. 9, pp. 331-345.

Yaglou, C. P. The comfort zone for men at rest and stripped to the waist. *Journal of Industrial Hygiene*, 1927, vol. 9, pp. 251-263.

— Temperature, humidity, and air movement in industries: The effective temperature index. *Journal of Industrial Hygiene*, 1927, vol. 9, pp. 297-309.

— Industrial ventilation with particular reference to hot and dusty trades. *Fuels and Furnaces*, 1927, vol. 5, pp. 977-985.

Drinker, P., Thomson, R. M., and Finn, J. L. Quantitative measurements of the inhalation, retention, and exhalation of dusts and fumes by man: I. Concentrations of 50 to 450 milligrams per cubic meter. *Journal of Industrial Hygiene*, 1928, vol. 10, pp. 13-25.

Drinker, K. R., and Drinker, P. Metal-fume fever: V. Results of the inhalation by animals of zinc and magnesium oxide fumes. *Journal of Industrial Hygiene*, 1928, vol. 10, pp. 56-70.

Yaglou, C. P. Ventilation in hot and dusty industries. *Industrial Psychology*, 1928, vol. 3, pp. 158-163.

— and Dokoff, K. Calibration of the Kata thermometer over a wide range of air conditions. *Journal of Industrial Hygiene*, 1929, vol. 11, pp. 278-291.

Yaglou, C. P., and Drinker, P. The summer comfort zone: Climate and clothing. *Journal of Industrial Hygiene*, 1928, vol. 10, pp. 350-363.

Hatch, T., and Choate, S. P. Statistical description of the size properties of nonuniform particulate substances. *Journal, Franklin Institute*, 1929, vol. 207, pp. 369-387.

Drinker, P., and McKhann, C. F. The use of a new apparatus for the prolonged administration of artificial respiration: I. A fatal case of poliomyelitis. *Journal of American Medical Association*, 1929, vol. 92, pp. 1658-1660.

Drinker, P., and Shaw, L. A. An apparatus for the prolonged administration of artificial respiration: I. A design for adults and children. *Journal of Clinical Investigation*, 1929, vol. 7, pp. 229-247.

Shaw, L. A., and Drinker, P. An apparatus for the prolonged administration of artificial respiration: II. A design for small children and infants with an appliance for the administration of oxygen and carbon dioxide. *Journal of Clinical Investigation*, 1929, vol. 8, pp. 33-46.

Drinker, P. Hygienic aspects of the industrial dust problem. *Heating, Pip-ing, and Air Conditioning*, 1930, vol. 2, pp. 5-8.

DEPARTMENT OF PHYSIOLOGY.—Publications of this department dating from 1927 are as follows:

Turner, Abby H. The circulatory minute volumes of healthy young women in reclining, sitting, and standing positions. *American Journal of Physiology*, 1927, vol. 80.

— The adjustment of heart rate and arterial pressure in healthy young women during prolonged standing. *American Journal of Physiology*, 1927, vol. 81, pp. 197-214.

— The vital capacity of college women. *American Physical Education Review*, 1927, vol. 32.

Himwich, Harold E., and Castle, William B. Studies in the metabolism of muscle: I. The respiratory quotient of resting muscle. *American Journal of Physiology*, 1927, vol. 83, pp. 92-114.

Drinker, Cecil K. Instruction in the method of resuscitation—A lecture for the use of instructors and teachers of first aid and resuscitation methods. *American Gas Association Monthly*, June, 1928, vol. 10, pp. 349-354.

— Instruction in the application of modern methods of resuscitation in cases of gas poisoning, electric shock, submersion (apparent drowning), and suspended respiration from other causes. A lecture for the use of instructors in resuscitation methods. Issued by the Committee on Resuscitation, representing the Consolidated Gas Co. of New York and its affiliated gas and electric companies. 1928.

— and Drinker, Philip. The problem of resuscitation from electrical and other accidents in the United States and Canada. Prepared as report on electrical shock and resuscitation technique, by Dr. John W. Lieb, for meeting of Union Internationale des Producteurs et Distributeurs d'Énergie Electrique, Paris, July 5 to 10, 1928. 31 pp.

Shaw, L. A., Messer, A. C., and Weiss, S. Cutaneous respiration in man: I. Factors affecting the rate of carbon dioxide elimination and oxygen absorption. *American Journal of Physiology*, 1929, vol. xc, pp. 107-118.

Fairhall, L. T., and Hoyt, L. H. The excretion of zinc in health and disease. *Journal of Clinical Investigation*, 1929, vol. vii, pp. 537-541.

Fairhall, L. T., and Walker, L. C. Foil-wrapped food material: I. An investigation concerning the use of zinc foil in the food industries. *Food Industries*, 1929 (November), pp. 642-645.

Heller, E., Killiches, W., and Drinker, C. K. The evaluation of 5 and 7 per cent carbon dioxide mixtures as respiratory stimulants. *Journal of Industrial Hygiene*, 1929, Vol. XI, pp. 293-300.

Drinker, C. K., and Shaughnessy, T. J. The use of 7 per cent carbon dioxide and 93 per cent oxygen in the treatment of carbon monoxide poisoning. *Journal of Industrial Hygiene*, 1929, Vol. XI, pp. 301-314.

Hamilton, Dr. Alice. The storage-battery industry. *Journal of Industrial Hygiene*, Vol. IX, 1927, pp. 346-369.

— The lessening menace of benzol poisoning in American industry. *Journal of Industrial Hygiene*, Vol. X, 1928, pp. 227-233.

— Enameled sanitary ware manufacture. *Journal of Industrial Hygiene*, Vol. XI, 1929, pp. 133-153.

Johns Hopkins University.

School of Hygiene and Public Health, 615 North Wolfe Street, Baltimore, Md. W. H. Howell, Director.

THE School of Hygiene and Public Health began its work in October, 1918. The income for its maintenance was furnished by the Rockefeller Foundation, and subsequently the foundation appropriated to the Johns Hopkins University the sum of \$5,000,000 as an endowment for the school, together with an additional \$1,000,000 for the construction of a suitable building.

The school was founded for two specific purposes: First, to train investigators, teachers, officials, and other workers in the field of hygiene and public health; second, as a research institute for the advancement of knowledge in these fields. Courses are offered leading to the degrees of certificate in public health, master of science in hygiene, doctor of science in hygiene, and doctor of public health.

Investigations are carried on from time to time relating to industrial sanitation and hygiene from the standpoint of public health, including the physiological effects of fatigue. The researches published from the school are collected annually in a volume known as "Collected Papers."

University of Iowa.

Iowa City, Iowa.

BUREAU OF BUSINESS RESEARCH, COLLEGE OF COMMERCE. S. L. Miller, director.—Organized in July, 1926. Two studies undertaken by the bureau come within the field of personnel research: Attitudes of laborers in Iowa and contiguous territory; and Attitudes of Iowa employers. The first has been published; the second is under way.

LaSalle Extension University.

La Salle Buildings, Forty-first Street and Michigan Avenue, Chicago, Ill. Hugo Diemer, Director Management Courses.

EDUCATIONAL DIVISION.—A course in personnel management is given under the direction of Mr. Diemer. In connection with the course a consultation service is conducted for the advice of the students on problems of organization, policy, or procedure in connection with personnel activities.

A client service is also maintained which makes surveys upon request, particularly with relation to training programs and methods.

An internal survey was made a few years ago which included job analyses, and established classifications and grades together with starting rates of compensation and intervals and increments of promotion. Investigations were made in the matter of time and job standards and wage incentives in the transcribing, printing, and multigraphing departments.

Massachusetts Institute of Technology.

Cambridge, Mass.

THE PERSONNEL DEPARTMENT, operating under the division of industrial cooperation and research, assists industrial concerns in securing the services of specially equipped and trained men, more particularly

for positions in important advanced scientific work. This department cooperates with the faculties of the several educational departments in matters of personnel and in placement of graduates.

The cooperative course in railroad operation (I-A) is given by the Massachusetts Institute of Technology in cooperation with the Boston & Maine Railroad. The work at the institute consists of fundamental training in the principles of modern science, while the work with the company provides practical experience in the operating department of the railroad. The officials of the institute and of the railroad cooperate with the intent to secure the maximum educational value. The work with the railroad consists of four periods of 16 or 18 weeks each, and includes practical work in the following departments: Maintenance of way (including signaling), mechanical (maintenance of equipment), conducting transportation, and executive (accounting, stores, etc.).

This course is five years in length, and the subjects taken in the first two years are practically identical to those taken by other engineering students. During the last three years the students alternate terms at the institute and at the railroad. A student entering the cooperative course must satisfy the scholastic requirements of the institute and the personal requirements of the railroad. During the cooperative periods the students are regular paid employees of the railroad and subject to its rules and regulations. Both the theoretical and practical work of the final year are distinctly of postgraduate caliber. At the successful completion of the course, the degrees of bachelor of science and master of science are awarded.

A detailed description of this course is included in the regular institute catalogue.

The cooperative course in electrical engineering (VI-A) is given by the Massachusetts Institute of Technology conjointly with five large concerns representing the major fields of electrical engineering. The work at the institute consists of instruction in the arts and sciences fundamental to engineering, while the work with the company consists of practical experience laid out and supervised with the intent to secure the maximum possible educational value. Officials of the institute and of the companies work together to see that the ideals of the cooperation are realized.

A student may choose one of three options known as: Option 1.—Manufacturing; option 2.—Public utilities; option 3.—Communication.

The manufacturing practice is obtained principally in the Lynn, Schenectady, and Pittsfield works of the General Electric Co. Public-utility practice may be taken with any one of three companies: The Edison Electric Illuminating Co., of Boston, gives practice in the generation and utilization of electric power, the Boston Elevated Railway in electric transportation, and Stone & Webster (Inc.) in the design, construction, and operation of power plants. Communication practice is given in the factories of the Western Electric Co. (Inc.), the telephone plant of the New York Telephone Co., and the research laboratories of the Bell Telephone Laboratories (Inc.).

This course is five years in length, the first two years being identical with the regular course in electrical engineering (Course VI)

at the institute and the last three being spent in alternate terms at the institute and at the plant of the company. A student entering the cooperative years must have satisfied the scholastic requirements of the institute and the personal requirements of the company concerned. Both the theoretical and practical work of the final year are distinctly of postgraduate caliber. At the successful completion of the course the degrees of master of science and bachelor of science are awarded.

The institute publishes a special bulletin describing this course in detail.

The work of the school of chemical engineering practice differs from the usual cooperative engineering courses in three respects: (1) The students are not employees of the cooperating companies, hence receive no remuneration from them; (2) the plant work is not given until the end of the senior year (X-B) or until after the bachelor's degree has been obtained (X-A); (3) a member of the faculty of the department, with an assistant, is resident at the plant of the cooperating company throughout the year, devoting his entire time to the intensive development of the educational possibilities of the work.

The cooperating companies are:

Bangor (Me.) station.—Eastern Manufacturing Co. and Penobscot Chemical Fiber Co.

Boston (Mass.) station.—Merrimac Chemical Co. and Revere Sugar Refinery.

Buffalo (N. Y.) station.—Bethlehem Steel Co.

Bayonne (N. J.) station.—Tide Water Oil Co.

In the program leading to the degree of master of science the field-station work is taken during July–December, eight weeks being spent at each of three of the four field stations listed above. Following a very carefully arranged schedule the students, working as embryonic engineers, plan and carry to completion a series of tests covering the basic operations of chemical engineering operation, viz, flow of heat, flow of fluids, combustion, evaporation, filtration, distillation, etc.

After the completion of this work the students return to the institute for two special 5-week courses in chemical engineering design and combustion. During the second term, a 15-week period, the work is entirely elective, consisting of graduate courses in chemical engineering, in applied chemistry, and the master of science thesis.

In the program leading to the bachelor of science degree, a student may substitute for the last 22 weeks of the regular fourth year, January–June (consisting largely of laboratory courses, elective courses, and thesis), the field-station work previously described. In the case of the bachelor's degree men a thesis is completed at the last field station visited.

The institute publishes a special bulletin describing the course in detail.

University of Michigan.

Ann Arbor, Mich.

BUREAU OF BUSINESS RESEARCH, SCHOOL OF BUSINESS ADMINISTRATION. Ernest M. Fisher, assistant director in charge.—The bureau was founded in October, 1925, to coordinate and facilitate the re-

search work of the members of the faculty of the school of business administration. One of its general field of activities is personnel research.

A current survey in personnel work in an occupational survey of business and professional women, which will result in a series of bulletins, the first of which will be released in the near future.

A study of labor turnover as a personnel problem is in progress.

Published bulletins, which can be secured through the bureau of business research, include the following:

Factory labor turnover in Michigan. By O. W. Blackett. Published November, 1928, No. 1, Michigan Business Studies, Vol. II.

Business and the young accountant—Vocational experiences of the college graduate. By Clarence S. Yoakum. Published May, 1929, No. 3, Michigan Business Studies, Vol. II.

DEPARTMENT OF EDUCATION.—Under the direction of the vocational education department, Prof. Thomas Diamond has conducted courses for the training of foremen in the following cities: Grand Rapids, Bay City, Holland, Muskegon, Saginaw, and Jackson. He has also conducted courses for teachers in the Ford Trade School and in the school for construction and repair men conducted by the Michigan Bell Telephone Co.

UNIVERSITY BUREAU OF APPOINTMENTS AND OCCUPATIONAL INFORMATION. T. Luther Purdon, director.—This bureau was formed in 1929 by the merger of two other organizations, the bureau of appointments, dealing with the placement of teachers, and the committee on vocational counsel and placement, dealing with the counseling and placement of people interested in business field.

The bureau is at present making a study of personality traits of the employees of the Detroit Security & Trust Co., to determine traits making for success and failure in the banking field.

New School for Social Research.

465 West Twenty-third Street, New York, N. Y. John A. Fitch, Director.

DURING the sessions of 1925-26, 1926-27, 1927-28, and 1928-29 the new school offered courses by Dr. Arthur Frank Payne on the technique, psychology, and organization of systems of vocational guidance. These courses included discussions of the mainsprings of human actions as embodied in the reactions of the working group, a study of practices in the organization and administration of guidance systems in various types of schools and institutions, and of the systems of vocational guidance and employment adjustment in factories, offices, stores, and social-service institutions.

New York University.

Washington Square East, New York, N. Y.

SCHOOL OF EDUCATION, DEPARTMENT OF PERSONNEL ADMINISTRATION. Prof. Anna Y. Reed, chairman.

1. *Research.*—Studies completed during the past year or at present being made by graduate students under the supervision of the department which are of interest to the business personnel field include the following: Personnel problems of the adult immigrant, the educa-

tional value of juvenile jobs, occupational opportunities for negro women in Greater New York, survey of pupil characteristics and problems in a boys' vocational school, the stability of clerical employees in New York University.

2. *Information and guidance.*—The personnel bureau maintained cooperatively with the National Junior Personnel Service (see p. 109) not only serves all students of the university but gives individual help with personal adjustment problems which are referred by business firms in the metropolitan area. The bureau also serves as a clearing house on personnel practices and during the past year the work of this division included responses to requests from 73 firms for advice and assistance in their personnel procedure.

Training.—In addition to a very comprehensive series of courses which provide preparation for the personnel field in public schools and colleges the department also offers courses bearing on the business personnel field which supplement the courses offered by the school of commerce. A course (160.9) providing general overview of the evolution and present status of the personnel movement in education and industry is given by Don H. Taylor, and another (160.10) by the same instructor, deals with the application of vocational psychology to problems of vocational guidance and selection; Lynn A. Emerson offers a course (260.7-8) on personnel responsibilities for training and education in business; Anna Y. Reed offers three courses, placement principles and practices (160.20), women in business, industry, and the professions (160.19), and research in personnel problems (360.9-10), which draw heavily in their enrollment upon persons engaged in personnel work in industry.

The work of this department was inaugurated through a series of personnel services in 1924 conducted in cooperation with the National Junior Personnel Service (Inc.). (See p. 109.)

SCHOOL OF COMMERCE, ACCOUNTS, AND FINANCE, DEPARTMENT OF MANAGEMENT.—A course on production control and time study, by Prof. William B. Cornell and Mr. Nathaniel M. Cartmell, is "designed primarily for those who expect to devote themselves to industrial management or to accounting or other work where a knowledge of control methods, job standardization, and time study will be of advantage." A course in problems in handling men, by Associate Prof. Newman L. Hoopgarner, for the purpose of bringing "the student face to face with the kinds of situations encountered under normal conditions in industrial concerns, and upon the correct solution of which success largely rests * * * is designed primarily for those already engaged in industry or those expecting to take positions where a knowledge of industrial problems will be of advantage." A course in personnel administration, by Mr. Glenn A. Bowers, deals "with the fundamental principles of personnel administration. It gives the student a good grasp of the scientific and human background of the personnel field—its principles and practices. It covers broadly employment practice, health and safety, corporation instruction and training, problems of personnel research, employee's service features, the joint relation problems of the so-called 'democratic movements' in industry." A course in labor problems and employment management, by Mr. Bennet F. Schauffler, is "designed for those who wish to learn the policies, routines, and

methods which have proved successful in the more advanced plants of the country in connection with labor problems and employment management." A course on techniques of personnel management, by Mr. Harold B. Bergen, has as its aim "to make the student familiar with the techniques utilized in the application of the fundamental principles of personnel management, * * * job analysis, position classification, determination of compensation standards, test development, interviewing, rating of employees, selection, placement, training-on-the-job, promotion, transfer, salary and wage administration, etc." A course on psychology for business executives, by Associate Prof. Newman L. Hoopingarner, "emphasizing and illustrating psychological technique from such standpoints as incentives and how to use them, motivation, sizing up, developing and supervising personnel." A course on personality development and vocational orientation, by Associate Prof. Newman L. Hoopingarner, concerns "the individual's own problems of personality development and vocational adjustment." A course on techniques of supervision and leadership, by Mr. Harold B. Bergen, offers "a practical analysis of successful executive behavior in the handling of men * * * designed especially for individuals who supervise or direct the work of others and for students who are interested in actual problems of supervision and leadership." Other courses are on office management, problems in office management, problems in management, technique of retail-store management, department-store operation, wholesale organization and management, seminar in management, etc.

SCHOOL OF RETAILING (formerly known as the Training School for Teachers of Retail Selling), Norris A. Brisco, dean.—This is a graduate professional school preparing college graduates and others with equivalent general ability for positions as teachers of salesmanship or directors of training for department stores and for other managerial positions in retail stores. A course in personnel relations, by Dean Brisco, deals "with the principles and the prevailing practices in the field of human relations in business." A course on psychology of speech, by Mr. Clapp, concerns the place of speech in human relations and the cultivation of good speaking ability. A course on personnel methods, by Miss Bloodworth, refers to "handling people, the human factor in business * * * interviewing, selection and placement, the routine of employment, the new employee, training and welfare, etc."

GRADUATE SCHOOL OF BUSINESS ADMINISTRATION. Archibald Wellington Taylor, dean.—Certain courses in the School of Commerce, Accounts, and Finance, mentioned above, are available to graduate students.

Ohio State University. Columbus, Ohio.

DEPARTMENT OF PSYCHOLOGY. Herbert A. Toops and Harold E. Burt, professors of psychology.—Courses given by Doctor Burt in personnel work are: Psychology of personnel; industrial psychology;

educational and vocational guidance. His published works in this field include:

Measuring interest objectively. *School and Society*, 1923, vol. 17, pp. 444-448.
 Vocational tests for agricultural engineers. With F. W. Ives, in *Journal of Applied Psychology*, 1923, vol. 7, pp. 178-187.

Principles of employment psychology. *Industrial Psychology*, 1926, vol. 2, pp. 634-640.)

Psychology and industrial efficiency. Appleton, 1929.

Articles by Doctor Toops on personnel subjects include:

Short cuts in testing skilled workers. *Industry Illustrated*, November, 1925, pp. 31, 37-39.

Are you in the right job? *Popular Science Monthly*, vol. 103, No. 5, November, 1923, pp. 53-54.

Better training of employees through tests. *Proceedings of Management Week*, Ohio State University, Part II, 1926, pp. 116-124.

DEPARTMENT OF PUBLIC HEALTH AND HYGIENE. Dr. Emery R. Hayhurst, professor of hygiene and head of department.—A special course in industrial hygiene has been given by this department since the opening of the school year, 1915. Beginning with graduate students only the course was soon opened to undergraduate students but since 1921-22 has been limited to those of junior standing or above. The course, which is given in the college of medicine, is elective in the various colleges of the university and is required of students in industrial engineering. Beginning with the year 1928-29 the course has been given all three quarters and three or five hours per week, the shorter course being lectures and demonstrations and the longer course providing field work. Registration runs from 15 to 30, both men and women, each quarter. A historical approach, the economics of the subject, the dangerous trades, the industrial health hazards, the occupational diseases, and the methods of prevention and control, including the principles of industrial medical service, are the elements covered.

BUREAU OF BUSINESS RESEARCH, COLLEGE OF COMMERCE AND ADMINISTRATION. Spurgeon Bell, director.—“The aim of the bureau of business research is to make studies of business and industrial management and of the development of commerce and industry in Ohio. Researches are made which are of value alike to the business and industrial interests of the State and to the college of commerce and administration in its teaching program.” Graduate students are trained in research by working under the supervision of competent members of the research staff.

The bureau publishes five regular bulletins each month:

The Bulletin of Business Research.

The Wholesale Grocers' Bulletin.

The Retail Dry Goods Bulletin.

Monthly Bulletin on Employment Conditions in Ohio, by cities and by industries.

Bulletin on Automobile Bill-of-Sale Registrations.

Published researches of the bureau in the personnel field are:

Sales force compensation and expense of Ohio wholesale grocers. *Wholesale Grocery Studies*, R-1, 1924.

Administration of personnel functions in Ohio department stores. *Department Store Studies*, X-18.

The construction industry in Ohio. *Studies of Industries*, R-6.

Industrial and commercial Ohio. Studies of Industries, X-23, Vol. I.
 Labor management. Industrial Management Studies, X-20.
 Ohio employment studies. Industrial Management Studies, R-7.

The extensive study on "labor management" is a manual of standard practice in employment, supervision of labor force, and training of employees. The survey of industrial and commercial Ohio is a continuing study.

Studies in progress or recently completed but not yet published are:

Salaries and cost of living of university staffs of instruction. A comparison of salary changes in a group of State universities with cost of living changes in the period from 1914 to 1925.

Foremanship training. An examination into the past, present, and future of foremanship training to determine the true function of foremanship and the best methods of selection and upgrading foreman personnel.

University of Pennsylvania. Philadelphia, Pa.

SCHOOL OF PUBLIC HYGIENE. D. H. Bergey, M. D., director pro tempore.—The industrial hygiene department of this school, through the research activities of Dr. Henry Field Smyth and Henry F. Smyth, jr., has participated in the following studies of occupational diseases and disease hazards:

A study of the anthrax problem in the tanning industry in Pennsylvania in collaboration with the division of hygiene and engineering of the State department of labor, results of which were published in 1922.

Industrial anthrax in Pennsylvania. *Nation's Health*, vol. 4, No. 5, pp. 290-294.

The anthrax hazard in Pennsylvania tanneries. *American Journal of Hygiene*, vol. 2, No. 4, pp. 346-367.

Anthrax, a hazard of industry. *Hygeia*, vol. 2, No. 6.

Doctor Smyth served as chairman of the committee on industrial anthrax of the industrial hygiene section, American Public Health Association, in a continued study of the incidence of anthrax in industry, the report on which is to be published in the *American Journal of Public Health*.

A study of the hazards of spray painting in Pennsylvania has been made in cooperation with the Pennsylvania Department of Labor and Industry, and the results published as Special Bulletin No. 16 of the department, under the title "Spray Painting in Pennsylvania."

Further study of spray painting has been conducted by the spray coating committee of the National Safety Council, field work on which was directed by Doctor Smyth. Published reports are:

1927.—Spray coating. Report to chemical section, National Safety Council, Appendix I; Hazards of spray-coating process investigated (*Nation's Health*, vol. 9, No. 5); Spray-coating processes (*Safety Engineering*, vol. 14, No. 2).

1928.—Faulty practices in spray painting (proceedings of Pennsylvania Safety Congress); and spray painting hazards as determined by the Pennsylvania and National Safety Council surveys (joint paper with Henry F. Smyth, jr.), *Journal of Industrial Hygiene*, vol. 10, No. 8, pp. 163-213.

1929.—The injurious effect of lead enamel on the health of workmen. *The American Enameler*, March, 1929.

Studies on the toxicity of various solvents are:

1928.—Inhalation experiments with certain lacquer solvents (joint paper with Henry F. Smyth, jr.) (*Journal of Industrial Hygiene*, Vol. X, No. 8, pp. 261-271.)

Study of hazards in connection with the industrial use of naphtha (in an oilcloth plant) and of benzol in the textile leather and enamel leather industries, made for the New Jersey Department of Labor. (Not published.)

The results of a two years' study of turpentine dermatitis are to be published jointly with Henry F. Smyth, jr., in the *Journal of Industrial Hygiene*, 1930.

A continuing study of industrial skin irritation, as committee of one, industrial hygiene section, American Public Health Association, published in—

1928.—Skin irritants. (*American Journal of Public Health*, vol. 19, No. 4, pp. 366-376.)

1929.—New skin irritants, to be published in *American Journal of Public Health*, 1930.

Henry F. Smyth, jr. A study of methods of determining quantitatively small amounts of benzene in vapors in the air of workrooms. (Results to be published.)

1929.—The determination of small amounts of benzene in vapors in air. (To appear in *Journal of Industrial Hygiene*.)

Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis.

Seventh and Lombard Streets, Philadelphia, Pa. Charles J. Hatfield, M. D., Director.

THIS INSTITUTE, established in 1903 and supported up to May, 1919, entirely by funds donated by Mr. Henry Phipps, is said to be the first organization brought into existence for the express purpose of eradicating tuberculosis through intensive and scientific research. Since July 1, 1910, it has been under the supervision of the board of trustees of the University of Pennsylvania.

Recent studies dealing with tuberculosis in industry are:

Tuberculosis as it affects industrial workers. By Dr. Frank A. Craig. *Journal of Industrial Hygiene*, August, 1922, vol. 4, No. 4, p. 170; also *Annual Report of the Henry Phipps Institute*, Vol. XVI, 1923.

Some industrial phases of tuberculosis. By Dr. Frank A. Craig. *Nation's Health*, August, 1922, Vol. IV, No. 8.

Health survey of the police and firemen of the city of Philadelphia. By Dr. Frank A. Craig. Vol. XVII, *Annual Report of the Henry Phipps Institute*, 1923.

Wharton School of Finance and Commerce.

University of Pennsylvania, Philadelphia, Pa.

ONE OF THE courses of study in this school covers the field of labor management (Prof. J. H. Willits, adviser). In the last two years this course includes the following courses (each three hours, both terms) in the department of geography and industry: 8. Industrial management; 9. Field work in industry (inspection of management problems in manufacturing establishments); 10. Industrial relations and employment management; 12. Industrial policy; Industry research (an intensive study of an industrial problem of a specific industrial plant in the Philadelphia district).

DEPARTMENT OF INDUSTRIAL RESEARCH. Joseph H. Willits, director.—Established at the Wharton School of Finance and Commerce early in 1921, the purpose of this department is to "apply the methods of thorough scientific research to various fundamental problems in industry, such as industrial relations, so that human well-being, and especially the more general distribution of human well-being,

may be increased, and to provide a bureau to which the various elements of the industrial community may turn for scientific research on industrial problems."

The research has been and is on cooperative lines, the first undertaken being a study of monthly labor turnover in 25 plants in diverse industries in Philadelphia. The reporting was continued through 1928 and led to the publication of "Labor mobility" and "Four years of labor mobility." Work by members of the staff with the United States Coal Commission, 1923, resulted in the publication of "Earnings of coal miners," "Conclusions and recommendations of the United States Coal Commission as to labor relations in bituminous mining," and several chapters in "What the coal commission found." "The trend of wage earners' savings" was the result of a study of savings institutions and methods in Philadelphia over a considerable period.

Cooperation with the Metal Manufacturers' Association of Philadelphia gave the department information on labor turnover, factory lunch rooms, accidents, and accident-prevention methods, and earnings of metal workers. Mimeographed reports on these subjects have been issued to the cooperating companies.

The original material for the study entitled "Earnings and working opportunity in the upholstery weavers' trade" came from the members of a local union in the form of weekly reports of earnings and hours over a 2-year period. "Collective bargaining in the photo-engraving industry" came from employers and union officials in the industry as well as a survey of the literature.

Monthly records of production and shipments of 49 iron and steel foundries, originally sent to the Philadelphia Federal Reserve Bank, supply material for a monthly report as well as for the study "Trends in foundry production." The results of a survey of the production of knitting machinery and of full-fashioned hosiery are contained in "Significant postwar changes in the full-fashioned hosiery industry."

Further research in the field is now being conducted on the subject of output of hosiery manufacturers and earnings and working time of a group of workers in the industry. The cooperation of the employers and of the union is making the respective studies possible.

"Earnings in certain standard machine-tool occupations" is a further development of the material supplied by the metal manufacturing plants, with the addition of some intensive data in a smaller group of plants.

Data from woolen and worsted spinners are incorporated in the "Analysis of production of worsted sales yarn." The analysis of "Help-wanted advertising as an indicator of the demand for labor" makes use of the classified advertising in daily newspapers with considerable attention to the various occupations and industries specified in the advertisements.

Further studies now in progress concern the unemployment situation in Philadelphia, the use of the group bonus as an incentive, the effect of the new mechanization on workmen, an index of wage rates in the bituminous coal fields, and a study of earnings and selling costs of sales clerks in a representative group of department stores.

Princeton University.

Industrial Relations Section, Department of Economics and Social Institutions, Princeton, N. J.

THE INDUSTRIAL RELATIONS SECTION was founded in 1922. In 1926, Prof. J. Douglas Brown became director and Miss Eleanor Davis, assistant director.

The industrial relations section is a part of the department of economics and social institutions of Princeton University. The director of the section holds his position as a member of the faculty of that department, and a committee of the department acts with him in determining the policies of the section. Physically, the section is located in the Princeton University Library and its own library is coordinated with the library facilities of the university.

The income of the industrial relations section has been provided by Mr. John D. Rockefeller, jr., on the basis of a fixed annual amount for a period of years.

The industrial relations section covers in its work the subjects concerned with employer-employee relations in industry either through company sponsored plans or in the presence of trade-unions. It covers also trade-union history, policies, and problems; labor legislation, more especially in the United States; and industrial changes affecting labor.

Its library contains periodicals, books, pamphlets, and unpublished memoranda obtained by purchase, correspondence, and field investigation. Its catalogue now contains approximately 100,000 entries, cross referenced by source and subject.

The industrial relations section has just completed a study of labor banking which has been in preparation over a period of years. It has in preparation a brief study of mutual benefit association plans. It has under consideration a brief compilation of statistics concerning employee stock ownership and a brief study of the use of investment trusts in promoting thrift among employees. A good deal of the work of the industrial relations section is concerned with student instruction and with assistance to graduate students in industrial relations. The following is a list of completed studies:

In mimeographed form.—Employee savings plans; Group insurance; Labor turnover; Reduction of absence and tardiness; and Rules and financial provisions of industrial pension plans.

In typewritten form.—Building and loan associations; Corporation training programs; Discharge; Employment contracts and applications; Loans to employees; Mutual aid associations; Profit sharing; Service awards; Suggestion systems; Tendencies in mutual aid administration; Vacations for production workers; and Veterans' clubs.

In book form.—Employee stock ownership in the United States; and The labor banking movement in the United States.

Purdue University.

Lafayette, Ind.

SCHOOLS OF ENGINEERING.—A. A. Potter, dean, and J. E. Walters, director, are carrying on the work of the personnel system.

To develop the personality, as well as the mind, the body, and the character of the student, is the chief purpose of the personnel service of the schools of engineering at Purdue University.

The major duties of the personnel service are as follows: (1) Personality development—to assist the students in the improvement of

their personalities. (2) Occupational information—to assist in the vocational guidance of students by giving them occupational information. (3) Placement—to assist in the placement of senior students in proper employment after graduation, and to help juniors and underclassmen to secure summer work. (4) Records—to keep up-to-date personnel records of all engineering students. (5) Assistance to graduates—to assist engineering graduates of the university in employment and other personnel matters.

Personnel studies concerning the proper adaptation of engineering students and graduates are also being made by Mr. Walters.

The schools of engineering have also established an industrial personnel laboratory which will contain the equipment, devices, charts, and diagrams used in industrial personnel work; employment, safety, health, training, and service.

George H. Shepard, professor of industrial engineering and management, is conducting tests to obtain quantitative data on the relation between rest periods during working hours in industry and production or output. These tests continue from year to year as a regular feature of the work in industrial management at Purdue University.

Simmons College.

300 The Fenway, Boston, Mass.

DEPARTMENT OF SOCIAL-ECONOMIC RESEARCH. Prof. Lucile Eaves.—The work of this department is carried on in cooperation with the research department of the Women's Educational and Industrial Union, with the Savings Banks Association of Massachusetts and with various business, social, and medical agencies which supply records for studies or permit the use of statistical equipments. Further explanations of the organization of the research activities and lists of recent studies are given under "Women's Educational and Industrial Union." (See p. 142.)

Prince School of Education for Store Service (Graduate School of Simmons College).

19 Allston Street, Boston, Mass. Lucinda Wyman Prince, Director.

ESTABLISHED in 1905 as the school of salesmanship at the Women's Educational and Industrial Union in Boston (see p. 142); in 1918 the school moved into quarters of its own and the present name was adopted. Its original object was to provide training for saleswomen in department stores. The chief purpose of the school now is to train personnel executives—educational directors, employment managers, superintendents—for stores and, to an increasing extent, for factories. It is affiliated with Simmons College and the National Retail Dry Goods Association (see p. 116), and the Boston merchants have cooperated in its support. A history of this school, together with an account of the training methods developed, under the title "Department store education," by Helen Rich Norton has been published by United States Bureau of Education as its Bulletin (1917) No. 9.

The director of the school is the author of Bulletin No. 22 (Commercial Education Series No. 1), "Retail selling" (103 pp.), issued by the Federal Board for Vocational Education in 1919.

PRINCE ALUMNÆ ASSOCIATION holds its annual meeting at the same time as the National Retail Dry Goods Association. Sessions are devoted to the presentation and discussion of educational, employment, and research work in stores and to the work of teachers of retail selling in the public schools. Its publication the Prince Alumnæ News contains papers on department store personnel work.

Smith College.

Northampton, Mass.

SCHOOL FOR SOCIAL WORK. Prof. Everett Kimball, director.—A graduate professional school offering courses in social work from the psychiatric and mental hygiene point of view. It originated as an emergency training course in psychiatric social work established in 1918 by the authorities of Smith College and the Boston Psychopathic Hospital under the auspices of the National Committee for Mental Hygiene (see p. 100) primarily to provide a supply of specially trained social workers to deal with mental and nervous cases among returned soldiers.

The duration of the course is 14 months, in 3 divisions—a summer session of 8 weeks of theoretical instruction, combined with clinical observation, at Smith College; a training period of 9 months' practical instruction carried on in cooperation with hospitals, clinics, and social agencies (during 1928-1929 in Boston, Chicago, Foxboro, Hathorne, Minneapolis, New York, Philadelphia, St. Paul, and Worcester), and a concluding summer session of 8 weeks of advanced study. The social worker with psychiatric experience has been of particular value in industrial and personnel work. In recognition of this, the regular curriculum includes courses in social psychology, mental tests, case work, government, medicine, industrial problems, and social psychiatry. Details are given in bulletin of Smith College School for Social Work, 1930-1931.

The second session's work includes the preparation and writing of a thesis under the supervision of a director of research. Many of these theses (for complete list see bulletin) deal with problems of personality in industry, schools, and society. It is proposed to publish the more outstanding of these theses in a quarterly, *Smith College Studies in Social Work*.

Stanford University.

Stanford University, Calif.

SCHOOL OF BUSINESS.—The Stanford School of Business, organized in 1925, includes among its purposes the teaching of business organization and administrative principles, and the investigation of special problems including such as would fall under the heading "personnel." Dr. E. K. Strong, jr., previously carrying on research in this field under the auspices of the department of psychology, has been made a member of the school of business faculty, offering courses in the psychological aspects of management and problems of personnel. He still continues teaching in the department of psychology courses dealing with applications of psychology especially in industrial and

vocational relationships. Special research projects have investigated the vocational guidance possibilities of an interest blank which distinguishes members of each of various professions and occupations from other individuals and vocational groups. Published articles include:

Strong, E. K., jr. An interest test for personnel managers. *Journal of Personnel Research*, September, 1926, vol. 5, pp. 194-203.

— Interest analysis of personnel managers. *Journal of Personnel Research*, October, 1926, vol. 5, pp. 235-242.

— Differentiation of certified public accountants from other occupational groups. *Journal Educational Psychology*, April, 1927, vol. 18, pp. 227-238

— A vocational interest test. *Education Record*, April, 1927, vol. 8, pp. 107-121.

SCHOOL OF EDUCATION.—Major contributions related to personnel research have been made by Dr. Truman L. Kelley in his study of differentiable mental abilities. He has also given invaluable aid, primarily through statistical and critical advice, in various studies of abilities necessary for vocational success, including those of Cowdery, Jensen, MacQuarrie, Strong, and Zyve. He has been teaching fundamental courses in statistics and classes on the methods and interpretation of psychological and educational measurements. Doctor Proctor has contributed in the field of vocational and educational guidance through both classwork and publications. The work in intelligence testing formerly conducted in the department of education was transferred to the department of psychology in 1922 on its reorganization under Dr. Lewis M. Terman. Periodical and other publications from members of the school of education are:

Jensen, M. B. Trait differences in teachers, research workers, and administrators in education. 1927. Ph. D. thesis.

Kelley, T. L. Principles and technique of mental measurement. *American Journal of Psychology*, July, 1923, vol. 34.

— Distinctive ability. *School and Society*, October 23, 1923, vol. 18, pp. 424-448.

— Crossroads in the mind of man. Stanford University Press, 1927. 245 pp.

MacQuarrie, T. L. Measurement of mechanical ability. 1925. Ph. D. thesis.

— Vocational guidance in universities. *Vocational Guidance Magazine*, March, 1924, vol. 2, pp. 155-158.

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— The public schools in vocational adjustment. *Industrial Psychology*, December, 1926, vol. 1, pp. 776-780.

— Prognostic tests as a determinant in commercial educational guidance. *Balance Sheet*, September, 1927, vol. 9, pp. 4-6.

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— Vocations. 1929. Boston, Houghton Mifflin Co.

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DEPARTMENT OF PHYSIOLOGY.—Prof. E. G. Martin and J. P. Baumberger have completed and reported the results of studies in industrial physiology as follows:

Baumberger, J. P. Fatigue and error in mental occupation. *Journal of Industrial Hygiene*, 1921, vol. 3.

— (With E. E. Perry) Weber's law, tolerance and visual judgment of size in the bottle making industry. *Journal of Industrial Hygiene*, September, 1923, vol. 5, pp. 205-209.

— Working capacity and the effect of alternating occupation on output. *Journal of Industrial Hygiene*, November, 1923, vol. 5, pp. 245-252.

Martin, E. G. Fatigue and rest. *Industrial Psychology*, May, 1926, vol. 1.

DEPARTMENT OF PSYCHOLOGY.—The work of Dr. Lewis M. Terman with intelligence tests has been continued, resulting in the production of the Terman group test, founded on the principles of his previous Stanford-Binet individual tests and the army group intelligence tests. More recently, assisted by Dr. Maude A. Merrill, a revision of the Stanford-Binet tests has been undertaken. Studies in mental efficiency and in the field of industrial psychology have been made possible by the addition to the department faculty of Drs. Walter R. Miles and Edward K. Strong, jr. Courses available include mental and intelligence tests and the psychology of endowment by Doctors Terman and Merrill; the physiological psychology of action by Doctor Miles, and a seminar in applied psychology by Doctor Strong. A limited bibliography of publications and dissertations includes:

Brammer, G. A. The static equilibrium of airplane pilots. 1924, A. M. thesis.

Cowdery, K. M. An evaluation of the expressed attitudes of members of three professions (medical, engineering, and legal). 1926, Ph. D. thesis.

Fearing, F. S. An experimental study of certain factors influencing static equilibrium. 1924, A. M. thesis.

Laslett, H. R. The effects of loss of sleep on mental and physical efficiency. 1926, Ph. D. thesis.

Mackenzie, Hope. The permanency of interest. A. M. Thesis.

Merrill, Maude A. Relation of mental age to industrial efficiency of a group of mental defectives. *Journal Delinquency*, 1925, vol. 9, pp. 83-104.

Miles, Walter R. Alcohol and human efficiency. Carnegie Institution of Washington. Pub. No. 133. 298 pp.

Syracuse University.

Syracuse, N. Y.

COLLEGE OF BUSINESS ADMINISTRATION. Charles Lee Raper, dean.—The courses of instruction in this college dealing with personnel matters are: Industrial psychology and vocational psychology, by Prof. H. W. Hepner (business psychology 108, three hours, spring semester, and 109, three hours, fall semester); business management and field work in organization and management, by Prof. M. C. Cross (business management 103, three hours, spring semester, and business management 116, two hours, spring semester); industrial management, by Prof. S. T. Hart (business management 6, two or three hours, spring semester).

University of Virginia.

Institute for Research in the Social Sciences, University, Va.
Wilson Gee, Director; Frank Traver deVyver, Research
Assistant in Labor Problems.

THE Institute for Research in the social sciences was established by a grant from the Laura Spelman Rockefeller Memorial to the University of Virginia for research in the field of social sciences, to stimulate research on the part of the professors. Each research problem in the institute is carried on as the professor's own research project, usually assisted by a well-trained research worker. When completed, the studies are published as a series of institute monographs.

So far the only study in the field of personnel research which has been undertaken is "Labor in the South," a study "of the wage-earn-

ing classes of the South and their living conditions and problems, labor laws and labor movements." This study, the work of Abraham Berglund, G. T. Starnes, and Frank T. deVyver, will be completed in 1930.

University of Wisconsin.

Madison, Wis.

DEPARTMENT OF ECONOMICS. John R. Commons, professor.—A research course is conducted by Professor Commons and his associate professors in the department of economics. This course covers four sections: (a) Labor legislation; (b) labor history and industrial government; (c) unemployment, causes and remedies; (d) labor management. Research work in this field is carried on continuously, but studies are not published. Doctoral dissertations and theses are filed in the department library.

Yale University.

New Haven, Conn.

THE PSYCHO-CLINIC, Dr. Arnold Gesell, director, is dealing with personnel problems as represented by adolescents seeking employment, particularly those with subnormal or unstable constitutions.

LABORATORY OF APPLIED PHYSIOLOGY. 4 Hillhouse Avenue. Yandell Henderson, professor, and Howard W. Haggard, associate professor, of applied physiology.—The researches conducted in this laboratory have been mainly studies in the physiology and toxicology of gases, the treatment of asphyxia, the determination of the maximum energy expenditure of which athletes are capable, and recently the treatment of pneumonia. Professors Henderson and Haggard were formerly consulting physiologists of the United States Bureau of Mines, and during the war served with the Chemical Warfare Service and the Medical Research Board of the Air Service. Professor Henderson is now consulting physiologist of the Chemical Warfare Service. The work done includes experimental studies on mine rescue oxygen apparatus (Bureau of Mines Technical Paper No. 62), gas masks for the military service and for industrial use, apparatus and methods for testing aviators in respect to their ability to withstand altitude, and investigation of carbon-monoxide poisoning and resuscitation. The inhalator for the administration of oxygen and carbon dioxide, introduced by Professors Henderson and Haggard, has in recent years come into very wide use, and is not only saving thousands of lives, but by rapid resuscitation is preventing post-asphyxial injuries. This line of investigation has now been extended, in collaboration with Dr. Pol N. Coryllos of the Cornell Medical School, to the treatment of pneumonia. The staff of the laboratory carried out, in collaboration with the Bureau of Mines, an extensive investigation of the physiological effects of automobile exhaust gas for the commissions of the States of New York and New Jersey in charge of the construction of the Holland Vehicular Tunnels under the Hudson River. These investigations resulted in standards which have been adopted all over the world in application to the ventilation requisite in vehicular tunnels, garages, repair shops, and factories.

The principal publications dealing with the foregoing topics, which have appeared from this laboratory are as follows:

Noxious gases and the principles of respiration influencing their action. By Y. Henderson and H. W. Haggard. Chemical Catalog Co., 419 Fourth Avenue, New York City.

The maximum of human power and its fuel. By Y. Henderson and H. W. Haggard. American Journal of Physiology, April, 1925, Vol. LXXII, p. 264.

The circulation and its measurement. By Y. Henderson and H. W. Haggard. American Journal of Physiology, June, 1925, Vol. LXXIII, p. 193.

The physiology of respiration in practical application. By Y. Henderson. British Medical Journal, December 19, 1925, and January 9, 1926.

The treatment of carbon monoxide poisoning. By Y. Henderson. Journal of American Medical Association, October 1, 1921, vol. 77, p. 1065.

Studies in carbon monoxide asphyxia—II. The growth of neuroblast in the presence of carbon monoxide. By H. W. Haggard. American Journal of Physiology, April, 1922, vol. 60, p. 244.

The toxicology of hydrogen sulphide. By H. W. Haggard. Journal of Industrial Hygiene, March, 1925, vol. 7, p. 113.

The influence of hydrogen sulphide upon respiration. By H. W. Haggard and Y. Henderson, with T. J. Charlton. American Journal of Physiology, July, 1922, vol. 61, p. 239.

The science of health and disease. By H. W. Haggard. Harper Bro., New York City. 524 pp.

The growing movement to establish schools of business research in colleges and universities is resulting in a pronounced expansion of research work. Most of this is along commercial lines, with the field here defined as personnel research given only secondary or incidental consideration.

Nevertheless some interesting work in the personnel field has been and is being done through these agencies, and while it is not of sufficient volume to be treated in detail, it is noted below and constitutes part of the complete report on personnel research work in colleges and universities.*

UNIVERSITY OF ILLINOIS.

Urbana, Ill. Bureau of Business Research, Charles M. Thompson, director.

Methods of training employees in stores of moderate size (1924).

UNIVERSITY OF KANSAS.

Lawrence, Kans. Bureau of Business Research, Jens P. Jensen, director.

Employee training in Kansas department stores (1925).

UNIVERSITY OF MINNESOTA.

Minneapolis, Minn. Committee on Research, H. J. Ostlund, director.

Study of positions open to university-trained people in the field of finance in the Twin Cities (1929).

UNIVERSITY OF NEBRASKA.

Lincoln, Nebr. Committee on Business Research, T. Bruce Bobb, director.

Labor turnover in Nebraska department stores (1924).

UNIVERSITY OF NORTH CAROLINA.

Chapel Hill, N. C. Institute for Research in the Social Sciences, Howard W. Odum, director.

Mill village population in North Carolina (an analysis of population characteristics in selected mill villages; transiency, labor turnover, etc.).

Welfare work in mill villages (1929).

History of the textile industry (1930).

* Most of these data are taken from the report of the American Association of Collegiate Schools of Business, "Research Projects of Member Schools," January, 1929.

UNIVERSITY OF NORTH DAKOTA.

Grand Forks, N. Dak.

Mexican labor in sugar-beet field of the United States (1929).

RUTGERS UNIVERSITY.

New Brunswick, N. J. Bureau of Economic and Business Research, E. E. Aggers, director.

Cost of living survey (in progress).

The effect on New Jersey labor situation of the immigration law (planned).

UNIVERSITY OF TEXAS.

Austin, Tex. Bureau of Business Research, A. B. Cox, director.

Settlement of industrial disputes in Texas by arbitration (1929).

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LIST OF BULLETINS OF THE BUREAU OF LABOR STATISTICS

The following is a list of all bulletins of the Bureau of Labor Statistics published since July, 1912, except that in the case of bulletins giving the results of periodic surveys of the bureau only the latest bulletin on any one subject is here listed.

A complete list of the reports and bulletins issued prior to July, 1912, as well as the bulletins published since that date, will be furnished on application. Bulletins marked thus () are out of print.*

Conciliation and Arbitration (including strikes and lockouts).

- *No. 124. Conciliation and arbitration in the building trades of Greater New York. [1913.]
- *No. 133. Report of the industrial council of the British Board of Trade on its inquiry into industrial agreements. [1913.]
- No. 139. Michigan copper district strike. [1914.]
- *No. 144. Industrial court of the cloak, suit, and skirt industry of New York City. [1914.]
- *No. 145. Conciliation, arbitration, and sanitation in the dress and waist industry of New York City. [1914.]
- *No. 191. Collective bargaining in the anthracite-coal industry. [1916.]
- *No. 198. Collective agreements in the men's clothing industry. [1916.]
- No. 233. Operation of the industrial disputes investigation act of Canada. [1918.]
- No. 255. Joint industrial councils in Great Britain. [1919.]
- No. 283. History of the Shipbuilding Labor Adjustment Board, 1917 to 1919.
- No. 287. National War Labor Board: History of its formation, activities, etc. [1921.]
- *No. 303. Use of Federal power in settlement of railway labor disputes. [1922.]
- No. 341. Trade agreement in the silk-ribbon industry of New York City. [1923.]
- No. 402. Collective bargaining by actors. [1926.]
- No. 468. Trade agreements, 1927.
- No. 481. Joint industrial control in the book and job printing industry. [1928.]

Cooperation.

- No. 313. Consumers' cooperative societies in the United States in 1920.
- No. 314. Cooperative credit societies (credit unions) in America and in foreign countries. [1922.]
- No. 437. Cooperative movement in the United States in 1925 (other than agricultural).

Employment and Unemployment.

- *No. 109. Statistics of unemployment and the work of employment offices. [1913.]
- No. 172. Unemployment in New York City, N. Y. [1915.]
- *No. 183. Regularity of employment in the women's ready-to-wear garment industries. [1915.]
- *No. 195. Unemployment in the United States. [1916.]
- No. 196. Proceedings of the Employment Managers' Conference held at Minneapolis, Minn., January 19 and 20, 1916.
- *No. 202. Proceedings of the conference of Employment Managers' Association of Boston, Mass., held May 10, 1916.
- No. 206. The British system of labor exchanges. [1916.]
- *No. 227. Proceedings of the Employment Managers' Conference, Philadelphia, Pa., April 2 and 3, 1917.
- No. 235. Employment system of the Lake Carriers' Association. [1918.]
- *No. 241. Public employment offices in the United States. [1918.]
- No. 247. Proceedings of Employment Managers' Conference, Rochester, N. Y., May 9-11, 1918.
- *No. 310. Industrial unemployment: A statistical study of its extent and causes. [1922.]
- No. 409. Unemployment in Columbus, Ohio, 1921 to 1925.

Foreign Labor Laws.

- *No. 142. Administration of labor laws and factory inspection in certain European countries. [1914.]
- No. 494. Labor legislation of Uruguay. [1929.]
- No. 510. Labor legislation of Argentina. [1930.] (In press.)

Housing.

- *No. 158. Government aid to home owning and housing of working people in foreign countries. [1914.]
- No. 263. Housing by employers in the United States. [1920.]
- No. 295. Building operations in representative cities in 1920.
- No. 500. Building permits in the principal cities of the United States in [1921 to] 1928.

Industrial Accidents and Hygiene.

- *No. 104. Lead poisoning in potteries, tile works, and porcelain enameled sanitary ware factories. [1912.]
- No. 120. Hygiene of painters' trade. [1913.]
- *No. 127. Dangers to workers from dust and fumes, and methods of protection. [1913.]
- *No. 141. Lead poisoning in the smelting and refining of lead. [1914.]
- *No. 157. Industrial accident statistics. [1915.]
- *No. 165. Lead poisoning in the manufacture of storage batteries. [1914.]
- *No. 179. Industrial poisons used in the rubber industry. [1915.]
- No. 188. Report of British departmental committee on the danger in the use of lead in the painting of buildings. [1916.]
- *No. 201. Report of the committee on statistics and compensation insurance cost of the International Association of Industrial Accident Boards and Commissions. [1916.]
- *No. 209. Hygiene of the printing trades. [1917.]
- *No. 219. Industrial poisons used or produced in the manufacture of explosives. [1917.]
- No. 221. Hours, fatigue, and health in British munition factories. [1917.]
- No. 230. Industrial efficiency and fatigue in British munition factories. [1917.]
- *No. 231. Mortality from respiratory diseases in dusty trades (inorganic dusts.) [1918.]
- *No. 234. Safety movement in the iron and steel industry, 1907 to 1917.
- No. 236. Effects of the air hammer on the hands of stonecutters. [1918.]
- No. 249. Industrial health and efficiency. Final report of British Health of Munition Workers' Committee. [1919.]
- No. 251. Preventable death in the cotton-manufacturing industry. [1919.]
- No. 256. Accidents and accident prevention in machine building. [1919.]
- No. 267. Anthrax as an occupational disease. [1920.]
- No. 276. Standardisation of industrial accident statistics. [1920.]
- No. 280. Industrial poisoning in making coal-tar dyes and dye-intermediates. [1921.]
- *No. 291. Carbon-monoxide poisoning. [1921.]
- No. 293. The problem of dust phthisis in the granite-stone industry. [1922.]
- No. 298. Causes and prevention of accidents in the iron and steel industry, 1910-1919.
- No. 306. Occupational hazard and diagnostic signs: A guide to impairments to be looked for in hazardous occupations. [1922.]
- No. 392. Survey of hygienic conditions in the printing trades. [1925.]
- No. 405. Phosphorus necrosis in the manufacture of fireworks and in the preparation of phosphorus. [1926.]
- No. 427. Health survey of the printing trades, 1922 to 1925.
- No. 428. Proceedings of the Industrial Accident Prevention Conference, held at Washington, D. C., July 14-16, 1926.
- No. 460. A new test for industrial lead poisoning. [1928.]
- No. 466. Settlement for accidents to American seamen. [1928.]
- No. 488. Deaths from lead poisoning, 1925-1927.
- No. 490. Statistics of industrial accidents in the United States to the end of 1927.
- No. 507. Causes of death by occupation. [1929.]

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- No. 237. Industrial unrest in Great Britain. [1917.]
- No. 340. Chinese migrations, with special reference to labor conditions. [1923.]

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- No. 349. Industrial relations in the West Coast lumber industry. [1923.]
- No. 361. Labor relations in the Fairmont (W. Va.) bituminous-coal field. [1924.]
- No. 380. Postwar labor conditions in Germany. [1925.]
- No. 383. Works council movement in Germany. [1925.]
- No. 384. Labor conditions in the shoe industry in Massachusetts, 1920-1924.
- No. 399. Labor relations in the lace and lace-curtain industries in the United States. [1925.]

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- No. 211. Labor laws and their administration in the Pacific States. [1917.]
- No. 229. Wage-payment legislation in the United States. [1917.]
- No. 285. Minimum-wage laws of the United States: Construction and operation. [1921.]
- No. 321. Labor laws that have been declared unconstitutional. [1922.]
- No. 322. Kansas Court of Industrial Relations. [1923.]
- No. 343. Laws providing for bureaus of labor statistics, etc. [1923.]
- No. 370. Labor laws of the United States, with decisions of courts relating thereto. [1925.]
- No. 408. Laws relating to payment of wages. [1926.]
- No. 486. Labor legislation of 1928.
- No. 517. Decisions of courts and opinions affecting labor, 1927-1928.

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- No. 307. Eighth, New Orleans, La., May 2-6, 1921.
- No. 323. Ninth, Harrisburg, Pa., May 22-26, 1922.
- *No. 352. Tenth, Richmond, Va., May 1-4, 1923.
- *No. 389. Eleventh, Chicago, Ill., May 19-23, 1924.
- *No. 411. Twelfth, Salt Lake City, Utah, August 13-15, 1925.
- No. 429. Thirteenth, Columbus, Ohio, June 7-10, 1926.
- *No. 455. Fourteenth, Paterson, N. J., May 31 to June 3, 1927.
- No. 480. Fifteenth, New Orleans, La., May 21-24, 1928.
- No. 508. Sixteenth, Toronto, Canada, June 4-7, 1929.

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- No. 210. Third, Columbus, Ohio, April 25-28, 1916.
- No. 248. Fourth, Boston, Mass., August 21-25, 1917.
- No. 264. Fifth, Madison, Wis., September 24-27, 1918.
- *No. 273. Sixth, Toronto, Canada, September 23-26, 1919.
- No. 281. Seventh, San Francisco, Calif., September 20-24, 1920.
- No. 304. Eighth, Chicago, Ill., September 19-23, 1921.
- No. 333. Ninth, Baltimore, Md., October 9-13, 1922.
- *No. 359. Tenth, St. Paul, Minn., September 24-26, 1923.
- No. 385. Eleventh, Halifax, Nova Scotia, August 26-28, 1924.
- No. 395. Index to proceedings, 1914-1924.
- No. 406. Twelfth, Salt Lake City, Utah, August 17-20, 1925.
- No. 432. Thirteenth, Hartford, Conn., September 14-17, 1926.
- *No. 456. Fourteenth, Atlanta, Ga., September 27-29, 1927.
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- No. 511. Sixteenth, Buffalo, N. Y., October 8-11, 1929. (In press.)

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- No. 192. First, Chicago, December 19 and 20, 1913; second, Indianapolis, September 24 and 25, 1914; third, Detroit, July 1 and 2, 1915.
- No. 220. Fourth, Buffalo, N. Y., July 20 and 21, 1916.
- No. 311. Ninth, Buffalo, N. Y., September 7-9, 1921.
- No. 337. Tenth, Washington, D. C., September 11-13, 1922.
- No. 355. Eleventh, Toronto, Canada, September 4-7, 1923.
- No. 400. Twelfth, Chicago, Ill., May 19-23, 1924.
- No. 414. Thirteenth, Rochester, N. Y., September 15-17, 1925.
- No. 478. Fifteenth, Detroit, Mich., October 25-28, 1927.
- No. 501. Sixteenth, Cleveland, Ohio, September 18-21, 1928.

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- No. 254. Productivity costs in the common-brick industry. [1924.]
- No. 360. Time and labor costs in manufacturing 100 pairs of shoes, 1923.
- No. 407. Labor cost of production and wages and hours of labor in the paper box-board industry. [1926.]
- No. 412. Wages, hours, and productivity in the pottery industry, 1925.
- No. 441. Productivity of labor in the glass industry. [1927.]
- No. 474. Productivity of labor in merchant blast furnaces. [1928.]
- No. 475. Productivity of labor in newspaper printing. [1929.]

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- *No. 121. Sugar prices, from refiner to consumer. [1913.]
- *No. 130. Wheat and flour prices, from farmer to consumer [1913.]
- *No. 164. Butter prices, from producer to consumer. [1914.]
- No. 170. Foreign food prices as affected by the war. [1915.]
- No. 357. Cost of living in the United States. [1924.]
- No. 369. The use of cost-of-living figures in wage adjustments. [1925.]
- No. 495. Retail prices, 1930 to 1928.

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- *No. 331. Code of lighting: Factories, mills, and other work places.
- No. 336. Safety code for the protection of industrial workers in foundries.
- No. 350. Rules for governing the approval of headlighting devices for motor vehicles.
- *No. 351. Safety code for the construction, care, and use of ladders.
- *No. 375. Safety code for laundry machinery and operations.
- No. 378. Safety code for woodworking plants.
- No. 382. Code of lighting school buildings.
- No. 410. Safety code for paper and pulp mills.
- No. 430. Safety code for power presses and foot and hand presses.
- No. 433. Safety codes for the prevention of dust explosions.
- No. 436. Safety code for the use, care, and protection of abrasive wheels.
- No. 447. Safety code for rubber mills and calenders.
- No. 451. Safety code for forging and hot-metal stamping.
- No. 463. Safety code for mechanical power-transmission apparatus—first revision.
- No. 509. Textile safety code.
- No. 512. Code for identification of gas-mask canisters.

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- *No. 159. Short-unit courses for wage earners, and a factory school experiment. [1915.]
- *No. 162. Vocational education survey of Richmond, Va. [1915.]
- *No. 199. Vocational education survey of Minneapolis, Minn. [1917.]
- No. 271. Adult working-class education in Great Britain and the United States. [1920.]
- No. 459. Apprenticeship in building construction. [1928.]

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- *No. 146. Wages and regularity of employment and standardization of piece rates in the dress and waist industry of New York City. [1914.]
- *No. 147. Wages and regularity of employment in the cloak, suit, and skirt industry. [1914.]
- No. 161. Wages and hours of labor in the clothing and cigar industries, 1911 to 1913.
- No. 163. Wages and hours of labor in the building and repairing of steam railroad cars, 1907 to 1913.
- *No. 190. Wages and hours of labor in the cotton, woolen, and silk industries, 1907 to 1914.
- No. 204. Street-railway employment in the United States. [1917.]
- No. 225. Wages and hours of labor in the lumber, millwork, and furniture industries, 1915.
- No. 265. Industrial survey in selected industries in the United States, 1919.
- No. 297. Wages and hours of labor in the petroleum industry, 1920.
- No. 356. Productivity costs in the common-brick industry. [1924.]
- No. 358. Wages and hours of labor in the automobile-tire industry, 1923.
- No. 360. Time and labor costs in manufacturing 100 pairs of shoes, 1923.
- No. 365. Wages and hours of labor in the paper and pulp industry, 1923.
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- No. 407. Labor costs of production and wages and hours of labor in the paper box-board industry. [1926.]

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- No. 412. Wages, hours, and productivity in the pottery industry, 1923.
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No. 502. Wages and hours of labor in the motor-vehicle industry, 1928.
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- *No. 123. Employer's welfare work. [1913.]
No. 222. Welfare work in British munitions factories. [1917.]
*No. 250. Welfare work for employees in industrial establishments in the United States. [1919.]
No. 458. Health and recreation activities in industrial establishments, 1926.

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- No. 284. Index numbers of wholesale prices in the United States and foreign countries. [1921.]
No. 433. Revised index numbers of wholesale prices, 1923 to July, 1927.
No. 493. Wholesale prices, 1913 to 1928.

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- No. 116. Hours, earnings, and duration of employment of wage-earning women in selected industries in the District of Columbia. [1913.]
*No. 117. Prohibition of night work of young persons. [1913.]
*No. 118. Ten-hour maximum working-day for women and young persons. [1913.]
No. 119. Working hours of women in the pea canneries of Wisconsin. [1913.]
*No. 122. Employment of women in power laundries in Milwaukee. [1913.]
*No. 160. Hours, earnings, and conditions of labor of women in Indiana mercantile establishments and garment factories. [1914.]
*No. 167. Minimum-wage legislation in the United States and foreign countries. [1915.]
*No. 175. Summary of the report on conditions of women and child wage earners in the United States. [1915.]
*No. 176. Effect of minimum-wage determinations in Oregon. [1915.]
*No. 180. The boat and shoe industry in Massachusetts as a vocation for women. [1915.]
*No. 182. Unemployment among women in department and other retail stores of Boston, Mass. [1916.]
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*No. 217. Effect of workmen's compensation laws in diminishing the necessity of industrial employment of women and children. [1918.]
*No. 223. Employment of women and juveniles in Great Britain during the war. [1917.]
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- No. 101. Care of tuberculous wage earners in Germany. [1912.]
- *No. 102. British national insurance act, 1911.
- No. 103. Sickness and accident insurance law in Switzerland. [1912.]
- No. 107. Law relating to insurance of salaried employees in Germany. [1913.]
- *No. 155. Compensation for accidents to employees of the United States. [1914.]
- *No. 212. Proceedings of the conference of social insurance called by the International Association of Industrial Accident Boards and Commissions, Washington, D. C., December 5-9, 1916.
- *No. 243. Workmen's compensation legislation in the United States and foreign countries, 1917 and 1918.
- No. 301. Comparison of workmen's compensation insurance and administration. [1922.]
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- No. 379. Comparison of workmen's compensation laws of the United States as of January 1, 1925.
- No. 477. Public-service retirement systems, United States and Europe. [1929.]
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- *No. 174. Subject index of the publications of the United States Bureau of Labor Statistics up to May 1, 1915.
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- No. 282. Mutual relief associations among Government employees in Washington, D. C. [1921.]
- No. 319. The Bureau of Labor Statistics: Its history, activities, and organization. [1922.]
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- No. 465. Beneficial activities of American trade-unions. [1928.]
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