UNITED STATES DEPARTMENT OF LABOR
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BUREAU OF LABOR STATISTICS
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MONTHLY LABOR REVIEW

VOLUME 33 NUMBER 4

OCTOBER, 1931

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON: 1931

For sale by the Superintendent of Documents, Washington, D. C. - - - - - - - - - Price 15 Cents per Copy
Subscription price per year: United States, Canada, Mexico, $1.50; Other Countries, $2.25

CERTIFICATE

This publication is issued pursuant to the provisions of the sundry civil act (41 Stats. 1430) approved March 4, 1921.

Contents

This Issue in Brief

Technological displacement in the farming industry has been continuous since the first settlement of the country, but owing to the expansion of markets for farm products and to the continued draft upon labor for the development of new farms, there was no actual shrinkage in farm employment before 1910, and but little shrinkage until after 1920, in spite of the fact that there was an increase in production per farm worker of 183 per cent between 1850 and 1924, as measured in crop-acres cultivated per worker. An article beginning on page 1 reviews the history of agriculture in the United States from the standpoint of mechanization and attempts to measure the effects of mechanical changes upon the employment of labor.

The Brazilian Government has encouraged the immigration of Europeans since early in the nineteenth century. Largely because of the development of Brazil's coffee plantations, agriculturists have been the most greatly desired class of immigrants. Some of the inducements offered to immigrants were the payment of their traveling expenses, free land (or the right to purchase land on favorable terms), remission of taxes for a specified period, etc. Special attempts have been made toward the colonization of the immigrants, and altogether many such colonies have been formed. In general, however, these colonies have not proved to be a greatly successful method of introducing immigrants into Brazil. Page 36.

The high cost of funerals has led to the formation of a number of cooperative funeral associations in the North Central States. Reports from 13 such associations to the Bureau of Labor Statistics show that these societies generally operate at cost, plus an amount sufficient to cover overhead expenses, and therefore are able to effect a considerable saving for the members. Nearly 7,000 families are in membership with the societies reporting, the average per society being 524. The organizations are operated on a democratic, cooperative basis, all members having an equal voice in the society. Although the business done in 1930 was small—about $36,000 altogether—most of the reports express complete satisfaction with the assocation. Page 79.

The average number of days worked per half month by miners and loaders in bituminous-coal mines declined from 9.1 in 1929 to 7.0 in 1931, with a corresponding drop in average earnings during the half month from $49.85 to $33.82, according to a survey of wages and hours in this industry made in the first quarter of 1931 by the United States Bureau of Labor Statistics, summarized on page 162. For all workers other than miners and loaders, the average number of days worked per half month dropped from 10.2 in 1929 to 8.3 in 1931, average earnings per half month declining from $52.57 to $41.58.

Practically the whole subject of industrial relations was covered during the 10-day session of the industrial institute held at Silver Bay, N. Y., during the latter part of August, 1931. The personnel section of the institute, an account of which is given in this issue, page 64, was intended as an opportunity for study and serious discussion, particularly for those engaged in personnel work. The topics covered included employment, accident prevention, industrial health, education and training, wages, stabilization of employment, benefits and insurance, added incentives, group relations, etc.

Plans for the payment of dismissal compensation are of comparatively recent origin in the United States, but a recent study lists 49 companies which have adopted the principle of payment of compensation to workers who are dismissed through no fault of their own. The details of the plans vary but they are alike in accepting the principle of the employer's responsibility for the prevention of permanent lay-offs or the lessening of hardships when such lay-offs can not be prevented. Page 179.

Accident frequency rates decreased 28 per cent and accident severity rates 8 per cent between 1928 and 1930, according to figures published by the National Safety Council and covering identical establishments. Page 92.

The union shop, or the employment only of union members in good standing, is usually provided for in collective agreements. The union agrees to endeavor to furnish a sufficient number of competent members to perform the work provided the employer gives advance notice of the number he requires. The agreements usually specify the conditions under which nonunion men may be employed if union members are not available. Examples of provisions for the employment of union members, contained in collective agreements received by the Bureau of Labor Statistics, are given on page 121.

The working-life history of 100 unemployed persons in Bloomington, Ind., was the subject of a recent study under the auspices of the Indiana State University. According to this study, the average number of jobs which had been held by these persons was 7.21 and the average time spent on a job was approximately 3 years. In 29 selected cases it was found that time was lost upon over 50 per cent of the occasions where jobs were changed, the average time lost per job being reported as 1.4 months. Page 51.

The Canadian National Institute for the Blind expanded some of its services in the fiscal year 1930–31, despite the industrial depression. One of its progressive steps was the organization of the merchants' association of the institute, the members of which are blind men and women who are carrying on small businesses. In the year under review more than $2,800 was divided among the association's members after they had received their regular retail profits. Page 111.

A study of attitudes toward home ownership and tenancy among representatives of various social classes in the Chicago region, made with a view to finding a possible explanation of the apartment-house movement, is summarized on page 155. Although no very definite conclusions were developed, it is stated that "among the quasi-stable classes of persons in the Chicago region, the cost and economy considerations seem clearly to be the major group of forces contributing to the multifamily-house movement."

MONTHLY
LABOR REVIEW
U. S. BUREAU OF LABOR STATISTICS

VOL. 33, NO. 4 WASHINGTON OCTOBER, 1931

Mechanization of Agriculture as a Factor in Labor Displacement

THE rapid progress that has been made in the invention and installation of labor-saving machines, and the improvement in methods of operation that during recent years has taken place in the agricultural industry of the United States, constitute one of the most important economic developments of modern times. Owing to this development, the area of cultivated land has been vastly increased, the quality of farm products has been greatly improved, and production per worker engaged and per capita of population materially raised, notwithstanding the constantly increased expenditure of labor that in this industry is necessary to counteract the effects of soil deterioration and the progressively greater utilization of poorer land. So great has been the progress in agricultural efficiency that, in this country at least, the world-old fear of famine has practically disappeared.

Yet, as in other industries, there are many problems arising out of this development that remain unsolved. Not the least important of these problems is that of providing for the workers who are displaced as a result of the increasing output per worker on the farms. This problem, however, did not become acute until very recently. In fact, though the machine has been an important factor in the production of farm crops in the United States for more than three-quarters of a century, and though there have been many other improvements tending to reduce the labor requirements in agricultural industry, the number of workers engaged, taking the industry as a whole, showed no decrease prior to 1910 and no considerable shrinkage until after 1920. The fact that increased output per worker has not until recently resulted in a surplus of agricultural labor may be explained by three principal causes:

1. During the greater part of the era of machine production in agriculture, new farms were being developed, calling for a relatively increased expenditure of man labor per unit of output;

2. On the older farms, the quantity of man labor necessary to turn out a given unit of product was progressively increased on account of the relative exhaustion of the soil; and,

3. The total output of agriculture was increased, in order to meet the needs of a growing population, and the demands of an expanding foreign market.

During recent years these conditions have been greatly changed. Owing to the slowing up of the rate of increase in population, the total demand for farm products has been relatively curtailed, thus rendering

unnecessary the bringing into cultivation of new farm lands. At the same time there has been a considerable falling off in the foreign demand for farm products. Meanwhile, developments in agricultural science—new methods of soil treatment, improved seeds, new fertilizers more scientifically applied, etc.—have apparently been more than sufficient to counteract the natural process of soil depletion, even without the aid of mechanization.

Under these conditions, it is apparent that the industry can not continue to absorb completely the labor displaced by the improvement of machines and by better methods in the operation of farms. That such labor has not been wholly absorbed during the last 10 years is indicated by the unusually heavy movement of population from the farms to the industrial centers. Estimates of the United States Bureau of the Census show that there was a decrease of 3,301,000 in farm population between 1920 and 1928. During these years there was a natural increase in farm population of approximately 2,500,000 persons, assuming the same ratio between births and deaths as is shown by the census figures for total rural population.

It is apparent that this overflow of labor from the farms is not in itself detrimental to agricultural industry. It follows from the fact that the labor requirement for producing farm crops has been and is being reduced, that workers are leaving the farms because they are no longer needed there. Nor would the influx of the workers released from the farms be injurious to other industries if they could be furnished with employment profitable both to themselves and to their employers. But during the last 10 years there has been technological displacement in most major nonagricultural industries, as well as in agriculture. Even before the beginning of the present depression the effect of such displacement was being shown in a net decrease in the volume of employment in manufacturing industries and on the railroads, which, during earlier years, were the most effective absorbents of labor released from the farms.

It appears, therefore, that the ill effects of technological displacement in agriculture are likely to be felt more in other industries than in agriculture itself. Unless the nonagricultural industries can be expanded sufficiently to provide for the workers who come from the farms, these workers will become competitors for the jobs now held by nonagricultural workers, or will be added to the ranks of the unemployed. In the latter case, since they must in some fashion be fed, clothed, and housed, they will become a burden upon the community at large.

It is the recognition of this situation that has led the United States Bureau of Labor Statistics to compile from more extended studies of technological displacement which it has recently undertaken the data bearing upon the development and the effects of agricultural mechanization which are here presented. These data, garnered from a mass of information assembled by the United States Department of Agriculture, State agricultural colleges, and experiment stations, Patent Office records, agricultural periodicals, and various other official and unofficial sources, have been arranged to show:

1. Conditions and progress in American agriculture prior to the installation of machines;

2. The beginnings of agricultural mechanization in this country;

3. Labor displacement due to the substitution of machine for hand methods in the several main operations of crop production;
4. The effects of the introduction of automotive power upon agricultural labor requirements;
5. Agricultural mechanization as a whole, and its culmination in the present agricultural situation;
6. The effect of agricultural mechanization upon the employment situation as a whole; and
7. The probable development of agricultural mechanization in the near future.

Early Agriculture in the United States

BEFORE the beginning of the nineteenth century there had been but little improvement in the methods of agricultural production, or of the tools or implements with which it was accomplished, since the beginnings of recorded history. While the early settlers in America encountered conditions which imperatively demanded changes in primitive methods, looking to the economizing of labor and the utilizing of maximum acreage, most of the colonies began with a farm equipment even more inadequate than that which was commonly in use in the countries of the Old World. While it appears that the Dutch settlers in the New Netherlands were supplied with farm tools and implements superior to those generally in use in European countries, in most instances the English colonies at first did not even have farm animals. Their hand tools were of the crudest models, and their equipment always meager. For more than a century after the landing of the Pilgrims, on many New England farms the soil was prepared for planting by digging with spades, mattocks, or hoes, or even with old axes. The plows available were usually made entirely of wood, and power to draw them was nearly always inadequate. Grain was sown by hand, and covered with a brush drag, or a rude wooden harrow, drawn by oxen or by hand. Corn was planted by hand in check rows, in the Indian fashion—an improvement upon European methods of planting similar crops—and dug in with a spade, hoe, or mattock; or, where none of these was available, with a sharpened stick or an Indian tomahawk. Grain was cut with a sickle, a scythe or a "sith," or, if these tools were lacking, was pulled up by the roots. Threshing was done with a flail, by tramping with oxen or horses, or by beating handfuls of the straw over a smooth boulder.

In the coastal regions of the middle and southern colonies the land was easier to cultivate, and yielded more readily to large-scale operations. Arable land was more plentiful, and less skill was required to work it. The situation invited cheap labor, which was at first supplied in the South by bringing over bound servants, "redemptioners," and apprentices; and later by the importation of African slaves. So effective was the combination of cheap land and cheap labor in the growing of commercial crops in the South that there was little change in farm equipment and methods until after the Civil War. In fact, the existence of a labor supply that is nominally cheap, but economically extremely costly, is still the main factor in the retardation of agricultural progress in the old South.

On the other hand, the early commercial development of New England and the middle colonies brought them into close touch with

the rapid industrial movement that began with the first successful utilization of mechanical power in England. The industrial development in the New England colonies, which followed that in England, was necessary mainly to supplement their meager agriculture; and the development naturally reacted upon their agricultural methods. At the same time, the ever-expanding westward movement was opening up new lands, and demanding more labor. Under these conditions it was imperative that some means be found whereby the supply of labor could be economized. The exigencies of pioneer life developed among the colonists an unusual adaptability and inventiveness. Many causes were converging toward an agricultural development in this country unparalleled in the history of mankind.

Beginnings of Agricultural Mechanization

THE first decided tendencies toward the mechanization of agriculture in America appeared during the last decade of the eighteenth century, with the invention of the cast-iron plow and the cotton gin. These were followed, about 30 years later, by the first reaping machines. Inventions of plows, cultivators, seeders, and harvesting machines followed in rapid succession from 1830 to 1850, but few of the machines were brought into successful operation until a quarter of a century later. The process of mechanization was at first retarded, but afterwards accelerated by the Civil War. By 1870 a considerable percentage of hand labor had already been released by the perfection of agricultural implements and machines. In 1900 the process was well under way. The Thirteenth Annual Report of the United States Commissioner of Labor in 1898, giving the results of a survey authorized by Congress, and made under his direction, concludes (p. 93) that "one man with the improved machinery in use to-day [1896] can cultivate and harvest nearly twice as large a crop as was possible under the primitive method."

Hand and Machine Labor Requirements in Different Farm Operations

Plowing

FROM primitive times to the end of the eighteenth century there was little development in the plow. Egyptian bas-reliefs show how the primitive plows in use in ancient times in the Nile Valley were evolved from the forked stick with which primitive peoples dug up the soil preparatory to planting their crops. In one of the earlier representations, a slave is shown digging with a fork, the prongs of which appear to be about 3 feet long, the man grasping one of the prongs near its end, and digging with the other. In another figure one of the prongs is much longer than the other, and the slave is harnessed to the longer end, while the shorter prong is dragged through the soil. Still another picture shows a wooden plow being drawn by two slaves, and guided by a third, the implement still bearing a close resemblance to its tree-prong ancestor. In a later representation two oxen have taken the place of the slaves at the end of the beam, and a slave is driving the team and another is guiding the plow.

In other ancient countries the development was similar, though often more retarded. Though plows are mentioned many times in

Herodotus and in the early Greek legends, contemporary evidence shows that fields were often dug with spade or mattock, or even with a sharpened stick, as late as the time of Pericles. Though plows drawn by oxen were used in ancient Rome, probably the greater part of the land was tilled by hand up to the beginning of the Christian era. In many instances the serfs of the Middle Ages had no plows; and where plows were used they were often drawn by man power. Contemporary writings show that huge wooden plows, sometimes having iron shares and braces, and drawn by oxen, were cooperatively owned and operated on manorial and village farms in England in the fourteenth and fifteenth centuries.

It is, of course, impossible to make any close estimate of the labor saved by the first rude plows. It will readily be seen, however, that each step portrayed in the Egyptian pictures represented a considerable increase in labor efficiency. While there are no data showing the labor requirements, when land was dug with a forked stick, and when it was rooted up with the first tree-prong plow, frontier experience in this country furnishes some material showing the gain made by ox or horse drawn plows over hand tools—the spade, the mattock, and the hoe. After the land had been brought into cultivation one man could spade up about an eighth of an acre a day, or an acre in eight 12-hour days. This is a labor requirement of 96 man-hours per acre. The first plows used by the colonists were usually drawn by from two to four oxen, with one man to drive, another to hold the plow, and a third man or a boy to ride the beam and cut "balks." In land under cultivation this group could plow from an acre to an acre and a half a day, which was at the rate of half an acre per man or two man-days per acre. This is a labor requirement of 24 man-hours per acre, or one-fourth of the requirement when the land was dug with a spade.

In general these figures hold good for all the colonies up to the beginning of the nineteenth century. Though heavier plows and a greater number of animals were sometimes used, it does not appear from the observations of contemporaries that there was a corresponding gain in efficiency. The "old colony" plow, which was in use in New England at the time of the Revolution, had a 10-foot beam and a 4-foot landside, and required from 6 to 8 or even more oxen to draw it. In the West a prairie-breaking plow, having a 30-inch share, and drawn by from 8 to 16 oxen, represented the highest development of the single-bottom plow. With a man to guide it, a driver on the beam, and another walking alongside the team, this plow could turn over from 2 to 5 acres of prairie sod in a 12-hour day. With the exception of the share, these plows were usually made entirely of wood, though sometimes reinforced with strips of iron. According to a writer in the Rhode Island American, similar plows were in use in the eastern States as late as 1820.

The first cast-iron plow was made by Charles Newbold and patented in 1797. In the same year Thomas Jefferson spared time from the affairs of state to work out a mathematical demonstration of a theoretically most efficient moldboard. Jefferson's figures seem to have been of considerable assistance to inventors; but an Ohio farmer improved on Jefferson's method by hewing out a "block plow" from the trunk of a tree, attaching to it handles and a beam, and shaping the

moldboard by experiment, adzing down the places that showed most wear until the moldboard assumed a smooth and even surface. He then had an iron mold cast in the same pattern.

The Newbold plow, being cast in one piece, proved to be too expensive to repair. It was followed in 1808 by a steel and wrought-iron plow, in which this defect was partly remedied. In 1819 Jethro Wood patented a plow cast in sections, so that parts exposed to wear could be replaced by others cast from the same pattern. This was followed in 1833 by John Lane's plow, which was of wood sheathed with saw steel. From that time inventions followed each other in rapid succession, there having been 186 patents in all issued previous to 1870. In 1839, writing in the Farmers' Companion, Judge Buell said that a plow which had just come into use "saved the work of one man and two cattle." Somewhat later a blacksmith named John Deere made a plow out of mill-saw blades. In 1855 James Oliver patented the "Oliver Chilled" plow.

Since 1855 many new plows have come upon the market. There have been many variations in the proportion of the parts, in size and weight, and in the contour of the moldboard. Disk plows, and, finally, the "duck-foot" of the Montana prairies, have come into use, with marvelous results in the saving of money and labor cost. Apparently the duck-foot is simply a huge cultivator, while the modern disk plow developed out of earlier cultivating implements. But the moldboard plow is still essentially the same as the first "Oliver Chilled" implement. It differs not at all in principle from Newbold's cast-iron plow. It is still, as Jefferson said, "a compound wedge," one wedge acting vertically and the other horizontally. Thomas J. Campbell, probably the most successful large-scale farmer in the world, says that no one yet knows what shape a plow ought to be to do the best work.

Since 1855, however, when the Oliver plow came into use, labor saving in the operation of plowing has been not so much a matter of improvement in the plow itself as a matter of power to draw the plow, and of what is now called the "hook-up." It is a problem of increasing the amount of power and the number of units that can be handled in the same operation, with a given quantity of man labor. There are gang plows having two, three, or up to a dozen or more moldboard or disk "bottoms," drawn by tractors, or by from 3 to 30 or more horses. The working width of the duck-foot may be anywhere from 8 or 10 to 50 or 60 feet. Under most conditions there is a considerable labor saving by using tractors in the place of horses, but thus far the greater part of the economy realized has been due to the size of the hook-up. In New York it requires 5.8 man-hours per acre to plow stubble with a 2-horse plow; 5.3 man-hours for a 3-horse outfit; and 2.4 man-hours for a 2-bottom plow drawn by a Fordson tractor.[1] In Iowa the following results were achieved with different-sized plowing outfits:[2]

[1] New York State College of Agriculture. Farm Economics Bulletin, No. 47, September, 1927.
[2] Iowa State College of Agriculture. Iowa Cost Route, 1926, Report No. 9.

TABLE 1.—MAN-HOURS OF LABOR PER ACRE REQUIRED WITH SPECIFIED PLOWING UNIT, IN IOWA

Motive power	Working width of plow	Man-hours required per acre
	Inches	
3 horses	16	4.12
4 horses	24	3.11
4 horses	28	2.47
5 horses	28	1.67
Tractor	28	1.67
Tractor	42	1.18

In the large wheat fields of the State of Washington a still further economy of labor is effected, chiefly by the operation of larger units, as is shown in the following table:[3]

TABLE 2.—MAN-HOURS OF LABOR PER ACRE REQUIRED WITH SPECIFIED PLOWING UNITS, IN WASHINGTON

Motive power	Number and size of plows used	Acres plowed per day	Man-hours per acre
6–7 horses	Two 14-inch	5	2.00
8 horses	Two 16-inch	6	1.67
8–10 horses	Three 14-inch	8	1.25
12 horses	Three 16-inch	9	1.11
20 horses	Six 14-inch	12–15	.83–.67

These results show a difference between the 6 or 7 horse team and the 20-horse outfit of 1.25 man-hours or a 63 per cent reduction in the labor requirement, due entirely to the size of the hook-up and the amount of horsepower utilized. Experiments with tractor-drawn plows have shown that even this record can be lowered. One man, driving a 15–30 horsepower tractor, has plowed 110 acres in five and a half 10-hour days, reducing the labor requirement per acre to 0.5 man-hour.[4]

There have been similar results from trials in many parts of the country, under widely varying conditions. Experts in the State agricultural experiment stations and in the Federal Department of Agriculture are predicting further developments along this line.

It would seem, however, that under most conditions a 20-horse plowing outfit, or its equivalent in mechanical power, with a working width of 7 feet—six 14-inch bottoms—is likely to be near the maximum limit where moldboard or ordinary disk bottoms are used. Larger units may be possible by substituting the duck-foot or the one-way disk. It appears that these implements require relatively less power, and that they are easier to operate. It has been noted that the largest of these implements has a working width of 60 feet. This is more than 8 times as wide as the largest of the plows included in Table 2. Taking 0.75 man-hour per acre as the average labor requirement with the largest horse-drawn plowing set-up of the older types, and assuming that the large duck-foot or the one-way disk will have equal

[3] Washington State College of Agriculture. Popular Bulletin No. 135, October, 1926.
[4] Agricultural Engineering, April, 1928, p. 103.

speed and that it can be operated by the same man power, the per-acre labor requirement would be reduced to 0.088 man-hour.

This would mean an almost total elimination of man labor in the actual field work of plowing. It must be remembered, however, that these huge, complicated machines require a great deal of care. So also did the horses. It is in fact altogether likely that in the long run the labor required for servicing and repairing the machines will be less than was formerly required to feed, care for, and harness the horses necessary to do an equal amount of work. This will certainly be true as between the most efficient machine hook-up that has thus far been demonstrated and the 2-horse teams with which formerly the greater part of the plowing was done. Moving at equal speed, it would require sixty 2-horse teams (or 120 horses) drawing 12-inch plows, to do the same work as is done by the 60-foot machine. It is obvious that the care of these horses would require more man labor than the care of the single machine. It is equally obvious that the expense would be greater. It may be noted that the increased labor efficiency of the 60-foot duck-foot cultivator, as compared with the 1-man, 2-horse plow, is 5,900 per cent and the labor displacement 98.3 per cent.

As a final example of the future possibilities of labor savings in plowing operations, there has recently been invented a "manless" plow, that guides and turns itself, after the first furrow has been run. This invention, worked out by a student of the Agricultural College of New Jersey,[5] is a fitting climax to the work begun in that State by the inventor of the all-metal plow a century and a quarter earlier. Moreover this invention works. It appears almost as though we may look forward to a practical elimination of man labor in the actual field work of plowing, in all sections where land is fairly level.

Harrowing, Disking, Seeding

Following the plowing, there are a number of operations, varying according to the nature of the crop, that in current discussions are usually brought under the head of "preparation of the seed bed." The most important of these are harrowing, disking, weeding, and leveling. In the large Western wheat fields and the Corn Belt, and more recently in the South, one or more of these operations have been hooked up with the seeder. In most localities and for most crops, they are coming to be more or less combined. For this reason it is difficult to determine what has been the recent development for any one process. Taking all seed-bed preparation and seeding operations together, the labor requirement for an acre of wheat where the methods and appliances of 1850 were used, was 10.4 man-hours. When the machines available in 1894–1896 were used, the requirement per acre was 1.45 man-hours.[6] A modern tractor-driven disk and drill hook-up, operated by one man, has seeded 92.7 acres in one day.[7] The labor requirement is 0.13 man-hour per acre, a reduction of 10.27 man-hours, or 98.7 per cent, from the method of 1850, and of 1.32 man-hours, or 91 per cent from the machine methods of 1895.

These figures, of course, represent the extremes for the period 1850–1920. Even yet there are very few localities where the maxi-

[5] C. B. Davidson, in Power Farming, November, 1925.
[6] Thirteenth Annual Report of the Commissioner of Labor, Vol. II, pp. 472–473.
[7] International Harvester Co. Muscles and Motors.

mum record for these operations has been approached. On the other hand, the harrowing and seeding methods generally in use in this country in 1850 were far superior to the most primitive methods. Even the brush harrow of colonial times had been improved, and its working width extended, until one man could cover several times as much ground as was covered in the same time with the earlier implements.

These operations have always given a great deal of trouble to agricultural producers. Crop failures are often due to improper or insufficient preparation of the seed bed, or to wrong methods of planting. From earliest historical times there were inventions and devices designed to overcome these difficulties and to economize labor. The ancient Assyrians had a wheeled seeder, drawn by oxen, in 504 B. C. There was an Italian ox-drawn seeder in 1605.[8] In 1870, 41 patents had been issued for seeders in the United States.[9] Since 1870 a bewildering variety of harrows, disks, rollers, packers, pulverizers, and drills have been put upon the market. There are machines adapted to almost every condition of surface, soil, or climate. The greatest labor saving that has been effected, however, has been due chiefly to the combination of the several processes, made possible by improved technical service and more and better power.

Naturally, the saving effected by machinery has been less for the planting of row crops than for the seeding of small grains. In 1850 the labor cost of preparing the seed bed and planting corn was 13.8 man-hours per acre. The standard requirement for planting corn with a motorized planter, worked out by the Ohio Agricultural Experiment Station in 1924, is 3.6 man-hours. This is a gain in production per unit of man labor of 289 per cent over 1850 and a labor displacement of 60 per cent.

Table 3 shows the man-hours per acre required in the production of specified crops, by the use of various methods of cultivation.

TABLE 3.—LABOR REQUIREMENTS FOR PRODUCING PRINCIPAL CROPS BY HAND AND BY MACHINE METHODS

Crop	Man-hours per acre required by—				1924 compared with 1850	
	Hand method, 1850 [a]	Machine method, 1894–1896 [a]	Hand and machine methods, 1924 [b]	Machine method, 1924	Per cent of gain in productivity per worker	Per cent of labor displacement
Corn	182.68	27.5	37.8	[c] 30.0	508	83.6
Cotton	167.80	78.7	118.5	[d] 45.0	273	73.2
Hay (harvesting)	21.08	3.9	10.7	1.6	1,217	92.4
Potatoes	108.92	38.0	90.4	[c] 50.0	118	54.1
Wheat	62.42	3.1	15.5	[e] 1.6	3,801	97.4
Average					1,185	80.2

[a] Data from Thirteenth Annual Report of the Commissioner of Labor, vol. I, pp. 24–25.
[b] Data from U. S. Department of Agriculture, Bulletin No. 1348, July, 1925, p. 59.
[c] Average for States in which most modern methods are used.
[d] With horse or tractor gang plow, 4-row cultivator, and sled stripper, on 200-acre farm in Texas. (Texas Agricultural Experiment Station, Bulletin No. 362, July, 1927.)
[e] With tractor or horse drawn gang plow, hook-up of disk, drill and harrow for seeding in one operation, and "Combine" harvesting and threshing.

[8] Butterworth, Benj.: Growth of Industrial Art. Washington, Government Printing Office, 1892.
[9] Report of Commissioner of Agriculture for the year 1870.

Harvesting

Primitive methods: Sickle and scythe.—The oldest known harvesting implements are the sickle and the scythe. Both of these tools are frequently mentioned in the literature of the Babylonians and Assyrians, the Ancient Egyptians, the Hebrews, the Phoenicians, and the Greeks and Romans. A comparison of descriptions and pictures of the sickle shows that there was little change in shape or size over a period of six or seven thousand years. Such differences as appear were evidently due, in the earlier centuries, chiefly to the kind of material available for making the tool. After the discovery of metals, the most important difference between the ancient and the more modern tool was that in the ancient models the blades were thicker and less curved than the blades of the sickles that were in use during the later Middle Ages and early modern times.

Probably the highest development in the fashioning of the sickle took place in England during the seventeenth and eighteenth centuries. The English sickle of that period had a slim curved blade, the cutting edge of which was serrated on one side, and a short handle, set almost at right angles with the heel of the blade. In using the sickle the reaper grasped a handful of the grain in his left hand, and, with a quick, sweeping motion, encircled the grain so held with the sickle, from 4 to 8 inches from the ground, according to the length of the straw. He then bent the grain forward and to the left, and at the same time drew the sickle, held in the right hand, toward him and to the right. As the process was repeated, the reaper rolled each handful of grain back into the curve of his left arm, until he had all that he could conveniently hold.

Successful reaping with the sickle required a great deal of manual skill. The reapers usually took great pride in their work, vying with each other as to number of sheaves cut, neatness of execution, and absence of waste. Reaping was hard work. The bent position of the reaper, together with the weight of grain carried on the left arm, rendered maximum performance impossible except on the part of men of exceptional strength and endurance. Yet much reaping was done by women—sometimes even by children—both in Europe and in this country.

It is usually assumed that the sickle and the scythe were the only grain-harvesting tools in this country prior to the introduction of the grain cradle. While it is undoubtedly true that the sickle was used to a greater or less extent in all the colonies—English, Dutch, and French—there was another tool that may have been more widely used, in both the English and the Dutch colonies. This was the "sith." The word is an old English variant of the word "scythe"; and the implement is, in fact, a one-handed scythe. It was used in connection with a device for gathering and holding the grain, called a "mathook."

As to the prevalence of the use of the sickle in the colonies, Mr. Jared Van Wagenen, jr., who drew his information from original sources, says: "I do not know of any evidence that the sickle was ever commonly used as a harvesting tool in America." [10] In general, however, the same thing may be said of the sith. But the fact that the sith,

[10] New York. Department of Agriculture and Markets. Agricultural Bulletin 203, June, 1927.

and not the sickle, appears to have been the forerunner of the cradle, would seem to indicate a general knowledge and wide use of the sith in those States in which the cradle later supplanted both of the more primitive tools. However this may be, it is probable that in most of the colonies—and later in the States—before the advent of the cradle more grain was cut with the scythe than with either the sickle or the sith, especially where threshing was done by tramping.

Authorities differ widely as to the acreage per day that could be cut with the sickle. While there are many persons still living who have seen grain cut with it, or have even used it themselves, there are few who can remember how much was usually cut in a day when the tool was in general use. Mr. Van Wagenen says that a good reaper could cut one-half acre a day. Some writers place the average for a 12-hour day as low as one-fourth acre. But even at the higher figure, the man-hour requirement of harvesting grain with the sickle was 24 man-hours per acre. With the sith and mathook the labor requirement was doubtless somewhat less, while with a scythe a first-class man could cut 3 acres a day. The average, however, for the scythe was probably not more than 2 acres per day, giving a labor requirement of 6 man-hours per acre. But cutting grain with a scythe left it in bad shape for hauling and threshing, so that the advantage of the scythe over the sickle or the sith was not so great as it seems.

Grain cradle.—The grain cradle was introduced into the United States sometime during the first half of the nineteenth century, probably from Scotland. The American type of the implement was invented by Charles Vaughn, of Hallowell, Me., in 1837.[11] Before the appearance of Vaughn's cradle there had been numerous experiments with devices apparently suggested by the sith; but this was the first implement that promised any considerable advantage over the older methods of harvesting. After 1850 there were several types of grain cradle in use—the grapevine, half grapevine, "mooley," and others, the names designating different designs of the snath—all following closely the Vaughn model. The cradle is essentially a scythe, with fingers parallel to the blade for holding the grain and laying it conveniently for raking and binding.

The cradle is a marvellous tool, representing the highest development in hand grain-harvesting methods that mankind has ever achieved. In fact, with the exception of the self-binder and the combine, there has been no other implement or machine that, taken by itself, marks so great a labor saving in the harvesting of grain. A very good man could cradle 4 acres of wheat in a day, and another good man could bind the same amount; [12] that is, the labor cost for cutting and binding an acre of grain was 6 man-hours, as against 24 man-hours for the sickle, representing an increased labor efficiency of 300 per cent. The lowest estimate of the daily cut of a cradler that has come down to us is 2 acres per day. At this figure, the labor requirement was 12 man-hours, as against 60 man-hours for the sickle, with a daily cut of one-fifth acre, which is the lowest estimate for the sickle, representing an increased labor efficiency of 400 per cent.

Reaping machine.—Like most other mechanical inventions, the creation of a successful harvesting machine was the work of many

[11] Maine Farmer, 1837, p. 178.
[12] Washington's letters to Young and Sinclair, quoted by Leo Rogin in University of California Publications in Economics, vol. 9, p. 126.

men in many lands. The known history of the reaping machine covers 19 centuries. The Roman historian, Pliny, described a device used in Gaul, which was propelled from behind by an ox hitched between shafts, the operator walking by the side of the machine and leading the ox, at the same time raking back the grain as it fell from the sickle.[13] During the seventeenth and eighteenth centuries there were a dozen or more inventions, in Germany, Holland, Scotland, England, and the United States, before the first really successful reaper was put into operation. There were several types of cutting devices—straight smooth edged, V-shaped, rotary, scissors, and reciprocating. The first machine with a reciprocating knife and stationary fingers—the modern type—was invented by Henry Ogle, an English schoolmaster, in 1822. The first McCormick patent was issued in 1831 and the Hussey machine appeared a year later. The improved McCormick self-rake reaper, patented in 1858, was the first successful power harvester. In all there were 9 patents issued for reciprocal-action harvesting machines in this country between 1831 and 1870, according to the report of the Commissioner of Agriculture for the latter year. The Marsh harvester was patented in 1858, but was not generally used until 15 or 20 years later. John E. Heath patented a self-binder in 1850 and there was a picture of a "grain-binding wheel rake" in the Cultivator for August, 1850 (p. 273). The Appleby machine appeared in England in 1858 and the Gordon brothers, of Rochester, N. Y., patented their wire binder in 1867. The first successful mechanical knotter was patented by S. D. Locke, of Wisconsin, in 1867, thus making possible the modern self-binder, using twine instead of wire, which was patented by McCormick in 1870.

Labor requirements of reapers.—The earliest reaping machines used in the United States represented little, if any, labor saving over the grain cradle. The machines that were in use just after the Civil War would cut an average of 12 acres a day and required 8 men to operate—2 on the machine and 6 to bind and shock the grain. Operating 12 hours a day, it took 96 hours of man labor to cut 12 acres of grain, or 8 man-hours per acre, which exactly equals the labor required for harvesting with a cradle at the rate of 3 acres per day.

The self-raking device dispensed with the labor of 2 men, thus reducing the labor requirement to 6 man-hours per acre. The Marsh harvester, with about the same capacity, required only 4 men—a driver, 2 binders sitting on the machine, and a shocker—thus reducing the labor requirement per acre to 4 man-hours. Finally, the self-binder, operated by 1 man, with another to shock the grain, reduced the per-acre labor requirement to 2 man-hours, representing an increased labor efficiency of 300 per cent and a labor displacement of 75 per cent as compared with the best results with the cradle and the accomplishment of the self-rake reaping machine. As compared with the maximum acreage of the sickle, the self-binder represents an increased efficiency of 1,100 per cent and a labor displacement of 91.7 per cent.

Header and combine.—The combined harvester and thresher is the latest and, in many ways, the greatest development in agricultural machinery. Technically, the combine is a "hook-up" of the header

[13] Bohn's Classical Library, Vol. IV, p. 102.

and the portable thresher. Though modern headers were first successfully operated on the Pacific coast of the United States toward the end of the nineteenth century, the invention is not original with us. The rude machine described by Pliny was a header. There were six patents for machines designed to cut and thresh grain in a single operation issued in this country between 1836 and 1883, and one as early as 1828.[14] Combines were used in California and in eastern Oregon between 1900 and 1910, but they did not appear east of the Rockies until during or after the World War. The first machine used east of the Mississippi was in 1926. Even yet the use of combines is confined mostly to large farms in regions where climatic conditions are especially favorable. It appears, however, from recent developments, that windrowing and drying devices, and the construction of smaller machines to meet the needs of the smaller farms, may render the combine practicable for the harvesting and threshing of all small grains on most of the farms throughout the entire country.

Labor requirements of header and combine.—It is difficult to compare either the header or the combine with any of the earlier harvesting tools or machines, with regard to labor requirements, on account of the fact that the header eliminates the binding and shocking of the grain and the combine includes also the threshing. Obviously, a considerable part of the advantage derived from either the header or the combine is due to the fact that the costs from the field to the bin are greatly reduced. But regarding the delivery of the grain from the header into the wagon or truck as no more than equivalent to the grain in the shock, there is a tremendous difference between the labor cost of the header and that of the self-binder. A header, drawn by from 16 to 32 horses, or by equivalent mechanical power, will cut from 20 to 40 acres in a 10-hour day, the smaller machines being operated by 1 man, while in some cases 2 men are required for the larger outfits. At an average of 30 acres per day the labor requirement per acre is 0.4 man-hour. This is a maximum increase in efficiency of 400 per cent over the self-binder and of 5,900 per cent over the sickle. The labor displacement, as between the maximum performance of the sickle and the maximum performance of the header, is 98.7 per cent.

Threshing

In order to appreciate fully the tremendous labor saving accomplished by the combine, it is necessary to have the labor requirements for threshing by the several earlier methods. The oldest threshing tool known to human history is the flail, though relics of prehistoric times show rude implements of a still more primitive character. Before there were threshing tools of any kind, men separated the grain from the head by grasping a handful of the straw and beating the heads against a smooth boulder or other hard surface. The flail is, in fact, a compound tool, and as such represents a considerable advance in human ingenuity. It was used in all ancient countries, and is found in rude form among the relics of many prehistoric peoples.

The flail in use in medieval and modern England consisted of a wooden handle, or handstaff, about 5 feet long, to which was attached

[14] Ohio State University. Department of Rural Economics. Mimeographed Bulletin No. 18, July, 1929.

by a thong a "swingle," "swipple," or beater, also made of wood, and about 30 inches in length by one-fourth inch in diameter. The thong was preferably of eelskin, but where this was unobtainable, of leather. The eelskin thongs often lasted more than a generation. In England and in the American colonies the handle of the flail was usually made of ash and the beater of thorn or of other relatively hard and heavy wood; and both the handle and the beater became highly polished with use. The end of the handle to which the beater was attached was larger than the other and was flattened for about 4 inches and a hole bored through to receive the thong. There was a similar attachment to the end of the beater. Some of the more modern flails in this country had a swivel at the end of the handle to prevent the twisting of the thong.

Estimates of the capacity of the flail vary as widely as those for the sickle. From various English sources it appears that in the early years of the nineteenth century a first-class man threshed 10 bushels of wheat in a day. On the Van Wagenen farm in New York John Brown and James Barker flailed rye for "the tenth bushel," averaging about 10 bushels a day each.[15] Another contemporary writer, S. Edwards Todd, states: "An ordinary laborer will thresh and clean about 6 or 7 bushels of wheat in a day, taking the country through."[16] On the whole, it seems that the flailing and winnowing of 8 bushels of wheat in a 12-hour day was at least a full average day's work. Assuming a yield of 16 bushels, it required 24 hours of man labor to thresh the grain from one acre.

Tramping—men, horses, or oxen.—Threshing grain by tramping has also been practiced since earliest times. For oats, barley, and rye this seems to have been the prevailing method in the American colonies, and in the middle and southern colonies wheat, also, was probably more often threshed in this manner than with the flail. Tramping was the most usual method of threshing in the western States until the introduction of the first successful threshing machines. According to McMaster's history of the United States, grain was tramped out in southern Maryland later than 1800, one man, managing a number of horses, threshing as much as 3,000 bushels in 10 days. This was at the rate of 0.033 man-hour per bushel, or 0.528 man-hour per acre. The grain had then to be winnowed. An average of contemporary estimates for winnowing by hand gives a figure of 7.5 man-hours per acre, making a total labor requirement of 8.028 man-hours, where grain was tramped out with horses and winnowed by hand. This is slightly more than one-third of the requirement for threshing with the flail.

The example given above, however, can not be taken as representative of the efficiency of this method for the country as a whole. A comparison of a number of estimates cited in a recent study indicates that, on the average, the labor requirement for threshing by tramping with horses or oxen was about half the requirement for the flail.

Where fanning machines were used, as was sometimes the case, the total labor requirement for either of the above methods was greatly reduced. It appears that fanning mills, available as early as 1830, had a capacity of a bushel a minute and could be operated by three

[15] New York. Department of Agriculture and Markets. Bulletin No. 203, June, 1927.
[16] U. S. Department of Agriculture. Report, 1866, p. 230.

men. This was at the rate of 20 bushels per man per hour, and the labor requirement per hour was therefore 0.05 man-hour per bushel, or 0.8 man-hour per acre, where the yield was 16 bushels. As the average hand-labor requirement for winnowing was 7.5 man-hours, this would mean a reduction of 6.7 man-hours by the use of the fanning mill, bringing the total man-labor requirement for the flail down to 17.3 man-hours per acre and the requirement for tramping to 5.3 man-hours.

Threshing machines.—Although there is reference, as early as 1732, to a threshing machine in Scotland, "where bye one man may do as much work as six men heretofore," the first threshing machine of which there is any record was invented by a Scotchman named Meikles in 1789. This device consisted of a horizontal shaft, to which were attached a number of flails that beat out the grain as it lay on the threshing floor, in the same manner as it was beaten by the hand flail. The machine could be operated either by hand or by horse power. Somewhat earlier there was used in some of the American colonies a rude device called a "nigger," which consisted of a section of a tree, the branches of which had been trimmed down to about 3 feet in length at the outer end and tapered down until they were smooth with the trunk at the inner end, which was attached to a post set in a socket in the center of the threshing floor. A horse, or a team of horses, was hitched to the outer end, and the device was pulled round and round over the grain. Obviously, this was designed as an improvement on the method of tramping. Just how much was gained by this device is not known, but it is apparent that, crude as the implement was, it embodied the principle of the toothed cylinder, which is the essential part of the modern threshing machine.

In the United States there were two patents issued for threshing machines between 1834 and 1883. The first successful machine was the Pitts thresher, which, when first patented in 1840, was a small machine, designed to be operated either by hand or by horse power. When operated by 4 men, its hourly capacity was from 20 to 25 bushels. At the rate of 24 bushels per hour, the labor requirement per bushel was 0.167 man-hour, and the requirement per acre 2.667 man-hours. This did not include winnowing. Adding the time necessary for winnowing, the labor requirement was brought up to 3.47 man-hours. This was 13.8 man-hours less than for the flail, and 1.8 man-hours less than the average requirement for tramping.

In 1850 the daily capacity of the Pitts machine had been increased to 300 bushels, and could still be operated by 4 men. In 1849, a writer signing himself "Agricola," described in the June, 1849, issue of the Cultivator (Albany, N. Y.), a machine that he operated on his own farm, and gave the following statement of operating costs:

	Cost per day
One man to feed machine	$0. 39
One man to supply feeder	. 38
One man to pitch from mow	. 34½
One man to deliver the straw	. 32
One man to attend fanning mill	. 50
Per day for labor	1. 93½
Four horses and driver	2. 50
Total cost per day	4. 43½

The writer gave the daily capacity of the machine as 200 bushels, and figured his average cost per bushel at 2.002 cents. As he employed 6 men, working 12 hours per day, the labor requirement was 72 man-hours for threshing 200 bushels, or 0.36 man-hour per bushel. This gave a labor requirement of 5.76 man-hours per acre, where the yield was 16 bushels, which is 2.2 man-hours more than for the smaller machine.

This difference in favor of the smaller threshers was noted by the agricultural writers of the time, and there seems to have been a widespread opinion, for some years after the first threshers came into use, that a small machine that could be set up in the barn and operated either by hand or by horse power would prove to be more efficient than the larger outfits. There is mention of one type of thresher that could be operated by one man with one horse, that threshed 100 bushels in a day, or 8⅓ bushels per hour, which is 5.5 bushels per man per hour better than the accomplishment of the 200-bushel capacity machine. The performance of these smaller types of threshers, however, is less adequately substantiated than the performance of the larger machine.

Estimates for later periods show a progressive increase in the efficiency of the threshing machines generally in use. A survey made by the statistical division of the Department of Agriculture in the season of 1869 indicated that the 8 to 10 horsepower contract thresher then "in common use" in Ohio, Indiana, Illinois, Michigan, Iowa, Minnesota, and other States threshed 300 bushels of wheat per day with a crew of 9 men. In this case the labor requirement was 4.8 man-hours per acre, assuming a yield of 16 bushels and that the crews worked 10 hours per day. Better results were obtained where steam threshers were used. According to the survey mentioned above, the steam-threshing outfits which were at that time just coming into use did nearly twice the work that was done by horsepower threshers operating under similar conditions. It appears that in California and in the Great Plains States, in some instances the per-acre requirement for threshing wheat with large steam-power threshers had been reduced to a small fraction over 1 man-hour before the close of the last century.

More recent studies show less favorable results in States east of the Mississippi. A survey made by the Agricultural Experiment Station of the University of Illinois, the results of which were given in its Bulletin No. 267, shows that in 1921 the average labor requirement for threshing oats in the east-central part of the State was 3.4 man-hours and for wheat 4.6 man-hours per acre. In Indiana, in 1921, the labor requirement for threshing wheat was 5.2 man-hours per acre when threshed from the shock and 6.2 man-hours when threshed from the stack.[17] In some localities where climatic and other conditions are especially unfavorable the modern requirement is even higher.

Table 4 shows the number of man-hours per acre required by different methods of harvesting and threshing wheat. As the figures in this table are approximate averages of data gathered from a number of sources and are employed only for the purpose of indicating the general effects of the substitution of one method for another, they are therefore not to be taken as exact or authoritative.

[17] Purdue University. Agricultural Experiment Station. Bulletin No. 272, June, 1923.

TABLE 4.—LABOR REQUIREMENTS FOR HARVESTING AND THRESHING WHEAT BY DIFFERENT METHODS

State	Man-hours per acre required with—					Combine compared with sickle and flail	
	Sickle or sith, and mathook, and flail	Cradle and threshing floor—tramping	Self-binder and stationary threshing machine	Header and stationary threshing machine	Combine	Gain in efficiency per worker	Per cent of labor displacement
California	62.6	20	4.5	3.7	0.50	12,000	99.2
Dakotas	60.0	24	4.5	----------	----------	1,333	[1] 92.5
Indiana	62.6	24	6.4	----------	2.03	3,125	96.8
Kansas	60.0	20	4.6	3.8	.69	8,333	98.8
Minnesota	60.0	24	----------	----------	----------	8,333	----------
Missouri	62.6	24	----------	----------	1.03	5,900	98.3
Montana	60.0	20	----------	2.3	1.00	5,900	98.3
Ohio	62.6	24	6.1	4.8	1.00	6,250	98.4
Oklahoma	60.0	24	5.9	4.0	.67	9,090	98.9
Oregon	60.0	20	----------	----------	1.50	4,000	97.5
Pennsylvania	62.6	24	8.5	----------	1.50	4,167	97.6
Texas	60.0	22	4.6	4.3	.75	8,333	98.8
Washington	60.0	22	----------	3.5	.69	8,333	98.8

[1] Self-binder and stationary thresher as compared with sickle and flail.

Labor requirements for harvesting and threshing with combine.—It is only when harvesting and threshing are combined in a single operation that the greatest saving of labor is achieved. The results that are reported from the employment of this method are almost beyond belief. Combines operated by 5 men have cut as high as 100 acres per day. At this rate, the labor requirement for cutting, threshing, and delivering the wheat, sacked or in the bin, is only 0.5 man-hour per acre. Estimating an average of 50 acres per day for the larger combines, the labor requirement for both harvesting and threshing is only 1 man-hour per acre. This is less than one-fourth the requirement for threshing alone in Illinois during the period 1913–1923. It is about one-fifth of the requirement for cutting with a header and threshing with a stationary thresher in the Great Plains region.[18]

Contrasting with the methods of the pre-machine age, the labor requirement for harvesting and threshing with a combine having an average daily capacity of 50 acres, operated by 5 men, is one-twentieth of the average requirement for harvesting with a cradle and tramping on a threshing floor, and one-forty-eighth of that for cutting and threshing with the sickle and the flail. Using the sickle and the flail, it would take 200 men to cut and thresh 50 acres of wheat in a 12-hour day. With the larger-type combine the same work is accomplished in 10 hours, and the machine is operated by 5 men. The saving in labor per acre is 19 man-hours over the cradle-and-threshing-floor method, and 47 man-hours over the sickle-and-flail method. The gain in efficiency per unit of labor of the most modern method over the most primitive is 4,700 per cent, and the labor displacement 98 per cent.

Labor requirements for the smaller combines, operated by fewer men, are in many cases even lower than the figures given above. They range all the way from 0.67 man-hour per acre in Oklahoma,

[18] U. S. Department of Agriculture. Bulletin No. 1198. Washington, April, 1924.

to 2.03 man-hours in Indiana. The average for 12 States is 1 man-hour, which is exactly equal to the requirement for the larger machines.

Table 5 shows the number of workers required to cut and to harvest 50 acres of grain in one day, with different tools or machines. As in Table 4, the data in this table are averages of data gathered from a number of sources and are employed only for the purpose of indicating the general effect of the substitution of one method for another. The figures, therefore, are in no sense to be taken as exact or authoritative.

TABLE 5.—NUMBER OF WORKERS REQUIRED TO CUT AND TO HARVEST AND THRESH 50 ACRES OF GRAIN IN ONE DAY WITH DIFFERENT TOOLS OR MACHINES

Cutting

Name of tool or machine	Total workers		Workers displaced		Per cent of labor displacement
	Skilled	Unskilled	Skilled	Unskilled	
Sickle	200				
Cradle	50		150		75.00
Reaper (hand rake)	40		10		20.00
Reaper (self-rake)	32		8		20.00
Harvester	16		16		50.00
Self-binder	8		8		50.00
Header	2		6		75.00

Harvesting and threshing

Sickle and flail	150	170			
Cradle and flail	50	170	100		31.25
Cradle and stationary thresher	56	33		137	62.27
Reaper (hand rake) and thresher	46	35	18		9.00
Reaper (self-rake) and thresher	38	35	8		9.88
Harvester and stationary thresher	22	35	16		21.92
Header and stationary thresher	8	10	14	25	68.42
Combined harvester and thresher	2	3	6	7	72.22

Corn-harvesting methods.—Between 1850 and 1875 there were 11 patents issued in the United States for corn-harvesting machines.[19] These included 2 cutters, 2 ear-strippers, 2 huskers and shellers, a picker, a husker and shocker, and several other combinations. None of these proved successful, however. Later a machine was perfected for cutting and binding that reduced the labor requirement per acre by about 20 per cent. But corn can be husked from the stalk and cribbed by hand cheaper than it can be cut by the machine and then husked and cribbed by hand. This is not counting the value of the stover. There is a more recent invention, called a shredder, for stripping the corn from the stalk. Since the shredder also leaves the stover in the field, a comparison may be made between the hand cost of picking, husking, and cribbing, and the machine cost for the same processes where the shredder is used.

The Ohio Agricultural Experiment Station gives the per-acre labor requirement (1920-1924) for husking and cribbing from the stalk by hand as 8.66 man-hours, while with the shredder it is 6.13 man-hours, a gain in efficiency of 71 per cent, and a labor displacement of 29 per cent.[20]

[19] Report of Commissioner of Agriculture for the year 1870.
[20] Calculated from figures given in Ohio Agricultural Experiment Station, Bulletin No. 396, September, 1926.

In a study made in 1926 by the divisions of farm management, public roads, and agricultural engineering, of the United States Department of Agriculture, it was found that one man could pick by hand 59 bushels of corn in a day. With a mechanical picker, operated by one man, from 69 to 102 bushels were harvested in a day. An average of these figures shows a gain for the machine of 26 bushels per day, or 44 per cent. The labor requirement is 0.17 man-hour per bushel where the corn is picked by hand, and 0.118 man-hour where the machine is used. The labor displacement is 0.052 man-hour per bushel, or about 30 per cent.

Corn shelling.—Before the coming of machines, corn was shelled by rubbing one ear against another, or by scraping the ear against the blade of a shovel or a spade. The handle of a frying pan or the edge of the bowl was commonly used as a corn sheller in the American Colonies, even as late as 1800. By these primitive methods not more than 7 or 8 bushels of corn could be shelled by one person in a day. According to the tables given in Vol. II of the Thirteenth Annual Report of the Commissioner of Labor (p. 441), it required 66.67 man-hours of labor to shell by hand 40 bushels of corn. This is at the rate of 0.6 bushel per hour.

From the beginning of the nineteenth century onward, there were many devices invented for lightening the laborious task of corn shelling. Sixteen patents for corn shellers had been issued before 1870.

The first successful sheller was a small affair, with a daily capacity of 40 bushels. Even with this machine, one man, working 12 hours a day, shelled more corn than 5 men could shell by hand. There is now a power corn sheller with which one man can shell a bushel a minute, or 720 bushels in a 12-hour day. This is 712 bushels more than the maximum that could be shelled by hand. The labor requirement for shelling 100 bushels of corn by hand in 1895 was 166.67 man-hours, with the hand machine it was 33 man-hours, and with the power machine 1.67 man-hours. The gain in efficiency per unit of labor is therefore 9,800 per cent, and the labor displacement 99 per cent.

Methods of harvesting cotton.—Until quite recently the only effective machine employed in the production of cotton was the gin, which revolutionized the industry at the beginning of the nineteenth century. Many attempts were made to devise a machine that would reduce the slow and difficult labor of picking the bolls from the stalk, but with little success. Hand picking was a very slow process and extremely costly, even where cheap labor was available. The figure given in the Thirteenth Annual Report of the Commissioner of Labor is 77 man-hours for picking one acre (one 750-lb. bale) of cotton. Between 1850 and 1863, 11 patents for cotton pickers were issued, none of which was successful. Up to the beginning of the World War in 1914, practically all cotton was harvested by hand. In that year the crop was poor, and many of the bolls had been frosted, so that they would fall to the ground at a touch, rendering picking even more than ordinarily slow and difficult. To meet this situation, a Texas farmer conceived the idea of gathering the fallen "bollies" with a horse-drag, at the same time stripping from the plants the bolls that had not fallen. His first drag was a section of picket fence, or what is called in the western States a "combination"

fence, being constructed of wooden slats bound together with interwoven horizontal wires. This section of fence was dragged over the cotton rows in such manner that the wires caught the bolls, stripped them off the stems, and left them lying on the wooden strips of the drag. But the drag gathered up so much rubbish that the cotton could not be ginned. Not to be discouraged, the farmer ran the stuff through his threshing machine, thus cleaning out enough of the rubbish to enable the gin to separate the fiber from the remainder.

The idea was taken up by other farmers, and the experts of the agricultural experiment stations got to work on it. First a rude wooden sled was constructed, with a V-shaped slot for catching the stalks and stripping off the bolls. The bolls were worked backward by the forward motion of the sled into a wooden box placed on the body of the sled. The first cotton sleds stripped only one row at a time, but were soon widened to cover two, three, and finally four or more rows. With a 4-row sled, one man can strip 4.4 acres of cotton in a 12-hour day.[21] The labor requirement per acre is 2.7 man-hours, as against 77 man-hours for hand picking. The labor displacement is 83.5 per cent. Meanwhile the gins have been adapted to the new method of harvesting, so that sledded cotton costs no more for ginning than that which is picked by hand. The loss in quality that at first resulted from sledding has also been eliminated, so that the labor saving represented above is a net gain.

Hay-harvesting methods.—The primitive tools for harvesting hay were the scythe, the hand rake, and the pitchfork. In one form or another all these tools were in use from primitive times, and before the middle of the last century constituted practically the entire equipment for harvesting this crop. In fact, both in this country and in the old world, there are many localities where the greater part of the forage is still harvested with these tools. There were scythes made of stone, copper, or bronze long before men learned any practicable method of reducing iron from its ores. The earliest forks and rakes were forked sticks or bones of animals. As in the case of the scythe, mankind had to wait for the coming of the age of iron for the perfection of these tools. The scythe has reached its highest perfection in Germany and in the United States, and the forks and rakes now made in this country are marvels of strength, lightness, and balance. We have no way in which to measure the saving in labor due to the perfection of these tools, but it must have been very great.

Machines for harvesting and handling hay began to appear in this country toward the end of the first quarter of the nineteenth century. According to a writer in the Pittsfield (Mass.) Sun, a mowing machine of the disk type was invented in 1822. Between 1833 and 1884, 11 patents for mowing machines were issued. In 1858, a writer in the Country Gentleman told of a mowing machine with which 1 man could cut 10 acres in a day, while a man with a scythe could cut only 1 acre.

Stacking and loading machines, slings, etc., came into general use considerably later. In fact, there are many of these devices that are still of so doubtful advantage that farmers sometimes junk them in disgust, and go back to the more primitive methods. But taking

[21] Texas Agricultural Experiment Station. Bulletin No. 362, July, 1927.

the situation as a whole, machines and devices are available that, under most conditions, greatly reduce the labor requirements for handling this crop. According to the study of hand and machine labor costs made by the Commissioner of Labor in 1894–1896, the per-acre labor requirement for harvesting hay by hand was 21.08 man-hours, while with the machines available at that time it was only 3.94 man-hours. This was an increase of more than 400 per cent in efficiency per unit of labor applied, and a labor displacement of more than 80 per cent. Later investigations show a still further increase in machine efficiency since the earlier study was made. The 1927 Yearbook of the Department of Agriculture places the average hand-labor requirement for harvesting hay at 11 man-hours, and the average for the machines then available at 1.6 man-hours. These figures represent a 60 per cent gain in efficiency over the machine methods of 1895, and of 1,200 per cent over the hand methods of 1850, indicating the improvement in the efficiency of hay-harvesting machinery that was achieved during the last 30 years. The labor displacement of the 1927 machines, as compared with the hand methods of 1850, is approximately 84 per cent.

Summary

The increases in efficiency in the growing of farm crops, obtained by the substitution of machine for hand methods, vary all the way from 80 per cent in the husking and cribbing of corn to more than 9,000 per cent in the shelling of corn. The labor displacement varies from 31 per cent to 99 per cent. In the production of small grains, the increased efficiency and the resulting labor displacement are, on the whole, greatest in the operations of plowing, seeding, and harvesting, and greater in the plains States and the far Northwest than in the older farming sections. During recent years, notable gains in efficiency have been made in the harvesting of cotton, and labor costs have been reduced in the production of all row crops, though far less than in the production of the small grains.

But increased efficiency has not been due wholly to the invention and use of new machines. Other causes are: (1) The improvement of hand tools, (2) the development of larger and more effective combinations of machines and power, and (3) the increased substitution of mechanical for animal power. The results of the comparisons made in this section are summarized in Table 1, which shows that the average increase in efficiency per unit of labor applied in the growing of five principal crops—corn, cotton, hay, potatoes, and wheat—by the substitution of the most efficient machines and methods for the earlier hand tools and hand methods, is approximately 1,200 per cent, and the labor displacement 80 per cent.

Effects of Introduction of Automotive Power Upon Agricultural Labor Requirements

WHILE the increasing substitution of mechanical for animal power in the operations involved in the production of farm crops constitutes the most important development in the agricultural industry during recent years, the greater part of the labor saving thus far achieved in this industry has been accomplished with animal power. While considerable economies have already been effected by the substitution

of tractors and trucks for horses and mules, and while the results achieved tend strongly to show that under most conditions motor farming will require less man labor than farming with horses, it can hardly be said that the superiority of power farming, under all conditions, has yet been completely proved. Though tractors, trucks, and stationary engines have been adapted to farms of all sizes and to all processes on all kinds of farms, 61 per cent of all power utilized on farms in the United States in 1924 was supplied by animals.[22] Tractors supplied only 16 per cent, and trucks less than 4 per cent.

Many of the largest field operations are still carried on by horses. Huge machine units for plowing, seeding, and harvesting and threshing are horse-operated in the State of Washington, and thus far there seems to be little disposition to change to the tractor and the truck. This is doubtless due largely to the fact that horses can be fed cheaply under the existing conditions, and can be turned out to graze when not at work, and to the fact that hilly fields and sandy soil render tractor operations relatively difficult. In New England, the middle States, and the old South, there are localities where there are many conditions under which the motorizing of farms would be of doubtful economy. In the prairie States, the Great Plains region, and the Southwest, conditions are more favorable, and the process of motorization is going on much more rapidly. Nevertheless, considerable progress has been made in localities where the conditions are relatively unfavorable. Studies recently made in Pennsylvania have demonstrated that the use of tractors is both practicable and profitable under most conditions in that State; and, according to one authority, all Michigan farmers use tractors to a greater or less extent. In Indiana farming is 82 per cent motorized, and in Illinois 66 per cent.[23]

As to the saving effected by the tractor, it has been estimated that in the State of Oregon the average reduction in labor requirements that may be effected by the substitution of tractors for horses in all the operations of wheat farming is 2.3 man-hours per acre. The figures upon which this estimate is based are given in the following table.

TABLE 6.—LABOR REQUIREMENTS IN WHEAT FARMING IN OREGON, USING TRACTOR AND USING HORSES

[Source: U. S. Department of Agriculture, Bulletin No. 1447, Washington, 1926.]

Operation	With tractor		With horses		Saving in labor per acre when done with tractor
	Acres per day	Man-hours per acre	Acres per day	Man-hours per acre	
					Man-hours
Plowing	18.0	0.56	7.6	1.32	0.6
Harrowing (spike-tooth harrow)	85.7	.12	43.9	.23	.1
Harrowing (spring-tooth harrow)	45.6	.22	18.7	.53	.3
Disking before plowing	56.5	.18	20.2	.50	.3
Other disking	40.5	.25	17.4	.57	.2
Weeding	72.3	.14	24.0	.42	.3
Drilling	72.4	.14	22.5	.45	.1
Cutting and threshing with combine	32.8	.30	17.6	.57	.4

[22] U. S. Department of Agriculture. Bulletin No. 1348. Washington, 1925.
[23] G. W. McCuen, in Ohio Farmer, Feb. 26, 1927.

A study in Pennsylvania, averaging all conditions, gave the following results:

TABLE 7.—LABOR SAVING EFFECTED BY SUBSTITUTION OF TRACTORS FOR HORSES IN PENNSYLVANIA

Operation	Man-hours per acre		Man-hours released
	Horses	Tractor	
Plowing	5.00	2.72	2.28
Drilling grain	1.00	.57	.43
Harvesting grain	1.00	.50	.50
Planting corn	.70	.67	.03
Planting potatoes	6.70	3.40	3.30
Cultivating corn	1.20	.57	.63
Cultivating potatoes	1.80	1.00	.80
Spraying potatoes	.57	.60	----
Mowing hay	.73	.37	.36
Raking hay	.53	.37	.16
Loading and hauling hay	3.00	----	----
Digging potatoes	4.40	3.90	.50

Though conditions in Pennsylvania are relatively unfavorable to tractor farming, it is estimated, on the basis of these figures, that under all conditions the saving effected by substituting tractors for horse power is from 33 to 50 per cent.[24]

In particular cases much more striking results have been achieved. In South Carolina a tractor mower, having a 7-foot sickle, cuts from 25 to 30 acres per day, and is operated by one man, replacing from 2 to 3 men and from 4 to 6 mules.[25] A 15–30 horsepower tractor, hitched to a 2-bottom plow and driven by one man, can plow 15 acres of stubble in a day, or something like 10 times as much as can be plowed by one man and two horses. It will do twice as much as a 2-bottom plow drawn by three horses and operated by one man. The lowest labor requirement for a 20-horse plowing outfit is 0.66 man-hour per acre, while the record for a 15–30 horsepower tractor outfit is 0.5 man-hour.

Table 8 shows the labor displaced by the utilization of various agricultural machines.

TABLE 8.—LABOR DISPLACEMENT OF DIFFERENT AGRICULTURAL MACHINES

Machine	Number of workers		Number of workers displaced		
	Hand method	Machine method	Skilled	Unskilled	Per cent of displacement
Corn harvester	10.0	4.0	----	6.0	60.0
Corn sheller	166.6	1.6	----	165.0	99.0
Cotton harvester	77.0	2.7	----	74.3	96.5
Combined harvester and thresher	320.0	5.0	145.0	170.0	98.0
Hay stacker	2.5	9.0	6.5	----	72.6
Mowing machine	7.0	1.0	6.0	----	85.7
Potato planter	13.0	1.4	----	11.6	89.2
Potato digger	20.0	1.6	----	18.4	92.0
Tree digger	375.0	24.0	----	351.0	93.6
Self-binder	24.0	2.0	22.0	----	91.7
Tractor gang plow	55.0	5.0	50.0	----	90.9
Seed drill	14.5	.13	14.37	----	99.1
Threshing machine	24.0	1.0	23.0	----	95.8
Beet lifter	6.6	2.8	3.8	----	57.6
Milking machine	10.0	4.0	6.0	----	60.0

[24] H. B. Josephson in Agricultural Engineering, July, 1928, pp. 219–223.
[25] Manufacturers' Record, Nov. 10, 1927, pp. 84–86.

Year-round Advantages of Motorized Farming

It is only when the year-round operation of the farm is considered that the full advantage of mechanical over animal power becomes apparent. The adjustment of power and labor to seasonal requirements has always been one of the farmer's most serious problems. On the horse-equipped farm it is nearly always necessary to keep and feed through the slack seasons more animals than there is profitable work for, and often more hands are kept than ordinarily can be profitably employed, so that the farmer will not be short-handed during the planting and harvesting seasons. When mechanical power is installed the machines can be put in storage when not in use, and meanwhile will not have to be fed and cared for. In the rush of planting or harvesting, tractors or trucks can be worked 24 hours a day, if necessary. At the same time, the peak of the seasonal labor requirement is lowered, owing to the fact of the higher per-man accomplishment of the tractor.

There are many examples which show the advantages of motor equipment in these respects. In Iowa one man and a boy, using tractor and truck equipment, do all the work on a 238-acre farm, tilling 100 acres of corn and 60 acres of oats. One man does all the work in the cultivation of 160 acres on another Iowa farm. Still another farmer cultivates 170 acres, with no help.

On the other hand, in the Big Bend country of Washington State, one man, using a horse hook-up with cultivator, rod weeder, and drill, can do all the work prior to harvesting in producing 517 acres of wheat. With weeder, drill, and "duck-foot," he can take care of 775 acres.[26] And the labor requirement for harvesting and threshing will be about 1.2 man-hours per acre.

On a wheat farm in Montana all the work prior to seeding is done by one man, and the labor requirement for seeding, harvesting, and threshing totals only 2.5 man-hours per acre.[27] Similar results have been accomplished on many other farms in that State. According to Prof. M. L. Wilson, of the Department of Agricultural Engineering of the University of Montana, the average farm family in the wheat-growing areas of that State can take care of from 600 to 1,000 acres of wheat, cropped once in two years, or alternated with corn.

These results, however, do not depend upon the use of the tractor. They are due chiefly to the introduction of three machines especially adapted to Montana conditions—the one-way disk, the duck-foot cultivator, and the combined harvester and thresher—and to the big "hook-up."

The relation of power and machinery in use in the different States to per capita production and net income is shown in the following table, compiled from U. S. Department of Agriculture Bulletin No. 1348:

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[26] Washington State College of Agriculture. Popular Bulletin No. 135.

[27] Agricultural Engineering, January, 1929, p. 3: "Research studies in the economics of large scale farming in Montana," by Prof. M. L. Wilson.

TABLE 9.—RELATION OF POWER AND MACHINERY TO CROP-ACRES PER UNIT OF MAN LABOR AND TO NET INCOME PER FARM OPERATOR, 1924

State	Average primary horsepower		Average horsepower-hours utilized annually		Average crop-acres per worker	Average value of machinery per worker	Average net income per farm operator
	Per worker	Per farm	Per man-hour	Per improved acre			
Maine	4.0	5.0	0.41	38	26.92	$436	$1,532
New Hampshire	4.5	5.6	.44	47	21.40	374	811
Vermont	4.2	6.1	.45	33	28.34	509	1,280
Massachusetts	6.0	9.6	.40	67	12.74	379	913
Rhode Island	4.7	8.9	.35	60	9.66	316	797
Connecticut	5.0	7.8	.37	58	13.94	363	953
New York	5.4	8.5	.51	36	28.76	557	1,807
New Jersey	6.0	11.7	.46	51	19.06	438	1,736
Pennsylvania	5.9	8.0	.53	37	30.79	594	1,482
Delaware	4.2	7.1	.46	36	30.22	391	1,780
Maryland	4.6	8.7	.44	38	23.68	320	1,379
Virginia	2.4	3.8	.27	25	17.81	172	1,119
West Virginia	2.5	3.2	.30	19	18.18	155	858
North Carolina	1.4	2.5	.16	26	13.38	117	1,454
South Carolina	1.3	2.7	.14	28	13.44	115	1,712
Georgia	1.3	2.5	.15	21	19.96	105	1,338
Florida	2.2	4.4	.18	26	16.76	126	915
Kentucky	2.0	2.9	.25	21	17.51	123	968
Tennessee	1.9	3.0	.23	25	18.26	135	962
Alabama	1.0	2.0	.12	19	16.02	69	949
Mississippi	1.1	2.0	.14	23	13.21	80	1,008
Louisiana	1.9	4.0	.27	40	14.41	117	1,069
Arkansas	1.6	2.8	.22	29	16.74	108	1,162
Texas	3.3	6.0	.37	28	32.31	196	2,030
Oklahoma	4.3	7.0	.48	25	49.01	258	2,227
Ohio	5.6	7.8	.60	35	35.70	411	1,819
Indiana	5.4	7.7	.62	32	42.77	437	1,834
Illinois	7.6	12.1	.88	36	55.70	591	2,657
Michigan	5.3	7.3	.59	37	35.74	451	1,539
Wisconsin	5.6	8.6	.63	44	33.86	572	1,863
Minnesota	7.0	11.5	.78	32	57.37	622	1,982
Iowa	9.8	14.8	1.07	36	65.23	954	2,985
Missouri	4.7	7.0	.53	25	40.95	353	1,504
North Dakota	14.1	21.8	1.52	22	163.33	953	2,218
South Dakota	14.1	22.0	1.43	27	128.51	963	2,657
Nebraska	11.0	16.4	1.13	27	103.09	821	2,928
Kansas	10.4	14.6	1.08	25	96.21	668	2,417
Montana	13.0	18.4	1.37	29	47.46	673	137
Wyoming	10.4	17.0	.93	34	46.40	461	1,493
Colorado	8.4	13.8	.82	32	53.50	504	2,255
New Mexico	4.1	7.4	.69	65	21.73	180	1,205
Arizona	6.1	21.4	.50	74	13.15	249	3,133
Utah	5.4	9.0	.56	42	24.78	314	1,875
Nevada	8.1	21.5	.75	32	46.54	431	3,354
Idaho	8.8	14.0	.98	44	41.59	572	2,192
Washington	7.4	11.4	.93	40	42.01	543	2,490
Oregon	7.2	11.3	.90	43	37.89	528	1,813
California	8.9	19.8	1.51	100	26.34	524	3,485
United States	4.5	7.4	.50	32	34.28	338	1,682

Development in Agriculture as a Whole, and the Present Agricultural Situation

WHILE it is indicated in the preceding sections that there has been an average labor displacement of 80 per cent where modern machine methods have been substituted for hand methods in the principal operations of growing farm crops, it does not follow that there has been any such displacement in the agricultural industry as a whole. The results for the industry as a whole will, of course, depend upon the extent to which the labor-saving machines are utilized in all sections, and under all conditions. On the other hand, there are many other things besides farm machinery that since the settlement of the coun-

try have operated to increase output per unit of man labor, and to cause labor displacement. Before the appearance of any of the modern farm machinery a great deal had been accomplished by the improvement of hand tools and implements. Among the more important instances of this development are the substitution of the grain cradle for the sickle and the scythe, and the substitution of the metal plow, with an improved moldboard design, for the clumsy and ineffective wooden plows that had been in use since earliest times. The improvement in hand implements and tools has continued throughout the period of mechanization, and has been no unimportant factor in producing the increased efficiency that usually is ascribed to machines alone. Furthermore, there has been a rapid development in methods of soil treatment, in the production of new and better seeds, in adaptation of crops to conditions of soil and climate, and in the management of the farms, all of which have contributed to the aggregate gain in the output per worker. For the industry as a whole, therefore, the final result can not be expressed in terms of any one of these causes. It will be a resultant of the operation of all of them.

Unequal Development of Agricultural Mechanization

One of the most striking features of the development of agriculture in this country is the way in which primitive methods of cultivation have persisted side by side with the most modern methods. Though many of the agricultural machines that are now familiar made their appearance early in the nineteenth century, but few came into anything like general use until after the Civil War. Though a large saving in man labor is shown by many of the machines included in the 1894–1896 survey by the Commissioner of Labor, elsewhere referred to, many of these machines did not come into general use until 20 years later.

This is not difficult to explain. On many of the farms of the country the necessary power was lacking. Farmers experienced the greatest difficulty in accumulating the capital with which to buy the new equipment. For many years there was no effective organization for selling or servicing the new machines or for educating the farmers in their use and care. Low prices for farm products often discouraged any increase in farm equipment. These causes, combined with the age-old prejudice against "new-fangled notions," affecting agriculture even more seriously than other industries, have tended to prevent the immediate utilization of the machines and methods which the genius of a progressive nation have provided. Even as late as 1924, power was utilized to replace human labor in but little more than half of the work done on farms.[28]

Moreover, it was naturally to be expected that a considerable time would be required in making the shift from hand to machine methods. This is especially true of farming, in which, on account of the great number of independent enterprises, and the wide difference in local conditions, coordination is always difficult. There has been, necessarily, a great deal of experimentation, much of it extremely costly. Machinery can not be serviced on scattered farms as promptly and

[28] U. S. Department of Agriculture. Bulletin No. 1348: Washington, 1925.

effectively as in manufacturing centers. Better rail transportation; the institution of the parcels post; the coming of the automobile; improved highways; the organization of service departments by manufacturers of and dealers in agricultural machinery; the work of the Federal Department of Agriculture, the agricultural experiment stations, and the State agricultural colleges in the development of methods; and the education of the farmers—all these and many other things characteristic of recent economic development have gone a long way toward removing the impediments to mechanization.

The survey made by the Commissioner of Labor in 1894–1896 shows that there was at that time a wide variation in the results achieved by the use of different machines in the several farm operations, and in the production of different crops. (See Table 3.) In the units compared, it was found that by the hand method 62.42 man-hours of labor were required to take care of an acre of wheat, while by the machine method only 3.1 man-hours were required. For corn the figures were 182.68 by the hand method, and 27.5 where machines were used. For wheat the labor displacement was 95 per cent, while for corn it was only 85 per cent. The substitution of machine for hand cultivation resulted in a labor displacement of 53 per cent in the growing of cotton, and of 50 per cent in the growing of potatoes. In the growing of five principal crops—corn, cotton, hay, potatoes, and small grains—an average of the figures given in the report shows a labor displacement of 73 per cent, as between "primitive" methods and the machine methods employed in 1896. In the production of tobacco there was practically no difference.

The report of the Commissioner of Labor does not disclose what proportion of all crops were produced by machine methods in 1894–1896. It is evident that there would be at that time no method of ascertaining such information. But if power equipment was utilized for no more than half of the work done on farms in 1924, it may safely be inferred that only a small percentage of the industry had been successfully mechanized 30 years earlier. The survey indicates what could have been accomplished at that time, with a full utilization of the machines and methods then available, rather than what had actually been accomplished. Figures recently compiled by the Department of Agriculture show that more than a quarter of a century later the average labor requirement for producing farm crops had not been reduced to the level for "modern methods" shown in this report. These data are given in the following table:

TABLE 10.—APPROXIMATE AVERAGE MAN-HOURS OF LABOR PER ACRE REQUIRED FOR CROP PRODUCTION IN VARIOUS PARTS OF THE UNITED STATES, IN 1924

[Source: U. S. Department of Agriculture, Bulletin No. 1348, Washington, 1925, p. 59]

Area	Corn		Small grains		Hay per cutting	Potatoes	Tobacco	Cotton	Rice	Sugar beets	Truck crops	Fruit	Cowpeas and soybeans
	For grain	For silage	Cut with binder	Cut with combine									
New England	100	100	42	------	10	100	------	------	------	------	------	------	------
New York	66	58	24	------	10	100	------	------	------	------	------	170	42
New Jersey	69	------	------	------	10	100	------	------	------	------	190	------	------
Pennsylvania	50	49	24	------	12	106	------	------	------	------	------	------	------
Virginia	50	------	23	------	------	82	------	------	------	------	------	------	------
West Virginia	57	57	23	------	8	------	378	------	------	------	------	------	------
Kentucky	46	60	12	------	------	------	363	------	------	------	------	------	18
South Carolina	------	------	------	------	11	116	------	136	------	------	------	------	------
Georgia	40	------	15	------	20	115	400	125	------	------	------	------	19
Louisiana	37	48	------	------	12	137	------	100	37	------	------	------	------
Arkansas	38	48	16	------	16	94	------	112	46	------	------	140	------
Texas	------	------	------	------	16	47	------	64	37	------	------	------	------
Missouri	24	30	15	------	------	------	------	------	------	------	------	------	25
Ohio	48	51	20	------	10	120	300	------	------	110	150	------	------
Michigan	30	32	19	------	------	80	------	------	------	110	------	------	40
Wisconsin	30	30	15	------	14	82	------	------	------	------	------	140	32
Minnesota	26	32	12	------	12	58	------	------	------	155	------	------	------
Indiana	26	30	15	------	12	------	------	------	------	------	------	------	------
Illinois	20	28	15	------	8.4	------	------	------	------	------	------	------	------
Iowa	18	28	------	------	7.5	69	------	------	------	------	------	------	------
Kansas	16	26	8.5	5	4	------	------	------	------	------	------	------	------
Eastern Nebraska	16	26	10	------	6	------	------	------	------	------	------	------	------
Western Nebraska	12	23	7	5	5	------	------	------	------	------	------	------	------
Dakotas	13	23	7	------	8	32	------	------	------	------	------	------	------
Colorado:													
Dry	------	------	7	5	5	------	------	------	------	------	------	------	------
Irrigated	------	------	25	------	12	75	------	------	------	124	------	352	41
Utah, irrigated	------	------	------	------	13	114	------	------	------	129	------	------	------
Northwest:													
Irrigated	------	------	24	------	15	------	------	------	------	119	------	400	30
Dry	------	------	17	7	------	------	------	------	------	------	------	------	------

As a matter of fact, in nearly every case the actual labor requirement in 1924 was greater than for the machine methods of 1894-1896. In the production of corn 37.8 man-hours per acre were required in 1924, while it was only 27.5 by the machine methods of the earlier period. The machine requirement for small grains was only 3.1 man-hours per acre in 1894–1896, as against 15.5 man-hours in 1924. The average per-acre requirement for five principal crops was 30 man-hours by the machine methods of the earlier period and 54 man-hours by the methods actually employed in 1924.

Even when the machine methods now generally in use are compared with the machine methods of 1896, the difference is not startling. For the five principal crops named above, the average per-acre labor requirement with the machines now generally in use is 25.6 man-hours, as compared with 30.2 man-hours in 1896. This is a gain in efficiency of 31 per cent, and a labor displacement of 24 per cent.

Production per worker and labor displacement as shown by index numbers.—An approximate estimate of the results of the combined operation of all the factors making for increased output per worker may be made in terms of crop-acres cultivated, or in terms of the physical quantity, or the total value in dollars of constant purchasing power, of the output of the industry as a whole. In 1850 the average farm worker could care for only 12 acres of farm crops, while in 1924 the average crop-acres cultivated per worker were 34, an increase of

183 per cent.[29] In 1870, census figures show, the average production of grain per worker was 11,530 pounds, while in 1920 it was 24,820 pounds, a gain of 115 per cent.

Crop-acres per worker, however, taken alone, are not a thoroughly sound basis for computing output per worker, since, owing to difference in yields, the number of acres cultivated does not always indicate the quantity produced. There are many conditions under which more intensive cultivation, requiring a greater expenditure of labor, will increase the quantity or the value of the crop, with no increase in the number of acres cultivated. On the other hand, unfavorable conditions may cut down the yield per acre, or conditions favoring a larger acreage, with less intensive cultivation, may result in an increased acreage per worker, with even a loss in quantity or in value of output. For these and other reasons, the total physical quantity, or the total value of the output forms a better basis for computing output per worker than do crop-acres cultivated.

Indexes published in the Commerce Yearbook, 1930, based on data assembled by the Department of Agriculture and the Bureau of the Census, indicate an increase of 61 per cent in production per worker between 1899 and 1927. The same report shows an increase in output per worker in the agricultural industry of 29.5 per cent between 1919 and 1927. The yearly average for the entire period is 2.3 per cent, on the basis of 1899 = 100, and the yearly average for the last eight years of the period, 3.8 per cent.

Postwar development in agricultural efficiency.—The figures given in the last preceding section, however, do not sufficiently indicate the rapid increase in agricultural efficiency that has taken place since 1919, for the reason that the increase for 1919–1927 shown in the Department of Commerce index is computed on a higher basis than is the increase for the entire period, 1899–1927. The index of the mass of crop production is 78 for the years 1895–1899, while the index for the years 1915–1919 is 108.[30] The increase in production per worker from 1919 to 1927 is, therefore, on the basis of 1899 = 100, approximately 40 per cent, and the yearly average increase 5 per cent.

This acceleration in the rate of increase of production per worker is characteristic of the postwar period in agriculture as in other industries. This is explained by the fact that practically all of the forces that since the beginnings of the industry had at different times operated to increase the output per worker have been working together during the last 10 years. The improvement of farm tools, which, before the machine age, was the chief cause of increased performance per worker, continues alongside of the perfection of farm machinery. Where horse power is still used, larger and more effective "hook-ups" greatly increase the results per worker engaged. Improvements in farm management and in methods of operating equipment, advances in the agricultural sciences, and improvements of the public services in aid of agriculture, each has added its quota. And most important of all, the process of motorization has been very greatly accelerated.

Yet, all things considered, it appears that the process of agricultural mechanization in this country has only barely begun. While machines have come into use that presage an almost total displace-

[29] U. S. Department of Agriculture. Bulletin No. 1348. Washington, 1925.
[30] Statistical Abstract of the United States, 1930, p. 674.

ment of man labor in the production of principal crops, where conditions are most favorable, the extremely wide variation in the results which have been achieved, even under similar conditions, is evidence that the industry is still largely in the experimental stage. This is even more apparent when it is remembered that many primitive methods still survive alongside of the most efficient modern methods. When it is added that even yet mechanical power is utilized to replace man labor in but little more than half of the work done on farms, and that the power that is installed is operated at only a fraction of maximum efficiency, it is apparent that the process of agricultural mechanization has still a long way to go. In short, the outstanding fact of the present agricultural situation is not the magnitude of past accomplishments—great as they have been in many respects—but the vastness of the field yet to be occupied.

Technological Labor Displacement in Agriculture, and the Unemployment Situation

It is evident, from the fact that there was between 1920 and 1927 a shrinkage of more than 3,000,000 in the number of persons living on farms, that there has been a large shift of labor from agriculture to other industries during these years. Furthermore, when it is remembered that during this period there has been a net decline in employment in most nonagricultural industries, it is apparent that the release of labor on the farms has contributed largely to the volume of unemployment that has developed during recent years. It does not follow, however, that there has been a shift from agriculture in any way proportionate to the displacement that has occurred as a result of increased output per worker. In fact, from the beginning of agricultural mechanization until the year 1910, there was no net decrease in the number of farm workers, taking the country as a whole, though there was continuous labor displacement.

Between 1880 and 1910, there was, in fact, an increase of approximately 3,000,000, or 37.6 per cent, in the number of farm workers. During this same period there was a technological displacement, as measured in terms of crop-acres cultivated per worker, of approximately 40 per cent. This would have resulted in the release from the industry of 3,400,000 workers during these years, except for the fact that conditions favoring the expansion of the industry enabled it to absorb the whole of the displacement. Not only was this absorption accomplished, but the industry took on an additional 3,000,000 workers.

Between 1900 and 1927, the technological displacement, computed from the Department of Commerce index of increased output per worker, was 38 per cent, while the decline in employment was less than 3 per cent. If none of the farm workers displaced during this period had been reemployed in the industry, more than 4,000,000 workers would have been shifted to other industries or would have remained unemployed. Instead of this, only approximately 200,000 were shifted out of the industry. From 1919 to 1927, the technological displacement was approximately 23 per cent, and the decline in agricultural employment 7 per cent. If none of the agricultural workers technologically displaced during this period had

been reemployed in the industry, there would have been 2,530,000 who would have had to find employment elsewhere or remain unemployed. The actual number who were shifted out of the industry was 800,000.

When the migration of farm labor indicated by the shrinkage in total farm population between 1920 and 1927 is taken into consideration, it appears that a much larger number of workers must have left the farms. If it is assumed that three out of five of the more than 3,000,000 persons who left the farms during these years were in search of employment, or would have been unemployed if they had remained on the farms—not a high estimate, when it is remembered that a large percentage of the migrants were between the ages of 18 and 25 years—it will appear that the shrinkage in farm employment between 1920 and 1927 was approximately 2,000,000 workers.

This figure does not represent the whole extent of the shift of workers from the farms during the last 10 years. According to estimates of the Bureau of the Census there was an absolute shrinkage in total farm population during this period of more than 3,000,000. The estimate of the shift of workers given above is made on this basis. But this takes no account of the natural increase in farm population, which, computed on the returns for census years, is found to be more than 2,500,000.[31] In 1920, 35 per cent of all persons living on farms were employed. At this ratio, the 2,500,000 increase in farm population represents an increase of 875,000 in the number of workers. This gives a total of 2,875,000 workers leaving the farms between 1920 and 1927, who either found employment in other industries or remained unemployed, a figure somewhat larger than that for the total technological displacement.

Probable Development of Agricultural Mechanization in the Near Future

THE wide difference between what has already been accomplished by improved machines and methods in agricultural production, and what could be accomplished with a full utilization of the best methods and the most efficient machines available, may be shown by comparing the average results achieved by the most efficient combinations with the highest estimate of actual accomplishment for the industry as a whole. A rough average of the results of mechanization in the production of five principal crops, based on the data assembled in preceding sections, indicates an increased efficiency of approximately 1,200 per cent.[32] The highest estimate of the actual increase in production per worker from 1850 to 1920 is 300 per cent. If we add another 100 per cent on the same base to cover the increase since 1920 (which will correspond fairly closely with the results on the basis of "value produced per worker"), the total will still be only one-third of the possible increase if the best machines and methods were utilized throughout the industry.

Furthermore, the increased efficiency of 1,200 per cent, where modern machines and methods have been used, has been achieved in many instances without the aid of mechanical power. It appears from investigations recently made by various Federal and State

[31] Statistical Abstract of the United States, 1930, p. 84.

[32] See Table 3, p. 9.

agencies that, even where the most economical horse equipment is used, at least 50 per cent of the labor now required in the several farm operations could be saved by the substitution of mechanical power. Taking into consideration also the improvements in farm machinery that are constantly being made, and the saving that would be effected if the most scientific methods of soil treatment, etc., were universally adopted, it will be fairly safe to conclude that the farming industry in the United States is at the present time operating at no more than 25 per cent of possible maximum efficiency.

The main reasons for this condition may be summarized as follows: (1) Inadequate markets for farm products (during the last 10 years, and over a considerable part of the entire period of mechanization, farmers have been able with the existing equipment to produce more than they could profitably sell); (2) low farm wages in many parts of the country, especially in the old South; (3) absence of efficient planning of farm work; (4) failure to utilize all the power available for farm production; and (5) the cost of changing from horse to motor equipment.

While it is obvious that in the long run overproduction and low prices will operate as a check upon mechanization, it is to be noted that during the last several years the combination of low prices for farm products and comparatively high wages for farm workers has tended to stimulate the adoption of modern methods and the installation of labor-saving machines. There was no other way in which to widen the margin between costs and selling prices, so as to avoid complete bankruptcy. Yet, if there had been sufficient demand for farm products at profitable prices, it is entirely likely that the improved methods would have been adopted even more rapidly than they were. But with regard to the probable rate of progress in mechanization in the future, the important fact is that the process continues alike during periods of depression and periods of expansion.

In agriculture, as in other industries, low wages have always been a prime cause of slow development in efficiency. As long as man labor is cheap and plentiful, little attention is apt to be given to the possibility of higher production and larger profits through the adoption of better methods and improved machines. As in other industries, it took the farmers a long time to discover that low wages do not always mean low production costs. But in agriculture as in other industries many employers are now coming to realize that exactly the opposite of this may be true. The highest unit labor cost in agricultural production is, on the whole, in the localities where wages are lowest. For example, the per-acre labor requirement for producing corn ranges all the way from 13 man-hours in the Dakotas to 50 in Virginia and 100, or even more, in the New England States.[33] Though wages are lower in Virginia than in the Dakotas, the labor cost per acre is considerably higher. Texas and Oklahoma cotton growers pay higher wages than are paid in the old South, but their unit labor costs are lower. This is true even where similar methods are employed. And with the modern methods now in use in the Southwest the labor cost is still further reduced, while wages are advanced on account of the training and experience that are necessary in caring for and operating machines. When the farmers of the old South come to realize these

[33] See Table 10, p. 28.

facts, the mechanization of agriculture in the southern States, other things being equal, will go forward as it has in the middle and western States during the last 10 years.

The definite planning of the work of the farm is a comparatively new thing in the United States, as it is in all other countries. A proper placing of farm buildings, an economical arrangement of fields, and an effective relating of one process to another are as important on the farm as in the factory. The modernization of farm operations promises as valuable results to the farmer as have been achieved by the now famous assembly lines in the Ford factories. Through the concerted efforts of the Department of Agriculture and the State agricultural colleges and experiment stations, there is now developing in this country a real science of farm management, the application of which on many of the more progressive farms has already resulted in very considerable economies in money and labor expenditure. With the increased installation of machinery, calling for larger capital investment, the need for scientific planning is bound to be more widely recognized in the near future. It is certain that this development will greatly increase the efficiency of the farm plant.

It is in part due to the relative absence of effective farm management that the power available for farming is not fully utilized. Maladjustment with regard to seasonal and other requirements in many cases prevents maximum utilization even of the power already installed. It often happens that the installation of a tractor or a truck on a farm merely duplicates the whole or a part of the former power equipment instead of replacing it. The necessary adaptation of labor to the new equipment is difficult and often costly. Farm workers must become machinists and machine operators, instead of merely hired hands. The farmer himself must become a business man, and, to a great extent, an engineer, or he must employ technical service. All this, however, promises to work out as a part of the process of mechanization, and, provided the necessary economic adjustments can be made, it promises greater profit to the farmers and higher wages and better working conditions for hired farm workers.

From an immediately practical point of view, the cost of changing from horse to motor equipment is perhaps the most important factor tending to retard progress in agricultural efficiency. It is not merely the fact that where many farmers are making the change at the same time there is no profitable market for the animals displaced, but a considerable part of the horse-equipped farm is always reserved for pasture and for the growing of forage and feed crops. The farmer is apt to think that his horse feed costs him nothing, while he has to pay out good money for oil and gasoline; and there may be considerable truth in this. When a farmer is already facing the necessity of cutting down his commercial crop acreage on account of general overproduction, the land that would be released by getting rid of his horses will be of little use to him.

Yet, all things considered, the change from horses to tractors is going on very rapidly. Between 1920 and 1929, according to the census reports, the number of horses and mules on farms in the United States decreased from 25,199,552 to 19,476,000, while the number of tractors increased from 246,083 to 852,989. If the change continues at this ratio there will be nearly 3,000,000 tractors on the farms of

the country 10 years from now, and the number of horses and mules will have been reduced to less than 15,000,000. And, of course, there will be a corresponding increase in efficiency and in the displacement of farm labor.

There is no better indication than these figures of the momentous changes in agricultural conditions that are likely to come within the next 10 years, especially when they are taken in connection with data showing the present condition of the industry. In the matter of power utilization the present situation is best described by Dr. C. D. Kinsman in Department of Agriculture Bulletin No. 1348:

> Present available information would indicate that power equipment is utilized to replace human labor in but little over one-half of the work now done on farms. Power equipment is available for a considerable part of the remaining work but for various reasons is not now utilized. In some areas wages have been so low that it has been more economical to hire human labor than to use the available machinery; in other cases the reason has been that machinery can not or has not been developed to do the work economically where only a small amount is to be done or the proper kind of power and the proper means of applying the power have not been available to do the work efficiently.

While great progress has been made in the substitution of machine for man power in such regions as the Great Plains, the Northwest Pacific Coast States, and in Texas and Oklahoma, in many parts of the country comparatively primitive methods of farm production are commonly employed. Surveys made by the Ohio Agricultural Experiment Station show that most fields in that State were still plowed with the 1-man, 2-horse walking plow in 1922–23.[34] It was found by the same investigators that the grain cradle is still used for harvesting on some Ohio farms. The 1-man, 1-mule, 8-inch plow is still popular throughout the old South. This same implement, or one hardly more efficient, is used on many of the tobacco and truck farms in Southern Maryland; in this region one may find in use every kind of farm power, from ox teams to the most recent types of trucks and tractors.

As noted at the beginning of this study, a comparison of the latest labor-requirement figures compiled by the Department of Agriculture with the machine requirements of 1895, as shown in the report of the survey made by the Commissioner of Labor, shows that the average requirement by the methods prevailing in 1924 was higher than for the machine methods of 1895.[35] The labor requirement, as well as the unit money cost, is always highest in the regions where there has been least mechanization.[36] In the old South the labor requirement for producing a bushel of grain in 1924 was 2.5 man-hours and in the Pacific Northwest 0.3 man-hour; for corn the labor requirement per bushel in the same year was 2.5 man-hours in certain Southern States, while in the corn belt it was 0.5 man-hour.[37] The per-acre requirement for producing potatoes varies all the way from 32 to 137 man-hours in the different States, and is, on the whole, greatest where machinery is least used.[38] In the eastern cotton States it takes from 100 to 125 hours of man labor to handle one acre of cotton, while in the Texas black belt only from 50 to 60 man-hours

[34] Ohio State University. Agricultural Extension Service Bulletin, No. 5, Vol. XVIII, 1922-23.
[35] See Table 3, p. 9.
[36] See Table 9, p. 25.
[37] Year Book of Agriculture, 1926, pp. 466, 467.
[38] U. S. Department of Agriculture. Bulletin No. 1348. Washington, 1925.

are required. In the old South one man plants from 10 to 20 acres of cotton in a day, while in Texas and Oklahoma one man plants 100 acres.

General Results of Agricultural Mechanization

It is, of course, not to be expected that agricultural mechanization will go forward at a uniform rate in all sections and for all farm operations. Conditions of soil, surface, and climate will always tend to limit the use of machines. In many localities there are persistent prejudices tending to resist strongly all changes in methods of production. There are large geographical areas in which economic conditions are relatively unfavorable to any expansion in production; and it may be expected that general market conditions will continue to have a great deal to do with advancing or retarding the movement of mechanization.

But the results thus far achieved are sufficiently definite to indicate the probability of certain developments in the near future:

1. It is likely that within the next few years practically all wheat produced in this country will be grown under conditions existing in the industry in the Great Plains region and in the Northwest; that is, on large farms, with big hook-ups of the most modern machinery, a maximum of mechanical power, and a minimum of man labor.
2. It is probable that the same will be true of the other two main commercial field crops—corn and cotton—though in a somewhat lesser degree.
3. Because of these developments, a great deal of land in the Middle, Southern and Eastern States may be released for the growing of other crops, and a considerable acreage of the less profitable land will probably go out of cultivation entirely.
4. The adaptation of types of machines and units of power to different conditions and purposes, and to smaller farms, will result in the mechanization of fruit, vegetable, and general truck farming, as well as of the animal and dairying industries, though at a slower rate than in the production of field crops.
5. There will be a great change in the kind of labor required on farms, tending, on the whole, to the replacement of unskilled by skilled or semiskilled workers. This change will probably be accompanied by an increase in the wages of hired farm workers.
6. It is likely that farming will come to be regarded more as a business, and less as a manner of living. In the future farmers will live on their farms only when conditions there are favorable for home making.
7. It is to be expected that the displacement of farm labor will continue, at varying rates throughout the industry, but more rapidly in the areas most favorable to large-scale machine operations. Owing to the fact that, under existing economic conditions, the limit of profitable expansion in agriculture has been reached, it is not to be expected that in the near future the industry will be able to absorb any considerable portion of the labor that will be technologically dispensed with through the continued installation of new and better machines and the more effective utilization of the machines.

Colonization of Immigrants in Brazil

By C. R. Cameron, American Consul General at Sao Paulo

Immigration Policies and Legislation

BRAZIL, that is, southern Brazil, was discovered by the Portuguese navigator, Cabral, in 1500, and its active development as a Portuguese colony began about 30 years later.

Although African slaves were regularly imported into Brazil from the earliest times until about 1850, during the greater part of the colonial period (1500–1821) the Portuguese Government discouraged other immigration into Brazil, even from Portugal, and that from other countries was practically prohibited. Many restrictions and prohibitions were imposed upon those immigrants who were permitted to enter. Generally they were prohibited from trading, from possessing real estate, and often also from even residing in the colonies. Nevertheless, an intermittent stream of Portuguese continued to arrive. Some Spanish came during the years of the union of the Spanish and Portuguese Crowns (1580–1640), but other European immigration was negligible. The racial intermixtures resulting from the Dutch occupation in Pernambuco (1630–1654) and the French occupation of Rio de Janiero (1555–1567), were almost nil, but the mixture of Portuguese with Indian and African went on rapidly.

In 1747, 4,000 married persons from the Azores and Madeira were contracted for Santa Catharina. This measure marked the beginning of the relaxation of the extreme restrictions on immigration. When the Prince Regent of Portugal moved to Brazil in 1807, a great number of Portuguese followed, and when he opened the ports of Brazil to international commerce in 1808, specific restrictions on foreign immigrants were practically abolished.

With the rise of the independence movement early in the nineteenth century, the Brazilian Government began to promote European immigration into the country. This was effected primarily through the system of colonization, i. e., the establishment of small settlements of a few hundred individual immigrants with Government assistance of various kinds for the first few years. The Swiss, who arrived in 1820, to settle Nova Friburgo, were granted their traveling expenses, provisional residence, free land, wages during the first two years, immediate citizenship, freedom from taxes for 10 years, and various other favors. After Brazil became independent (in 1822) this policy was continued and in 1824 a German colony, Sao Leopoldo in Rio Grande do Sul, was founded with similar assistance. In 1827, additional German immigrants were contracted for Brazil, 336 of whom founded the colony of Santo Amaro near the City of Sao Paulo, and 232 founded Rio Negro, in territory now within the State of Parana. Various other colonies followed, notably Petropolis, near Rio de Janeiro, founded in 1845 by 2,000 German immigrants.

Private persons and companies also brought in settlers. Thus the famous Campos Vergueiro of Sao Paulo introduced (with some financial assistance from the Province) Portuguese and German families which were employed under a system of share farming. These private enterprises, also, were subsidized by the Government. One such

immigration company, organized in 1886 and dissolved in 1895, introduced into the Province of Sao Paulo 126,145 immigrants.

Policy of the Republic

After the accession of the Republican Government in 1889, a number of laws were passed relative to immigration, the first being Decree No. 528 of June 28, 1890. This decree recognized that colonization under the Empire had not been entirely satisfactory from the standpoint of the immigrant, prohibited the entry of "natives of Asia and Africa,"[1] provided for the requisitioning of immigrants by planters and others (the requests to be filled by the Government through approved transportation companies), and made provision for private colonization with Federal Government subsidy. Law No. 6455, of 1907, developed the matter still further, devoted considerable attention to the manner of establishing colonies, either by the Federal or State Governments, or in cooperation, and defined the term "immigrant" much as at present; that is, a third-class passenger not criminal or diseased or unfitted to gain a livelihood.

Present Federal requirements regarding immigration are contained principally in Law No. 4247 of January 6, 1921, and Federal Decrees No. 16761 of December 31, 1924, No. 18384 of September 11, 1928, and No. 19482, of December 12, 1930.

Present restrictions on immigration.—During the last century there was little or no restriction on the kind or class of immigrants coming to Brazil, except that immigrants must be able bodied and not subject to penal action in their own countries, although for two years (1890–1892) the natives of Asia and Africa were barred, as was noted above. The legislation of recent years, however, has imposed further restrictions. Thus the decree of December 31, 1924, provided that immigrants could be brought into Brazil only by authorized navigation companies, and all entries must be made through the nine Brazilian ports of Para, Pernambuco, Bahia, Victoria, Rio de Janeiro, Santos, Paranagua, San Francisco, and Rio Grande. The decree of September 11, 1928, required passports for nationals and visas for foreigners, and that of December 12, 1930, limited immigration for the year 1931.

Immigrants—that is, second and third class passengers bound for Brazil—must present to the Brazilian consul certificates of vaccination, good health, and good conduct, as well as documents showing identification and occupation. Unaccompanied women and minors under 18 years of age must prove that they are being called to Brazil by duly authorized persons there.

Entry is denied to the following classes of foreigners: (1) Persons expelled from another country (except in cases in which expulsion was due to "political reasons of internal import"); (2) persons regarded by the police of another country as an element detrimental to public order; (3) persons who, during the past five years, have provoked acts of violence in order to impose any religious or political views; (4) persons considered dangerous to the public order or harmful to the interests of the Republic; (5) persons fleeing from another country because convicted for homicide, theft, robbery, commercial failure, falsification, smuggling, defalcation, counterfeiting, or white

[1] This provision was repealed in 1892.

slavery; (6) foreigners convicted by a Brazilian jury for any of the above crimes; (7) persons mutilated, crippled, blind, insane, indigent, or suffering from an incurable disease or a serious contagious disease; (8) persons coming to Brazil to practice prostitution; and (9) persons over 60 years of age. Persons in classes 7 and 9 may be admitted if they prove that they have sufficient income for their support, or if they have parents or others who will accept responsibility for them.

On July 2, 1930, the principal manufacturers' association of Sao Paulo requested the State president to take up with the Federal Government the matter of officially restricting immigration into the State. This was an epoch-making request, since for the last century the desire and interest not only of Sao Paulo but of Brazil as a whole has been to increase immigration as much as possible. After the revolution was completed, in October, 1930, the matter was given attention and by Federal Decree No. 19482, the entry of immigrants into Brazil was strictly limited during the year 1931, exceptions being made in favor of returning aliens already domiciled there, and those immigrants, expecially agriculturists or artisans, whose services might be shown to be necessary. The same law provided that within 90 days (since extended by another 90 days) from the date of the publication of the decree all individuals and firms which have any dealings with, or perform services for, any branch of the Government must have Brazilian-born employees up to at least two-thirds of the total. The law also levied a tax of from one-half of 1 per cent to 2 per cent, depending upon the amount of the salary, upon the compensation of all Federal functionaries. This tax forms a fund to be employed in the colonization of workers.

Federal Immigration Machinery

As provided in the above-mentioned laws, the Federal Government supervises matters of immigration through the General Directorate of the Service of Settlements operating, in Rio de Janeiro, through the Immigration Service, and in the other ports through the immigration inspectors. The Service of Settlements also administers the Federal colonies.

Immigration into State of Sao Paulo

The State of Sao Paulo has always done its share in promoting immigration. Probably, indeed, it has been more directly interested than the Federal Government, and its rapidly expanding coffee plantations caused its statesmen to send propagandists abroad and to devote large appropriations to stimulate immigration. In 1888 the great immigrant receiving station in the city of Sao Paulo was completed, with capacity for 4,000 immigrants at one time. Federal legislation is of course supreme in all matters concerning the entry of immigrants into Brazilian territory, but Sao Paulo, which has received more than half of all the immigrants entering Brazil, has also a considerable body of laws dealing with assistance to be rendered to immigrants and their settlement in the State.

The State law permits the establishment of colonies on public or expropriated lands, to be managed by a director until a local government is formed. Urban plots of 2,500 square meters (0.62 acre) and rural plots not to exceed 50 hectares (123.5 acres) may be sold

at a low price to be determined in each case—in practice the price has not exceeded 40 milreis to 60 milreis per hectare ($2 to $3 per acre)—payable in from 5 to 10 annual installments. In the case of newly arrived immigrants, the State government will also build a house and furnish agricultural animals, tools, and seed for the first year, to be paid for in the same way. Medical attendance is furnished for a year, and the State maintains in the colony an agricultural station for demonstrations, a mill for grinding cereals, etc. The colony becomes self-governing when the lots are paid for (in practice, this frequently happens before all the lots are sold).

Agricultural colonies may also be established by private persons with State supervision, the immigrants still enjoying certain favors, such as payment of passage. A prize of 10,000 milreis may be offered for each group of 50 families so colonized. Municipalities and railway companies may also establish colonies.

After an immigrant has occupied and cultivated public land for five years or more, the Government gives him preference in the purchase of the occupied tract (which, however, must not exceed 500 hectares of arable land, 4,000 hectares of pasture land, and 50 hectares of arable land, 4,000 hectares of pasture land, and 50 hectares of suburban land). The law also permits "homesteading," whereby, when public land is obtained, either by cession or sale, the recipient and his wife secure a title to a maximum of 10 hectares, worth a maximum 5,000 milreis ($600), which, with its improvements, will be exempt from execution for debt. This right is transmitted by law to the surviving husband or wife, and the possession may be transmitted by the latter, through a written instrument, to the eldest son.

A State decree (No. 4837) of January 19, 1931, creates a Directorate of Colonization, charged with the foundation and organization of agricultural colonies. The directorate will examine and pass upon the suitability for colonization of the public land sites indicated by the Directorate of Lands. Decree No. 4894 of February 13, 1931, provides for a credit of 1,000 contos ($100,000) for the "creation, installation, and support of colonial nuclei in various zones of the State destined for the colonization in productive services of the unemployed from urban centers." Some new agricultural colonies may therefore be shortly founded by the State of Sao Paulo.

Statistics of Immigration

No statistical records of immigration are available for the most of the colonial period, data having been published beginning only with the year 1820. In that year came the Swiss immigrants, already mentioned, who founded the colony of Nova Friburgo. No more immigrants entered Brazil until 1824, and the statistics show the arrival in Sao Paulo of no immigrants whatsoever until 1827. Accordingly, with the exception of 1,682 Swiss, all Brazilian and Sao Paulo immigration recorded occurred after independence was won in 1822. The abolition of slavery in 1888 created, in Brazil as elsewhere, an era of vagrancy on the part of the newly freed slaves, but at the same time caused labor to be regarded with less aversion by the European immigrant. These conditions coincided with the rise of coffee culture, especially in Sao Paulo, making heavier immigration an economic necessity. Indeed, the whole economic and political fabric of

Brazil was modified at this time, the Republic being proclaimed in 1889. Consequently, Brazilian immigration naturally falls into two distinct periods, the first beginning with the first recorded Brazilian immigration in 1820, or practically with the Empire, whereas the second period, contemporaneous with swarming Europe, was inaugurated with the Republic. The Imperial period corresponds to the years 1822–1889, including some data for 1820, and the Republican period to the years 1890 to date.

The following table shows, by decades, the number of immigrants during each period.

TABLE 1.—IMMIGRATION INTO BRAZIL AND INTO SAO PAULO, BY DECADES, 1820 TO 1930

Period	Number of immigrants		Period	Number of immigrants	
	Whole of Brazil	State of Sao Paulo		Whole of Brazil	State of Sao Paulo
Imperial period:			Republican period:		
1820–1829	9,105	955	1890–1899	1,211,076	735,076
1830–1839	2,569	304	1900–1909	649,945	388,708
1840–1849	4,992	649	1910–1919	835,768	480,509
1850–1859	108,045	6,310	1920–1930	941,153	752,080
1860–1869	108,187	1,681			
1870–1879	193,931	11,730	Total	3,637,942	2,356,373
1880–1889	453,787	183,979			
			Grand total	4,518,558	2,561,981
Total	880,616	205,608			

Immigration by Races and Nationalities

In 1824 there arrived 126 persons of "various" nationalities, that is, not Austrian, Belgian, English, French, German, Italian, Portuguese, Russian, Spanish, Swedish, Swiss, or Turkish, into which the official classification of that period divided immigrants. The first arrivals credited to Sao Paulo were 226 "various" in 1827, the first entering Sao Paulo for which nationality was specified being 80 Portuguese in 1841. The first Spaniards arrived in Sao Paulo in 1856, the first Austrians in 1872, and the first Italians, the nationality destined to furnish by far the most numerous contingent of Sao Paulo immigrants, in 1874. Indeed, during the first 50 years of the Empire, immigration was negligible, amounting from 1820 to 1869 to only 9,899 persons. When, however, the limitation of slavery was effected by suppression of the traffic about 1850, and its abolition assured by the "law of free birth" in 1871, immigration increased rapidly.

From 1820 to 1930, the total number of immigrants entering Brazil reached 4,518,558, those having nationality other than Brazilian numbering 4,460,868. During the same period, 2,561,981 immigrants entered the State of Sao Paulo, 2,272,312 of this total being non-Brazilian. The figures for Sao Paulo, however, include not only immigrants entering the port of Santos directly from foreign ports of embarkation, and therefore included in the figures given for Brazil, but many Brazilians and others arriving in Sao Paulo from other States, both coastwise (through Santos) and overland. It should be noted that during the past century, before the days of convenient overseas steamship service to Santos, many immigrants bound for Sao Paulo disembarked in Rio de Janeiro.

There has been a great preponderance of Latins in the immigration into Sao Paulo. During the nineteenth century Sao Paulo maintained no statistics as to immigration by nationalities, except as to Latins. Indeed, total immigration into this State by nationalities is available only from about 1920, although accurate figures for all nationalities entering and leaving through the port of Santos are available since and including 1908. The following table shows the total recorded Latin immigration into Brazil and into Sao Paulo State from 1820 to 1930, Rumanians being classed as Latin:

TABLE 2.—LATIN IMMIGRANTS ENTERING BRAZIL AND SAO PAULO, 1820 TO 1930

Nationality	Number of immigrants	
	Whole of Brazil	Sao Paulo (including interstate)
Italian	1,489,964	935,540
Portuguese	1,341,926	395,151
Spanish	586,527	382,035
French	36,461	[1] 2,696
Rumanian	36,968	[1] 22,601
Total, Latin	3,491,846	1,738,023
Immigrants of all nationalities, excluding Brazilian	4,460,868	2,272,312
Per cent Latins form of all foreigners	78	77

[1] Entered through port of Santos from 1908 to 1930, and therefore less than the figures for the other nationalities.

Many circumstances have worked together to cause Latin nationalities to predominate in European immigration to Brazil. Race, the common Latin tradition, religion, language, and climate, undoubtedly make the Latin immigrant more assimilable in the Brazilian body politic. A Spaniard and a Brazilian can converse readily without any previous study of the other's language, and an Italian and a Brazilian have little more difficulty. Although Brazil, even southern Brazil, is closer to the Equator—Sao Paulo is 23°, Madrid 41°, and Rome 42°—the elevation of Brazil from Sao Paulo south produces a climate not unlike that to which Spaniards, Portuguese, and Italians are accustomed.

Moreover, emigration to Brazil has generally enjoyed greater favor in Latin than in Germanic countries. In his message to the State congress on May 7, 1897, the President of Sao Paulo gave the result of an investigation carried on by Brazilian representatives abroad as to the possibilities of augmenting immigration into Sao Paulo. He stated that the Governments of Germany, Austria-Hungary, and the Scandinavian countries all frankly opposed and made difficult emigration to Brazil, but that the Latin countries placed no such difficulties in the way. At least one of the reasons for this divergence of policy was to be found in the fact that Sao Paulo desired, above all, agricultural laborers, especially for its coffee plantations. The Latins in general were content at least to begin in this way, whereas the Germanic Governments were reported to desire that their emigrants have the position of proprietors.

Racial Composition of Brazil

THE last and the most complete of the Brazilian censuses which endeavored to enumerate by races, was that of 1890. After that date, racial enumeration was not attempted on account of inaccuracies due to misstatements of the persons enumerated. The following table shows the numbers and percentages of the various races in accordance with the data obtained in the 1890 census, to which are added for the purposes of comparison, the percentages for 1830 and 1872:

TABLE 3.—RACIAL COMPOSITION OF BRAZIL IN SPECIFIED YEARS

Race	1830: Estimated per cent	1872: Per cent	1890	
			Number	Per cent
White	25.2	38.1	6,302,198	44.0
Black	37.8	19.7	2,097,426	14.6
Indian	4.3	3.9	1,295,796	9.0
Mixed	32.7	38.3	4,638,495	32.4
Total	100.0	100.0	14,333,915	100.0

Thus it is seen that in 1890, Brazil had a population 44 per cent white, the remainder being black, Indian, and mixed. From 1890 to 1930, the number of non-Brazilian immigrants entering Brazil reached 3,580,253 (including 100,653 Japanese). In the meantime, the total population of the country has increased to 40,272,650,[2] but it is impossible to calculate the proportion of the various elements making up the present Brazilian population, owing to the fact that only about half of the foreign immigrants remained, to the differing rates of increase of the various races, to a considerable mixing of the new arrivals with the other ethnic elements already in Brazil, and to the fact that the immigration during the Republican period has been spread irregularly over a period of 41 years.

By no means all of the immigrants to Brazil remain, and there is a heavy return current of those who go back either to remain in their native country, to visit friends, to bring their families to Brazil, etc., or who seek to better their fortune by moving on to other countries, often the United States or Argentina.

Figures for the port of Santos, covering immigration and emigration during the period since 1908, show that from the standpoint of "fixation," the Japanese lead, with 92 per cent remaining. The vast majority of this nationality, when they leave their distant homes, leave with the fixed determination to end their days in the country to which they go. Somewhat over half (53 per cent) of the Spaniards remained and 46 per cent of the Portuguese. Of the Germans only one-fifth, and of the Italians only about one-eighth remain.

Literacy of Immigrants

AS TO the literacy of immigrants, the Germans are far in the lead, with but 14.5 per cent of immigrants unable to read. The Brazilians come next, with but 20.1 per cent of illiterates, although this is far less

[2] Estimate for Dec. 31, 1929.

than the Brazilian population as a whole which, in 1920, had 75.5 per cent unable to read and write; Brazilians who travel are apparently especially well educated. The most illiterate immigrants are the Syrians, Lithuanians, Italians, Portuguese, Turks, and Spanish, in that order, the Spanish with a percentage of 73.8 being the most illiterate of all. The illiteracy of the total immigrant mass was 48.7 per cent, but if the Brazilians are removed, the percentage of illiteracy rises to 50.6 per cent unable even to read.

Occupations of Immigrants

THE great desire of Brazil, as with most immigrant-receiving countries, has been for agricultural labor, especially on the coffee plantations, and the conditions for the granting of subsidies and other inducements have frequently included the stipulation that the immigrants must be farmers. Data in regard to occupation are available only for the immigrants entering the port of Santos from 1908 to 1926, but these show that 59 per cent of the immigrants who entered Santos during that period were agriculturists, 6 per cent were artisans, and 35 per cent were of various occupations.

The Japanese immigrants head the list as regards percentage of agriculturists, with 97.9 per cent, closely followed by the Yugoslavs and Rumanians. The Turkish and Syrian immigrants include the lowest percentages of agriculturists, but the Spanish show a good percentage (81.4), and about half of the Portuguese, Italians, and Russians are farmers. Many of the skilled workmen in the factories of Sao Paulo are Germans, Austrians, and Italians. The Turks and Syrians are predominantly traders and merchants.

Government-Assisted Colonization

MOST of the European immigration into Brazil has been induced through propaganda, subsidies, and assistance of various kinds, one of the earliest methods of promoting the settlement and agricultural conquest of the vacant places being to bring out families and groups of the same nationality, often from the same villages in Europe, and locate them in a small agricultural settlement, or colony. In this way were overcome some of the unpleasant features attendant upon the breaking of home ties and taking up residence in a new country. The colony method naturally caused some delay in the acquisition of the Portuguese language and the assimilation of the new arrivals, but, practiced on a small scale, was not seriously objectionable.

There is no comprehensive compiled information as to colonies founded in Brazil, although the matter was studied by Grossi. He states that up to 1885, the Imperial and provincial Governments and private enterprises had established throughout Brazil 144 colonies with a total population (apparently in 1885) of 101,066 inhabitants, 65 per cent of whom were in Rio Grande do Sul and Santa Catharina. He states elsewhere that from 1827 to 1877, 100 colonies were founded in the State of Sao Paulo, 7 by the Imperial Government, only 1 by the State government, and the remaining 92 by private enterprise. During the latter years of the Empire and the first years of the Republic, Sao Paulo became somewhat more active in the matter and founded various colonies.

The Annuario Estastistico of Brazil, covering the period 1908 to 1912, gives interesting statistics as to Government colonies in existence during the years 1908 to 1912. In 1912, there were 44 colonies, Federal and State, located in the five States of Minas Geraes, Parana, Rio de Janeiro, Santa Catharina, and Sao Paulo, occupying a total of 523,687 hectares (2,022 square miles), and having a total population of 37,731.

The nationality of the colonists in these 12 colonies, numbering in 1912 a total of 37,731, was as follows:

Brazilians	7, 587
Austrians	7, 397
Russians	5, 969
Italians	5, 039
Germans	4, 345
Poles	4, 105
Spanish	990
Portuguese	959
Other nationalities	1, 340
Total	37, 731

During recent years very few of the European immigrants have settled in colonies, either Federal, State, or private, preferring to work on the plantations, obtain farms for themselves (if possessed of sufficient funds), or to remain in the cities. The one exception to this rule is constituted by the Japanese immigrants, who regularly aim to obtain farms through the instrumentality of private Japanese colonization companies. No Japanese are in Government colonies.

The report of the Federal Minister of Agriculture for 1929 gives a list of 23 colonies, with a population of 54,473, still under the direction of the Federal Government, that is, still paying for the land purchased.

The report of the State secretary of agriculture for 1927 contains a list of 10 former State colonies, all now self-governing, which, in 1927, had a total population of 26,449, four times that of 1911. There is to-day only one such colony, that in the municipality of Itaporanga, near the Parana border. The present revolutionary Government, however, is planning to establish some of the unemployed in colonies on various of the large estates which were mortgaged to the State bank, and the possession of which has passed to the State through foreclosure. Three colonies are now in process of formation.

In general it may be said that colonies have not proved to be a greatly successful method of introducing immigrants into Brazil. Many of the colonies, in order to be near existing settlements and markets, were located upon abandoned plantations, where, in many cases, the land was exhausted. Other colonies were located on virgin land but were handicapped by being distant from transportation routes and other settlements. Moreover, the arriving immigrant has many things to learn, he must become acclimated and learn methods of defense against the diseases and dangers of the new country. Especially in the case of Latins, language is not a great handicap, and the new arrival can learn these preliminary lessons more satisfactorily in a community of Brazilians or, at least, of persons who have resided in the country for some time. In the meantime, he can preserve his small capital for investment when a suitable opportunity arises, whereas in a colony he would be obliged to expend it at once. As a result, most immigrants, especially those of Latin origin, destined for

agricultural occupations, have preferred to work first upon one of the large plantations to gain experience and acquire savings sufficient to justify an independent establishment. About half of the total number of colonies founded have been abandoned by the colonists for what they considered better opportunities elsewhere. German immigrants have shown a preference for colonies, provided the latter are satisfactory from the standpoint of soil, location, communication, etc.

Nevertheless, the balance has not been entirely unfavorable and many flourishing and important Brazilian cities of to-day owe their origin to colonization. Such are Sao Leopoldo, and Santa Cruz of Rio Grande do Sul; Blumenau of Santa Catharina; Nova Friburgo and Petropolis of Rio de Janeiro; and Rio Negro of Parana; and in the vicinity of Sao Paulo, such cities as Sao Bernardino, Santo Amaro, Guarulhos, and the suburb of Santa Anna.

Subsidized Immigration

QUITE apart from the system of colonization, the immigration of the Imperial and Republican periods was largely subsidized, at least to the extent of paying passage. In 1828 the State of Sao Paulo agreed to pay a small daily subsidy or wage (160 reis, or about 9 cents) to adult colonists sent to this State by the Imperial Government, and a smaller sum to minors. The local government continued intermittently to subsidize immigration either independently or in conjunction with the central Government up to the year 1929, though no immigrants were subsidized during 1930.

Precise data as to the number of immigrants entering Sao Paulo who received subsidies, usually limited to passage money, are available only from 1889, the year in which the Republic was proclaimed. However, the immigrants included in the statistics as subsidized may have been so assisted by either the State or Federal Government or both.

The figures in the following table, showing the number of subsidized and nonsubsidized immigrants entering the State of Sao Paulo from 1889 to 1930, have been compiled principally from a table given in the report of the State secretary of agriculture for 1928 and data given in the Boletim do Trabalho, Nos. 62 to 65.

TABLE 4.—NUMBER AND PER CENT OF SUBSIDIZED AND NONSUBSIDIZED IMMIGRANTS INTO BRAZIL, BY YEARS, 1889 TO 1930

Year	Subsidized immigrants		Nonsubsidized immigrants		Total
	Number	Per cent of total	Number	Per cent of total	
1889	22,886	82	5,007	18	27,893
1890–1899	596,004	81	139,072	19	735,076
1900–1909	164,384	42	224,324	58	388,708
1910–1919	186,383	39	294,126	61	480,509
1920–1929	181,732	26	530,704	74	712,436
1930			39,644	100	39,644
Total	1,151,389	48	1,232,877	52	2,384,266

The peak of subsidized immigration into the State occurred in 1895 when the number of subsidized immigrants reached 114,769. During the early years of the Republic, indeed, few Europeans emigrated to Brazil without such assistance, the percentage of subsidized in 1891 reaching 99. Comparing the totals of the table it is seen that 48 per cent of the total immigration into Sao Paulo from 1889 to 1930, was subsidized. Exceedingly few of the 288,795 Brazilians entering during this period received a subsidy, and none of the 98,749 Japanese (at least by the Brazilian authorities, although Japan subsidizes through its emigration organizations). If, therefore, the sum of the Brazilian and Japanese immigrants, 387,544, is removed from the totals, it is seen that of the remaining grand total of 1,996,722 immigrants, the number of subsidized (1,151,389) is about 63 per cent. This therefore represents about the percentage of European immigrants to Sao Paulo who have received a subsidy.

No figures are available as to total amounts expended for subsidizing immigration by either the Federal or Sao Paulo State Governments. A report of a Senate committee of the Brazilian National Congress in 1927 placed the total expenditures of the Federal Government for the introduction of immigrants since the establishment of the Republic (1889) to date, at 200,000,000 milreis, including both direct expenditures and expenses of the official agencies engaged in immigration services. Making allowance for difference in exchange, this amount is equivalent to $40,000,000 or $50,000,000. The State of Sao Paulo expended nothing for subsidization during 1930 and 1931, but a few years ago its expenditures for this purpose were considerable. From 1920 to 1929 the State of Sao Paulo paid 80,540,382 milreis (almost $10,000,000) for the 181,732 subsidized immigrants who entered the State, or at the average rate per capita of $54.87. In 1924, the rate per capita reached $82.87, falling to $21.72 in 1928. Due to economic conditions, no subsidies have been granted since 1929.

The governmental machinery formerly devoted to immigration is now being utilized to further colonization and the placement of unemployed nationals on the plantations.

EMPLOYMENT CONDITIONS AND UNEMPLOYMENT RELIEF

Noncompetitive Work as Unemployment Relief

DURING the winter of 1930–31 a number of American cities developed plans whereby noncompetitive work was furnished to unemployed persons in lieu of other forms of relief. This method of meeting the unemployment problem was sufficiently successful to lead certain communities and unemployment committees to make public the results of their experience and to lay plans to use at least a part of the relief funds raised for 1931–32 to pay wages to unemployed persons for noncompetitive work. Publicity has recently been given to this phase of unemployment relief by the President's Emergency Committee for Employment [1] and the Joint Committee on Unemployment Relief of the State Board of Social Welfare and the State Charities Aid Association of New York.[2] The studies of these two organizations are here reviewed.

Value of Work Relief

NONCOMPETITIVE work is assigned among the applicants primarily on the basis of their need. The Joint Committee on Unemployment Relief of the State Board of Social Welfare and the State Charities Aid Association committee states that such work is more advantageous than direct relief for the following reasons:

1. It safeguards the normal and desirable reluctance of a person able to work to receive assistance.
2. It safeguards the morale of the worker by affording him normal occupation for a portion of his time, instead of having nothing to do except walk the streets fruitlessly looking for a job which he is practically certain he can not find, or sitting at home with little or nothing to occupy his time except brooding upon his misfortunes.
3. It avoids the danger that some of those receiving substantial assistance over a considerable time without return may in some degree lose their normal initiative, independence, and desire for self-support.
4. It aids in discovering just those cases of extreme need which any community would particularly desire to help—those who are in extreme distress for the first time and can not bring themselves to apply for charity until the entire family has undergone an extreme degree of deprivation and suffering, but who will apply for work long before they will apply for relief.
5. It utilizes the otherwise wasted capacity labor of the unemployed in work of constructive and permanent value to the community.

It is further stated that relief work even though it is more costly than would ordinarily be the case, owing to hurried planning, use of

[1] President's Emergency Committee for Employment. Community plans and action, No. 8: Five "made work" programs. Washington, 1931. (Mimeographed.)
[2] Joint Committee on Unemployment Relief, of the New York State Board of Social Welfare and the State Charities Aid Association. Work relief: A memorandum on work as a means of providing unemployment relief. New York, 105 East 22d Street, 1931.

hand labor instead of machinery, etc., is less costly than direct relief besides having the advantage of greater benefit to the individual worker.

The essentials of a work relief program are quoted from the same source:

1. Careful planning of all work to be done.
2. A variety of types of work.
3. Adequate supervision of those put to work.
4. Competent inquiry as to each applicant's need.
5. Work relief to be given only to those who would otherwise need direct relief.
6. Preference to be given to those with dependents.
7. Careful selection of individuals for various types of work.
8. A sufficient number of days work for each individual to make direct relief grants unnecessary.
9. Protection of those working by workmen's compensation insurance.

Finally, in urging the adoption of work relief, the committee states that advance planning is necessary to success and that work relief may be carried on by a city through its department of public welfare or other branches of government and also by private relief agencies. In planning relief for 1931–32, careful consideration is advocated of the following factors that were found important in the work carried on during 1931–32:

1. Review of the city's experience in unemployment relief during past winter.
2. Estimate of number needing relief.
3. Estimate of necessary expenditures.
4. Methods of financing.
5. Opportunities for city work.
6. Work relief through department of public welfare.
7. Work relief through private relief funds.
8. Committee on work relief.
9. Registration and investigation of applicants for work relief.
10. Selection of applicants.
11. Wage rate and number of days work
12. Supervision.
13. Workmen's compensation.
14. Industrial aid bureau.

City Programs.

THE President's Emergency Committee for Employment states that its description of the "made work" programs of Rochester, Chicago, Wilmington, Indianapolis, and Milwaukee is published in response to widespread interest in this type of emergency action. Attention is called to the fact that local conditions determine the methods of applying the "made work" principle.

Rochester.—When, in the fall of 1930, it was found that the need for relief was increasing, the city manager of Rochester recommended that a system of work relief be adopted in order to reduce the cost of relief, to enable persons who had not sought help to get through the winter without relief, and to assure to the community a tangible return for increased expenditures. A total of $800,000 was appropriated for work relief, to be administered by a bureau of departmental heads.

A total of 12,000 persons applied for work. Of this number, 7,917 men were given work in varying amounts on 77 different projects up to June 1, 1931. Men were selected for jobs on the basis of need primarily, but physical fitness was also taken into account. The policy adopted was to give two-thirds of the jobs to men who had

not yet applied for relief. The remaining one-third of the jobs were allocated to the public and private family-caring agencies, to be assigned by them.

The prevailing scale of wages was paid. In the beginning unskilled workers were given four days on and four days off, averaging eight hours per day for three days a week over a 4-week period. Skilled workers averaged one day in eight, bringing their earnings to approximately the same weekly level as the unskilled workers received. As time passed, however, unskilled workers were given only two days of work per week in order that more men might be employed.

Work undertaken included clearing parks, building, grading, removing old buildings, surveying, electrical work, painting, and a variety of other projects. The writer of the Rochester report states that in comparing the cost of these projects with the cost on a commercial basis it was found that the city received approximately a 52 per cent return. It is further stated that social work executives estimate that the cost of home relief would have been higher than the amount spent for work relief had the latter work not been undertaken.

Chicago.—Expenditures in Chicago for work relief amounted to approximately a million dollars between October 22, 1930, and April 27, 1931. A total of 203,670 days of work was furnished to heads of over 8,228 families. The program adopted provided that the work undertaken should be necessary and useful, that it should be done in cooperation with public and semipublic institutions and agencies, and that only work for which no provision had been made in current budgets should be undertaken.

The jobs created were given to men who were in distress owing to unemployment, the persons being selected according to their fitness, on a quota basis, through the six leading relief agencies of the city. The social agency was held to be the employer and the special work fund committee acted only as a clearance and employment agency.

The current rate of wages was paid. Special arrangements were made with trade-unions whereby, for every union member employed, a certain number of nonunion workers would be given temporary union cards and sent to work. This held true in all occupations.

Wilmington.—The city of Wilmington raised approximately $300,000 for its relief program in 1930–31. Of this amount $191,622 was used for direct payment of wages to workers and the remainder was used for relief. An engineering survey has subsequently been made whereby it has been determined that $700,000 worth of noncompetitive work may be done in 1931–32 if the mayor's relief committee approves and the necessary funds are raised. The projected work outlined includes beautifying the city, improving playgrounds, upbuilding boy life, and safeguarding health.

Indianapolis.—"Made work" in Indianapolis has been promoted by the Emergency Work Committee (Inc.), an organization set up especially to furnish employment to unemployed persons without profit to the organization. The committee began to function in the fall of 1930, and during the 24 weeks ending May 16, 1931, a total of 3,854 different persons was given "made work" from the Emergency Work Committee funds, and 435 from funds furnished by the Red Cross. Cash payments were made to the amount of $48,020 and food of the value of $67,113 was supplied.

Under the original plan, needy, unemployed men recommended by social agencies, the public schools social service, and the churches, were given three days of work each week. They were employed on public projects not provided for in current or prospective budgets. In January the plan was expanded so that persons applying for poor relief from the townships were employed. These applicants for work were simply taken from the lines of applicants in township offices until such time as a plan was developed for intelligent selection of men through the welfare agencies.

With the coming of spring, that is at the close of April, the decision was made to require all able-bodied applicants for relief to work for two days a week on "made work" in order to secure relief. Supplemental cash payments that had been allowed in special cases during the winter were done away with at that time also.

Various estimates of the success of the "made work" plan are included in the report of this scheme printed by the President's Emergency Committee for Employment, and, although there has been some criticism of the system, its usefulness appears to outweigh the drawbacks.

The Emergency Work Committee (Inc.) is now working out a program for the future, as follows:

1. That a skeleton organization be maintained.
   (*a*) To serve any public or private relief agency that wants certain of its clients to work for relief given them.
   (*b*) To ascertain how much service the Emergency Work Committee has rendered everybody concerned.
   (*c*) To advise vocationally certain clients and help them plan their occupational futures.
   (*d*) To find out what improvements can be made in order to make our project more effective, and
   (*e*) To collect, examine, and report to the committee the experiences and future plans of other cities now using or contemplating using "made work";
2. That the Emergency Work Committee determine how much, and the source of the funds, it wants to spend for "made work" this coming fall and winter; and
3. That serious consideration be given to the advisability of a long-time plan whereby "made work" will be utilized throughout the whole 12 months of the year.

Milwaukee.—Shortage of work in private employment led the city of Milwaukee to rearrange its program in order to make available more jobs on public work in 1930–31. The "made work" was handled by the city through its civil service system, as a city function. Expenditures for public work aggregated about $600,000, and an additional $75,000 to $100,000 was allocated for snow removal.

In all, 11,021 men registered for city work, and of this number 8,470 were accepted by the medical examiner of the civil service commission; 883 were employed by the fire and police alarm bureau without registration and physical examination; 853 were rejected by the medical examiner; and 815 failed to meet the citizenship or residence requirements for public employment. When men were found to fulfill the ordinary civil service requirements they were chosen for work according to the urgency of their need; that is, family responsibility. Later it became necessary to adopt a quota system whereby the unemployed in all city wards would share equally in the available work. The original plan was to rotate men in jobs, but this was found not to be practicable.

Occupational Experience of 100 Unemployed Persons in Bloomington, Ind.

WITH the hope of casting some light on the sociological and vocational aspects of the unemployment problem, a study was undertaken by Thomas W. Rogers of the industrial working-life history of 100 of the 200 persons given assistance during the past winter through the citizens committee on unemployment relief of Bloomington, Ind. The interviews were conducted by two senior students of the College of Commerce and Finance of the Indiana University. The results of this investigation have been published by the bureau of business research of the university. The following statistics are taken from the report.[1]

Persons who left the farm to go into industry were on an average about 10 years older than those who were brought up in an industrial community. Table 1 shows the average number of jobs held was 7.21; and the average time spent on a job for the different groups ranged from 1 year and 10.5 months for the 19–24 age group, to 4 years and 3.3 months for the 55–69 age group, the general average being about 3 years.[2]

TABLE 1.—SUMMARY OF INDUSTRIAL CASE HISTORIES OF 100 UNEMPLOYED PERSONS IN BLOOMINGTON, IND.

Age of subject	Total number of jobs held	Average time worked on each job		Age of subject	Total number of jobs held	Average time worked on each job	
		Years	Months			Years	Months
19 years	2	1	6.00	34 years	12	1	1.16
20 years	5	1	1.00	34 years	8	2	1.00
20 years	1	1		34 years	6	3	1.50
22 years	8		7.87				
22 years	2	2		Average, 25–34 years	6.67	2	3.93
22 years	7		9.14				
22 years	5	1	1.00	35 years	10	2	1.80
22 years	11		7.09	35 years	7	2	3.14
23 years	6	1	.83	36 years	3	4	8.00
23 years	9		8.55	36 years	4	5	6.00
23 years	15		4.53	36 years	10	2	1.20
23 years	1	4		36 years	4	3	6.00
23 years	1	6	9.00	36 years	14	1	4.71
23 years	11		4.90	36 years	8	2	6.12
24 years	1	7	6.00	37 years	6	3	1.16
24 years	12		9.75	37 years	6	3	6.83
24 years	5	1	7.20	37 years	6	3	11.66
				37 years	4	4	6.75
Average, 19–24 years	6	1	10.53	38 years	10	2	5.00
				38 years	2	5	5.00
25 years	1	7		38 years	3	6	8.00
25 years	8	1	2.75	38 years	9	2	8.00
26 years	9	1	.77	38 years	5	2	3.00
26 years	4	1	8.50	39 years	7	3	8.00
26 years	3	2	3.33	39 years	9	2	9.56
27 years	11	1	1.27	39 years	6	2	
29 years	9	1	2.44	40 years	8	3	.75
30 years	3	3	4.00	40 years	12	1	11.50
30 years	2	5		41 years	7	3	8.71
30 years	8	1	9.60	41 years	8	3	1.00
31 years	3	2		42 years	10	2	8.60
33 years	13		10.69	42 years	11	2	4.45

[1] The occupational experience of 100 unemployed persons in Bloomington, Ind., by Thomas Wesley Rogers in collaboration with Wallace P. Studencki and Peter Obsenica. Bloomington, 1931.

[2] The average for each age group (as shown in the last column of Table 1) was computed by adding the averages for all the individuals in the group and dividing them by the number of persons in such gronp. If the total number of jobs held by all the individuals in each age group be divided into the total time on these jobs the results are as follows: In ages 19 to 24, 11.17 months; ages 25 to 34, 1 year 7.54 months; ages 35 to 44, 2 years 6.9 months; ages 45 to 54, 3 years 1.39 months; ages 55 to 69, 4 years 4.8 months; general average, 2 years 6.7 months.

TABLE 1.—SUMMARY OF INDUSTRIAL CASE HISTORIES OF 100 UNEMPLOYED PERSONS IN BLOOMINGTON, IND.—Continued

Age of subject	Total number of jobs held	Average time worked on each job		Age of subject	Total number of jobs held	Average time worked on each job	
		Years	Months			Years	Months
42 years	22	1	3.82	52 years	4	3	6.00
43 years	11	2	7.00	53 years	4	9	6.00
43 years	2	3	2.00	54 years	9	3	.55
44 years	5	1	5.60	54 years	6	7	5.00
44 years	6	1	3.33	54 years	4		10.00
44 years	16	1	6.31	54 years	12		10.58
44 years	7	3	6.85	54 years	9	2	9.33
44 years	8	3	.62				
				Average, 45–54 years	7.55	3	11.36
Average, 35–44 years	7.82	2	11.88				
				55 years	5	7	4.80
45 years	8	1	7.25	56 years	11		7.27
45 years	7	3	1.00	58 years	14	2	5.64
45 years	3	3	1.00	58 years	2	2	6.00
45 years	2	13	1.50	59 years	9	4	9.33
46 years	5	5	10.80	61 years	8	3	4.75
47 years	5	6	.40	61 years	6	6	4.00
47 years	13	1	8.07	61 years	8		9.00
49 years	23	1	4.65	62 years	3	13	
50 years	8	3	7.00	65 years	4	10	11.25
50 years	6	3	11.00	68 years	8	5	2.66
50 years	15	2	3.35	69 years	9	5	10.00
50 years	5	3	7.20				
50 years	5	5	10.80	Average, 55–69 years	7.25	4	3.31
51 years	9	3	4.88				
52 years	4		3.50	Average, all cases	7.21	3	.80

In Table 2 various comparisons are shown between those who left the farm to go into industry and those who did not start on the farm.

TABLE 2.—COMPARATIVE SUMMARY OF AVERAGES FOR PERSONS WHO LEFT FARM TO WORK IN INDUSTRY AND THOSE WHO DID NOT START ON FARM

Age group	Number in group	Average age at which work in industry was begun	Average number of years worked		Mobility			
					Average number of jobs held	Average time spent per job		Average number of counties worked in
			Years	Months		Years	Months	
19 to 24 years (17):								
Left farm	1	17.00	5	5.00	5.00	1	1.00	1.00
Did not start on farm	16	15.86	6	2.63	6.06	1	11.12	1.56
25 to 34 years (15):								
Left farm	8	19.00	11	2.50	6.98	2	6.47	1.88
Did not start on farm	7	17.00	10	5.43	6.43	2	1.04	1.71
35 to 44 years (34):								
Left farm	12	24.92	15	2.33	5.40	3	.18	1.75
Did not start on farm	22	15.09	22	.85	9.10	2	11.68	1.91
45 to 54 years (22):								
Left farm	15	29.00	20	1.20	7.87	2	10.42	2.20
Did not start on farm	7	17.28	30	4.00	6.86	6	3.51	1.71
55 to 69 years (12):								
Left farm	10	29.00	29	7.10	6.40	5	5.91	2.30
Did not start on farm	2	15.50	43	6.50	11.50	4	1.82	2.00
Total (100):								
Left farm	46	25.94	19	.46	6.70	3	4.57	2.00
Did not start on farm	54	15.85	18	.11	8.04	3	.208	1.80

Table 3 shows that in 29 selected cases time was lost upon over 50 per cent of the occasions when jobs were changed, the average time lost per job being reported as 1.4 months.

TABLE 3.—SUMMARY OF 29 SELECTED CASES SHOWING TIME LOST BETWEEN JOBS

Age of subject	Total number of job changes	Number of occasions time was lost	Total time lost between jobs		Average time lost per job change (months)
			Years	Months	
22 years	7	5	1		1.71
22 years	5	3		10	2.00
22 years	11	5	1	7	1.73
23 years	6	4		3	.50
23 years	9	4	2	5	3.22
23 years	11	4	1	2	1.27
24 years	5	2	1	2	2.80
Average, 22–24 years	7.71	3.86	1	2.43	1.89
25 years	8	6		6	.75
26 years	9	3		10	1.11
26 years	4	1		1	.25
27 years	11	6		5	.45
29 years	9	5	2	7	3.44
30 years	2	1		3	1.50
33 years	13	9	2	1	1.93
34 years	12	8	1	4	1.33
Average, 25–34 years	8.5	4.88	1	.13	1.35
35 years	10	7	1	8	2.00
36 years	3	3		7	2.33
36 years	10	4		7	.70
37 years	6	3	1	4	2.66
39 years	6	2		3	.50
41 years	7	6	1	5	2.43
44 years	16	10	2	6	1.88
44 years	7	4		7	1.00
Average, 35–44 years	8.13	4.88	1	1.38	1.69
47 years	5	3		4	.80
49 years	23	5		5	.22
50 years	8	7		5	.63
54 years	4	3		7	1.75
54 years	12	5	1		1.00
Average, 47–54 years	10.4	4.6		6.6	.88
56 years	11	2	1	5	1.54
Total	8.62	4.48	1	.24	1.40

Unemployment in Foreign Countries

THE following table gives detailed monthly statistics of unemployment in foreign countries, as shown in official reports, from January, 1930, to the latest available date.

STATEMENT OF UNEMPLOYMENT IN FOREIGN COUNTRIES[1]

Date (end of month)	Australia		Austria	Belgium				Canada	
	Trade-unionists unemployed		Compulsory insurance, number unemployed in receipt of benefit	Unemployment insurance societies				Trade-unionists unemployed	
				Wholly unemployed		Partially unemployed			
	Number	Per cent		Number	Per cent	Number	Per cent	Number	Per cent
1930									
January	[2]	-------	273,197	22,542	3.5	25,782	4.0	22,795	10.8
February	[2]	-------	284,543	16,085	2.6	31,222	4.9	24,175	11.5
March	63,144	14.6	239,094	14,030	2.2	28,469	4.5	22,912	10.8
April	[2]	-------	192,477	13,715	2.2	36,605	5.8	18,581	9.0
May	[2]	-------	162,678	12,119	1.9	38,761	6.1	20,424	10.3
June	80,595	18.5	150,075	12,226	1.9	41,336	6.5	21,380	10.6
July	[2]	-------	153,188	15,302	2.4	48,580	7.7	18,473	9.2
August	[2]	-------	156,145	17,747	2.8	51,649	8.2	[3] 18,232	9.3
September	90,379	20.5	163,894	23,693	3.8	61,623	9.9	[3] 19,356	9.4
October	[2]	-------	192,778	27,322	4.3	54,804	8.5	[3] 22,403	10.8
November	[2]	-------	237,745	38,973	6.1	76,043	12.0	[3] 28,408	13.8
December	104,951	23.4	294,845	63,585	9.3	117,167	17.0	[3] 37,339	17.0
1931									
January	[2]	-------	331,239	77,181	11.1	112,734	16.2	[3] 33,664	16.0
February	[2]	-------	334,041	81,750	11.7	121,906	19.4	[3] 31,617	15.6
March	113,614	25.8	304,084	81,305	11.3	125,972	17.7	[3] 32,300	15.5
April	[2]	-------	246,845	70,377	10.0	110,139	15.6	[3] 30,778	14.9
May	[2]	-------	208,852	56,250	7.9	97,755	13.8	[3] 32,086	16.2
June	118,424	27.6	191,150	62,642	8.9	101,616	14.4	[3] 32,682	16.3
July	-------	-------	194,364	-------	-------	-------	-------	-------	-------
August	-------	-------	196,321	-------	-------	-------	-------	[3] 32,388	16.2

Date (end of month)	Czechoslovakia		Danzig (Free City of)	Denmark		Estonia	Finland	France	Germany
	Trade-union insurance funds—unemployed in receipt of benefit		Number of unemployed registered	Trade-union unemployment funds—unemployed		Number unemployed remaining on live register	Number of unemployed registered	Number of unemployed in receipt of benefit	Number of unemployed registered
	Number	Per cent		Number	Per cent				
1930									
January	39,199	3.6	19,282	55,876	20.3	5,608	12,696	1,484	3,217,608
February	40,550	3.6	21,153	59,363	21.0	4,580	11,545	1,683	3,365,811
March	45,567	4.0	20,376	47,109	15.6	3,575	10,062	1,630	3,040,797
April	42,664	3.7	18,371	33,471	11.8	2,227	7,274	1,203	2,786,912
May	41,098	3.8	16,232	27,966	9.4	2,065	4,666	859	2,634,718
June	37,853	3.4	14,975	24,807	8.7	910	3,553	1,019	2,640,681
July	46,800	4.1	15,330	26,200	9.3	762	4,026	856	2,765,258
August	52,694	4.7	15,687	26,232	9.0	1,039	5,288	964	2,883,000
September	57,542	5.3	16,073	27,700	9.0	1,414	7,157	988	3,004,000
October	61,213	5.5	17,307	32,880	11.4	3,282	10,279	1,663	3,252,000
November	65,904	5.9	20,272	44,200	15.3	5,675	10,740	4,893	3,683,000
December	93,476	8.3	24,429	71,100	24.6	6,163	9,336	11,952	4,384,000
1931									
January	104,580	9.5	27,081	70,961	24.4	5,364	11,706	28,536	4,887,000
February	117,450	10.0	28,192	73,427	25.6	4,070	11,557	40,766	4,972,000
March	119,350	10.0	27,070	67,725	23.6	2,765	11,491	50,815	4,756,000
April	107,238	8.9	24,186	45,698	15.9	2,424	12,663	49,958	4,358,000
May	93,941	7.6	20,686	37,856	13.1	1,368	7,342	41,339	4,053,000
June	82,534	6.6	19,855	34,030	11.6	931	6,320	36,237	3,954,000
July	-------	-------	20,420	36,369	12.4	634	6,790	35,916	3,976,000
August	-------	-------	-------	-------	-------	-------	-------	37,673	[4] 4,195,000

See footnotes at end of table.

STATEMENT OF UNEMPLOYMENT IN FOREIGN COUNTRIES—Continued

Date (end of month)	Germany					Great Britain and Northern Ireland			
	Trade-unionists					Compulsory insurance			
	Wholly unemployed		Partially unemployed		Number unemployed in receipt of benefit	Wholly unemployed		Temporary stoppages	
	Number	Per cent	Number	Per cent		Number	Per cent	Number	Per cent
1930									
January	1,004,787	22.0	501,950	11.0	2,482,648	1,183,974	9.8	336,474	2.8
February	1,076,441	23.5	593,380	13.0	2,655,723	1,211,262	10.0	371,840	3.1
March	995,972	21.7	576,153	12.6	2,347,102	1,284,231	10.6	409,785	3.4
April	926,831	20.3	553,098	12.1	2,081,068	1,309,014	10.8	451,506	3.8
May	895,542	19.5	552,318	12.0	1,889,240	1,339,595	11.1	516,303	4.2
June	896,465	19.6	578,116	12.6	1,834,662	1,341,818	11.1	569,931	4.7
July	930,777	20.5	631,903	13.9	1,900,961	1,405,981	11.6	664,107	5.5
August	984,384	21.7	670,466	14.8	1,947,811	1,500,990	12.4	618,658	5.1
September	1,011,820	22.5	677,627	15.1	1,965,348	1,579,708	13.1	608,692	5.0
October	1,061,570	23.6	693,379	15.4	2,071,730	1,725,731	13.9	593,223	4.8
November	1,167,930	26.0	721,658	16.1	2,353,980	1,836,280	14.8	532,518	4.3
December	(2)	31.7	(2)	16.9	2,822,598	1,853,575	14.9	646,205	5.3
1931									
January	(2)	34.2	(2)	19.2	3,364,770	2,044,209	16.5	618,633	5.0
February	(2)	34.5	(2)	19.5	3,496,979	2,073,578	16.7	623,844	5.0
March	(2)	33.6	(2)	18.9	3,240,523	2,052,826	16.5	612,821	5.0
April	(2)	31.2	(2)	18.0	2,789,627	2,027,896	16.3	564,884	4.6
May	(2)	29.9	(2)	17.4	2,507,732	2,019,533	16.3	558,383	4.5
June	(2)	29.7	(2)	17.7	2,353,657	2,037,480	16.4	669,315	5.4
July	(2)	31.0	(2)	19.1	2,231,513	2,073,892	16.7	732,583	5.9
August						2,142,821	17.3	670,342	5.4

Date (end of month)	Great Britain	Hungary			Irish Free State		Italy		Latvia
	Number of persons registered with employment exchanges	Trade-unionists unemployed			Compulsory insurance—unemployed		Number of unemployed registered		Number unemployed remaining on live register
		Christian (Budapest)	Social-democratic		Number	Per cent	Wholly unemployed	Partially unemployed	
			Number	Per cent					
1930									
January	1,491,519	1,161	21,533	14.5	31,592	11.1	466,231	23,185	9,263
February	1,539,265	1,120	21,309	14.8	(2)		456,628	26,674	8,825
March	1,677,473	983	21,016	14.6	(2)		385,432	28,026	6,494
April	1,698,386	906	20,139	13.7	26,027	9.2	372,236	24,305	3,683
May	1,770,051	875	19,875	13.6	(2)		367,183	22,825	1,421
June	1,890,575	829	18,960	13.0	(2)		322,291	21,887	779
July	2,011,467	920	19,081	13.2	23,393	8.2	342,061	24,209	607
August	2,039,702	847	21,013	14.5	(2)		375,548	24,056	573
September	2,114,955	874	22,252	16.0	(2)		394,630	22,734	1,470
October	2,200,413	999	22,914	16.7	20,775	(2)	446,496	19,081	6,058
November	2,274,338	975	23,333	17.0	22,990	(2)	534,356	22,125	8,608
December	2,392,738	935	24,648	17.9	25,622	(2)	642,169	21,788	10,022
1931									
January	2,613,749	953	26,191	19.1	26,167	(2)	722,612	27,924	9,207
February	2,627,559	965	27,089	19.8	28,681	(2)	765,325	27,110	8,303
March	2,581,030	996	27,092	(2)	26,825	(2)	707,486	27,545	8,450
April	2,531,674	1,042	27,129	(2)	25,413	(2)	670,353	28,780	6,390
May	2,596,431				23,970	(2)	635,183	26,059	1,871
June	2,629,215				23,016	(2)	573,593	24,206	1,584
July	2,662,765				21,427	(2)	637,531	25,821	2,169
August	2,732,434								

See footnotes at end of table.

STATEMENT OF UNEMPLOYMENT IN FOREIGN COUNTRIES—Continued

Date (end of month)	Netherlands		New Zealand		Norway			Poland
	Unemployment insurance societies—unemployed		Trade-unionists unemployed		Trade-unionists (10 unions) unemployed		Number unemployed remaining on live register	Number unemployed registered with employment offices
	Number	Per cent	Number	Per cent	Number	Per cent		
1930								
January	56,535	13.9	(2)		7,786	19.0	22,549	241,974
February	50,957	12.5	4,348	8.5	7,851	18.9	22,974	274,708
March	34,996	8.6	(2)		7,503	17.8	22,533	289,469
April	28,421	6.9	(2)		6,701	15.8	19,829	271,225
May	26,211	6.3	5,884	10.9	5,239	12.2	16,376	224,914
June	23,678	5.5	(2)		4,700	10.8	13,939	204,982
July	29,075	6.7	(2)		4,723	10.8	11,997	193,687
August	32,755	7.6	7,197	13.5	5,897	13.4	12,923	173,627
September	35,532	8.2	(2)		7,010	15.7	17,053	170,467
October	41,088	9.6	(2)		8,031	18.0	20,363	165,154
November	46,807	11.8	8,119	15.5	9,396	21.4	24,544	209,912
December	72,191	16.5	(2)		11,265	25.5	27,157	299,797
1931								
January	103,728	23.4	(2)		11,692	26.3	28,596	340,718
February	99,753	22.2	(2)		(2)		29,107	358,925
March	80,525	17.7	[5] 29,434		11,213	24.9	29,095	372,536
April	68,860	14.3	[5] 37,598		(2)		28,477	351,679
May	[4] 52,830	12.4	[5] 36,921				25,206	320,109
June	[4] 56,028	13.1	[5] 42,523				22,736	276,378
July	[4] 64,863	14.8	46,359				20,869	261,059

Date (end of month)	Poland				Rumania	Saar Territory	Sweden	
	Industrial workers							
	Extractive and manufacturing industries—wholly unemployed		Manufacturing industries—partially unemployed		Number unemployed remaining on live register	Number unemployed registered	Trade-unionists unemployed	
	Number	Per cent	Number	Per cent			Number	Per cent
1930								
January	219,333	24.3	108,812	24.8	12,622	11,307	45,636	14.2
February	251,627	27.5	120,058	28.4	15,588	11,949	45,460	13.2
March	265,135	28.7	120,844	28.9	13,045	8,882	42,278	12.5
April	246,670	27.0	113,594	26.9	13,412	7,522	38,347	11.1
May	201,116	23.0	104,469	24.2	25,096	7,362	28,112	8.3
June	182,600	21.6	94,375	22.2	22,960	6,330	28,956	8.1
July	170,665	20.5	70,597	17.0	23,236	7,095	27,170	7.8
August	150,650	18.3	74,289	17.1	24,209	7,099	28,539	8.1
September	146,642	17.8	74,285	16.5	39,110	7,527	34,963	9.8
October	141,422	17.5	91,854	14.8	36,147	9,013	43,927	12.2
November	(2)		106,835	23.6	42,689	12,110	57,070	15.3
December	(2)		95,637	23.1	36,212	15,245	86,042	22.9
1931								
January	(2)		82,717	23.8	38,804	18,921	69,437	19.8
February			92,838	27.1	43,270	20,139	66,923	18.4
March					48,226	18,292	72,944	19.3
April					41,519	18,102	64,534	17.5
May					33,484	14,886	49,807	13.2
June					28,093	15,413	45,839	12.1
July					29,250	17,685	46,180	12.4

See footnotes at end of table.

STATEMENT OF UNEMPLOYMENT IN FOREIGN COUNTRIES—Continued

Date (end of month)	Switzerland				Yugoslavia
	Unemployment funds				
	Wholly unemployed		Partially unemployed		Number of unemployed registered
	Number	Per cent	Number	Per cent	
1930					
January	10,523	4.4	10,710	4.4	8,508
February	9,971	4.1	11,445	4.7	9,437
March	7,882	2.6	12,642	4.2	9,739
April	5,203	2.1	12,755	5.3	12,052
May	5,356	2.2	13,129	5.4	8,704
June	5,368	1.7	17,688	5.7	6,991
July	4,751	1.9	15,112	6.2	7,236
August	5,703	2.3	19,441	7.9	6,111
September	7,792	2.5	26,111	8.3	5,973
October	7,399	3.0	23,309	9.4	6,609
November	11,666	4.7	25,793	10.5	7,219
December	21,400	6.6	33,483	10.4	9,989
1931					
January	20,551	8.3	30,977	12.5	11,903
February	20,081	7.9	30,879	12.2	14,424
March	18,991	5.4	41,880	12.4	12,029
April	10,389	4.0	27,726	10.6	11,391
May	9,174	3.5	26,058	9.9	6,929
June	12,577	3.6	34,266	9.7	4,431
July	12,200	3.3	39,000	11.3	6,672

[1] Sources: League of Nations—Monthly Bulletin of Statistics; International Labor Office—International Labor Review; Canada—Labor Gazette; Great Britain—Ministry of Labor Gazette; Austria—Statistische Nachrichten; Australia—Quarterly Summary of Australian Statistics; Germany—Reichsarbeitsblatt, Reichs Arbeitsmarkt Anzeiger; Switzerland—Wirt. u. Social. Mitteilungen, La Vie Economique; Poland—Wiedomosci Statystyczne; Norway—Statistiske Meddelelser; Netherlands—Maandschrift; Sweden—Sociala Meddelanden; Denmark—Statistiske Efterretninger; Finland—Bank of Finland Monthly Bulletin; France—Bulletin du Marché du Travail; Hungary—Magyar Statisztikai Szemle; Belgium—Revue du Travail; New Zealand—Monthly Abstract of Statistics; U. S. Department of Commerce—Commerce Reports; and U. S. Consular Reports.

[2] Not reported.

[3] Computed by Bureau of Labor Statistics from official report covering membership of unions reporting and per cent of unemployment.

[4] Provisional figure.

[5] New series of statistics showing unemployed registered by the employment exchanges. Includes not only workers wholly unemployed but also those intermittently employed.

Government Bill for Compulsory Unemployment Insurance in Norway

THE Council of State has submitted to the Storting (Parliament) a bill providing for compulsory unemployment insurance in Norway.[1]

The chief features of the measure are the establishment of a State Unemployment Commission, consisting of five members, and the creation of a State Unemployment Fund, from money appropriated by the Storting. Municipalities will be able to obtain either loans or grants from this fund for the purpose of carrying on government work, with a view to assisting the unemployed. The bill also provides for the establishment of communal unemployment commissions, similar in all respects to the State commission, in all communes having more than 200 persons who contribute to unemployment insurance.

[1] Dagbladet for May 9, 1931, as reported by Mr. Thomas H. Bevan, U. S. Charge d'Affaires ad interim, Oslo, May 22, 1931.

The communal unemployment funds shall be created from contributions collected from the insured and their employers. It is estimated that the contributions will amount to 7,000,000 kroner ($1,876,000)[2] annually.

The regulations regarding insurance against unemployment are substantially the same as those for sickness insurance, and provide for the exemption of persons under 20 years of age, city and Government functionaries, farm and forest workers, fishermen, and houseworkers.

It is estimated that more than 250,000 persons will be affected by this law, while the present voluntary insurance system includes only 40,000 persons.

The unemployed covered by such insurance may collect a daily benefit varying from 1.50 to 3.50 kroner (40 cents to 94 cents), according to their income classification, plus an additional amount for each child. The contributions, amounting to from 40 to 80 öre (11 cents to 21 cents) per week, will be shared equally by the insured and his employer.

No date has been mentioned for the enforcement of the measure in case the Parliament enacts the bill into law.

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[2] Conversions into United States currency on basis of krone=26.8 cents.

INDUSTRIAL RELATIONS AND LABOR CONDITIONS

Gainful Workers in the United States, by Industry Groups

THE following statement, issued by the Census Bureau, shows the number of gainful workers in the United States, as disclosed by the Census of April 1, 1930.

Number of Gainful Workers

IN THE population of the United States as returned for April 1, 1930, there were 98,723,047 persons 10 years of age and over. Of these, 48,832,589 were returned as gainful workers; that is, as persons usually working at a gainful occupation. The gainful workers therefore represented 49.5 per cent of the population 10 years old and over, or 39.8 per cent of the total population (122,775,046).

Of the whole number of gainful workers, 38,053,795 were males, forming 76.2 per cent of the male population 10 years old and over, or 61.2 per cent of the total male population. The 10,778,794 female gainful workers formed 22.1 per cent of the female population 10 years old and over, or 17.8 per cent of the total female population.

The percentage of the male population 10 years of age and over gainfully employed in 1930 (76.2) was materially lower than the percentage in 1920 (78.2), which in turn was lower than the percentage in 1910 or 1900. The percentage of the female population 10 years old and over gainfully employed in 1930 (22.1) was materially higher than the percentage in 1920 (21.1) and decidedly higher than the percentage in 1900 (18.8). The percentage of female workers shown for 1910 is not strictly comparable with the data for the other years, mainly because of the inclusion of relatively larger numbers of females as farm workers.

The figures showing the number of gainful workers in relation to the population are summarized in Table 1.

TABLE 1.—NUMBER OF GAINFUL WORKERS IN THE UNITED STATES, BY SEX, 1900 TO 1930

Item	Year	Total	Male	Female
Total population	1930	122,775,046	62,137,080	60,637,966
	1920	105,710,620	53,900,431	51,810,189
	1910	91,972,266	47,332,277	44,639,989
	1900	75,994,575	38,816,448	37,178,127
Persons 10 years old and over	1930	98,723,047	49,949,798	48,773,249
	1920	82,739,315	42,289,969	40,449,346
	1910	71,580,270	37,027,558	34,552,712
	1900	57,949,824	29,703,440	28,246,384
Gainful workers (persons reporting a gainful occupation)	1930	48,832,589	38,053,795	10,778,794
	1920	41,614,248	33,064,737	8,549,511
	1910	38,167,336	30,091,564	8,075,772
	1900	29,073,233	23,753,836	5,319,397
Per cent of total population	1930	39.8	61.2	17.8
	1920	39.4	61.3	16.5
	1910	41.5	63.6	18.1
	1900	38.3	61.2	14.3
Per cent of population 10 years old and over	1930	49.5	76.2	22.1
	1920	50.3	78.2	21.1
	1910	53.3	81.3	23.4
	1900	50.2	80.0	18.8

Main Industry Groups

THE classification of gainful workers by *industry groups* which is here presented differs in many respects from the classification by *occupation*, which was presented in the Census Reports for 1920. It is not possible, therefore, to make any very close comparisons with the 1920 data (except for the agricultural group, which is practically the same in the two classifications). In this industrial classification, all persons whose services are employed in a given industry are classified under that industry. In the occupation classification, on the other hand, all clerical workers are classified in a group by themselves without regard to the industry in which they are employed, and certain other important occupations are likewise placed as a whole in that general group where they are usually or most frequently found. Statistics giving the number of gainful workers in 1930, classified by occupation, following very closely the 1920 classification, will be presented later.

Of the whole number of male gainful workers returned in 1930, 11,901,247, or 31.3 per cent, were engaged in manufacturing and mechanical industries; 9,568,347, or 25.1 per cent, were engaged in agriculture; 5,820,642, or 15.3 per cent, in trade; and 3,990,875, or 10.5 per cent, in transportation.

Of the whole number of female gainful workers, 3,149,391, or 29.2 per cent, were engaged in domestic and personal service; 2,416,288, or 22.4 per cent, were employed in manufacturing and mechanical industries; 1,762,795, or 16.4 per cent, were engaged in professional service, mainly in teaching; and 1,716,384, or 15.9 per cent, were employed in trade.

The number of males engaged in agriculture in 1930, namely, 9,568,347, may be compared with 9,578,289 male workers returned in agricultural occupations in 1920. Allowance must be made, however, for the fact that the 1920 enumeration was made in January, when considerable numbers of farm laborers were temporarily engaged in other occupations, while the 1930 census was taken in April, when by reason of the advancing season the number of men at work as farm laborers was decidedly larger. The actual decline in the number of persons employed in agriculture throughout the year is doubtless considerably greater than the census figures taken alone would indicate.

The classification of male and female gainful workers by main industry groups is presented in Table 2.

TABLE 2.—GAINFUL WORKERS IN THE MAIN INDUSTRY GROUPS, BY SEX, FOR THE UNITED STATES, 1930

Industry group	Male	Female	Per cent	
			Male	Female
All industries	38,053,795	10,778,794	100.0	100.0
Agriculture	9,568,347	913,976	25.1	8.5
Forestry and fishing	266,876	3,249	0.7	
Extraction of minerals	1,147,770	10,294	3.0	0.1
Manufacturing and mechanical industries	11,901,247	2,416,288	31.3	22.4
Transportation	3,990,875	447,730	10.5	4.2
Trade	5,820,642	1,716,384	15.3	15.9
Public service (not elsewhere classified)	934,581	123,323	2.5	1.1
Professional service	1,663,049	1,762,795	4.4	16.4
Domestic and personal service	1,662,707	3,149,391	4.4	29.2
Industry not specified	1,097,701	235,364	2.9	2.2

International Conference of Labor Statisticians

THE Fourth International Conference of Labor Statisticians was held in May, 1931, at Geneva, Switzerland. Representatives of 23 countries were in attendance, the United States being represented by Ethelbert Stewart, United States Commissioner of Labor Statistics. A detailed account of the proceedings of the conference is contained in an article in the International Labor Review for July, 1931.

Wages

BEFORE making any comparisons it was deemed necessary to explain the meaning of wages, and it was decided that the practice of collecting information as to time rates and, in so far as available, normal earnings should be continued. It was also agreed that it is impracticable to take into account family income. This decision was reached, even though the income of members of a family other than the head of the household may be considerable, because such information is not always available and the amounts of supplemental income vary so widely from country to country. As evidence of the importance of earnings of the head of the family and variation in per cent of income contributed by members of the family other than the head of the household the following table, derived from family budget inquiries, is reproduced:

RELATIVE COMPOSITION OF THE WORKER'S FAMILY INCOME IN VARIOUS COUNTRIES

Country	Date of inquiry	Number of families included	Per cent of income derived from—					Total income
			Employment of members of family				Other sources	
			Husband	Wife	Other members	Total		
Czechoslovakia	1925–1927	53	73.2	6.5	11.2	90.9	9.1	100.0
Denmark	1922	80	86.0	[1] 5.4	([2])	91.4	8.6	100.0
Estonia	1925	283/322	77.1	6.0	7.4	90.5	9.5	100.0
Finland	1920–21	437	80.6	5.6	6.9	93.1	6.9	100.0
Germany	1927–28	896	82.2	4.4	4.9	91.5	8.5	100.0
Netherlands	1923–24	89	91.1	1.4	4.2	96.7	3.3	100.0
Norway	1927–28	135	87.8	1.0	4.2	93.0	7.0	100.0
Sweden	1923	747	87.6	1.9	4.3	93.8	6.2	100.0
Switzerland	1923	18	83.1	3.6	3.9	90.6	9.4	100.0

[1] Includes also income from employment of "other members."
[2] Included with income from employment of wife.

Payments in kind and paid holidays were regarded as of minor importance, except in special cases, and the decision was made to exclude them. Family allowances, on the other hand, are considered as part of wages and sufficiently important to be taken into account where paid. The inclusion of payments for social insurance was regarded as impracticable in international comparisons but desirable for use where comparable data are available.

The discussion then turned to a consideration as to whether rates of wages or earnings should be collected, and the decision reached was that earnings were the most desirable form of wage data, but

time and piece rates should be collected when earnings are not available. The further point was made that it is undesirable to compare earnings and wage rates, but when it becomes necessary to make use of both kinds of statistics, care should be taken to use all information that might clarify the relation between levels of rates and earnings.

The question was raised as to how far the statistics submitted by the various authorities are representative of the general level of wages in the respective countries. The recommendation made was that statistics should be extended as far as possible.

Cost of Living

ASSUMING that satisfactory wage data are developed, the question next arising is what may be bought in various countries with a given money income. It was recommended that the International Labor Office continue to publish statistics of retail prices and that rent be included in the statistics. In addition to the collection of retail prices, it was thought desirable that family budget inquiries should be made in countries where they have not been made for 10 years, in order that information might be available as to the quantity of different items used. The conference approved the compilation of a composite international budget as a rough measuring rod but recommended that it be supplemented by national budgets. While it was considered useful to make international comparisons in countries with comparable standards, it was stated that there is no advantage in comparing costs in countries, such as France and Russia or France and China. A suggestion that cost of living be compared on the basis of nutritive values was rejected, as food constitutes only part of total living costs.

Resolutions and Recommendations

THE resolutions and recommendations adopted by the conference are as follows:

This conference, recognizing the value of the information as to wages and prices which has in the past been collected by the International Labor Office for the purpose of calculations relating to the purchasing power of wages in different countries, and taking account of the resolutions adopted by the governing body at its fifty-first session, with the object of improving the bases and methods of compilation of such statistics, makes the following recommendations—

1. The International Labor Office should continue to collect and publish particulars of wages in a representative selection of towns, industries, and occupations in those countries for which information is obtainable; the statistics hitherto published should be extended as far as possible, and, in publishing the information, the office should give detailed particulars as to the sources, nature, and scope of the data included.

2. Information as to earnings per unit of time are preferable for purposes of international comparison but can generally be furnished only as a result of special inquiries. Governments should make these inquiries on uniform lines on the basis of the resolutions adopted by the first international conference of labor statisticians and should supply the information to the office. Comparisons based on this information should be made and published by the office.

3. Time rates of wages and piecework basis time rates as established by collective agreements or other arrangements can be furnished by many countries without special inquiry. These are of value for purposes of international comparison and should be collected and published.

4. In principle, it is undesirable to compare rates of wages in one country with actual earnings in another; but where, owing to incomplete information, rates of wages in certain countries have to be compared with earnings in other countries,

any available information as to the relation between the level of rates of wages and earnings should be used to correct the figures of wage rates.

5. In addition to the data as to money wages referred to in the foregoing paragraphs, particulars should be supplied with regard to the amounts of family allowances, if any, paid to the various classes of workpeople.

6. The International Labor Office should continue to collect and publish statistics of the retail prices of the articles of food consumed by working-class families in the towns for which particulars as to wages are collected; particulars should also be collected of the prices of fuel and light in these towns. The statistics hitherto published should be extended as far as possible and in publishing the information the office should give such indications as can be obtained as to the scope of the data.

7. In view of the desirability of including, in the data relating to cost of living, information as to the relative level of rents in each country, the International Labor Office should invite the statistical authorities in each country to furnish regular information with regard to the average rents of the predominant types of working-class dwellings in the towns for which statistics of wages and prices are supplied, together with a description of the accommodation provided and of the general character of the dwellings covered. The International Labor Office should study the possibility of obtaining one or more standard units of housing for the various purposes of international comparison.

8. In those countries in which no family budget inquiries have been made during the last 10 years, such inquiries should be undertaken at the earliest possible date, on the lines laid down in the resolutions adopted at the third conference of labor statisticians in 1926.

9. The wages and prices information referred to in the preceding paragraphs should be collected and published by the International Labor Office at annual intervals. The office should address each year to the statistical offices of each contributing Government a questionnaire soliciting the fullest possible particulars of wages and retail prices and rents relating as nearly as possible to the month of October. In view of the fact that there are important seasonal variations in the prices of certain foodstuffs, such prices should be obtained several times a year.

10. The information so obtained should be tabulated in a form facilitating ready comparison, and should be published, at the earliest possible date, in a special annual volume. This volume would be, in essentials, a development and amplification of the statistical tables published by the office at regular intervals in the International Labor Review. It should include, as regards wages, tables both of rates of wages and of earnings. It should include explanatory notes regarding the source, nature, and scope of all the figures given, and should set out and illustrate the various possible methods of combining the data so as to yield any desired indices of relative real wages. This conference believes that such a volume would increase in scope and in importance with each addition to the range of information obtained; and would form from the outset the nucleus of what must become in due course an authoritative source book of comparable international information regarding wages and retail prices in all industrially developed countries.

11. Following upon the publication of this volume, there should be prepared and published in the International Labor Review an article in which the data contained in the published volume should be discussed from the standpoint of determining the relative levels of purchasing power of wages in the various countries. In this article the difficulties of the procedure should be fully and frankly disclosed. Indices on various bases should be given, with the purpose of indicating the various points of view from which comparisons can be made and of preventing any one figure being regarded as authoritative for all purposes.

In view of the fact that the index numbers of purchasing power of wages serve different national purposes, it is impracticable for the International Labor Office to compute all the comparisons which are possible between a series of countries and between different occupations and industries. The series of index numbers compiled by the office should be illustrative of the methods by which the data may be used for computing further series.

12. In any statistics which may in future be compiled by the International Labor Office as to the relative purchasing power of wages in different countries, account should be taken of the diverse circumstances and conditions of the workers in different countries resulting, for example, from differences: (a) In systems of wage payment; (b) in the nature and amount of payments supplementary to wages, such as family allowances, and paid holidays; and (c) in sys-

tems of social insurance. Alternative series of index numbers should be so far as possible computed to show the effect of the inclusion or exclusion of such items.

13. The calculation of these index numbers by the use of information as to working-class consumption furnished by family budget inquiries should be made not only as hitherto on a fixed international budget but also on the basis of various national or regional budgets.

14. The conference realizes that comparisons can not usefully be made between countries of widely differing habits and customs; and that the closer are the consumption habits in different countries, the more trustworthy are the comparisons likely to be.

15. The conference is unable to recommend the proposal to compare countries of dissimilar conditions by progression through countries with intermediate conditions owing to the lack of information on such conditions at the present time and to the absence of any criterion for measuring the degree of dissimilarity among the intermediate countries.

16. In all comparisons between two or more countries, however, allowance should be made for the difference in articles consumed in each of the countries by basing the calculations successively on the list of important articles consumed in one country and the list of important articles (but not necessarily the same articles) consumed in the others.

17. It is also desirable that as regards certain articles of food for which direct comparison of prices as between one country and another is impracticable, the International Labor Office should explore the question of supplementing the present method of calculation by a method in which account would be taken of the possibilities of comparisons of prices on a basis of nutritive value.

The conference recommends that the governing body place the question of the supply of the data required for the purpose of these international comparisons of wages and cost of living on the agenda of a future international labor conference with a view to the framing of a convention binding the governments which ratify it to collect and supply the information at regular intervals.

It recommends that a small committee of experts representing the competent national statistical authorities might be set up. The function of this committee would be to assist the office in its work of developing and publishing wage and cost-of-living statistics and in preparing for any future international conference which might appear desirable in the near future.

Conference on Personnel Work in Industry

THE Silver Bay (N. Y.) Industrial Institute, held during the period August 15–25, 1931, was divided into three sections—one covering supervision and management, the second, education and training, and the third, personnel work. The following account is limited to the personnel division.

In attendance at the institute were representatives (mainly personnel supervisors and employment managers) from many industrial firms, including some of the largest companies in the United States; from several universities and State or local educational departments; from public utilities; from the New York Stock Exchange; and from several insurance companies.

The institute was designed primarily as an opportunity for study and serious discussion, especially for persons engaged in personnel work or interested in it. The topics covered included the general subject of employment (personnel organization and policy; sources of labor supply; selection and placement; rating, transfer, and promotion; termination procedure; records and turnover analysis; and job analysis and classification), accident prevention, industrial health, education and training, wages (methods, surveys, time study, principles of wage determination), added incentives, stabilization of employment, benefits and insurance, and group relations.

The keynote of all the sessions was "not theory but practical working."

Employment

IN OPENING the subject of employment, W. E. Yeomans, personnel director of the Merchants' Association of New York, pointed out that the function of the personnel department of any plant is to man the factory with the kind of workers needed and to focus the attention of the management upon the waste entailed by the loss of trained workers. In his opinion, the personnel departments have heretofore directed too much effort toward correcting the workers after taking them on and not enough toward selection of the right workers to start with.

This session was of the opinion that if an organization has, through its personnel department, given proper thought to the problem, the main source of supply for a particular job will be by promotion from among its own workers. An important source of supply for younger employees is the schools and colleges. It was agreed that the employment departments of industrial establishments should cooperate with public and private employment agencies and with other companies for the improvement of employment technique.

The session on selection and placement of employees, led by Henry C. Link, of the Psychological Corporaton of New York City, agreed that the employment manager should avoid any one particular formula in selection, that he should make it his business to know the men already on the job and should find the right men by a review of their background. Employment should be centralized, but the employment policy should recognize the right of the department heads to choose their men.

The importance of the personal interview was dwelt upon. It was the opinion of some of the delegates that even when no positions are open the employment manager should see the applicants personally. By so doing he engenders good will for the company, builds up a file of good "prospects," and at the same time discharges a social duty.

As to efficiency ratings, it was agreed that these fulfill the following purposes: They standardize wage rates, form a basis for promotion and for transfer to other jobs, show the progress of the men rated, provide a stimulus for further effort by the men, and assist the supervisor to know his workers.

The turnover analysis should show the worker's previous history, his progress on the job, his intelligence, and aptitude. Some of the elements of cost in labor turnover were found to be the cost of the employment department, cost of training (including the learner's wage), spoiled work, damage to machinery, loss of efficiency in the working group, supervisory cost, accident cost, and loss of customers' good will because of new employees' mistakes.

The group studying job analysis worked out a guide to the procedure in job analysis, points to be covered, and the charting of results. It was emphasized that every precaution should be taken, during all of the preliminary work of describing and grading jobs according to their value to the organization, to eliminate personality and salary considerations. The advantages of such an analysis were declared to be that it shows the relative values of different kinds of work and of jobs in different departments, that it focuses attention on salaries that are

out of line, acts as a check on the organization in different departments, reduces favoritism, and corrects employees' misconceptions as to their jobs.

It was agreed by the delegates that the employment should be terminated only as a last resort, for when a man is dismissed the employer loses the cost of hiring and training him, while the employee loses his seniority and his pay; he may also lose the effects of the training given him, for he may not be able to use it on the next job. In terminating the employment it is important that action shall not be hasty, that the matter shall be talked over by the foreman and the personnel officer, that the employee shall be given some previous warning (discipline, demotion, suspension, etc.), and that in all cases the personnel officer, or some person other than the immediate superior, should interview the worker involved. This interview, and indeed the whole termination procedure, should be such as to retain the good will of both the worker and the remaining employees, and should be made of as great a value as possible to the worker involved.

Stabilization of Employment

THESE sessions dealt with forecasting and planning, production control, guaranties of employment, employment control, lay-off policy and procedure, permanent lay-off allowance, and unemployment benefits and loans.

In opening the discussion of stabilization of employment, Prof. J. Douglas Brown, Princeton University, pointed out that we are becoming increasingly conscious that in order to have stabilized industry we must have stabilized employment and stabilized income. Expressing some uncertainty as to whether complete stabilization is desirable or desired, he pointed out some of the means which have been adopted to reduce seasonal fluctuations. These included business forecasting, budgeting sales and production, standardization of products, manufacture for stocks, obtaining advance orders, diversification of market, addition of side lines and fillers, etc.

Some of the delegates present described the methods being used by their firms. One reported the use of forecasting and budgeting, another the pushing of sales in dull seasons and the adding of side lines and fillers. A large shoe manufacturing company bought a large tract of woodland and put its surplus force to work clearing it; it afterwards built houses on the land, for sale to the workers. Another firm, which manufactures some 300,000 different items, has resorted to standardization of products, to diversification of market, and to endeavoring to get its customers to regularize their orders. Several other firms have reduced the length of the working week. The representative of one of these emphasized the fact that, in his company, in all cases of such change the employees' views were ascertained before the change was made.

Mr. Yeomans stated that in his opinion there has been an improvement in the attitude of employers recently and that they are feeling an increased sense of responsibility for the welfare of their workers.

As to the spreading of work to give some employment to as large a number as possible, it was the consensus of the group that the employment so given should not fall below 50 per cent of full time. E. S. Cowdrick, New York City, pointed out that spreading work, if carried

too far, may have its disadvantages—the short-time and part-time employment may not be paying a living wage, it may not be giving adequate protection to longer-service employees, the rotation of work may reduce efficiency, etc.

A number of delegates reported that their firms have adopted the practice of paying an allowance—a dismissal wage—in cases of permanent lay-off. The representative of the Goodyear Rubber Co. reported that his firm pays such a wage in all cases of 5 years' service or more. The allowance increases with the length of service, ranging from 1 month's pay for 5 years' service to 3 months' pay for 15 years' service; for each year of service above that amount an additional month's pay is given. The dismissal wage, as one delegate put it, is the company's "recognition of the man's equity in the profits made from his services."

In the session on unemployment benefits and insurance, the Procter & Gamble plan was described and discussed. The advantages of a company plan paying unemployment benefits were held to be that it provides greater security to the employees, obviates public legislation, exerts pressure on the management to stabilize employment, and encourages cooperation between different departments of the company. Disadvantages were held to be the expense involved, that such a plan goes only part way in solving the problem of unemployment, and that it tends to hold to the company an excessive labor supply. The consensus seemed to be that if industry does not take steps toward the inauguration of such plans, the State will do so. With few exceptions the delegates were opposed to State action. One delegate, however, pointed out the analogy between the present situation and that when the passage of workmen's compensation was in contemplation. Although few employers would be willing to abolish workmen's compensation now, many of them opposed it at the time. In the opinion of this delegate, employers might do better to try to shape legislation on unemployment insurance than to oppose it.

Education and Training

THESE sessions dealt with organization, policy, teachers, program, apprenticeship, cooperative education, training on the job, executive, supervisor, and foreman training, and background and general education.

It was brought out that although, fundamentally, the problem of the training of workers is the job of the supervisory force, in large organizations these persons do not have the time for training work, so that many such firms have established a special education department and others are cooperating with the public schools or State educational departments. It was agreed by the delegates present that every employee needs some training—the beginners in how to perform the job, and the rank and file of employees in matters pertaining directly to the present job and in those bearing on the job above. The courses offered should cover the background relative to the firm's business, technique and skill required on the particular job, and the organization of the work.

In order to be successful, the courses must be made attractive to the workers, and the kind of program offered will be determined by the purpose of the training.

The representatives present from the American Telephone & Telegraph Co., the Westinghouse Electric Co., and the New York Stock Exchange described the educational methods used by those companies.

Accident Prevention

THE sessions on accident prevention covered the economic and human losses of accidents, safety organization, engineering revision, controllable factors in frequency rate, and cooperation with other companies and agencies.

All of the discussion of plant safety and accident prevention stressed, as the most important factor, that the management must convince the men of its sincere and personal interest in safety; no campaign for safety can be successful without this. The remarkable success achieved by the larger industrial companies was pointed out, and the fact was emphasized that the least progress in this line has been made by the smaller employers. In this connection the cooperation of the large companies in community safety movements was urged, and one delegate suggested that the interest of the larger employer might be enlisted if he realized that the accidents in small plants were costing him money. Even large self-insurers may be affected through the hiring of former employees of small plants who are habitual offenders as to accidents.

It was emphasized that safety education must be a continuous process, with management, men, and supervisors all interested. In some cases this educational process is carried out through plant committees, with a rotating representation of the employees. Other plants carry on safety contests, posting the results and pitting one department against another.

G. E. Sanford, of the General Electric Co., Schenectady, N. Y., stated that his company has been carrying on a continuous safety competition since 1924, with striking results. He pointed out that the duties of the plant safety man are to anticipate the accident situation and determine means of prevention or recurrence of accidents.

Health

DURING the sessions on health, the medical department of the Federal Reserve Bank of New York was described by Dr. Mary Crawford; the health service of a group of small plants in Philadelphia (including 2 confectionery plants, a woolen mill, a silk mill, a bakery, a manufacturer of elastic goods, a yarn mill, and a mill manufacturing narrow tape) was described by Dr. G. S. Everts, of the Health Council of that city; the medical department of the New York Stock Exchange by Dr. F. H. Glazebrook; and the health service and health education courses of the American Telephone & Telegraph Co. by Dr. C. H. Watson.

These addresses and the discussion following emphasized that in establishing a medical department the best equipment and the most competent personnel should be obtained.

Doctor Crawford was of the opinion that the only sound basis on which to conduct a medical department is that of the interest of the employees. The department is not there to discipline nor warn the employees of breaking health so that they may be eliminated; it is

there to maintain health in the plant at as high a level as possible. In this connection she emphasized that it is important that the confidential relation between physician and patient shall always be maintained, even as respects the management.

Besides the obvious advantages of the physical examination to the employer, it was pointed out that there are also advantages to the employees. They receive a "health inventory" without expense, learn of unsuspected and preventable disabilities, receive health education, and have the period of service prolonged by keeping fit.

The new occupational hazards that have developed within recent years through the new processes introduced in industry were described by the medical director of the General Electric Co. In his opinion the major industrial hazards at present are lead, mercury, benzol and allied chemicals, and dust. Other hazards also important are dermatitis, sulphur dioxide, and chromic acid fumes. He pointed out that dust is one of the most common hazards, and that prevention of the silicosis caused by siliceous dust is very expensive; the General Electric Co., he said, has spent more than $100,000 in improving dust conditions in its porcelain department alone. In sand blasting, which is an occupation offering great exposure to dust, the company hires only men past the age of 45, since it has been found they are less susceptible than younger men to silicosis.

Wages

THE subject of wages—methods, surveys, time study, and principles of wage determination—was presented by Prof. W. C. Lytle, of the College of Engineering, New York University. He pointed out that time study and motion study go together, their primary purpose being to discover the one best way of doing the job. Incidentally they also aid in setting a standard for wage rates, in setting a definite task, and in giving an added incentive to the worker.

In fixing wage rates, he does not favor basing the rate on the cost of living; in his opinion the latter should be used only as a check on the adequacy of the rate.

In incentive plans the incentive should be so designed as to serve the management's needs, as for instance a bonus for reducing "scrap," etc. In his opinion a production bonus is preferable to a straight profit-sharing plan, as the latter may have little relation to individual merit. In incentive plans the principle of "immediacy," i. e., of having the pay envelope show at short intervals the results of the added production due to the incentive plan, is important. Publicity should be given to task results.

The incentive plan should be simple and understandable by the employee. In Professor Lytle's opinion the plan should provide positive incentives, not negative ones (such as penalties for poor work); the latter he regards as bad psychology.

Benefits and Insurance

THESE sessions dealt with mutual benefit associations, group insurance, annuities and pensions, thrift plans, and stock ownership by employees. The advantages and disadvantages of each of these plans, to employer and worker, were discussed. Some form of

benefit and thrift plan was favored but it was emphasized that whatever plan was adopted by the plant should be simple, safe, and flexible.

During these sessions group life insurance and group health and accident insurance were explained by J. C. Cole, of the Travelers Insurance Co. He gave the legal definition of group insurance, as follows:

> Group life insurance covers not less than 50 employees, with or without medical examination, written under a policy issued to the employer, the premium to be paid by the employer or employer and workers jointly, and insuring all of the workers or any class or classes thereof for amounts of insurance based upon some plan which precludes individual selection, for the benefit of persons other than the employer, provided, however, if the premium is paid jointly and insurance is offered to all of specified classes, not less than 70 per cent must be insured.

He pointed out that the present tendency is toward joint payment of premiums. The insurance ends when the employment with the particular employer ends, but the worker may convert the policy to a like amount of ordinary life insurance, at the regular rate, without having to submit to a physical examination. Indeed, one of the advantages to the worker of group insurance—both against death and sickness and accident—is that no physical examination is required, and workers below par physically, who would not be eligible for ordinary insurance, can thus obtain group insurance.

The advantages of building and loan associations and of credit unions, as means of thrift and sources of credit, were described by W. W. Stewart, of the Hunter Manufacturing & Commission Co., New York City.

Group Relations

THESE sessions dealt with collective dealing with employees, procedure, problems, and set-up of a joint relations plan, handling of meetings, etc.

The employee-representation plans of their respective firms were described by K. L. Reynolds, of the Goodyear Rubber Co.; C. E. French, of the Colonial Beacon Oil Co.; Grover C. Brown, of the Bethlehem Steel Corporation; and John H. Wentzien, of the Bordens Farm Products Co.

Dr. Don H. Taylor described the collective bargaining, on a straight trade-union basis, between the Printers' League (the closed-shop branch of the New York Employing Printers' Association) and the printing-trades unions.

Two plans of union-management cooperation were described—that on the Baltimore & Ohio Railroad (a plan which has since been adopted by a number of other railroads), by Capt. Otto S. Beyer, and that in the Naumkeag Steam Cotton Co., by Francis Goodell.

Essentials of Successful Personnel Work

THE whole series of meetings and discussions was summarized at the closing session of the institute by C. R. Dooley, of the Standard Oil Co., New York City. In closing, he outlined what he felt are the important factors of successful personnel work. In his opinion the attitude of the personnel man should be one of helpfulness to men and management. He should be sympathetic to the problems

of management, just as he expects the management to be sympathetic to personnel problems. It is essential that the personnel director, in dealing with management, should maintain his ideals always and stand firm as regards principles; he should not, however, emphasize the details of improvement or policy too much. In other words, he should be yielding as regards small things, firm as regards principles. He should give credit, not ask for it. His goal is efficiency for the company and fair treatment and opportunity for the workers. Above all, in the speaker's opinion, he should never forget the broad view, for after all, "business is social as well as economic."

Labor Institute at Rutgers University

APROXIMATELY a year ago officials of the New Jersey State Federation of Labor, encouraged by the Workers Education Bureau of America, requested the trustees of Rutgers University to provide for a labor institute at which representatives of labor and university men familiar with labor matters might study together some of the outstanding economic problems of special interest to labor. The trustees were cordial in their cooperation and the responsibility of organizing the meetings was delegated to the university extension division.

The department of economics and the bureau of economics and business research were also asked to aid in developing the program and in the collection of data which would be helpful in conducting the conferences. The whole method of procedure was placed in the hands of a joint committee representing, respectively, the university, the New Jersey Federation of Labor, and the Workers Education Bureau. A brief account of the institute is published in the American Federationist of August, 1931, from which the information for the present article is taken.

Selection of conference members.—It was decided to persuade the local unions, as far as practicable, to provide for scholarships with a stipend sufficient to meet the costs of conducting the institute. While the conference room, dormitories, swimming pool, etc., were put at the disposal of the delegates by the university, room service, board, printing, etc., had to be paid for. The maximum charge was fixed at $31.50 per person, which might be reduced if the numbers in attendance justified it. Even at this figure there was some deficit, as many unions were unable to pay for scholarships. The university made up this deficit.

Invitations were extended not only to trade-unionists but to interested persons on the staff of other universities in the East. However, as the institute was held from June 8 to 12, during the period of examinations and commencement exercises, the attendance from these higher educational institutions was not so large as was anticipated. Some representatives of industry were also invited. With 50 labor delegates and visitors at special sessions, the number of persons attending the discussions varied from 75 to 100.

Program.—It was decided that unemployment should be the main subject of discussion. The morning sessions were selected for the formal meetings, the afternoons for recreation, unless the delegates

wished special meetings at that time, and the evening discussions were held at the dinner table.

The principal topic—unemployment—was taken up under the following four heads: How do we get that way? What does it do to us? What have we done about it? and What ought we to do about it?

Among the speakers were: Prof. Walter R. Peabody and Prof. Thomas W. Holland, both of Rutgers University; Prof. Willard Atkins, of New York University; Prof. J. Douglas Brown, of Princeton University; Dr. Frank Johnson, pediatrist, of New Brunswick, N. J.; the president of the American Federation of Labor; Matthew Woll; Dr. Emil Frankel; and Mrs. Lillian Gilbreth.

All who participated in the proceedings agreed that the labor institute should be made a regular feature of Rutgers summer campus activities.

Recommendations of 1931 International Management Conference

AMONG recommendations made in resolutions adopted at the second international conference, organized by the International Management Institute, which met in Geneva, July 1 to 4, 1931, were the following:[1]

Overproduction

THE making of voluntary agreements between producers within each division of industry or agriculture in which such agreements may be possible, with a view to eliminating overproduction and unreasonable competition; provided, however, that the consumers' interests are always protected by adequate publicity concerning these agreements.

The establishment of international sources of information upon which to base the scientific study of problems of distribution, in order to furnish the latest possible data so that every undertaking may be aided in adjusting its production to the consumers' actual requirements.

The gradual increase of consumption by the expansion of purchasing power effected through the reduction of costs and prices, in order that existing surpluses and new products may be absorbed by assuring the whole community an improved and broader standard of living.

Unemployment

THAT undertakings should make every effort by a judicious adjustment of employment, and particularly, in those industries where it is possible, by a temporary and coordinated reduction in hours of work, to reduce to a minimum the demoralizing effects of total unemployment.

That until the restoration of economic confidence results in a redevelopment of business initiative and an increase in the purchasing power of consumers, those who are totally unemployed should be guaranteed the necessary help, either by their professional associations or by the community, until reengaged or transferred.

[1] Data are from International Labor Office, Industrial and Labor Information, Geneva, July 27, 1931.

That as far as possible the larger aspects of these questions should be dealt with by regular discussion between employers' and workers' organizations. Such contacts are fruitful in mutual understanding and in collaboration.

Mechanization

THE general adoption of systematic control methods in the every-day management of enterprises in order to relieve from routine those in positions of responsibility.

The full utilization of each individual's capacity and initiative and the provision of means by which he may procure additional technical knowledge.

A favorable attitude toward every device tending to secure intellectual and cultural development and consequently the improved use of the leisure resulting from a reduction in the hours of work and less exhausting labor.

Economic Instability

THE widest possible application of the system of groups for the exchange of experience (management groups). The value of such groups has been emphasized by the reports and discussions submitted to the conference and the recommendations adopted in accordance therewith.

The development of professional institutions based on wider industrial groupings and providing a channel by which they may develop, in the name of the profession as a whole and for the benefit of each of its members, research, study, and statistics providing for all the basic facts essential to direction and to reorganization.

And, above all, the practical extension of the principles of rationalization, first to each profession and industry, conscious of the close community of the interests of its members, and later to whole nations, whose declarations of agreement, however emphatic, are to-day only too often mere verbiage.

Social Consequences

THAT all those seeking for the rational organization of their own enterprises should give special consideration to the social results of the measures they take, with special reference to the physical and moral conditions of their establishments, the proper treatment of their workers, the prosperity of those dependent on them, and the provision for leisure and its use.

The congress, therefore, recommends:

That international agreements, which are the ultimate form of rationalization, either within trades or between nations, should make provision for the maintenance under a system of quotas or licenses—less objectionable than the constant increase of customs duties—of elements in production regarded as indispensable to national economic balance, even in cases where they may not be organized to the maximum efficiency.

That here, too, rationalization, by indicating the most varied and the most elastic forms for the organization of interests, should provide its own remedy for the inconveniences to which it gives rise and offers most fruitful means of defense, collaboration, and of development.

International Collaboration

THAT the International Management Institute be requested to prepare as promptly as possible, with the collaboration of the various national committees, a list of the official and private committees, organizations, and technical, scientific, and educational institutions in all countries, which are carrying on work relating to the general field of rationalization; and that copies of such list be issued to institutions for higher education, for professional and technical training, and to schools of business; for the purpose of facilitating contact between these schools and the different research groups.

Mexican Labor Colony at Bethlehem, Pa.

THE Mexican colony in Bethlehem, Pa., was built up mainly by the transportation from the Southwest of Mexican workers under contract with the Bethlehem Steel Co. In 1923 the settlement reached its peak population of about 1,000. Since then its numbers have rapidly declined, and in 1929 there were probably 350 or 400 in the colony, with those arriving and leaving about balancing each other. A monograph dealing with this colony forms the sixth of the published researches made by Paul S. Taylor on a grant from the Social Science Research Council and issued by the University of California.[1] He made three visits to Bethlehem—the first in the early part of 1928 and the last in the early part of 1930.

Previous to 1923 there were only a few Mexicans in Bethlehem. In the spring of that year, however, there was an industrial revival and the steel company's idle furnaces were again started up. In order to meet the increasing demand for labor, efforts were made to secure Mexicans, with the result that between April 6 and May 30, 1923, there were 912 Mexican men, 29 women and 7 children transported from Texas to Bethlehem. Mexican workers were also sent to other plants of the company.

The recruiting was done through Texas employment agencies, cooperating with the Mexican consulate general in San Antonio. One of the company's Spanish employees was detailed to Texas to aid in procuring and handling the desired labor. A representative of the Bethlehem Steel Co. and the Mexican consul general in San Antonio signed the contract covering the Mexican nationals shipped out of that city, as the latter wished to protect his departing countrymen.

According to the agreement, the cost of transportation was to be deducted from earnings in semimonthly installments of $3.50 each, but those who remained in the employ of the company one year were to receive back all deductions. The transportation of families was paid by the company without reimbursement. Quarters and board were provided in company houses for $1.10 a day. Wages were to be a minumum of 30 cents per hour, for such hours as were permitted by Pennsylvania statute, and were to be the same as those of men of other nationality doing the same work. Mexicans were not to be discharged without just cause, and any who might become public charges for whatever cause were to be

[1] Several of these reports have already been summarized in the Monthly Labor Review: March, 1929, Mexican labor in the Imperial Valley, Calif. (pp. 37–47); September, 1929, Mexican labor in the South Platte Valley, Calif. (pp. 59–65); and January, 1931, Increase of Mexican labor in certain industries in the United States (pp. 81–83).

returned at company expense to San Antonio. Under the latter provision the company did return some injured Mexicans, not only to San Antonio but to their homes in Michoacan.

The boarding house at Bethlehem was run by a commissary company which used Mexican cooks. Certain families did their own cooking. A Mexican with a small store sold groceries and other commodities which his countrymen desired, and for awhile was protected against bad debts by company deductions from wages.

The coming of the Mexicans was without doubt a shock to the people of Bethlehem and gave rise to exaggerated statements about this newly imported labor. It was rumored that these workers were strike breakers taking the places of natives who were reported to have left the plant demanding higher wages. Some weeks before there had been danger of serious labor disturbances. The company representative, however, regarded these reports as propaganda to keep Mexicans from coming to Bethlehem and denied the existence of a strike. An investigation was made by the Mexican consul at Philadelphia, who found conditions satisfactory to the imported laborers.

In 1929 a minor official of the company said, in reference to the attitude of the other workers toward the newcomers: "The other employees knew there was a shortage of labor, so they accepted the Mexicans." That the Bethlehem workers were not pleased at the advent of the Mexicans is quite obvious, however, the writer thinks, from a newspaper item published about the time of their arrival. The claim that there was a dearth of labor at this period is corroborated by the Pennsylvania State employment office report under date of March 15, 1923, that "in the iron and steel industry it is impossible to supply the needs for unskilled workers."

In order to avoid the importing of diseased workers to Bethlehem, prospective recruits were required to submit to a physical examination in Texas.

Labor Relations

Some Mexicans come to Bethlehem in search of work because they hear of the large steel mills in that locality. If they get jobs they stay, if not, they leave. Considerable numbers of them have come to Bethlehem because they had relatives already employed in the town. Frequently, money has been forwarded to Mexico or Texas to enable them to make the long trip. A remarkable instance is that of one of the group shipped from Texas in 1923, who has been followed by 7 brothers and 3 sisters, together with the families of those who were married, making a total of 30 persons.

As soon as the Mexicans reached Bethlehem in 1923 they began to scatter to look for more attractive jobs than the steel company offered. The greatest number on the pay roll of that company in any month of those who were originally brought from Texas in 1923 was 790 in May of that year. By the middle of the summer there were 24 per cent less, by November the number was 53 per cent under the maximum, and by the close of the same year 71 per cent.

In the spring of 1930 only 46 Mexicans who were known to belong to the original group shipped in 1923 remained on the company's rolls. Estimates of the total number of Mexicans employed in 1930 range from 90 to 150. Including Mexicans born in the United States, the writer considers 125 a conservative figure.

Upon arrival in Bethlehem the original contingents of Mexicans were concentrated in bunkhouses in a labor camp. In a little over a year, however, the scattering of Mexicans to other localities in the East, their return to the Southwest or Mexico, and their dispersion to other domiciles in Bethlehem depopulated the camp. The company then ceased to provide special arrangements for boarding Mexicans. Some of the solos were already boarding with Mexican families; now they are found boarding with Polish, Wendish, Slovak, Spanish, and Mexican families. Some of them live in groups, renting and housekeeping for themselves, each man buying his own food and doing his own cooking. Most of the Mexicans live in town houses, but a number, both of families and solos, still live in company-owned houses at the coke plant.

The greater number of the Mexicans of Bethlehem live scattered about the southern front of the works. They are not segregated in such clearly defined districts as characterize Mexican colonization in the southwestern part of the country. Early in 1929, about 124 Mexican men, women, and children were living in the neighborhood of the coke works, according to an estimate made by two Mexicans. This group included 17 families with 56 children and 34 unattached persons.

There are also a few Mexican workers who are not employed by the steel company, 4 having become machinists and 3 machinists' helpers in Allentown which is close to Bethlehem. In Bethlehem itself there were probably only 2 or 3 Mexican men who are not employees of the steel company. There are 7 or 8 Mexican girls working in a cigar factory, while a couple of boys and a few girls are employed in a silk factory. A 5-and-10-cent store has a Mexican clerk, and a hotel steward employs a Mexican boy part time.

Almost all of the Mexican employees of the steel company are laborers. There are, however, a very few skilled mechanics and semi-skilled workers among them. According to a statement of a Mexican, there are artisans among the Mexican laborers—carpenters and machinists—but they are not asked to follow their trades. This informant added, however, that these men do not speak English.

On the whole, the comments of numbers of executives on the Mexicans' industrial qualities were favorable. One executive, who had more direct experience with Mexican labor than some of the other reporting officials, made the following statement:

> I don't think that the Mexicans are inherently different from other people. They are very easy to handle if they are given just treatment and are greeted with a smile. We rule them, but we are just. We tell them what to do and expect them to do it; but we don't worry them with what not to do. I take a personal interest in each Mexican, and have obtained their confidence. If they are sick or in trouble of any sort, they usually come and tell me. If they are sick, we send them to the hospital.

The Mexicans were reported as not standing the cold as well as other nationalities, but as being especially good for hot work on the open-hearth or blast furnaces. The rapid scattering of the Mexicans shipped to Bethlehem in 1923 to other employment led to the report that these workers were unreliable. Their "steadiness," however, was said to have increased. Possibly this latter observation was due to the departure of the more nomadic employees as much as to the better adaptation of Mexicans to industrial regularity. The following observations of a Mexican are of interest in this connection:

> The foremen like the Mexicans. The American people don't like to work; the Mexicans do anything. The family men are steady and like steady work.

The single men say, "Let the married fellow work. To hell with the work, we are going to have a good time."

The survey showed that the proportion of families has increased.

In making comments upon their employment the Mexicans noted both favorable and unfavorable conditions. The following observations were made by a group of Mexicans:

There is no discrimination in movies, restaurants, barber shops, but there is in the work. The bosses give protection to their own race. They give the most dangerous work and the lowest-paid jobs to Mexicans. The Mexicans get less. Yes, if they are doing the same work they get equal pay. The Americans do not make distinctions. The Americans are superintendents.

Even before the steel company had recourse to Mexican labor an attempt had been made to scatter nationalities and place a neutral, if possible an American, in charge.

We try to keep them split up pretty well; we think we have a little better control over them then. If we have a Slavish foreman on one shift, we put a Wendish foreman on another. The Slavish foreman would put most of the work on the Wendish, and vice versa.

Social Relations

PREJUDICE against Mexicans in Bethlehem because of their color apparently was not strong and only occasional, if it had any existence. No color distinction was reported in the case of the few Mexican children in the schools.

In 1927 a characteristic mutual benefit society was organized but expired. It was succeeded by another which in 1930 claimed a membership of 120. The initiation fee was 50 cents and the monthly dues $1. After a waiting period, sick benefits of $8 a week are paid for 13 weeks and longer if the society votes approval. The death benefit is $100 plus a collection of $1 from each member.

Only a very small percentage of the Mexicans living in Bethlehem or in other parts of the United States have become American citizens, most of them expecting to return to Mexico. However, in Bethlehem they learn English more rapidly and adopt the characteristic American urban garb more readily than in the rural Southwest. In 1929 four Mexicans had bought homes in Bethlehem. The town also had a Mexican grocery, a barber shop, a pool hall, and a stand for selling Mexican newspapers. A considerable number of the Mexican workers buy company stock.

No criticisms were made in Bethlehem concerning the cleanliness of Mexicans, and the record of Mexican children in school, according to the reports of teachers and school officials, "was at least equal to that of the other children, a large proportion of whom were of European parentage."

Mexicans take little part in politics. Voting is restricted to the few, 18 in number, according to a report made early in 1930, who are naturalized citizens or were born in this country.

Apart from their grievances against foremen of European stock, little friction existed between Mexicans and other nationalities except the Poles. Intermarriages of Mexican men with women of other nationalities were reported as comparatively frequent. None of the Mexican women had intermarried. The Mexicans have some sense of kinship with other Latin Americans living in Bethlehem. Some Mexicans were included among the members of a Spanish club.

Spaniards were eligible for membership in the Mexican society, although when the inquiry was made in the early part of 1929 none had applied for admission.

While the northern climate has without doubt been a factor in the departure of many Mexicans from Bethlehem, others have become accustomed to the colder temperatures.

The Future

WHETHER or not additional supplies of Mexican labor from the Southwest will be drafted for Bethlehem, the author thinks is a question not to be answered at present. The colony in that town, however, has proven that it is able to maintain itself at a long distance from its source without recurring shipments by the company. With or without such importations it is, according to a subordinate executive, "a nucleus for the future."[1]

[1] The present tense has been used throughout the report in reference to the period in which the greater part of the field work was carried on, viz. 1929. References to 1930, when that date is of importance, are indicated in the text.

COOPERATION

Cooperative Burial Associations in the North Central States

THE high cost of funerals has led to the formation, within the past few years, of a number of cooperative funeral associations in the North Central States. Some of these are in farming and some in mining districts. The Bureau of Labor Statistics has record of 5 such societies in Illinois, 10 in Iowa, 5 in Minnesota, and 5 in South Dakota. The Illinois societies are those of coal miners, while those in the other States are mainly in rural and farming districts. The present article gives data for 13 such organizations, in the States of Iowa, Minnesota, and South Dakota, which furnished reports to the Bureau of Labor Statistics.

These reporting associations include in their membership nearly 7,000 families. The average society is a nonstock, nonprofit organization, with 524 members, doing business on the cost-plus basis. It allows all members an equal voice in the society, and is reported as saving the members from one-third to one-half the current cost of funerals.

Age and Size of Associations

OF THE 13 associations reporting, the two oldest societies are a little over 4 years old, having been formed in 1927. Of the others, 3 were formed in 1928, 4 in 1929, and 3 in 1930. The average age of all the societies is 2 years and 3 months.[1]

These organizations range in size from 215 to 1,300 members. Six of them have 500 members or more. The average membership is 524.

Membership Basis

THE South Dakota associations operate on a capital-stock basis, but the societies in Iowa and Minnesota are nonstock organizations operating with funds obtained through the sale of membership certificates. Of the nine associations reporting in Iowa and Minnesota, all but two have a membership fee of $5; the remaining societies charge $10. Of the associations in South Dakota, one has shares of $5 each and the other three have shares of $10 each. Several societies express the opinion that $5 is too low, and that $10 would have been preferable.

One Iowa society requires a membership fee of $15 in cases in which membership is not taken out until after a death.

Each member is required to pay the membership fee (or buy one share of stock, in the stock association), and receives in return a membership certificate or stock certificate. The membership certifi-

[1] In contrast with the 3 Illinois societies for which the bureau has data, which were established in 1915, 1921, and 1924.

cate is nontransferable, but in most cases entitles the whole family of the member to the benefits of the society. Several of the Iowa societies provide that the certificate becomes void upon the death of the person to whom it was issued. The Minnesota societies reporting specify, however, that the death of the member does not bar the surviving members of the family from benefit, and that the certificate becomes void only when all the single children under 30, and the husband and wife, and all other dependent relatives have died. The membership fee is then transferred to the "free-burial fund."

In the South Dakota societies the shares of stock are transferable, but only on the books of the association. As in the other two States, the membership (obtained by the purchase of a share of stock) is a family membership.

Nearly all of the societies provide that if a member moves from the district in which the association operates, his membership fee shall be refunded.

Voting

WITHOUT exception the Iowa and Minnesota societies adhere to the cooperative principle of one man, one vote. The South Dakota societies, however, are evenly divided on the question, two adhering to this method and two allowing vote by shares.

None of the Iowa societies allows proxy voting, but one Minnesota society does so, and all but one of the South Dakota societies.

Management

IN ALL cases the society is under the charge of a board of directors—usually seven in number—and elected for a term of one or two years. These elect the officers from among their own number.

Business Principles, and Services Rendered

MOST of the societies studied furnish the members complete funeral service, from the embalming of the body to actual interment. In one case, however, the only business of the society so far is the selling of caskets.

In one case the funeral service is supplied through a contract with a local undertaker. The society supplies the casket and pays the undertaker $60 for each funeral of an adult. For this sum the undertaker does the embalming, directs the funeral services, and supplies the hearse (within a radius of 15 miles) and other equipment. The rent of the casket showroom is the only fixed expense of the association, as the secretary of the organization is paid on a commission basis. The secretary states: "Most of our funerals cost from $130 to $170,[2] and the average saving is over $100 per funeral."

In another society the cost ranges from $123 to $310, the latter figure including cost of "good steel casket and steel vault."

The largest society of all owns its own funeral home, two hearses, and other equipment, and employs its own undertaker.

[2] Includes embalming, funeral directing, casket (and wooden box), use of hearse (within radius of 15 miles), use of lowering device, and grave cover. Does not include digging of grave, furnishing of automobiles, or steel or concrete cover for casket.

Only one society operates on the basis of current prices. The others try to operate as near cost as possible, with due provision for overhead, incidentals, etc. One society reports that its overhead is covered by a 20 per cent profit on casket and vault.

The South Dakota associations provide that the cost of funerals to nonmembers shall be fixed by the board of directors on the basis of "the cost price of supplies and the expenses in connection with such funeral, including wear, tear, and depreciation of vehicles used, and the amount of salary of director or assistant, and other overhead expenses, or the costs of such funeral may be by the board of directors delegated to the funeral director."

Only two societies have a reserve fund (in one this is less than $100), but several societies report that they are trying to accumulate a small reserve for emergencies.

The by-laws of nearly all of the societies provide that any profits made, above the amount placed in the reserve fund, shall be divided among the members on the basis of patronage, and in a number of cases the by-laws provide for a regular appropriation for an educational fund to be used for the teaching of cooperation. However, as the societies report, almost without exception, that they made either very small profits or no profits at all on the year's operations, these provisions have evidently been without practical effect.

One society states that the small profits made thus far have been used to buy equipment; it has bought a hearse which is being paid for in this manner. In the future, prices will be reduced if it is found that a profit is being made.

Special Provisions

PRACTICALLY all of the societies have a "free burial fund," from which assistance can be given in cases in which the member's family is unable to pay the funeral expenses. The sources of revenue for this fund consist of lapsed membership fees and an assessment of 25 cents per member per year. In addition, the South Dakota societies provide that a certain proportion of any profits made during the year shall be set aside for the free burial fund.

Operations in 1930

THE table following shows summary data as to the 1930 operations:

MEMBERSHIP AND BUSINESS OF COOPERATIVE BURIAL ASSOCIATIONS, 1930

State	Number of societies reporting	Number of members	Paid-in share capital	Amount of business, 1930	Net profit, 1930	Reserve fund
Iowa	6	3,373	(1)	[2] $11,873	[3] $868	[4] $84
Minnesota	3	1,593	(1)	16,500	[4] 350	[4] 1,200
South Dakota	4	1,845	$10,350	8,075	[3] 401	----------
Total	13	6,811	10,350	36,448	1,619	1,284

[1] Nonstock associations. [2] 3 societies. [3] 2 societies. [4] 1 society.

Results Accomplished

It is seen that the volume of business done in 1930 was not great. The main criterion of success of these organizations, however, is the saving made for the members at the time when the bereaved family needs it most. As to this the reports are practically unanimous.

One society, which has been in operation two years and a half, reports: "We are sure we have saved our members at least $10,000, based on prices charged by the regular undertakers, since we started in business. It has brought prices down all along the line."

The society which sells only caskets claims that it saves its members 50 per cent on this item. Another association says: "We save our members from $100 upwards on each funeral." A third states: "We have cut down funeral expenses to less than one-half, or nearly to one-third, of what we used to pay, and we are well satisfied with our organization." A fourth declares that the burial association "has been a boon to the middle class, as we have been able to cut the cost of funerals in two."

The secretary of an Iowa society with 500 members remarks that the society has saved the members from one-third to one-half of what they formerly paid, and that the membership and business is showing a steady increase. This official is of the opinion that a cooperative burial association should have at least 400 members in order to insure a fair volume of business.

The secretary-manager of a South Dakota society with 400 members points out that in 1930 the death rate among the membership was unusually low. "Our aim is to have a membership of 1,000 families or more. This will cut down overhead and keep equipment and undertaker in employment."

The only report which expressed anything but complete conviction as to the success of the society was a small organization of 285 members. The secretary of this society states: "Although this association has been operating one year, it is hard to tell how it will materialize. All earnings so far have been invested in equipment." And he adds the following warning for burial associations: "Avoid one-man management."

Difficulty experienced by the cooperative associations in obtaining caskets and other funeral supplies, because of the opposition of private business, was pointed out by a Minnesota society. This society also reports that representatives of the five societies in that State met on June 26, 1931, and formed a State federation, whose main purpose will be to look after the interests of the local associations.

HEALTH AND INDUSTRIAL HYGIENE

Rheumatic Disease Among Industrial Workers

A REPORT in the Statistical Bulletin, August, 1931, published by the Metropolitan Life Insurance Co., states that although rheumatic disease is a minor cause of death it is of great importance from the standpoint of morbidity. Only about 4,500 deaths occur annually in the United States from rheumatism in all its forms, about two-thirds of which result from acute rheumatic fever and the remainder from chronic rheumatism. In both the general population and among the industrial policyholders of the company the death rate from acute rheumatic fever has been declining steadily for a long time, while that for chronic rheumatism has been small and almost stationary.

Rheumatic disease is important, however, because of its great prevalence, particularly in the disabling chronic forms. A survey covering over 600,000 persons, made by the company in 1917, showed that rheumatism was one of the most important causes of disability. The rate for persons suffering from the disease was 164.4 per 100,000 of the persons surveyed, or about 9 per cent of all the illnesses reported. Disability from rheumatic disease was exceeded only by that from accidents, which caused only 8 per cent more cases. Other chronic conditions show a much lower rate, tuberculosis causing less than half as many cases of disabling sickness, heart disease and cerebral hemorrhage each two-fifths as many, and cancer only one-tenth. Although these figures probably somewhat overstate the case, since the term "rheumatism" may be used to describe indefinite and undiagnosed conditions, it is considered that most of the cases were true rheumatic conditions affecting either the joints or the muscles. Similar figures showing the high prevalence of rheumatic disease were compiled by the United States Public Health Service in the study of sickness in Hagerstown, Md., made from December, 1921, to March, 1924.

Sickness statistics of persons insured by the Metropolitan Life Insurance Co. under group contracts, for the year 1928, show that for illnesses lasting more than one week there were 8.5 claims per 1,000 males insured for rheumatic conditions, most of the rheumatic disability being caused by the acute form.

A much higher sickness rate is shown in different surveys for women than for men, the rate for women in the Metropolitan surveys being one and one-half that for males, and in the Hagerstown study twice that of men.

Age is an important factor in all types of sickness, but particularly in the chronic forms. In the Metropolitan studies the rate for rheumatic disease was only 0.2 person per 1,000 for the group under 15

years of age, increasing to 0.9 at ages 15–35; 3.1 at ages 35–54; and 11 from age 55 and over. Similar figures were shown by the Hagerstown study.

The extent of disability from rheumatic disease was shown in Metropolitan surveys of 1915 to 1917. In those studies only 12.4 per cent of those reported to be suffering from rheumatic conditions were at work. The illnesses from this cause were also of long duration. In two localities for which the duration was studied, 35.4 per cent of these patients had suffered from rheumatism three years or more, while only 17.4 per cent of the illnesses from all causes had lasted that length of time.

Rheumatic conditions are closely associated with certain occupations, the sickness rates generally being highest in industries and occupations in which there is exposure to extremes of heat or cold or to dampness. Excessively high rates are shown by the statistics of the Metropolitan Life Insurance Co. for quarry workers, iron miners, employees of steam railroads and subway and elevated roads, and paper and pulp workers. Low rates were found among employees of machinery and metal-working plants and in the printing industry. The disability experience of the Boston Edison Electric Illuminating Co. showed high sickness rates from rheumatism among repairmen, linemen, chauffeurs, meter testers, laborers, firemen, and oilers.

The economic loss from rheumatic disability is high. It has been estimated that rheumatic disease causes an annual loss of 7,500,000 weeks of work and of $200,000,000 in wages. There is a further indirect loss in impaired efficiency which can not be calculated.

The importance of rheumatic disease as a public health problem has only recently been fully recognized. Ten years ago only two or three clinics for its study could be found in the country, while now they are found in nearly every medical center. Recently a committee on the control of rheumatism has been formed which is similar to those which have been so successful in the campaigns against tuberculosis, cancer, and heart disease. The purposes of the committee are the promotion of research into the various forms of rheumatic disease, the furnishing of information to the medical profession, and the development of clinical facilities for treatment.

Skin Disease from Brazilian Walnut Wood

AN OUTBREAK of dermatitis early in 1931, in a cabinetmaking plant employing about 100 men, led to an investigation [1] of the causes by the United States Public Health Service. At the time the cases occurred the men were working on an order calling for the use of Brazilian walnut, the wood for which had been purchased from an importer a short time before.

The cases, which numbered 11 in all, developed in from two days to two weeks from the beginning of exposure. The workers who were mainly affected were those who came in contact with the sawdust and those who sandpapered the wood. In addition to those who developed the dermatitis, many of those working in the room developed a coryza

[1] United States Public Health Service. Public Health Reports, Aug. 14, 1931, Dermatitis venenata due to contact with Brazilian walnut wood, by Louis Schwartz, Senior Surgeon.

and sneezing while at work. The first symptoms were burning and itching of the face and eyelids, which in some of the cases was limited to those parts but in others spread to the hands, neck, and other exposed parts of the body. In general the men were not incapacitated for work but recovered after a few weeks so that it appeared that a tolerance to the wood may be developed in susceptible individuals. In some cases there was swelling of the face and eyelids and the itching and burning was accompanied by a papular, scaly eruption. The dermatitis was so severe in three cases that work had to be given up for a time.

Inquiry was made of other firms which had purchased the wood from the importer. Replies were received from 10 firms, all but one of which had had cases of dermatitis which had been attributed to the Brazilian walnut. One firm stated that the majority of the workers were affected, while other companies reported only one or two cases. In one instance use of the wood had been discontinued because of the dermatitis among those working with it.

Tests of the irritative quality of the sawdust were made on three volunteers. For the test a small piece of gauze was moistened with water and completely covered with sawdust. This was placed on the skin of the back, covered by larger pieces of rubber and flannel, and secured in place with adhesive plaster. There was a positive reaction under the patch at the end of 24 hours in each case, which varied from a mild redness of the skin with a few small blisters, which lasted only one day, to a very marked erythema lasting more than a week.

Sickness Among Male Industrial Employees

A STUDY of the frequency of disabling sickness among a group of industrial employees is carried on regularly by the United States Public Health Service. The study is based on the frequency of claims for sickness and nonindustrial accident benefits among a group of industrial sick-benefit associations covering about 135,000 male industrial employees. The most recent report [1] relates to the first quarter of 1931 and shows that the favorable health record of 1930 was continued into this year. A widespread outbreak of influenza occurred in the first two months of 1931, but with this exception, and possibly that of tuberculosis of the respiratory system, respiratory diseases occurred less frequently than in the same period in 1930 and 1929. As influenza and pneumonia rates generally fluctuate together, the low rate for pneumonia in the first quarter of this year is noteworthy, although it may be accounted for by declining industrial activity, especially in the iron and steel industry, in which an abnormal incidence of pneumonia appears to be associated with occupations involving exposure to wide changes of temperature. A lower incidence rate is shown for all of the nonrespiratory disease groups in 1931 as compared with the same period in 1930 and 1929, the greatest decrease having occurred in the incidence of diseases of the digestive system and in diseases of the skin.

[1] United States Public Health Service. Public Health Reports, July 31, 1931, pp. 1799, 1800. Sickness among male industrial employees in the first quarter of 1931.

Industrial depressions, with the resultant worry over finances and the insecurity of jobs, may have an influence upon the rate for nervous diseases. In 1921 the rate for cases of neurasthenia was 2.5 cases per 1,000 males, a higher rate than has occurred in any year since that time. In view of that fact, and also because the medical director of a large industrial establishment has recently found an unusual number of cases of nervous indigestion and other nervous conditions which he ascribes to the effects of the depression, the rate for neurasthenia is shown separately in the following table. Although there is no indication in these figures of an increase in the frequency of diseases of this type, it is considered that it is possible the remainder of the year may show a change in this respect.

The following table shows the frequency of disabilities lasting eight calendar days or longer among male industrial employees in the first quarter of 1931 as compared with the corresponding quarter in 1929 and 1930. The table covers the morbidity experience of 18 identical industrial establishments in 1930 and 1931 and of 15 of these establishments reporting in 1929. The average number of males covered in the records in the three years, 1929 to 1931, were 131,117, 134,469, and 123,222, respectively.

FREQUENCY OF DISABILITIES LASTING EIGHT CALENDAR DAYS OR LONGER, FIRST QUARTER OF 1929, 1930, AND 1931

Disease causing disability	Number of disabilities per 1,000 in first quarter of—			Disease causing disability	Number of disabilities per 1,000 in first quarter of—		
	1929	1930	1931		1929	1930	1931
Respiratory diseases:				Nonrespiratory diseases—Con.			
Influenza and grippe	82.1	23.2	47.1	Neuralgia, neuritis, sciatica	3.0	2.5	2.5
Bronchitis	7.3	7.3	5.9	Neurasthenia	1.5	1.3	1.4
Pneumonia, all forms	5.3	4.8	3.8	Other diseases of nervous system	1.3	1.4	1.1
Diseases of pharynx and tonsils	8.3	8.8	7.5	Diseases of circulatory and genito-urinary systems	8.6	9.2	8.0
Tuberculosis of respiratory system	.9	.9	1.1	Diseases of skin	4.8	3.9	2.9
Other respiratory diseases	6.2	6.1	5.2	Epidemic and endemic diseases, except influenza	6.0	4.0	3.1
Total	110.1	51.1	70.6	Ill-defined and unknown causes	2.0	2.6	1.9
Nonrespiratory diseases:				All other diseases	5.8	5.4	4.6
Diseases of stomach	4.6	5.0	3.9	Total	59.5	56.7	47.6
Diarrhea and enteritis	.8	1.2	.7				
Appendicitis	4.6	4.4	3.5	Total cases of sickness	169.6	107.8	118.2
Hernia	2.0	2.0	2.1	Nonindustrial injuries	11.7	10.9	10.0
Other digestive diseases	3.6	3.3	2.5				
Rheumatism, acute and chronic	6.5	6.4	6.0	Total sickness and injuries	181.3	118.7	128.2
Lumbago and other diseases of organs of locomotion	4.4	4.1	3.4				

Los Angeles City Employees' Health Clinic

A COMMUNICATION from D. S. Parkes, in charge of the hospitalization and insurance services for employees of the Department of Water and Power, Los Angeles, Calif., gives an account of the organization of a health clinic by the employees of that branch of the city government.

The clinic, which was started in 1929, now occupies a 2-story building with more than 50 rooms. It is in the charge of 2 physicians of standing—one of whom does all the major operations—and they

have associated with them 18 graduate physicians who include various specialists. The clinic employs also 10 nurses, 2 laboratory technicians, and 5 office employees.

There are about 2,000 employees of the water and power department who are members of the organization, and it is said that more would become members if it were not for giving up their family doctors. Other city groups have joined, also, so that the total membership at present is approximately 6,500. The monthly fee of $2 is deducted from the pay of the employees. The fee entitles members to free medical care, operations, dressings, medicine, and hospitalization, while all dependents of members are given free medical and surgical care, but pay the actual cost of hospitalization, nurses, and medicine. Hospital cases are not cared for at the clinic but are sent to one of the city hospitals.

At the end of two years' operation of the clinic a check-up of the results was made through the various division and subdivision heads, and it was agreed that there has been a marked increase in efficiency on the part of the personnel, less absenteeism because of prolonged illness, and a notable improvement in morale and esprit de corps, the better morale no doubt being largely attributable to the fact that employees are freed from the usual worries as to finances in the case of illness.

Occupational Diseases Investigated in Massachusetts in 1930

THE report of the division of industrial safety of the Massachusetts Department of Labor for the year 1930 [1] shows that there were 389 cases of industrial disease (including four fatalities) investigated during the year. The majority of cases occurred among men, only 41 cases being reported for women. There was one fatality during the year due to anthrax. Other fatal cases in which the cause was not so clear-cut or which were disputed by the insurance company were a case of pneumonoconiosis occurring in the granite-cutting industry; a case of pulmonary tuberculosis, this worker also having been employed in the granite industry; and a case diagnosed as actinomycosis but in which the attending physician stated there was only a casual relation between injury and death.

The following table shows the number of investigated cases of occupational disease by cause:

CASES OF OCCUPATIONAL DISEASE INVESTIGATED IN MASSACHUSETTS IN YEAR ENDING NOVEMBER 30, 1930

Disease	Number of cases		
	Male	Female	Total
Dermatitis	192	31	223
Gas and fume poisoning	70	7	77
Lead poisoning	45	1	46
Anthrax	[a] 9		[a] 9
Pneumonoconiosis	[a] 8		[a] 8
Other dust poisoning	6	2	8
Tuberculosis	[a] 6		[a] 6
Chrome poisoning	5		5
All other	[a] 7		[a] 7
Total	[b] 348	41	[b] 389

[a] Including 1 fatality. [b] Including 4 fatalities.

[1] Massachusetts. Department of Labor and Industries. Annual report for the year ending November 30, 1930. Boston, 1931.

The increasing frequency of industrial dermatitis is shown by the fact that more than 57 per cent of the cases investigated were due to this cause. The majority of cases resulted from contact with dyestuffs, various oils and greases, acids, and dusts, such as soap powders. The next most important causes of occupational disease were poisoning from gases and fumes and lead poisoning. The largest number of cases of gas and fume poisoning occurred in garages as a result of inhalation of carbon monoxide, and the painting industry and the manufacture of storage batteries were responsible for half of the 46 cases of lead poisoning.

Industrial Diseases and Poisoning in British Factories, 1930

THE report of the chief inspector of factories and workshops in Great Britain for the year 1930 contains the report of Dr. John C. Bridge, senior medical inspector of factories, showing the causes and extent of industrial diseases and poisoning among workers in British factories.

Special investigations of health hazards made during the year included an inquiry into sickness among operatives in card rooms, (which showed an excess of respiratory illness among card-room workers at the older ages) and a study of the efficiency of various types of respirators.

Table 1 shows the number of cases of disease resulting from the use of some of the more important industrial poisons for certain years from 1900 to 1930.

TABLE 1.—NUMBER OF CASES OF POISONING AND OF INDUSTRIAL DISEASES AMONG FACTORY WORKERS IN GREAT BRITAIN FOR SPECIFIED YEARS, 1900 TO 1930

Disease	1900	1910	1920	1927	1928	1929	1930
Lead poisoning:							
Cases	1,058	505	289	347	326	244	265
Deaths	38	38	44	35	43	31	32
Mercury poisoning:							
Cases	9	10	5	3	4	-------	3
Deaths	-------	1	-------	2	-------	-------	-------
Arsenic poisoning:							
Cases	22	7	3	3	2	-------	1
Deaths	3	-------	-------	1	1	-------	-------
Carbon bisulphide poisoning: Cases	-------	-------	-------	-------	1	6	-------
Aniline poisoning:							
Cases	-------	-------	-------	38	41	26	24
Deaths	-------	-------	-------	1	-------	-------	-------
Chronic benzene poisoning: Cases	-------	-------	-------	-------	-------	1	-------
Toxic jaundice:							
Cases	-------	-------	6	3	6	2	-------
Deaths	-------	-------	3	-------	-------	1	-------
Epitheliomatous ulceration:							
Cases	-------	-------	45	174	175	165	194
Deaths	-------	-------	1	49	59	50	36
Chrome ulceration: Cases	-------	-------	126	65	70	109	95
Anthrax:							
Cases	37	51	48	31	45	40	43
Deaths	7	9	11	2	8	5	6

Lead poisoning.—There was a slight increase in the number of cases of lead poisoning reported in 1930 as compared with 1929, there being 21 more cases and 1 more death. This increase is regarded, however, as of no great importance, since the diagnosis of lead poisoning is a matter of difficulty and may often be based upon a single symptom when a worker is known to have been exposed to

lead. The most decided increase in the number of cases reported occurred in the smelting of metals and the manufacture of storage batteries. Of the cases occurring in metal smelting, the majority were in two large works and were mild in type, the reports indicating that dust in charging the furnaces was probably responsible. As in the previous year, several cases of poisoning or incipient poisoning occurred in a perambulator factory among young women employed in the dry rubbing down of a so-called "leadless" filler. An analysis of the filler showed that it contained over 27 per cent of soluble lead. A slight decrease was noted in lead poisoning among building painters, but there was apparently no diminution in cases of the more or less chronic type among painters who had been subjected to the risk before the 1927 regulations governing the hazard of lead poisoning went into effect. Three cases showing lead absorption occurred among men engaged in spray painting.

Arsenic poisoning.—Only one case of arsenic poisoning was reported, but this case was of interest as it occurred in a man of 61 years of age who had been employed for 46 years in the manufacture of arsenical sheep dip. He had had one epithelioma removed 10 years and one 5 years previously, and at the present time two primary growths had appeared in different parts of his body.

Aniline.—Practically no change took place in cases of intoxication from aniline. A reduction would have been shown had it not been for 10 cases resulting from the inhalation of vapor from 5-chlor-ortho-toluidine, the first recorded from this chemical. The symptoms in these cases were first slight headache, drowsiness, and conjunctival or nasal irritation, followed later by strangury and hematuria. In two cases the urine was examined seven days after the development of symptoms and was found to contain large numbers of red corpuscles. These workers had been exposed to the fumes of 5-chlor-ortho-toluidine given out from a paste when dried in a vacuum oven. The poisoning occurred at a time when there was an abnormally high outside temperature. The remaining cases occurred in the making of dye intermediates and aniline colors and in aniline black dyeing and the handling of aniline residue.

Anthrax.—The number of cases of anthrax from handling hides and skins was slightly greater than in the preceding year. It appears that in all the fatal cases a delay occurred either in securing treatment or in a proper diagnosis. As anthrax is not a common disease, and as many physicians have never seen a case of anthrax, the authorities have issued a card stressing the necessity for full investigation of all lesions of the skin which in any way resemble the early stage of anthrax infection.

Epitheliomatous ulceration.—There were 97 cases of epithelioma with 10 deaths due to pitch and tar, the largest number of these cases occurring in tar distilling. Ninety-seven cases with 26 deaths were caused by mineral oil, 82 cases with 21 deaths being found among mule spinners. For the years for which epithelioma has been reported among cotton mule spinners and until the end of 1930, 1,002 cases have been reported. The disease was recognized in 818 persons, or 81.6 per cent of the total cases, while they were still employed in the mule room; 48 cases, or 4.7 per cent, developed in spinners who had retired from 1 to 16 years before the disease was recognized; and in

136 cases, or 13.5 per cent, the workers had passed into other employment which might have contributed to the disease. As this type of ulcer is seldom reported during life, the principal source of information as to its occurrence among cotton mule spinners is the death certificate furnished by the registrar-general, and it seems probable, therefore, that many such cases pass unrecognized as industrial in origin.

Dermatitis.—Reporting of cases of skin disease is not compulsory, but during the year there were 789 cases of dermatitis which were voluntarily reported. This is a smaller number of cases than were reported during the preceding year, and, although for several years the number of cases reported had steadily increased, it is believed that a better knowledge of dermatitis and of methods of prevention is indicated. During 1930 there was a distinct decrease in cases due to oil, resulting probably from the use in many large engineering works of an alkaline antiseptic wash. The causative agents in the reported cases were alkalies, sugar, oil, chrome, turpentine and substitutes, dyes, chemicals, friction and heat, benzol, gasoline, dough, acids, paraffin, French polish, nickel compounds, and accelerators.

Silicosis and asbestosis.—By a recent arrangement the factory-inspection service receives copies of all death certificates in which death resulted from pulmonary disease involving fibrosis of the lungs. Of the 700 such certificates received in 1930, 241 gave silicosis as the cause of death and in the great majority of cases it was found that the previous occupation of the persons concerned was one in which there was recognized exposure to silica dust. The industries furnishing the greatest number of such cases were the manufacture of pottery; the sandstone industry, the occupations including quarrymen and stonemasons; coal mining; gold mining (ex-South African miners); refractories industries; sand blasting; and tin mining.

The recent investigations of the effects of exposure to asbestos dust have resulted in the adoption of measures to control the dust in the textile side of the asbestos industry. Data regarding 20 fatal cases of asbestosis without tuberculosis show that there is a serious hazard involved in continued exposure to heavy concentrations of asbestos dust. Of the 20 cases, 6 occurred in mattress makers and 6 in carders or cloth weavers, while in the remaining cases it appeared that there was exposure to neighboring dusty processes such as carding and cloth weaving. There is evidence, also, that although removal from exposure to very dusty processes may greatly delay the appearance of a disabling fibrosis or may prevent it entirely if the exposure was not too long, exposure to heavy concentrations of asbestos dust for a comparatively short period of years will result sooner or later in the development of a disabling fibrosis. The average age at death of the 20 cases was 38.9 years, and the average length of employment, was 14.9 years.

Poisoning from gases and fumes.—The number of cases of poisoning from carbon monoxide was 94, with 14 deaths, which was somewhat smaller than the preceding year. There were 26 cases, with 5 deaths, which were caused by blast-furnace gas; 28 cases, with 3 deaths, due to power gas; 13 cases, with 3 deaths, due to coal gas; and 27 cases, with 3 deaths, due to various causes, such as coke rivet fires in confined spaces and fumes from coke-fired ovens, and exhaust fumes from motor-bus engines.

Table 2 shows the number of cases of poisoning from gases and fumes for the years 1926 to 1930:

TABLE 2.—NUMBER OF CASES OF INDUSTRIAL POISONING FROM GASES AND FUMES, 1926 TO 1930, BY YEARS

Gas or fumes	1926	1927	1928	1929	1930
Carbon monoxide:					
Cases	101	88	81	113	94
Deaths	6	4	9	10	14
Carbon dioxide:					
Cases	4	3	8	-----	2
Deaths	-----	-----	1	-----	1
Sulphuretted hydrogen:					
Cases	3	9	9	7	5
Deaths	-----	-----	3	2	-----
Sulphur dioxide:					
Cases	2	5	10	6	4
Deaths	-----	1	-----	-----	-----
Chlorine: Cases	13	14	17	14	5
Nitrous fumes:					
Cases	5	7	6	11	5
Deaths	1	-----	1	2	-----
Ammonia:					
Cases	5	5	12	18	2
Deaths	1	-----	1	-----	-----
Benzol, benzine and petrol, naphtha:					
Cases	4	7	7	7	7
Deaths	1	2	2	-----	1
Miscellaneous:					
Cases	17	23	17	36	9
Deaths	1	2	2	1	1

INDUSTRIAL ACCIDENTS

Accident Experience of Establishments Reporting to National Safety Council, 1930

THE 1931 report on industrial accident statistics, published by the National Safety Council, shows that a general reduction of 28 per cent in accident frequency rates has been accomplished during the years 1928 to 1930 in the 1,562 industrial establishments which furnished reports for each of the three years, 1928, 1929, and 1930. Accident severity rates were also reduced 8 per cent in these establishments during the same period.

The figures point to progressive improvement in this group, as 25 per cent of the reduction in frequency rates and 6 per cent of the reduction in severity rates was experienced from 1929 to 1930. The improvement made in these establishments is undoubtedly greater than has been experienced in all establishments of these industries.

Table 1 gives, by industry, the accident frequency and severity rates for these 1,562 identical establishments for 1928, 1929, and 1930. The man-hour exposure for these three years was 2,791,269 in 1928; 3,006,957 in 1929; and 2,507,233 in 1930.

TABLE 1.—ACCIDENT FREQUENCY AND SEVERITY RATES IN 1,562 ESTABLISHMENTS REPORTING TO NATIONAL SAFETY COUNCIL, 1928, 1929, AND 1930, BY INDUSTRY

Industry	Number of establishments	Accident frequency rates (per 1,000,000 hours' exposure)			Accident severity rates (per 1,000 hours' exposure)		
		1928	1929	1930	1928	1929	1930
Automobile	36	25.48	26.60	14.93	1.32	1.27	1.52
Ceramic	14	32.68	32.85	28.93	2.24	.89	.52
Chemical	106	18.87	17.19	15.16	2.10	1.53	1.97
Construction	146	65.21	56.77	56.01	6.02	5.52	5.19
Electric railway	24	30.26	25.42	26.08	2.98	1.92	1.61
Food	93	19.45	17.66	15.19	1.35	1.48	1 62
Foundry	71	39 87	42.10	30.09	1.51	1.88	2.28
Laundry	17	18.27	18.76	7.73	.85	1.57	.78
Machinery	141	16.16	18.34	13.84	.96	1.18	1.09
Marine	5	16.61	13.57	13.74	1.82	1.64	2.29
Meat packing	11	46.87	31.61	23.15	1.97	1.22	1.13
Metal products	181	25.20	25.57	16.31	1.39	1.37	1.14
Mining	84	61.11	62.93	56.18	9.24	8.83	9.85
Nonferrous metallurgical	18	20.98	25.02	14.62	1.15	3.08	1.23
Paper and pulp	115	26.16	25.59	21.79	2.07	1.60	1.49
Petroleum	28	29 36	31.34	20.70	2.74	2.74	2.21
Printing and publishing	8	15.02	12.82	9.11	.23	.49	.44
Public utility [1]	136	24.53	21.17	16.45	3.84	3.55	2.88
Railway car and equipment	19	17.55	27.35	19.80	1.36	.65	3.15
Refrigeration	18	47 73	41.82	33.05	2.38	3.03	2.46
Rubber	23	32.63	23.57	15.66	1 56	1.37	1.22
Steel	73	19.13	17.71	11.68	2.28	2.45	1.93
Tanning and leather	25	19.62	17.70	17.82	.55	1.63	1.25
Textile	66	10.04	10.94	8.85	.59	.61	.98
Woodworking and lumbering	99	41.59	39.92	34.49	3.16	3.29	2.93
Total [2]	1,562	25.10	24.26	18.11	2.16	2.11	1.98

[1] Does not include gas operations.

[2] Includes miscellaneous industries and glass products. The exposure of the latter is too small to be indicative of injury trend. Data were not available for cement and quarry industries.

A total of 4,198 establishments, with 2,236,629 employees, furnished data for the year 1930, as against 3,603 establishments with 1,987,878 employees reporting for 1929, and 2,557 establishments with 1,828,186 employees reporting for 1928.

The reports for 1930 cover approximately 96,000 accidents, 1 per cent of which caused either death or permanent total disability, while 4 per cent resulted in permanent partial disability and 95 per cent involved temporary disability only. These accidents represent 18.47 accidents per 1,000,000 man-hours worked.

The temporary accidents involved approximately 1,700,000 days of lost time. The permanent partial disabilities, computed according to accepted standards, represented a time loss of about 2,600,000 days. The fatalities and permanent total disabilities, likewise computed, represented a time loss of nearly 6,000,000 days. Consequently the total time loss was around 10,250,000 days, or 1.97 days per 1,000 hours worked.

Table 2 shows, by industry, the total number of establishments reporting for 1930, the number of man-hours worked, and accident frequency and severity rates.

TABLE 2.—ESTABLISHMENTS, EXPOSURE, AND ACCIDENT RATES FOR ALL ESTABLISHMENTS REPORTING TO NATIONAL SAFETY COUNCIL, 1930, BY INDUSTRY

Industry	Number of establishments	Hours of exposure	Accident frequency rates (per 1,000,000 hours' exposure)	Accident severity rates (per 1,000 hours' exposure)
Automobile	129	457,019	12.83	1.04
Cement	129	69,729	6.30	2.43
Ceramic	40	14,583	25.85	1.59
Chemical	211	204,069	15.50	1.94
Construction	392	93,783	51.57	5.49
Electric railway	66	118,335	22.49	1.96
Food	189	149,100	17.72	1.48
Foundry	138	103,464	32.11	2.23
Glass products	38	58,446	14.54	.77
Laundry	37	10,487	8.96	.59
Machinery	300	597,148	14.11	1.02
Marine	28	50,452	36.61	3.50
Meat packing	67	150,525	34.38	.99
Metal products	442	366,535	17.59	1.26
Mining	146	58,944	49.34	8.94
Nonferrous metallurgical	52	74,018	17.14	2.03
Paper and pulp	232	209,565	23.65	1.89
Petroleum	87	576,677	18.05	2.37
Printing and publishing	31	18,404	9.67	.29
Public utility	541	672,308	18.76	2.95
Quarry	119	17,563	23.46	3.30
Railway car and equipment	45	51,100	20.23	2.43
Refrigeration	52	25,392	35.17	2.28
Rubber	52	178,901	12.48	.83
Steel	125	458,802	11.99	2.47
Tanning and leather	49	34,076	16.49	1.16
Textile	197	216,308	9.23	.66
Woodworking and lumbering	233	124,879	40.53	3.31
Total [1]	4,198	5,206,395	18.47	1.97

[1] Includes miscellaneous industries, not shown separately.

LABOR LAWS AND COURT DECISIONS

Court Upholds Common-Law Marriage in Workmen's Compensation Case

THE Court of Appeals of the District of Columbia in deciding the rights of a widow to compensation for the death of her common-law husband, has held that such a marriage was binding in law, and that a surviving widow might recover compensation. (Hoage, Deputy Commissioner, United States Employees' Compensation Commission et al. *v.* Murch Bros. Construction Co. et al., 50 Fed. (2d) 983.)

The case concerned the death of Turner Sutton, a resident of the District of Columbia. Turner was employed as a laborer by the Murch Bros. Construction Co., and was so injured on December 3, 1928, that he subsequently died. Sadie Sutton, as the surviving common-law wife, claimed compensation under the District of Columbia workmen's compensation act. The deputy commissioner found that the parties had lived together for a period of about three years as husband and wife and had so represented themselves to the public, and that the wife was dependent upon the husband for her support at the time of his death. He therefore awarded her compensation.

The construction company and the insurance carrier opposed the award of the commissioner on two grounds: (1) The evidence did not sustain the findings of the commissioner, and (2) that even if the evidence did sustain the findings the common-law marriage relationship did not exist in the District of Columbia, and was therefore illegal.

The insurance company obtained an injunction in the Supreme Court of the District of Columbia, on the ground that the finding of the commissioner that the claimant had entered into a common-law marriage in the District of Columbia did not entitle her to compensation, since no such marriage was legal under the laws of this jurisdiction.

The deputy commissioner thereupon appealed to the Court of Appeals of the District of Columbia. The main question for consideration by the appeals court was whether or not a common-law marriage was valid in the District of Columbia. At common law, the court pointed out, no formal ceremony was essential to a valid marriage. No peculiar ceremonies were even required, the consent of the parties being the prime requisite. Even the Roman lawyers, it was stated by Chancellor Kent of England, "strongly inculcated the doctrine that the very foundation and essence of the contract consisted in consent freely given, by parties competent to contract."

After the year 1753, common-law marriages were forbidden in England. The act, however, as adopted in England, the court said, "was never adopted in any of the States of the United States."

In this country it has been generally held that—

A marriage according to the common law is valid and binding, in the absence of a statute prohibiting or declaring void a marriage not solemnized in accordance with its provisions, and also it has been held, by the greater weight of authority, that statutory provisions as to solemnizing marriages, not containing words of nullity, are directory merely, and do not affect the validity of common-law marriages.

A case which was decided in Maryland (Denison *v.* Denison, 35 Md. 361) holding a contrary view was followed in a former decision by the court of appeals (De Forest *v.* U. S., 11 App. D. C. 458), but the court pointed to the fact that the Maryland law was continued in force in the District of Columbia by an act of February 27, 1801 (2 Stat. 103). By a subsequent change, however (Code of 1929, ch. 3, title 1), all references to the laws of Maryland are omitted. Congress has enacted a complete marriage and divorce law for the District of Columbia, and the court said:

It is to these laws, rather than to those preserved out of the past relationship with the State of Maryland, that we must look for guidance and control in the determination of the question now before us, and hence we do not think we can safely follow the decision of the Court of Appeals of Maryland in Denison *v.* Denison, supra, in which it was held that under the Maryland marriage act of 1777, to constitute a lawful marriage, "there must be superadded to the civil contract, some religious ceremony," for this is not true under the marriage laws of the District.

The court referred to a case (Meister *v.* Moore, 96 U. S. 76), decided by the United States Supreme Court, in which the validity of common-law marriage in Michigan was involved, and also to a more recent case (Travers *v.* Reinhardt, 205 U. S. 423) in which the doctrine in the former case was reaffirmed, and continuing said that—

We think, therefore, that it can not now be controverted that an agreement between a man and woman per verba de praesenti to be husband and wife, consummated by cohabitation as husband and wife, constitutes a valid marriage, unless there be in existence in the State in which the agreement is made a statute declaring the marriage to be invalid unless solemnized in a prescribed manner, and we think it equally true that the rule now generally recognized is that statutes requiring a marriage to be preceded by a license, or to be solemnized by a religious ceremony, without express words of nullity as to marriages contracted otherwise, are directory merely, and failure to procure the license or to go through a religious ceremony does not invalidate the marriage.

The court, in concluding the opinion, referred to several sections of the 1929 Code of the District of Columbia on the subject of "Marriage," and announced that—

There is nothing in the statute which declares that a marriage shall not be valid unless solemnized in the prescribed manner, nor does it declare any particular thing requisite to the validity of the marriage. The act confines itself wholly with providing the mode of solemnizing the marriage and to the persons authorized to perform the ceremony. Indeed, the statute itself declares the purpose underlying the requirements to be to secure registration and evidences of the marriage rather than to deny validity to marriages not performed according to its terms, and, since the legislative intent to abrogate the common-law right may not be presumed, unless clearly expressed (Meister *v.* Moore, supra), we are necessarily brought to conclude that the decision of the lower court that common-law marriages in the District are invalid is not supported by law, and is wrong. The case of Meister *v.* Moore was decided in 1877, and Travers *v.* Reinhardt in 1907, and we must assume that Congress knew of these cases. Much water has since passed over the dam, and statutes on the subject in the District have remained unchanged, and if, as was said by the Court of Appeals of Virginia in Offield *v.* Davis, 100 Va. 250, 40 S. E. 910, the doctrine of common-law marriage is contrary to public

policy and public morals, it is for Congress and not the courts to do what is needful by appropriate legislation to declare such unions null and void.

The decree of the lower court was therefore reversed, and the award of the deputy commissioner to the widow of the deceased workman was allowed according to the provisions of the District of Columbia workmen's compensation act.

Enactment of Federal Labor Code in Mexico

ON August 28, 1931, the Federal Labor Code of Mexico went into effect, making uniform the application of Article 123 of the Mexican Constitution of 1917 and superseding the various State labor laws.

The Spanish text of the Labor Code appears in the Diario Oficial of Mexico under date of August 28, 1931. A translation of this is being prepared by the United States Bureau of Labor Statistics.

WORKMEN'S COMPENSATION

Recent Compensation Reports

Colorado

THE report of the Industrial Commission of Colorado for the 2-year period ending November 30, 1930, presents a comparison of outstanding features in the workmen's compensation laws of the various States and recommendations for amendments to the Colorado compensation act. Statistical tables cover the work of the commission, by years, since the act became effective.

Some of the statistics for the biennium are given in the following table:

ACCIDENTS AND CLAIMS, UNDER COLORADO WORKMEN'S COMPENSATION ACT, YEARS ENDING NOVEMBER 30, 1929 AND 1930

Item	1928–29	1929–30
Number of accidents reported	25,846	22,973
Claims for compensation:		
Fatal cases	177	151
Nonfatal cases	5,290	4,999
Per cent claims form of accidents	21.15	22.42
Number of compensation agreements approved	4,463	4,162
Number of awards made	2,449	2,735
Number of cases in which compensation was denied:		
Fatal cases	31	34
Nonfatal cases	291	340
Average weekly wage	$25.12	$26.10
Average weekly rate of compensation	$11.08	$11.56

The coal and metal industries were responsible for a large percentage of the claims, accounting for 45.19 per cent of the fatal claims in 1928–29 and 45.03 per cent in 1929–30, and 30.98 per cent of the nonfatal claims in 1928–29 and 27.79 per cent in 1929–30.

Figures published, by calendar years, for premium income and benefit payments of the insurance companies writing workmen's compensation insurance in the State show net premium income as $2,062,310 for 1928 and $2,247,314 for 1929, against net losses paid of $1,180,671 for 1928 and $1,283,488 for 1929.

Illinois

STATISTICS of the experience under the workmen's compensation act of Illinois during 1928 are presented in the twelfth annual report of the Illinois Department of Labor, for the year ending June 30, 1929. The accident record and compensation payments are summarized in the two tables following. Table 1 shows the number of compensable fatal and nonfatal accidents reported to the administration, yearly from 1917 to 1928, and distributed by industrial groups for 1928.

TABLE 1.—COMPENSABLE FATAL AND NONFATAL ACCIDENTS IN ILLINOIS, 1917 TO 1928, AND NUMBER IN EACH INDUSTRY GROUP IN 1928

Year	Number of accidents			Industry group	Number of accidents		
	Fatal	Non-fatal	Total		Fatal	Non-fatal	Total
1917	492	36,268	36,760	1928			
1918	629	37,618	38,247	Agriculture and extractive industries	1	262	263
1919	535	37,754	38,289	Mining, quarrying, petroleum wells	143	8,539	8,682
1920	597	49,988	50,585	Manufacturing	184	22,567	22,751
1921	498	43,024	43,522	Construction	126	9,536	9,662
1922	534	46,238	46,772	Transportation and storage	82	3,646	3,728
1923	675	61,135	61,810	Communication	3	352	355
1924	655	53,529	54,184	Trade and finance	46	4,700	4,746
1925	[1] 204	[1] 51,639	[1] 51,843	Professional service	5	434	439
1926	[2]	[2]	57,535	Governmental service	19	736	755
1927	720	53,263	53,983	Services, not otherwise classified	52	3,032	3,084
1928	667	54,083	54,750	Industry not reported	6	279	285
				Total, 1928	667	54,083	54,750

[1] Cases closed by Mar. 1, 1927. [2] Data not available.

Table 2 shows the number of compensable accident cases closed during 1928, regardless of the year in which they occurred, by extent of disability, the total amount of compensation paid for each class of disability, and the average amount per case.

At least 73.2 per cent of the total amount of compensation was paid for injuries resulting in death or in permanent disability or disfigurement, although of the total number of accidents, 74.2 per cent resulted in temporary disability only.

TABLE 2.—COMPENSABLE ACCIDENT CASES IN ILLINOIS CLOSED DURING 1928 AND AMOUNT OF COMPENSATION PAID, BY EXTENT OF DISABILITY

Extent of disability	Number of cases	Amount of compensation paid	
		Total	Average per case
Fatal	524	$1,375,503	$2,625
Permanent total	31	84,113	2,713
Permanent partial and disfigurement (with or without temporary total)	11,721	5,715,034	488
Temporary total only	38,251	1,839,934	48
Temporary partial only	185	18,382	99
Not otherwise classified [1]	835	704,044	843
Not reported	33	70,375	2,133
Total	51,580	9,807,385	190

[1] Includes combinations, such as temporary total combined with temporary partial.

Michigan

ACCIDENT statistics, as published in the initial issue of Michigan Labor and Industry, the new quarterly report of the Michigan Department of Labor and Industry, cover compensable industrial accidents reported to the department for the fiscal year ending June 30, 1929, the time loss incurred, and the amount of benefits paid.

The total number of compensable accidents was 35,923, including 392 fatalities. An average of 58.9 days' lost time was incurred per injury, and the average compensation and medical cost per injury amounted to $173.87.

The following table, compiled from data in the report, shows, by industrial groups, the number of compensable fatal and nonfatal accidents, the total compensation and medical cost, and the average cost per injury.

COMPENSABLE ACCIDENTS, AND COMPENSATION AND MEDICAL COSTS, FISCAL YEAR 1928–29, BY INDUSTRY GROUP

Industry group	Number of accidents			Compensation and medical cost	
	Fatal	Nonfatal	Total	Total	Per injury
Agriculture	4	118	122	$29,464	$241.51
Mining, quarrying, and metallurgy	47	1,867	1,914	402,179	210.12
Stone, clay, and glass products	5	367	372	73,528	197.65
Blast furnaces, steel works, and rolling mills	2	480	482	84,533	175.37
Machinery	10	1,534	1,544	227,390	147.27
Fine machines and instruments	0	77	77	16,547	214.89
Metal goods	47	8,409	8,456	1,336,888	158.09
Vehicles	42	4,867	4,909	996,881	203.07
Wood products	14	2,098	2,112	281,841	133.44
Logging, fisheries, and ice	12	1,137	1,149	175,144	152.43
Leather	1	126	127	23,420	184.40
Rubber and composition goods	2	210	212	40,905	192.94
Chemicals and allied products	17	690	707	139,232	196.93
Paper, pulp, and printing	5	1,064	1,069	113,993	106.63
Textiles	0	107	107	13,804	129.00
Furs, clothing, and furnishings	0	32	32	2,134	66.68
Laundering, cleaning, and dyeing	1	128	129	19,383	150.25
Food, beverages, and tobacco	9	1,141	1,150	152,220	132.36
Miscellaneous manufacturing	0	80	80	9,429	117.86
Construction, not building	24	1,125	1,149	238,738	207.77
Building erection and demolition	49	3,495	3,544	663,927	187.33
Shipbuilding	4	108	112	18,937	169.08
Transportation	15	1,801	1,816	290,260	159.83
Utilities	22	836	858	239,749	279.42
Trade	18	1,845	1,863	276,469	148.39
Clerical and professional service	2	48	50	8,000	160.00
Care and custody of buildings and grounds	5	471	476	57,733	121.28
Miscellaneous industries	35	1,270	1,305	313,201	240.00
Total	392	35,531	35,923	[1] 6,245,939	173.87

[1] Not the correct sum of items, but as given in report.

Missouri

STATISTICS of a general nature for all industrial accidents, both under and not under the State workmen's compensation act, occurring during the calendar year 1929, are published in the third annual report of the Missouri Workmen's Compensation Commission. The report also contains statistics on cases closed, as of November 15, 1930, and revised compensable costs for all accidents under the act occurring in the years 1927 and 1928.

A total of 103,698 accidents, including 269 fatalities, was reported to the commission during 1929, of which 101,927 were under the act. It is shown that out of 101,303 of these cases that had been closed by November 15, 1930, 63,721 did not disable the employee beyond the day of the accident, but involved medical service amounting to $357,325, an average of $5.61 per case. Accidents resulting in disability beyond the day of injury but for less than three days numbered 8,880, and involved medical service amounting to $67,004, an average of $7.55 per case. In the remaining 28,702 accidents medical aid and other compensation amounted to $4,147,317, an average of $144.49 per case.

Distribution of compensation cost and medical cost for the 101,303 closed cases, by type of disability, is given as follows:

COMPENSATION AND MEDICAL COST IN MISSOURI OF ACCIDENT CASES IN 1929, CLOSED BY NOVEMBER 15, 1930, BY EXTENT OF DISABILITY

Extent of disability	Number of cases	Benefits		
		Compensation [1]	Medical aid	Total
Noncompensable accidents resulting in disability of more than 1 but less than 3 days	8,880	----------	$67,004	$67,004
Compensable accidents resulting in—				
Temporary disability	26,539	$1,292,960	695,987	1,988,947
Permanent total disability	7	47,380	4,488	51,868
Dismemberment (not permanent total)	581	399,520	55,777	455,297
Loss of use (not permanent total)	1,100	701,990	143,100	845,090
Permanent partial disability (other than dismemberment or loss of use)	79	39,000	6,660	45,660
Disfigurement	222	32,200	12,966	45,166
Death	174	698,270	17,019	715,289
Total	37,582	3,211,320	1,003,001	4,214,321
Noncompensable accidents resulting in disability of 1 day or less	63,721	----------	357,325	357,325
Grand total	101,303	3,211,320	1,360,326	4,571,646

[1] Includes burial expense, disfigurement, mutilation, and excess medical.

Nevada

THE biennial report of the Nevada Industrial Commission, for the period ending June 30, 1930, presents the experience of the commission in administering the elective workmen's compensation law and the exclusive State insurance fund of Nevada during the biennium.

Attention is called to the increased number of severe accidents occurring in the past two years and the diminished premium revenue due to reduced pay rolls in many activities, necessitating an increase in future insurance premium rates. It is also pointed out that during the next 8 or 10 years a large number of workers will be employed by Federal contractors in the construction of the Hoover Dam in the southern section of the State, and that this will involve a material increase in employment in other activities in that district. Provisions are being made for strict enforcement of safety regulations on this project, in an effort to reduce accidents, as it is indicated the work will be of an extrahazardous nature.

The statistical tables in the report include tabulations of accidents, by extent of disability and by industry, for each of the two years. A summary of these is shown in the table following:

NUMBER OF ACCIDENTS IN NEVADA, BY EXTENT OF DISABILITY AND BY INDUSTRY, JULY 1, 1928, TO JUNE 30, 1930

Industry	Number of full-time workers	Deaths and permanent total disabilities	Permanent partial disabilities	Temporary total disabilities		Number of accidents	
				7 days and over	Under 7 days	Per 1,000 full-time workers	Per $100,000 of pay roll
1928–29							
Mining	3,154	17	58	629	187	282.50	0.15
Ore reduction	589	0	3	38	15	96.77	4.8
Nevada Consolidated Copper Co	2,656	9	27	398	5	165.28	7.1
Railroads	243	1	4	14	7	107.00	12.7
Utilities	462	1	0	27	68	207.79	12.7
State and municipal, compulsory	2,328	2	8	92	125	77.51	5.2
Miscellaneous	4,395	4	33	397	573	229.19	13.6
Total	13,827	34	133	[1] 1,695	980	198.31	10.7
1929–30							
Mining	2,677	14	63	553	227	320.10	15.7
Ore reduction	347	0	2	14	18	97.98	4.7
Nevada Consolidated Copper Co	2,105	4	19	171	59	120.11	5.9
Railroads	232	0	0	13	8	90.05	5.0
Utilities	497	1	1	33	71	213.28	13.3
State and municipal, compulsory	2,161	1	10	125	204	157.33	7.0
Miscellaneous	5,097	3	36	222	979	243.28	14.7
Total	[1] 12,816	23	131	1,131	1,566	222.46	11.4

[1] Not the correct sum of items, but as given in report.

Pennsylvania

ACCORDING to the annual report of the Pennsylvania Bureau of Workmen's Compensation for 1930, a decided decrease occurred in the number of industrial accidents.

The total number of accidents, causing a time loss of two days or more, reported to the bureau during the year 1930 was 144,679, including 1,762 fatalities. Compared with 1929, this constituted a reduction of 11.9 per cent in fatal accidents and 13.2 per cent in nonfatal accidents. It is stated that while the business depression of 1930 was partly responsible for this reduction the intensive safety campaign conducted by the department of labor and industry was also an important factor.

The following table shows the number of fatal and nonfatal accidents reported to the bureau during 1930, distributed according to industrial group classification, compared with revised, similar figures for 1929:

NUMBER OF FATAL AND NONFATAL ACCIDENTS REPORTED IN PENNSYLVANIA, 1929 AND 1930, BY INDUSTRIAL GROUPS

Industrial group	Number of accidents reported					
	1929 [1]			1930		
	Fatal	Nonfatal	Total	Fatal	Nonfatal	Total
Construction and contracting	244	20,248	20,492	224	20,485	20,709
Manufacturing	378	60,132	60,510	343	45,108	45,451
Coal mining, anthracite	518	27,543	28,061	471	26,036	26,507
Coal mining, bituminous	408	23,131	23,539	337	19,781	20,118
Quarrying and mining other than coal mining	41	2,033	2,074	20	1,830	1,850
Transportation and public utilities	205	8,907	9,112	138	7,205	7,343
Trade, retail	41	7,720	7,761	57	7,726	7,783
Trade, wholesale	13	1,739	1,752	13	1,439	1,452
State and municipal employment	86	4,190	4,276	83	4,909	4,992
Miscellaneous	66	9,014	9,080	76	8,398	8,474
Total	2,000	164,657	166,657	1,762	142,917	144,679

[1] Revised from report reviewed in April, 1930, issue.

There was also a decline in compensation liability. The total amount of compensation awarded for the year 1930 was $15,654,583, as compared with $16,312,007 in 1929, a decrease of 4 per cent.

Compensation payments were authorized during the year, either by agreement or award, in 1,677 fatal cases, amounting to $5,863,056, an average of $3,496 per case; in 3,411 permanent-disability cases, amounting to $3,883,623, an average of $1,139 per case; and in 80,270 temporary-disability cases, amounting to $5,907,904, an average of $74 per case; making a total of 85,112 cases, amounting to $15,617,989, an average of $183 per case. Funeral expenses, amounting to $36,594, were also paid in 246 fatal, no-dependency cases, not included in the above figures, an average of $149 per case.

The persistent enforcement campaign of the bureau against employers of labor neglecting to carry compensation insurance, as provided by the workmen's compensation act, resulted in the securing of new insurance policies during the year by 12,254 employers. This action assured full benefits of the compensation law, in case of injury happening in the course of their employment, to approximately 37,000 employees, who formerly were not properly protected under the provisions of the act.

Utah

AN ANALYSIS of industrial accidents in all industries subject to the workmen's compensation act in the State during the two years ending June 30, 1930, is given in Bulletin No. 3 of the biennial report of the Industrial Commission of Utah. Statistical tables present in detail the accident cases by extent of disability; they also show the man-hour exposure, pay rolls, premiums, compensation cost, dependency and cost of fatalities, and cost of permanent disabilities by degree of impairment. Data extracted from the report, covering the total number of accidents in each fiscal year, by extent of disability, and the respective benefit costs, are shown in Table 1.

TABLE 1.—NUMBER OF ACCIDENTS AND BENEFIT COSTS IN UTAH, BY EXTENT OF DISABILITY, YEARS ENDING JUNE 30, 1929 AND 1930

Degree of disability	Number of accidents		Total benefit costs [1]	
	1928–29	1929–30	1928–29	1929–30
Fatal	103	138	$424,674	$513,542
Permanent total disability	2	1	60,000	15,000
Permanent partial disability	407	393	512,613	450,117
Temporary total disability	16,147	16,333	452,625	420,756
Total	16,659	16,865	1,449,912	1,399,415

[1] Contract medical excluded.

Proportionately heavy fatality was experienced in coal mining and metal mining. These two groups together were responsible for half of all deaths, although the combined man-hour exposure was only one-sixth of the total exposure, as shown in Table 2.

TABLE 2.—MAN-HOUR EXPOSURE AND FATALITIES IN MINING INDUSTRIES IN UTAH YEARS ENDING JUNE 30, 1929, AND 1930

Industry group	1928–29		1929–30	
	Man-hour exposure	Fatalities	Man-hour exposure	Fatalities
Coal mining	10,072,442	25	8,663,668	63
Metal mining	21,066,566	27	19,530,829	26
Intrastate railroad	(1)	5	(1)	2
All other groups	153,370,818	46	156,880,220	47
Total	184,509,826	103	185,074,717	138

[1] Not available; not included in total.

Wyoming

THE report of the Workmen's Compensation Department of Wyoming for the calendar year 1930 contains several tables covering the experience of the State industrial accident fund during the year.

The department received reports of 2,391 accidents, of which 37 were fatal, 43 caused permanent partial disability, 1,082 caused temporary total disability, and 1,229 required medical service only. Coal mining, as the leading industry and paying 44 per cent of the total premiums received in 1930, was responsible for the largest number of accidents and a high degree of severity. It is charged with 23 fatalities, 18 permanent partial disabilities, and 554 temporary total disabilities, but with only 52 medical-aid cases. The oil industry ranked second, both in number of accidents and in premium payments, which were 13 per cent of the total. It is charged with 6 fatalities, 2 permanent partial disabilities, 106 temporary total disabilities, and 315 medical-aid cases.

The fund shows a balance of $577,209.39 on December 31, 1930, as against $545,696.76 for the previous year, an increase of $31,512.63. The total amount of premiums collected, including service and policing charge, was $420,278.66, and the amount of administrative expense during the year was $17,666.71, making the cost of administering the State fund 4.2 per cent of the premiums paid.

The following table shows the number of claims allowed during the year by the State courts and the total costs for these claims:

NUMBER OF CLAIMS AND AMOUNTS AWARDED UNDER WYOMING WORKMEN'S COMPENSATION ACT, 1930, BY EXTENT OF DISABILITY

Extent of disability	Number of cases	Compensation awarded	Amount of other awards	Total amount awarded
Fatal	539	$95,740.22	[1] $4,300.00	$100,040.22
Permanent total disability	92	14,427.25		14,427.25
Permanent partial disability	390	76,267.29		76,267.29
Temporary total disability	1,771	123,982.72		123,982.72
Total	2,792	310,417.48	[2] 77,933.36	[2] 388,350.84

[1] Funeral expenses.
[2] Includes medical and hospital service, $66,409.76; investigations and witness fees, $7,223.60.

British Columbia

THE report of the Workmen's Compensation Board of the Province of British Columbia for the calendar year 1930 shows a reduction of nearly 10 per cent in the number of accidents causing a time loss of more than three days. A total of 33,285 claims was filed in 1930, as compared with 36,750 in 1929. Fatal accidents, however, increased almost 10 per cent, as these totaled 277 in 1930, against 253 in 1929. This was mainly due to a disaster in the coal-mining industry, which was responsible for a toll of 45 lives. Reports were also received in 1930 of about 3,000 first-aid cases, for which no claims were filed, as no lost time exceeding three days was incurred.

It is pointed out that there had been a curtailment in the number of workers employed in certain classes of work, particularly in the lumber and allied industries, with a resultant reduction of accidents in these, but also that on December 31, 1930, a total of 8,958 employers with about 175,000 workers were operating under the act, or 70 employers more than at the end of 1929 and a larger number than in any previous year.

The following table summarizes the number of cases closed in 1930, with amount of compensation awarded, by the industrial groups under the act and the extent of disability.

COMPENSABLE ACCIDENT CASES CLOSED IN BRITISH COLUMBIA IN 1930 AND AMOUNT OF COMPENSATION AWARDS, BY INDUSTRY GROUP AND EXTENT OF DISABILITY

Industry group	Extent of disability					
	Fatal		Permanent partial		Temporary total	
	Number of cases	Compensation awards	Number of cases	Compensation awards	Number of cases	Compensation awards
Logging, lumber, and paper	76	$154,430.56	404	$466,553.15	6,248	$632,751.05
Coal mining	57	174,339.92	42	73,860.83	928	89,558.67
Metal mining, quarrying, stone and clay products	25	80,811.48	58	62,364.88	769	79,143.00
Iron and steel products	1	6,725.91	24	20,163.52	716	37,201.02
General manufacturing	6	22,796.02	55	55,945.27	1,128	65,061.67
Construction and shipbuilding	8	13,760.55	103	129,986.78	1,672	193,476.73
Public utilities	4	13,453.84	28	45,372.56	509	50,593.69
Navigation and stevedoring	7	62,120.66	58	70,157.35	845	108,765.70
Canadian Pacific system	23	81,343.37	51	56,374.41	1,285	90,979.15
Grand Trunk Pacific system	3	5,365.69	6	8,334.59	111	9,096.93
Canadian National system	11	41,984.48	8	9,354.80	156	13,153.89
Provincial employees	11	47,603.16	39	35,402.83	643	56,806.92
Municipal employees	4	15,603.20	17	16,392.24	599	46,108.53
Fishing and products	2	11,792.27	16	12,882.32	365	32,642.49
Explosives and chemicals	0		0		10	380.54
Trade and transportation	1	100.00	26	41,046.64	640	50,758.67
Great Northern system	0		1	1,098.32	14	1,181.73
Dominion employees	2	200.00	4	3,537.54	80	4,823.75
Total	241	732,431.11	940	1,108,828.03	16,718	1,562,484.13

WORKERS' EDUCATION AND TRAINING

Vocational Adjustment Workshop

THE New York City Vocational Adjustment Bureau specializes in the study of "problem" girls, especially in connection with vocational guidance and employment. The maladjustment of these girls is frequently the result of subnormal mentality or psychopathic tendencies, which may end in social and industrial incompetence. In order to determine by experiment what cases of mental and nervous disability could be at least partially rehabilitated by practical industrial work under therapeutic methods, the Vocational Adjustment Bureau opened in November, 1925, a curative workroom. A brief report on this undertaking is given in a pamphlet [1] published by that bureau, which is here reviewed.

In the first week of the workroom's existence, 11 girls and women were registered. The number gradually increased, and at the time the report was made there were 68 attending more or less regularly, while the total enrollment since the work was begun is over 400. Each woman receives individual attention, and for this reason only a restricted number can be admitted. The aim of the workroom is placement as soon as possible at some regular occupation.

Because of nervousness or personality disorders, the patients referred to the bureau by a social agency or hospital are often found so emotionally unstable that they must be rehabilitated before their placement can even be considered. The workroom affords an opportunity for careful study and training. The latter is not merely a matter of teaching manual tasks but includes the giving of talks on mental hygiene, and suggestions as to deportment, dress, recreation, and various other matters having to do with maintenance of a well-balanced life.

Certain convalescent girls who have been discharged from public hospitals and are not able to enter at once the commercial world find in the workroom a friendly place where they can by degrees adjust themselves to conditions somewhat similar to those in outside industry. The time spent in this sheltered workroom may in some cases prevent a return of the psychotic condition which had required hospital commitment. In general, it is not easy to find immediately the right kind of employment for paroled hospital patients with peculiar temperamental and character handicaps, and frequently with disabilities of a mental origin. The bureau's difficulties are also doubled because it has to deal with discouraged persons. The workroom, however, gives a welcome to those who are staggering under these burdens, and attempts to develop their mental muscles as the State rehabilitation services endeavor to strengthen and reeducate physical muscles.

[1] [New York City Vocational Adjustment Bureau.] A Therapeutic Industrial Experiment. The Vab Work Shop of the Vocational Adjustment Bureau. New York City.

In the beginning, work for the patients was obtained from factories on a piecework basis. This scheme, however, was abandoned, as the girls did not earn enough to pay even a small part of the wages that were being given them. The girls in this sheltered workroom could not be speeded up to satisfy the demands of factory managers. No definite date could be given for the return of the products. Experimenting with this factory work proved, however, that bead stringing and the making of garters, lamp shades, silk tassels, and Christmas tinseled ornaments were within the capacity of these neurotic girls and women, if they were given sufficient time for the tasks and were adequately supervised. Furthermore, it was shown "that only through the fabrication of unique articles of more or less artistic character could such a workroom ever become even partially self-supporting or be able to offer the variety of tasks that this group of girls required for their rehabilitation."

It was soon found that the work for these maladjusted women and girls must not be too difficult nor must the process involved take a very long time. The members of this group, as a rule, grow fatigued very quickly and a variety of occupations was shown to be necessary. Bright colors had a tonic effect and tended to soothe irritable workers.

As a result of the efforts of members of the workroom committee, novel hampers, utility boxes, cigarette and match boxes, waste-paper baskets, boudoir dolls, and slipper-bag dolls were made and offered for sale at the Vab Shop, 771 Madison Avenue, which was opened in the fall of 1927. The therapeutic effects of work on these articles in contrast to the rather deadening influence of the homely factory products are reported to have been immediately apparent. The beautiful combination of colors served to dissipate the gloom which enveloped the workers and the fact that these articles were to be sold in a shop exclusively devoted to Vab products was a stimulant to the downhearted.

The committee is always seeking for articles suitable for production in the Vab workroom. Several years ago a committee member sent to the workroom a pair of sample cushions for keeping ladies' shoes and slippers in shape. This was a valuable suggestion which resulted in the evolution of the Vab velvet shoe tree, patented in 1928, and the making of 150,000 pairs of these trees in the workshop, which were sold to the trade. From the therapeutic angle these trees combine in their fashioning much that is to be desired. They are rapidly finished and colorful.

The demand for shoe trees still continues, but it is inadvisable to keep patients for an extended period on the same article, therefore many kinds of bags, hat stands, dress hangers, stuffed animals, and maids' uniforms are being made to order. The production of staple articles has not been attempted, nor should quantity production ever be undertaken. The output of the neurotic can not be speeded up and the only possibility for a financial return for this type of labor is on the basis of the high-grade quality of the work.

The workroom, it is reported, often serves to determine work tolerance. It is frequently helpful, before endeavoring to place a girl, to discover her mental stamina and physical endurance. In illustration, a girl of 22 who had failed in her sophomore year at college was sent to the vocational adjustment bureau because since leaving college she had been continually changing jobs. She tired easily and when fatigued would be quarrelsome and impertinent.

She was given two hours' work in the morning and in the afternoon, interspersed with rest and a walk in the open. The working time was increased by degrees until she was able to stay on her job steadily for a whole day without marked fatigue. She was odd in appearance and manner, and during the months spent at Vab constant efforts were made to aid her in overcoming some of her idiosyncrasies. She learned that certain combinations of color were more attractive than others, and that a lace-trimmed cotton blouse worn with a velvet skirt was not a "smart" combination for business wear, and by degrees she adopted less conspicuous clothes. In the Vab unit training course she received instruction in office-routine technique. When ready for a position her voice was low and well-modulated and she was able to conduct herself quietly and without causing friction. She has held a job in which her earnings have been $28 per week for more than six weeks, thus already surpassing her previous record as to length of time on a job.

Some individuals with an obsession of inferiority have been brought to see that they have certain abilities which, with training, may be of real value. The restoration of self-confidence to such persons can frequently be affected through work graded from the simplest process to increasingly difficult tasks.

One measure of rehabilitation is instruction in operations not previously used by the patients. Without fatiguing the worker, she is encouraged to improve her production record. Competition with other workers of different vitality and energy is, however, to be avoided, as the weak might be harmed rather than helped by attempting to do as much as those who are better equipped.

After an operation of approximately four years, it has been demonstrated that certain persons suffering from hysteria, post-encephalitis lethargica, phobias, mental depression, inferiority complexes, hyperemotionalism and various types of psycho-neurosis have generally been helped by a period at the workroom. The fact that approximately 24 per cent of these persons are working is proof positive that some improvement has been made. The daily records of the post-encephalitic cases reveal an improvement in behavior, if not in production; the depressed, cheered by successful accomplishment, that panacea for the downhearted, tend to respond most quickly to work and to the atmosphere of friendliness which prevails in the workroom.

Except in pronounced cases of dementia præcox, a period spent in the workroom has been found effective, if not in rehabilitating the woman or girl completely, at least in restoring to some degree her usefulness and productivity. The conclusion that certain of these maladjusted individuals will never be able to fit into any actual industrial situation where it would be necessary for them to work daily under pressure from 8.30 a. m. to 5.30 p. m. has brought about the organization of a permanent sheltered workroom known as the "Vab, Commercial."

Illinois Commission on Establishing a State Trade-Training Institution

THE Governor of Illinois on June 29, 1931, approved a bill (House bill No. 1140) creating a commission to investigate and ascertain the feasibility of establishing a State institution in or near the city of Chicago for the purpose of training citizens of the State in the various

skills required in this machine age, and of preparing them to fit into modern industry, which is highly specialized and systematized. Technological unemployment would thus be reduced to a minimum.

The act provides for a commission of nine members, three appointed by the governor, three members of the house of representatives to be selected by the speaker of the house, and three members of the senate appointed by the lieutenant governor. All members of the commission are to serve without remuneration, but an appropriation of $2,000 is made for necessary expenses. The report of the commission is to be printed and submitted to the next general assembly.

The act as approved by the governor is as follows:

Whereas it is the generally accepted theory that one of the causes of the present economical depression is the great mass production brought about by the machine age; and

Whereas large numbers of American citizens, particularly in the metropolitan district of the city of Chicago, in the State of Illinois, have been out of employment for a great period of time; and

Whereas the developments of the machine age have demonstrated the fact that thousands of the citizens of Illinois are unprepared to cope with the machine age; and

Whereas heretofore, skilled laborers have had to learn their trades as best they could in the shops of private employers; and

Whereas such persons have been entirely at the mercy of such employers, and no citizen has had complete opportunities to learn the skilled trades except in private schools or in the employment of such places as choose to employ inexperienced labor and teach such inexperienced laborer the skill of its particular trade; and

Whereas various private concerns have organized, in connection with their industries, schools to teach their employees the practical side of the various trades; and

Whereas it appears that numerous professions are overcrowded; and

Whereas it appears that the field of unskilled labor is vastly overcrowded; and

Whereas it further appears that all of the citizens of Illinois have not had an equal chance in the private schools of the State to learn various skilled trades; and

Whereas the great State of Illinois now supports and maintains one of the greatest educational institutions in the country for the purpose of training the citizens of the State and other citizens of the country, mentally, culturally, intellectually, and scientifically; and

Whereas it is also the duty of the State to train other of its citizens along the lines of skilled labor and to prepare such citizens to fit into modern industry and its highly specialized and systematized age as it exists to-day; and

Whereas it appears that there is a great need of a public institution to train the general populous [sic] of the State in various skilled labors that exist to-day in connection with modern industry; now, therefore

Be it enacted by the people of the State of Illinois, represented in the general assembly:

SECTION 1. A commission shall be appointed to investigate and ascertain the feasibility of establishing a State institution in or near the great metropolitan city of Chicago for the purpose of training citizens of the State in the skilled trades and vocations as exist to-day in the various modern industries and in this highly synchronized and systematized machine age, in order that such citizens may better fit into the scheme of things and may learn from such public institution such trades that will improve their earning capacity and their living conditions; that said commission consist of nine persons to be appointed in the following manner:

The speaker of the house of representatives to appoint three members of the house of representatives, the lieutenant governor to appoint three members of the senate, the Governor of the State of Illinois to appoint three members of such commission;

That such commission meet from time to time and work out a program in harmony with the provisions of this act, reduce such suggestions as said com-

mission may make, to a printed report, and submit said report to the next general assembly (the fifty-eighth general assembly).

SEC. 2. The sum of $2,000, or so much thereof as may be necessary, is hereby appropriated to the commission herein created for the necessary expenses of such commission. The members of such commission shall not be paid for their services but said $2,000, or so much thereof as may be necessary, shall be used for the necessary expenses for the travel, board, and lodging of the members of such commission.

Municipal Instruction for Unemployed Skilled Workers in Rotterdam, Netherlands

THE extent and duration of serious unemployment have induced the burgomaster and aldermen of Rotterdam to look for measures to prevent the loss of professional knowledge by unemployed or irregularly employed skilled workers.[1] To attain this a committee was appointed to investigate the matter and report. Inasmuch as unemployment at Rotterdam is most severe in the building and metal trades, the investigation was restricted to these trades. The committee recommended the installation of day courses. After due authorization by the burgomaster and aldermen, such courses were immediately established for carpenters, mechanical woodworkers, cabinetmakers, plumbers, bench workers, electricians, and coppersmiths. At these courses, which commenced on April 13, 15 hours of instruction are given weekly. On May 4 another course was started in autogenous and electric welding, occupying 6 hours weekly.

In the period May 13 to May 29 (later data are not available) 495 unemployed applied for admission, of whom 413 were admitted after careful selection. Roughly 27 per cent of this total did not join when they were given an appointment, so that courses began with 296 members. During the period of the course, 128 persons left the courses for various reasons, such as reemployment, etc. Most of the instruction given is theoretical, but in a few instances practical tuition is given.

[1] Report of C. H. Foster, American Consul at Rotterdam, dated July 18, 1931.

CARE OF THE BLIND

Arkansas Pension Law for Indigent Blind Citizens

THE State of Arkansas enacted a law (Act No. 158) at the 1931 legislative session, providing for the payment of a pension to the indigent blind citizens of the State.

To provide funds, a license tax of $10 per year has been imposed upon every person engaged in the business of operating billiard or pool tables for profit, within the State. All revenues received under the provisions of the act must be credited to the "Indigent blind fund" and be used exclusively for the purpose of paying pensions to the blind.

To be eligible for the pension the applicant must have reached the age of 21 and have been a citizen for five years. Applications for such a pension must be made before the chancery court or the judge of such court for the district in which the applicant resides. Claims for a pension must be filed not less than six months after the passage of the act (approved, March 20, 1931) and at that time the fund shall be distributed among the number of persons who have so applied.

The amount of pension is limited to $25 per month per person.

The State Confederate pension board is to administer the fund.

For the purpose of making the act effective an appropriation of $20,000 is made out of the "Indigent blind fund" for the paying of pensions for the fiscal period ending June 30, 1932, and the like sum for the period ending June 30, 1933.

Utilizing Blind Workers in Indiana

DURING the 12 months ending September 30, 1930, the industrial departments of the Indiana State Board of Industrial Aid for the Blind gave 116 persons (76 women and 40 men) instruction and employment, according to the annual report of the board for that year. In addition to these apprentices and employees, many persons were assisted in other ways, for example, by the purchase of broom, rug, or basket supplies. An excellent spirit of cooperation among the employees and those having charge of the work is reported. The general depression affected to some extent the board's industries. The output of the shops had to be restricted and such reduction increased the operating costs. Despite this curtailment, however, the institution did a fair amount of business. In the year under review 198,792 brooms were manufactured. This number was a little below normal and resulted from reducing the daily working hours from 9 to 8. The average hourly wage paid to the employees was $0.3036.

The garment department operated full time, but the number of employees had to be reduced. As a consequence the output was somewhat below normal. The number of garments made was 13,331 and it is stated that the high-grade workmanship on them facilitated

their sale, with the result that many purchasing them for the first time have become regular buyers of these products of the institution.

The needle-craft department's sales were greater than in any preceding year. This accomplishment was largely the outcome of the work of the cooperation for blind committee of the Indiana Federation of Clubs. This committee's members and the club women throughout Indiana are reported as having been indefatigable in their efforts to assist this department. The blind women who work in their homes do all kinds of needlework, especially the hemming of towels, 36,579 being hemmed during the year covered in the report. Sales of goods totaled $8,996.51.

The total sales of goods from all industries for the year ending September 30, 1930, aggregated $102,618.01 and the wages paid to the blind employees amounted to $29,563.08.

The field agents or home teachers have been very active. Every day requests are received to assist the blind in their homes and the greater part of the time of these teachers is given to such requests.

These demands on home teachers vary in accordance with the need of the individual. They may be for instruction, placement work, aid in building up a home industry, social adjustment, etc. Instruction is given in needlework, reading and writing and other industrial work. The agents have been successful in establishing many in home industries, such as broom making, chair caning, stand keeping, sales work, rug weaving, etc. At the present time there are 68 engaged in rug weaving. Many of these persons are successful, the degree of success depending largely on the location of the weaver. The board has been materially aided in this work through the cooperation of the rehabilitation division of the State, this department having provided looms and instructional material for training of applicants. The home teachers cover the entire State and have visited most of the blind in their homes. During the year, 1,803 visits were made. Of this number, 1,221 were for the purpose of investigation, 550 for instruction, and 32 were social calls.

In accordance with the statutes, the register of the blind was maintained, 2,264 names being listed with detailed information regarding each person. Of the total number registered, 1,310 were men and 954 women. In 1,043 of these cases blindness was unpreventable; in 820 cases, preventable; and in 401 cases, undetermined.

The trust fund designated "the Home for Blind Women's Fund" was substantially increased during the year by gifts amounting to $5,030.

Canadian National Institute for the Blind

DESPITE the difficulties resulting from the business depression the Canadian National Institute for the Blind not only maintained its usual services during the fiscal year ending March 31, 1931, but in some instances expanded them and added new lines.[1] The sales of the products of the institute's industries and home workers compare favorably with the high accomplishment of the preceding year. Notwithstanding the lower average prices of the articles made, the subsidies on these industries show fair comparison with 1929–30. While in some cases the subsidies were reduced, the cash benefits to the blind have been continued or increased. The institute has been energetically going forward with registration, the prevention of

[1] Labor Gazette, Ottawa, July, 1931, p. 763.

blindness, the conservation of vision, field work, home teaching, salesroom activities, workshop employment, placement, and helpful general services.

The report of the assistant general secretary of the institute stressed the importance of the recent passage by the Legislature of Ontario of the blind workmen's compensation act, which social workers are said to regard as "one of the most progressive pieces of social legislation ever passed." This law is summarized as follows in the May, 1931, issue of the Canadian Labor Gazette:

> The blind workmen's compensation act provides for the payment from the consolidated revenue fund of the Province, to the workmen's compensation board or the employer as the case may be, of the full cost of compensation for an accident to a blind workman where such cost exceeds $50. Payment is made on a certificate of the board. The assessment on an employer to be levied by the board on the wages of a blind workman is to be fixed at such amount as is deemed fair, having regard to the provisions of the workmen's compensation act. The Canadian National Institute for the Blind is given exclusive jurisdiction as to the nature of the work a blind workman shall do and as to his proper placement. Upon recommendation of the workmen's compensation board, however, the lieutenant-governor in council may designate any other organization or institution to execute the powers and perform the duties assigned to the institute. An employer giving employment to a blind workman without the consent or approval of the institute or changing the nature of such employment when once approved, is deemed to have waived benefit in respect of such workman. Officers of the institute are to have access at all times to the place of employment of a blind workman with the knowledge and consent of the superintendent or foreman.

The report of the assistant general secretary of the institute also refers to the amendment to the Federal election act, which provides for a new alternative method by which blind persons may vote.

> Heretofore the ballots of blind voters have been marked by the deputy returning officer in the presence of the poll clerk and agents for the candidates; under the amendment they may still be so marked, but alternatively the blind voter may bring a friend with him to the polling station, and upon the voter and his friend taking the proper oaths they may go together into a voting compartment where the friend may mark the blind voter's ballot.

The measures requisite for the rehabilitation of the blind in business and industry are reviewed in the report of the national supervision of industrial placement. While the industrial depression has hindered rehabilitation work, methods have now been worked out which promise more lasting success. In the western Ontario and Quebec divisions, detailed aftercare is at present being carried on, full-time placement agents attending to every problem which comes up, and each opportunity being made to serve its maximum benefit.

Another forward step in 1930–31 was the organization of the Merchants' Association of the Canadian National Institute for the Blind. The members of this association are blind men and women who are carrying on small businesses and who, with few exceptions, have been placed by the institute. In the year ending March 31, 1931, the sum of $2,831.51 was divided among the members after they had received their regular retail profits.

The placements of the blind from April 1, 1930, to March, 1931, numbered 782 and the amount of earnings during that period was slightly over $51,000. In the first 3 years of this work about $200,000 was earned by the blind as an outcome of the efforts of the placement department of the institute. It is estimated that there are approximately 6,800 blind persons in Canada.

INDUSTRIAL DISPUTES

Strikes and Lockouts in the United States in August, 1931

DATA regarding industrial disputes in the United States for August, 1931, with comparable data for preceding months are presented below. Disputes involving fewer than six workers and lasting less than one day have been omitted.

Table 1 shows the number of disputes beginning in 1927, 1928, 1929, and 1930, number of workers involved and man-days lost for these years and for each of the months, January, 1930, to August, 1931, inclusive, as well as the number of disputes in effect at the end of each month and the number of workers involved. The economic loss (in man-days) involved is computed by multiplying the number of workers affected in each dispute by the length of the dispute measured in working-days as normally worked by the industry or trade in question.

TABLE 1.—INDUSTRIAL DISPUTES BEGINNING IN AND IN EFFECT AT END OF EACH MONTH, JANUARY, 1930, TO AUGUST, 1931, AND TOTAL NUMBER OF DISPUTES, WORKERS, AND MAN-DAYS LOST IN THE YEARS 1927 TO 1930

Month and year	Number of disputes		Number of workers involved in disputes		Number of man-days lost during month or year
	Beginning in month or year	In effect at end of month	Beginning in month or year	In effect at end of month	
1927: Total	734		349,434		37,799,394
1928: Total	629		357,145		31,556,947
1929: Total	903		230,463		9,975,213
1930: Total	653		158,114		2,730,368
1930					
January	45	21	9,240	5,316	184,730
February	52	40	37,480	6,683	438,570
March	49	38	15,017	5,957	291,127
April	64	41	6,379	5,840	189,828
May	66	29	9,329	4,386	185,448
June	59	34	14,011	8,311	144,117
July	78	30	14,308	4,815	141,647
August	51	33	15,902	7,131	142,738
September	72	44	16,337	13,778	208,184
October	47	36	10,858	16,007	335,916
November	44	29	4,390	7,759	273,608
December	26	7	4,863	5,144	194,455
1931					
January	56	20	10,147	2,927	181,031
February	52	34	19,984	12,512	228,329
March	45	27	26,121	28,139	422,545
April	60	39	26,442	22,604	769,720
May	106	49	27,588	15,735	402,437
June	81	51	18,437	17,071	506,097
July [1]	74	66	52,884	62,527	683,150
August [1]	67	76	9,130	29,000	1,304,774

[1] Preliminary figures subject to change.

Occurrence of Industrial Disputes, by Industries

TABLE 2 gives by industry the number of strikes beginning in June, July, and August, 1931, and the number of workers directly involved.

TABLE 2.—INDUSTRIAL DISPUTES BEGINNING IN JUNE, JULY, AND AUGUST, 1931

Industrial group	Number of disputes beginning in—			Number of workers involved in disputes beginning in—		
	June	July	August	June	July	August
Auto, carriage, and wagon workers			1			35
Bakers			1			150
Barbers	1			360		
Building trades	18	16	13	1,823	2,427	680
Chauffeurs and teamsters	5	4	3	985	156	431
Clothing	11	15	21	1,155	35,925	3,885
Fishermen		1			350	
Food workers	1	1	1	8	95	600
Furniture	1	4	2	55	145	350
Iron and steel	1	1		180	35	
Jewelry workers		1	2		12	13
Leather			1			100
Light, heat, power, and water		2	2		450	380
Longshoremen and freight handlers		1	3		60	440
Lumber, timber, and mill work			2			60
Metal trades	1	3	1	13	122	48
Mining	33	8	3	12,576	2,826	679
Motion-picture operators, actors, and theatrical workers	2	1	1	30	16	400
Printing and publishing	1	1	2	10	42	19
Stone	1			8		
Municipal workers			1			600
Textiles	3	14	5	1,159	10,209	217
Tobacco			2			43
Other occupations	2	1		75	14	
Total	81	74	67	18,437	52,884	9,130

Size and Duration of Industrial Disputes, by Industries

TABLE 3 gives the number of industrial disputes beginning in August, 1931, classified by number of workers and by industries.

TABLE 3.—NUMBER OF INDUSTRIAL DISPUTES BEGINNING IN AUGUST, 1931, CLASSIFIED BY NUMBER OF WORKERS AND BY INDUSTRIAL GROUPS

Industrial group	Number of disputes beginning in August, 1931, involving—				
	6 and under 20 workers	20 and under 100 workers	100 and under 500 workers	500 and under 1,000 workers	1,000 and under 5,000 workers
Auto, carriage, and wagon workers		1			
Bakers			1		
Building trades	4	5	4		
Chauffeurs and teamsters	1	1	1		
Clothing	5	12	2	1	1
Food workers				1	
Furniture			2		
Jewelry workers	2				
Leather			1		
Light, heat, power, and water		1	1		
Longshoremen and freight handlers		2	1		
Lumber, timber, and mill work		2			
Metal trades		1			
Mining			3		
Motion-picture operators, actors, and theatrical workers			1		
Printing and publishing	2				
Municipal workers				1	
Textiles	1	4			
Tobacco	1	1			
Total	16	30	17	3	1

In Table 4 are shown the number of industrial disputes ending in August, 1931, by industries and classified duration.

TABLE 4.—NUMBER OF INDUSTRIAL DISPUTES ENDING IN AUGUST, 1931, BY INDUSTRIAL GROUP AND CLASSIFIED DURATION

Industrial group	Classified duration of strikes ending in August, 1931					
	One-half month or less	Over one-half and less than 1 month	1 month and less than 2 months	2 months and less than 3 months	3 months and less than 4 months	5 months and less than 6 months
Auto, carriage, and wagon workers	1					
Bakers	1					
Building trades	8	1	1	1		
Chauffeurs and teamsters	2					1
Clothing	10	3				
Furniture	1					
Iron and steel			1			
Jewelry workers	2					
Longshoremen and freight handlers	3					
Metal trades	2					
Mining	1		2	5	1	
Motion-picture operators, actors, and theatrical workers	1					
Textiles	4	2	1			
Tobacco	1				1	
Total	37	6	5	6	2	1

Principal Strikes and Lockouts Beginning in August, 1931

Shirt makers, New York City.—A strike of some 500 shirt and boys' blouse makers is reported to have begun on August 11 to resist a reduction of wages and the sending of work by the manufacturers to "nonunion low-paid out-of-town shops." It is understood that this strike ended successfully on August 29.

Clothing workers (men's), Boston.—A successful strike or stoppage of some 2,500 men's clothing workers for union conditions and wage increases is reported to have begun on August 18 and to have ended by September 4.

Garbage collectors, Chicago.—Some 600 members of the Sanitary Teamsters', Chauffeurs', and Helpers' Union stopped their work of collecting city refuse on August 26, demanding 5 days' work per week instead of 4. This strike was unsuccessful, but the men will work 5 days temporarily until the refuse accumulated during the strike has been cleaned up.

Principal Strikes and Lockouts Continuing into August, 1931

Bituminous coal miners, West Virginia.—The strike of July 6 in the Kanawha district involving about 1,500 men is reported to have ended about August 17. Some of the places were filled by outside workers, but most of the men, it was said, would get work.

Textile workers, silk, Connecticut.—The 500 operatives of the Edward Bloom Co. (Inc.), at Putnam, who struck on July 13, demanding a working week of 48 instead of 55 hours, voted on September 15 to return to work under the conditions that formerly prevailed. It is understood that the plant has resumed operations.

Silk workers, New Jersey.—The strikes of July 22 and July 27 involving some 8,000 textile workers still continue, but give promise of an early amicable settlement. On September 15 it was estimated that approximately 4,000 workers had returned to their plants with satisfactory readjustment of the wage schedules on the basis of a compromise, with recognition of the union and a 44-hour week. These settlements, it is understood, apply to the workers affiliated with the Associated Silk Workers and the United Textile Workers.

Clothing workers, New York City.—No report has been received of the final ending of the strike or stoppage of some 30,000 men's clothing workers which began on July 29, but it is understood that following additional settlements with other independent proprietors the strike was practically over by August 21.

Clothing workers, New Jersey.—No report has been received of the ending of the strike of about 2,000 workers in Egg Harbor, Hammonton, and Vineland, which began on July 29. As this strike was in some respects identified with the larger stoppage of the same date in New York City, its duration was probably coextensive with the larger one and ended by August 21.

Hosiery workers, Philadelphia.—No report has been received that the strike of some 3,000 workers which began on February 16 has ended; but it is probable that the strike, considered as a whole, was practically if not entirely over by the end of August, and that it was successful only in part. Production in the industry has been at a low ebb for several months.

Silk workers, Pennsylvania.—The strike of some 3,000 workers in Allentown which began as of May 1, was, it is understood, practically over by September 1. A press report of August 31 stated that there were still only 5 mills where no settlement had been made. Beyond recognition by a number of the mills, it is said, the strikers virtually gained nothing.

Conciliation Work of the Department of Labor in August, 1931

By Hugh L. Kerwin, Director of Conciliation

THE Secretary of Labor, through the Conciliation Service, exercised his good offices in connection with 68 labor disputes during August, 1931. These disputes affected a known total of 12,849 employees. The table following shows the name and location of the establishment or industry in which the dispute occurred, the nature of the dispute (whether strike or lockout or controversy not having reached the strike or lockout stage), the craft or trade concerned, the cause of the dispute, its present status, the terms of settlement, the date of beginning and ending, and the number of workers directly and indirectly involved.

On September 1, 1931, there were 57 strikes before the department for settlement and in addition 19 controversies which had not reached the strike stage. The total number of cases pending was 76.

Company or industry and location	Nature of controversy	Craftsmen concerned	Cause of dispute	Present status and terms of settlement	Duration		Workers involved	
					Beginning	Ending	Directly	Indirectly
					1931	1931		
Custanzo Mining Co., Warwood, W. Va.	Strike	Miners	Asked recognition and checkweighman.	Adjusted. Allowed checkweighman; no discrimination for union membership.	June 16	Aug. 8	700	------
Officers' quarters, Knoxville, Iowa	Controversy	Building trades	Discussion of prevailing wage rates.	Pending	July 24	----------	33	------
State road work, Du Page County, Ill.	------do	Teamsters, engineers, laborers.	Asked increase and improved conditions.	Adjusted; returned to work	Aug. 3	Aug. 25	50	------
Chic Sportswear Co. (Inc.), New York City.	Strike	Cutters, knitters, operators.	Wage cuts and conditions	Pending	July 30	----------	35	8
Twenty shoe factories, Lynn, Mass.	------do	Shoe workers	Wages, conditions, union recognition.	Adjusted. Wages increased and union recognition.	Aug. 3	Aug. 19	500	------
Fruit and vegetable workers, San Jose, Calif.	------do	Garden workers	Wages cut	Unclassified. Settled without Government conciliation.	Aug. 1	Aug. 4	1,000	------
Building, Grand Rapids, Mich.	Controversy	Bricklayers	Discussion of prevailing rates	Pending	July 29	----------	(1)	------
Elm Grove Mining Co., Wheeling, W. Va.	Strike	Miners	Asked union recognition and checkweighman.	------do	June 16	----------	800	------
Grace Dress Co., Bronx, N. Y.	------do	Dressmakers	Change in piecework rates	Adjusted. Accepted small cut on certain garments, small increase on others.	July 24	July 29	18	------
Fleer Bros., Brooklyn, N. Y.	------do	Teamsters and chauffeurs.	Cut in tonnage rates for handling coal.	Adjusted. Agreement on rates concluded.	Aug. 3	Aug. 5	25	40
Rubinger Sportswear Corporation, New York City.	------do	Knitters and machine workers.	Change in piecework rates	Pending	July 15	----------	70	------
Super Maid Cookware Corporation, Chicago, Ill.	------do	Metal polishers	Working conditions	Unable to adjust	Aug. 5	Aug. 28	50	------
Raven Run Mine, Girardsville, Pa.	------do	Miners	Union dispute relative to fines	Adjusted. Miners paid fines	July 29	July 31	500	------
Lackawanna & Wyoming R. R. Co., Scranton, Pa.	Controversy	Street-railway workers.	Proposed wage cut	Adjusted. Agreed on arbitration	Aug. 5	Aug. 13	58	148
Building, Kansas City, Mo.	------do	Building	Discussion of prevailing wage rates.	Pending	July 20	----------	(1)	------
High-school and other buildings, Erie, Pa.	Strike	Building trades	Nonunion electricians employed; others refused to work with them.	Adjusted. Two-year union agreement signed.	Aug. 3	Aug. 13	75	80
State office building, Columbus, Ohio.	------do	Structural-iron workers and elevator constructors.	Jurisdiction of placing elevator doors; recent award repudiated by ironworkers.	Adjusted. Returned pending further negotiations.	Aug. 8	Aug. 14	13	270
Taxi drivers, Seattle, Wash.	------do	Drivers	Proposed decrease from $1 to $1.50 on each day's wage.	Unclassified. Withdrew proposal; part of cabs laid off.	---do-----	Aug. 8	300	125

[1] Not reported.

LABOR DISPUTES HANDLED BY THE CONCILIATION SERVICE DURING THE MONTH OF AUGUST, 1931—Continued

Company or industry and location	Nature of controversy	Craftsmen concerned	Cause of dispute	Present status and terms of settlement	Duration		Workers involved	
					Beginning	Ending	Directly	Indirectly
					1931	1931		
Simmons Manufacturing Co., Kenosha, Wis.	Threatened strike.	Metal polishers	Wage cut	Adjusted. Allowed union recognition; wages to be adjusted.	Aug. 10	Aug. 19	14	
Painters, San Jose, Calif	Lockout	Painters	Wages cut $1 per day	Pending	Aug. 12		80	
Fageol Motor Co., Oakland, Calif	Strike	Sheet-metal workers.	Wages cut $2.20 per day	do	Aug. 7		35	
Bass Construction Co., Detroit, Mich.	Controversy	Hoisting engineers	Wages	Adjusted. Allowed $1.25 per hour and union conditions.	July 28	Aug. 8	4	60
Do	do	Ironworkers	do	Adjusted. Allowed $1.50 per hour and union conditions.	Aug. 8	Aug. 12	35	300
Post-office building, Bay City, Mich.	do	Laborers	do	Adjusted. Increased from 35 to 40 cents per hour.	Aug. 11	do	35	
M. Binstock & Co., Denver, Colo	do	Clothing workers	Renewal of agreement	Adjusted. Allowed 44-hour week; 10 per cent wage cut of 6 months ago restored.	Aug. 3	do	35	15
United States Assay Building, New York City.	Strike	Building	Refusal to handle granite furnished by Stone Mountain Granite Corporation.	Adjusted. Contractors agreed to use no stone from Stone Mountain, Ga., on subsequent contracts.	Aug. 1	Aug. 13	165	9
Heltonville Limestone Co., Heltonville, Ind.	Controversy	Stone workers	Prevailing wage not being paid	Adjusted. Agreed to pay prevailing wage rates; cutters, $1.25 per hour, carvers $1.50.	Aug. 7	Aug. 20	35	65
Levine & Meltzer, New York City	Strike	Millinery workers	Asked union recognition and union conditions.	Pending	Aug. 6		35	6
Amerikar Mogyar, Nepszava, New York City.	Lockout	Linotype operators	Change in wages and conditions in new agreement; nonunion workers employed.	do	Aug. 1		12	
Becille Dress Co., New York City	Strike	Dressmakers	Asked recognition; satisfied with wages.	do	Aug. 11		6	30
Shirt and waist factory, New York City.	do	Shirt and waist workers.	Alleged violation of agreement in sending work out of town.	Adjusted	Aug. 11	Aug. 29	500	
Reniger Construction Co., Lansing, Mich.	Controversy	Bricklayers	Wages cut from $1.50 to $1.35 per hour.	Unable to adjust	Aug. 19	Aug. 29	35	110
Clothing, Boston, Mass	Strike	Clothing workers	Asked wage increase and union conditions.	Adjusted. Allowed as asked	Aug. 18	Sept. 4	2,500	
Film theater operators, Chicago, Ill.	Lockout	Operators	Owners objected to hiring two operators.	Pending. State's attorney handling the situation.	Aug. 14		80	120
Van Houten Bros., Perkasie, Pa	Strike	Silk workers	Alleged abrogation of recent agreement.	Adjusted. All returned	July 20	Sept. 11	43	4
Glassell Construction Co., Shreveport, La.	Controversy	Airport construction.	Investigation of prevailing wages in the locality.	Pending	Aug. 15		(1)	

H. B. Nelson Construction Co., Tuscaloosa, Ala.	do	Carpenters	Asked increase of 10 cents per hour—to 65 cents.	Adjusted. Wages to be adjusted later.	Aug. 8	Aug. 18	38	----
School building, Pittsburgh, Pa	Strike	Electricians	Wage cuts	Pending	Aug. 18	----	38	----
Meadow Gold Dairies (Inc.), Pittsburgh, Pa.	do	Wagon drivers	Asked recognition and restoration of wage cuts.	do	Aug. 19	----	400	----
Lewis Bros., Newark, N. J	do	Candy makers	Proposed 10 per cent cut; employees asked 8-hour day.	Adjusted. All parties withdrew demands.	Aug. 17	Aug. 19	150	100
Cumberland Coal Co., Isolene, Tenn.	Controversy	Mining	Asked the right to organize	Unable to adjust	Aug. 9	Aug. 9	30	50
Tile setters, Portland, Oreg	do	Tile setters	Wages cut $2 per day	Pending	Aug. 17	----	54	----
Hauser Construction Co., Twin Rocks, Oreg.	do	Building	Wages cut from 12½ to 20 per cent	Adjusted. Cuts accepted	Aug. 1	Aug. 20	12	61
Tampa Marine Co., Tampa, Fla	do	do	Additional wage cuts	Pending	Aug. 10	----	80	----
Elco Shoe Manufacturing Co. (Inc.), Brooklyn, N. Y.	do	Shoe lasters	Objection to new foreman	Adjusted. Company refused to discharge foreman; workers returned.	Aug. 11	Aug. 13	65	245
Clara-Dora Frocks, New York City.	Strike	Dressmakers	Asked increase in piecework rates	Adjusted. Allowed slight increases on certain garments.	Aug. 13	Aug. 17	16	4
Manhattan Wood Heel Co., Brooklyn, N. Y.	do	Wood-heel workers	Asked increase, recognition, and improved conditions.	Adjusted. Allowed union recognition and 12½ per cent increase.	Aug. 7	Aug. 10	40	5
Wood-heel workers, Brooklyn, N. Y.	do	do	do	Adjusted. Recognition refused; some piecework changes; part reemployed.	do	do	210	20
Algernon Blair, contractor, post office, Kittaning, Pa.	Controversy	Building	Prevailing wage rates	Pending	Aug. 19	----	63	----
E. Hubschman & Sons, Philadelphia, Pa.	do	Leather workers	Proposed wage cut of 10 per cent	Adjusted. Company withdrew proposal to cut.	Aug. 18	Aug. 21	375	----
Dale Hat Co., Philadelphia, Pa	Lockout	Millinery	Asked union recognition	Unable to adjust. Recognition refused.	Aug. 20	Aug. 29	24	91
North Moeller Co., Jackson, Mich	do	Bricklayers	Cut from $1.50 to $1.25 per hour	Unable to adjust. Refused to restore wages.	Aug. 10	Aug. 28	10	60
John R. Powell, Plymouth, Pa	Controversy	Squib makers	Installation of squib-making machine.	Adjusted. Company agreed to alternate work among part of the girl employees.	May 4	Aug. 24	32	7
Alfred Giantel (Inc.), New York City.	Strike	Shoe workers	Wage cut 15 per cent	Unclassified. Plant closed	Aug. 10	Aug. 20	25	6
U. S. Gypsum Co., veterans' hospital, Indianapolis, Ind.	Controversy	Bricklayers	Working conditions	Adjusted. Local bricklayers employed.	Aug. 15	Aug. 18	15	135
Veterans' hospital, Indianapolis, Ind.	do	Plasterers, hod carriers.	do	Adjusted. Local workers employed.	do	Aug. 22	40	110
J. Narius & Sons, New York City	Threatened strike.	Clothing cutters	Discharge of cutter	Adjusted. Agreed to reemploy discharged cutter at $65 per week temporarily.	June 4	Aug. 21	1	70
Holland American Steamship Co., Hoboken, N. J.	Strike	Longshoremen	Objected to working under stevedore employed by the company.	Adjusted. Company agreed to change some of existing conditions.	Aug. 17	Aug. 25	280	----
Berkshire Knitting Mills, Wyomissing, Pa.	do	Hosiery knitters	Asked 33⅓ per cent increase and shorter hours.	Unclassified. Strike called off by workers.	Aug. 24	Aug. 24	20	----
Lemaur Clothing Co., New York City.	do	Clothing workers	Asked recognition and union conditions.	Adjusted. Allowed recognition and unemployment insurance.	July 29	Aug. 20	125	----

[1] Not reported.

LABOR DISPUTES HANDLED BY THE CONCILIATION SERVICE DURING THE MONTH OF AUGUST, 1931—Continued

Company or industry and location	Nature of controversy	Craftsmen concerned	Cause of dispute	Present status and terms of settlement	Duration		Workers involved	
					Beginning	Ending	Directly	Indirectly
					1931	1931		
Ware Woolen Co., Ware, Mass	Strike	Weavers and spinners.	Asked small increase	Adjusted. Allowed as asked	Aug. 5	Aug. 7	70	
Building at Fort Lewis, Tacoma, Wash.	Controversy	Lathers	Alleged paying below prevailing wages.	Pending	Aug. 22		(1)	
Goose Run Mine, Murry City, Ohio.	Strike	Miners	1 miner discharged	Unable to adjust	July 20	Aug. 24	150	
Kalina Jewelry Manufacturing Co., New York City.	do	Jewelry workers	Equal division of work and change in piecework rates.	Adjusted. All granted $5 to $7 per week increase.	Aug. 18	Aug. 21	6	3
La Salle Manufacturing Co., New York City.	do	do	Objected to change from piecework to time basis.	Adjusted. Returned; accepted $50 to $70 weekly rates.	Aug. 17	do	7	5
Bremer & Mittelmark, New York City.	do	Millinery	Change in piecework rates and recognition of committees.	Adjusted. Allowed as asked; all returned.	Aug. 21	Aug. 22	40	7
H. & M. Knitting Mills, Brooklyn, N. Y.	do	Knitters	Equal division of work	Adjusted. Returned; satisfactorily settled.	Aug. 25	Aug. 27	50	8
Westchester County road construction, White Plains and Tarrytown, N. Y.	do	Road laborers, shovel men, and truck drivers.	Alleged failure to receive wages	Adjusted. Laborers allowed 50 cents per hour to Jan. 1, 1932; then 60 cents to Jan. 1, 1934.	Aug. 26	Aug. 31	100	
Security Hat Corporation, New York City.	do	Hat workers	Asked union recognition and improved conditions.	Pending	Aug. 11		40	10
Total							10,482	2,367

[1] Not reported.

LABOR AGREEMENTS, AWARDS AND DECISIONS

Provisions for Employment of Union Members, in Collective Agreements

PRACTICALLY all of the collective agreements received by the Bureau of Labor Statistics, with the exception of the agreements of railroad employees, make some provision for the employment of union members. A large majority of the agreements stipulate that only members of the union shall perform the class of work specified in the agreement, if union members are available. The union agrees to make every effort to furnish competent members to perform the work if the employer notifies the union, 24 to 48 hours in advance, of the number of workers required. If the union is unable to furnish a sufficient number of workers the employer is usually permitted to hire nonunion workers. Generally such workers are given permits or working cards until the next meeting of the local union, at which time they are required to make application for membership. A few agreements provide that the nonunion workers shall be displaced when a union member is available. Many of the agreements provide that if a nonunion worker refuses to make application and join the union within a given time, or if he proves ineligible to membership for any reason, he shall be discharged. A few agreements provide that when a nonunion worker is employed he must make application for membership and pay the initiation fee in full before he starts to work; in others such worker is required to make a deposit on initiation fee when making application for membership.

A large number of agreements require the employer to hire all workers through the business office of the union, and in a few of these agreements the employer agrees to accept any capable member sent to him by the union office, while in other agreements it is stipulated that the employer may select members from the "out-of-work" list.

Advertising for help is not permissible by the terms of a number of the agreements, while in others the employer may advertise for help if the union, after due notice, has failed to furnish him with the number requested, but he must advertise in the name of the local union. One agreement provides that the employer may advertise for help but he must use the words "union shop."

Many of the agreements provide that the local union shall maintain an office with a telephone, and the business agent must be in charge of office for certain hours during the day to answer inquiries and to provide necessary service to the trade. Generally the agreements which provide for the employment of union members only also provide that the union will do all in its power to furnish members who are thoroughly competent to perform the work of the trade in an efficient and workmanlike manner. Many of these provide that any work performed by members of the union, if found defective, must be made good by the members on their own time.

A very few agreements provide for a preferential union shop, i. e., one in which union men are employed in preference to nonunion men. One street-railway agreement provides for the open shop. Many railroads deal directly with the recognized unions in the making of agreements, but these agreements do not provide for the employment of union members only.

The following are a few provisions taken from about 1,000 collective agreements which contain provisions for the employment of union members:

Bakery and confectionery workers.—Only members of the union are to be employed and they shall be hired through the union office. If through a scarcity of union men others are hired, such men must deposit full initiation fee with the union representative within six days after employment.

Local No. — shall have the right to substitute one workman for another belonging to the local provided such worker is capable of doing the work. The person substituted shall be considered as being employed by the boss and shall be paid out of the wages of steady employee so that he will be covered under the workmen's compensation insurance act.

The employer agrees that if he should refuse to employ three members entitled to get employment sent him in consecutive order he shall have no right to ask another worker for a period of two months.

If no members of Local No. — are available the union shall have the right to bring workmen from another city and the employer shall pay expenses of bringing such help.

Journeyman barbers.—Employer agrees to hire none but members of union in good standing. Said union men must be hired through the office of the union, and must present a working card issued by the union before being engaged to work in any shop.

Master barbers to employ only members of Local No. — or men signifying a willingness to become members by a payment of at least one-half of the admission fees. If a man is hired other than through the union the employer must notify the union at once.

Brewery workers (soft drink and yeast makers).—Only such workingmen shall be employed by the firm who are good standing members of Local No. —, and who are provided with working cards supplied by the union. Should the union be unable to furnish help during the busy season (April to October) extra help may be employed as long as such employment does not cause any lay-off to union men. Such men must have permit card from the union and must be paid the union scale.

Brickmakers.—All employees shall be members of Brickmakers District Council No. —. The council agrees that it will at all times furnish a sufficient number of capable men. Failure of the union to furnish men within two days the manufacturer may employ men who are not members and may pledge such men 30 days' work. Such nonunion men must pay the same dues and be subject to the same check-off as the union men. After 30 days they must be admitted to the union if they wish to join.

Broom makers.—An employer wanting a man must notify the shop steward.

Bookkeepers, stenographers, and accountants.—The employer agrees to employ only members of the union to perform all work among employees known as "office staff," provided that new employee may work a probation period of two weeks. The union agrees to furnish competent members on reasonable notice, provided their services are available.

Building service employees—window cleaners.—The association agrees its members shall employ members in good standing who carry cards issued by the union. If the union is unable to furnish workers when called upon to do so others may be temporarily hired who shall obtain working card from the business agent of the union.

Asbestos workers.—Contractor agrees to have all asbestos work done by members in good standing of Local No. —. The local shall maintain an office and have agent in attendance from 8 to 9.30 a. m. and from 4.30 to 5 p. m. to answer inquiries and provide necessary service to the trade.

All work covered by this agreement shall be performed by union men. In an emergency should the local fail to furnish the number of men required others may be hired who shall work under a permit from Local No. — until replaced by

members of said local. Men hired in emergency must have worked four years at the trade to receive a permit.

Bricklayers, masons, and plasterers.—The employer agrees to give preference of employment to workmen affiliated with this union. The union agrees to supply workmen to all employers who are members of the General Contractors' Association. No member shall work with a nonunion man who refuses to join the union and to deposit usual fee or to give order for same.

Carpenters and joiners.—Only members of the United Brotherhood of Carpenters and Joiners shall do any work involved in the use of carpenters' tools. No member permitted to work on a job where other than members of the union with the quarterly card are employed. Violators of this provision shall be fined the sum of $10 for the first offense and $25 for the second offense, or suspended for three months.

All members of the United Brotherhood of Carpenters and Joiners working for other than legitimate contractors in this jurisdiction shall charge not less than 15 cents per hour above the scale of wages of journeymen. When a contractor calls for men through the office said men shall be supplied with a job card, and said contractor or foreman shall recognize same and put the men to work.

Cement finishers.—Contractors agree to employ only members of this local and shall call on union headquarters when in need of help. Union members may work for any contractor giving them the union conditions and wages as stipulated in this agreement; but shall give preference to contractors who have signed this agreement.

The employer is not required to hire union men from the office of the union. Members shall not be transferred from one job to another without the consent of the employer. The union agrees to furnish at all times competent members when requested. If the union fails to furnish sufficient number of men then others may be hired but must be laid off within 48 hours after the union is able to furnish members.

Electrical workers.—The contractor agrees to employ only members in good standing of Local No. —. If the union fails to furnish the number of members required the employer reserves the right to employ such other men as are available, it being agreed that wages and hours shall be as herein provided. Such men shall be granted a working permit by the union, maximum charge to be $1 per day. The employer and the union are to cooperate by refusing to furnish members to contractors who have not signed this agreement.

The union agrees to furnish such men as the employer may from time to time demand or need. The employer agrees not to sublet the installation of any work unless it is done by members of Local No. —; also not to loan or cause to be transferred members in his employ to another contractor.

All work of any member of the union shall be made good on his own time if it is found defective, unless done under the direction of the employer. The local union will insist that its members do their duty, and does not expect any company to retain an incompetent member.

Elevator constructors.—The contractor agrees to employ only members of the International Union of Elevator Constructors. In the event that the union is unable to supply sufficient mechanics to meet the requirements of the employer he may employ mechanics or helpers who are not members of the union, to whom the union will issue permits; these permits to be renewed from week to week. These mechanics must apply for membership to the union after being six months on a permit.

Operating engineers.—Union members shall be selected by the employer from the union supply. The union agrees to furnish sufficient number of competent men when required. In the event the union fails to furnish number required then others may be hired who will not be required to pay for permits or to join the union, but they shall be dismissed at the end of a day's work when union members are available.

No member of the union is permitted to work on any machine unless the entire crew are members of the International Union of Operating Engineers, except in an emergency and then only until a member can be secured. The business agent has charge of placing all engineers and he must be notified before any engineer will be permitted to go on a job.

Hod carriers and building laborers.—Employers must find out if men applying for work are members of the union, and if not the employer may of his own free will put such man in Local No. — and then give him employment, thereby avoiding a dispute with Local No. —.

Any person or persons who may be hired by the boss and they are found to be without a membership card of the aforesaid union the pay for the first 10 hours' work shall go as entrance fee to above stated union and $3 per day until initiation fee of $50 has been paid.

Wood, wire, and metal lathers.—Employer agrees to hire only members of local union. Employing lathers shall hire on each and every job one-half American and one-half Italian speaking lathers. Each job shall have one American and one Italian steward.

It is agreed that should an emergency arise the contracting plasterer shall notify the representative of the local union who shall furnish the number of men required provided the men are available. No permit card man shall be employed while members in good standing are unemployed.

Painters, decorators, and paperhangers.—Resident dues-paying members in good standing shall at all times be given preference over out-of-town or traveling members. Clearance card members or men on application permits shall be employed only when resident members in good standing are not available. Dealers when called upon to furnish paperhangers shall use union men.

Employers agree to employ none but union members, or such as are willing to become members, and must immediately notify the steward or business agent if putting such men at work. All members are strictly responsible for their workmanship and shall have proper tools and shall report for work on Monday with clean white overalls.

Parquet-floor layers.—Members of the union shall be employed on all floor laying and scraping. Members shall not be required to work with nonunion workmen in the building trades, nor to work for employers who employ nonunion men on other work.

Operative plasterers.—Employers agree to hire none but members of Local No. — but are at liberty to employ and discharge any members they see fit. No member allowed to work with a plasterer who is not a member, or who has not signed an order for his full initiation fee. No member of Local No. — shall work with nonunion men of any other trade.

Advertising for plasterers is not permissable without the approval of the joint board. Where there is a shortage of men the union agrees to make every effort to furnish such skilled workers through their local.

Plumbers and gas fitters.—Contractors agree to employ only members of Local No. — to do their work within this territory as long as the local is able to supply reliable, competent and otherwise satisfactory plumbers. Employers will give due notice to local of the number of plumbers required and the local shall supply sufficient number of competent mechanics at all times.

Employers may hire members direct. No member shall be compelled to work on any building with nonunion men of his trade. No member shall leave his work because nonunion men in some line of work other than building construction are employed on the building or the job.

Sheet-metal workers.—If after 48 hours' notice Local No. — is unable to furnish sufficient number of competent journeymen to meet the requirements of the employer, additional journeymen may be secured from other sources, all of whom shall be eligible to and make application for membership in Local No. — and become members and parties to this agreement.

Sign writers.—Employer agrees to employ only members in good standing of Local No. —. The firm shall not use newspaper advertising for additional help until a request for such help has been made to the local.

Slate, tile and composition roofers.—The employer agrees to employ only members in good standing of Local No. —. In the event the union is unable to supply employer with roofers he shall have the right to hire others who shall obtain from the foreman without charge a working permit for the balance of the current week. Permit renewable weekly in advance at office of business agent by paying fee of $1.50 for a period of not exceeding three months. If the holder of the permit joins the union the permit fees shall apply on his initiation fee.

No contractor shall hire a mechanic or apprentice to apply roofing material who does not have a working card or permit from Local No. —. No member of this local shall work for other than a bona fide roofing contractor.

Steamfitters.—Employers agree to employ only members of Local No. — as long as the local is able to supply reliable, competent, and otherwise satisfactory steamfitters. If the local is unable after 48 hours' notice to supply such men the employer for the time being shall be at liberty to employ men necessary to continue the work.

Structural and ornamental iron workers.—The union upon demand is to furnish the employer with a sufficient number of competent men. Satisfactory arrangements as to transportation shall be made in advance with the business agent. Any member who fails to go to work shall be fined the amount of transportation plus $10 which is to be collected by the union and the amount for transportation to be returned to the employer.

Cigarmakers.—No member shall be allowed to work in a shop with nonunion men or women.

Retail clerks.—Members of the union only shall be employed in stores owned and controlled by the party of the first part. A temporary working card shall be issued to all new members for a period of four weeks without cost, after which time such employees must become members of the union. All extra sales people shall carry a special working card issued by the union for which they shall pay 50 cents per month to the union treasury.

Employer will employ only members of the union or those who if eligible will join the union within 30 days of employment. Extra help who are employed four consecutive Saturdays shall also become members.

Boot and shoe workers.—All help shall be hired from the local union office. In case the union is unable to supply the required help within 24 hours the company has the right to hire others provided those hired become members of the union before starting work.

Cloth hat and cap makers.—The firm agrees to employ in the operating, cutting, blocking, and trimming departments workers who are members in good standing of the union. The firm will apply to union when in need of new help. The trial period will be one week after which employment shall become permanent.

Fur workers.—The firm agrees to employ none but members in good standing of the union, and the union agrees to furnish such members. The firm agrees when employing a new worker to send him or her to the union to get a card made out to the firm entitling said worker to be employed. No worker to be employed without such card.

Foremen need not be members of the union, but all those who work at the bench must be members. The son of an employer working as an apprentice for his father shall be a regularly registered apprentice of the union.

Men's straw hat makers.—The firm agrees to employ only members in good standing. In the event that the union can not furnish sufficient number of members the union will permit 10 per cent apprentices in order to relieve such a situation.

Ladies' garment workers.—The employer agrees to employ and retain in his employ none but members in good standing of the local union to perform all work required in the process of making a garment. The employer agrees that whenever he will require additional help he will apply to the union for such help and the union agrees to furnish to the employer to the best of its ability out of its membership such workers as he may require.

Men's clothing workers.—The employer agrees to employ only members in good standing and who shall identify themselves by showing union cards directing them to said employer. The employer agrees to engage all new workers through the office of the union. All new help after a trial period of two weeks shall be considered regular workers and shall be entitled to all the rights, privileges, and benefits provided for in this agreement.

Journeyman tailors.—All employees, including the foreman, shall be members in good standing of Local No. —. When nonunion men are employed they shall become members within ten days after employment.

Neckwear cutters.—Employer agrees to employ only such neckwear cutters as are in good standing of local and agrees to call on the union for cutters when needed. He shall require a working card signed by a representative of the union showing member in good standing.

Neckwear makers, tackers, and boxers.—The employer agrees to employ none but members of the union. If union is unable to furnish members others may be hired and such help must join the union within eight days after employment.

Cleaners, dyers, and pressers.—Employer agrees to employ none but members in good standing, except office employees who are not performing work of the union. The employer agrees that if the person employed is not a member in good standing of the union he or she shall within two weeks of such employment become a member of the union or be discharged unless written permission is given by the union for them to continue in employment. The union shall at all times to the utmost of its ability furnish the employer with skilled help.

Cloth examiners and shrinkers.—Employer agrees to employ only members of the union and to discharge any member at the end of the day, or week if weekly worker, when notified that such worker is not in good standing. The union agrees to furnish members when possible. If the union fails to furnish members or if there is an unauthorized walkout the employers may hire those who are not members of the union.

Glove workers.—The employers agree to retain in their employ only members of the International Glove Workers' Union in good standing and in possession of a paid-up working card, and in no case shall nonunion help be employed so long as any competent union men are idle.

Full-fashioned hosiery workers.—The association agrees that its members will employ as winders, leggers, footers, stampers, boxers, and apprentices to the foregoing occupations, none but members of the union. Ninety days shall be allowed to the union for the unionization of such of the foregoing workers as are not presently organized.

Leather workers.—The employer agrees to hire none but members in good standing with the union. If the union is unable to furnish required number needed by the employer he has the right to hire whom he pleases, but those hired shall receive a permit card from the representative of the union and shall become a member of the union within two weeks.

Pocketbook workers.—The association agrees to give union preference in hiring new help and the union agrees to furnish such workers as the employers may require. In the event the union is unable to furnish same within 48 hours the employer shall be permitted to get help from other sources. The union agrees to give a working card to all such help upon application to affiliate. If the worker does not make application after two weeks of employment the union shall have the right to replace such worker with one of its members.

Coopers.—Only members in good standing of the coopers' union shall be employed. The employer shall have the right to select men from the "out-of-work" list of the union.

Glass-bottle blowers.—When an operator is to be hired he shall be a member of the Glass Bottle Blowers Association. If the union is not able to furnish members others may be hired who, at the end of six months, shall be taken into the association.

Glass-sign workers.—In the event that more workmen are required the firm shall first apply to Local No. — and if the local is unable to supply the required number of men then the matter may be taken up with the international office of the Glass Bottle Blowers Association for adjustment. If additional workers are granted they must become members of Local No. —.

Gold-pen makers and grinders, and fountain-pen workers.—The company agrees to employ none but members in good standing of union. This includes all employees in the plant of the company. The union agrees to furnish members of the union within five days after request. If unable to do so the company shall have the right to secure help otherwise, but such help will be compelled to affiliate with the union within one week after securing such employment.

Hotel and restaurant employees.—The proprietor agrees to employ only members in good standing of Local No. —. All waitresses working on union jobs must be booked through the business agent, otherwise the local will not be responsible for their actions.

Laundry workers.—None but members of the union to be employed during the life of this agreement. All members of the union employed by this firm are to be continued in its employ during the term of this agreement.

Longshoremen.—Members of the union shall have preference of all work pertaining to rigging up and ccaling, and discharging and loading. The employer is not obligated to hire men by gangs, or through the union office but reserves the right to hire available members of the union.

Marine cooks and stewards.—To employ members of union in steward's department on all their vessels fitting out and under operation. The union agrees to furnish competent and experienced members at all times. Failing to do so, the steward in charge, who must be a member of the union, may employ others. If satisfactory to the union they may become members or be replaced by union members when available.

Meat cutters and butcher workmen.—No employer shall allow any employee to work over five days without becoming a member of Local No. —. All minority stockholders shall belong to the union.

The union will furnish men who will work to the best interest of employer, giving honest and diligent service to patrons. Men of clean record recommended

by members of the Retail Meat Dealers' Association will be accepted as members of Local No. — without examination, provided they have at least three years experience in retail market.

Blacksmiths, drop forgers, and helpers.—The employer agrees to call on the union for men and the union agrees to furnish competent men in two days. Failure of the union to furnish men the company may hire others who if satisfactory will be given 15 days to join the union.

Boilermakers and iron shipbuilders.—Only members in good standing of Local No. — to be employed. If the union fails to furnish sufficient capable men the company may employ others and the union will not discriminate against such employees.

Machinists.—All help actually on work coming under the jurisdiction of this union shall be hired through the office of Local No. —, and all foremen or subforemen shall be practical mechanics.

Metal polishers.—The company agrees to employ none but members of Local No. — or those who carry the regular working card of this local, provided that the local will furnish such competent help as may be required by company within 48 hours after notification. Failure to furnish members, others may be hired with the approval of local until competent union men can be obtained.

Pattern makers.—No member of the league within the jurisdiction of this association shall be allowed to work with other than members of the league without permission of the executive council.

Stove mounters.—Members in good standing of Local No.— shall be given preference of employment. All such members to be competent workmen and who shall have worked for three or more years at their trade.

Motion-picture operators and stage employees.—Only members of Local No. — to be employed. The union agrees that its members shall obey all rules and directions of any authorized representative of employer, and agrees to furnish competent members to perform the work required by the employer.

Paper-mill workers.—Permanent employees shall maintain membership in good standing in their proper union and the company shall assist in bringing this condition about. When available, union men shall be hired, and new employees not union men shall become so within 15 days from the date they start to work.

Bookbinders.—Employers agree to hire none but members in good standing of Bookbinders' Local No. — in their binderies and stock rooms or on any machine, or on any work coming under the jurisdiction of the International Bookbinders' Union. The union agrees to faithfully and truly discharge the obligations imposed upon it by furnishing help to perform work as above mentioned, and employers shall call on the union for such help.

Photo-engravers.—Only members of Local No. — of Photo-Engravers' Union shall be employed. Any photo-engraver financially interested in a photo-engraving establishment and performing the duties of a photo-engraver in such place shall be an active member of this local in good standing.

Printing pressmen.—The publisher agrees to employ only members in good standing of Local No. —. If the union fails after 48 hours' notice to furnish competent men, the foreman may secure men and they may be retained if competent and apply for membership in Local No. —. Senior apprentices shall be advanced when journeymen are needed before employing nonunion men.

Web pressmen.—Employers obligate themselves to employ members of Local No. — and the union agrees to supply competent men. If union fails after due notice others may be employed and retained and the union agrees to admit them to membership if no charges exist against them.

Stereotypers and electrotypers.—In consideration of this agreement members agree to at all times truly and faithfully discharge the obligations imposed upon them by furnishing men capable of performing the required work, but if they fail or neglect to supply such help the office shall secure help needed from any source and retain them provided they shall be eligible and shall make application for membership. Employers may advertise for members in the name of Local No. —.

Typographical workers.—The union agrees to do its utmost to furnish competent men at all times. If they shall fail to furnish a sufficient number then the party of the first part may employ any members of the International Typographical Union, and may advertise in the name of the local, provided they give reasonable time for the local to supply men.

Curbstone cutters.—None but members of this union who are American citizens and residents of ——— shall be allowed to cut or set curbstone.

Granite cutters.—All operators of granite-working machinery shall be members of the Granite Cutters' International Association. The refusal of members to work with nonunion men shall not be considered as a violation of this agreement.

Stonecutters.—Only members of the union to be employed for pneumatic and hand stonecutting and carving. If union fails to furnish sufficient number of competent men the employer shall have the right to hire such additional men as are needed regardless of union affiliation and such men shall join and become members of the union.

Quarry workers.—None but union men will be employed, or those who are willing to become such within 15 days of employment. Preference shall be given to local union men.

Street-railway employees.—All motormen and conductors now members of the association are to remain members, and all motormen and conductors taken into train service after signing of this agreement are to become members of the association within 60 days.

The contracting parties hereto understand and agree that the open shop shall prevail and it is mutually agreed that no words, deeds, acts, or omissions of a discriminatory nature shall be practiced or permitted in the case of any employee. The company agrees to meet with individuals or committees of division No. — for the discussion of questions of mutual interest and to give due consideration of all suggestions for improvement of working conditions.

Teamsters and chauffeurs.—Only members of Local No. — shall be employed, and the union agrees that its members will perform said work in a good and faithful manner. In case of suspension or expulsion of a member the firm agrees to discharge such employee. The firm shall apply to the union for all help required and will not advertise unless the union fails to furnish required help.

Firm agrees to employ if possible none but members in good standing and carrying the regular working card. Union members reserve the right to refuse to work in company with any employee who is in arrears for dues, assessments, or fines, or who fails to make application for membership, and pays initiation fee and quarterly dues in full before taking charge of wagon.

Upholsterers.—Union men are to be employed and hired through union representative. If the union is unable to supply sufficient help the employer may advertise after giving 16 hours' notice, but he must use words "union shop" in the advertisement.

All carpet sewers employed by this firm shall be members of Local No. —. Members employed by this firm shall not be loaned or hired to another firm when there are other members unemployed.

Wall-paper crafts.—The employer agrees that he will employ, directly or indirectly, only members in good standing of the union.

Awards and Decisions

Railroad Telegraphers—Illinois Central Railroad

AN ARBITRATION board in an award made August 5, 1931, denied a request of the telegraphers employed by the Illinois Central Railroad Co. for adjustments in the present rates of pay equivalent to an increase of one and one-third hour's pay per day for each position covered by the agreement.

The telegraphers' organization on June 11, 1929, requested that the rules be changed to provide a 6-day week for employees now required to work seven days a week, and that their rates of pay be adjusted in order that they would suffer no loss of earnings by the change. The organization also requested adjustments in the rates of pay of members who during past years were placed upon a 6-day schedule. As the carrier and employees failed to agree, the services of the United States Board of Mediation were invoked. The carrier and telegraphers' organization agreed during the mediation proceedings that the 6-day week schedule for all employees should take effect

within 90 days after the decision of the arbitration board, regardless of what the decision might be.

The employees selected as arbitrators E. J. Manion and F. F. Cowley. The carrier selected as arbitrators E. C. Craig and T. J. Quigley. The arbitrators selected by the employees and the carrier having failed to agree on the neutral arbitrators, the United States Mediation Board appointed Dr. Davis R. Dewey and Judge Hugo O. Hanft, as neutral arbitrators.

The majority of the board made the following award:

That the request of the employees for adjustments in present rates of pay equivalent to an increase of one and one-third hour's pay per day for each position covered by the agreements be and the same hereby is denied, and that no increase in pay be awarded.

The provisions of this award shall become effective with the beginning of the first pay-roll period following the date on which said award is filed, and shall continue in force for the period of one year from the effective date thereof, and thereafter subject to 30 days' written notice by or to the railroads.

The neutral members of the board made the following statement as to how they arrived at their conclusion:

In refusing an increase of wages to all employees, the neutral members of the board were influenced by the fact that there was a general depression in business which may be prolonged and that this is not an opportune time to make increases which apply without discrimination to all employees. They also wish to record their opinion that if there be a return to more prosperous conditions, this decision should not be regarded as necessarily adverse to any future demands for an increase or adjustment of wages which the employees may make.

The arbitrators selected by the employees filed a dissenting opinion, the last paragraph of which is as follows:

We, the minority, do therefore certify, that in our opinion the majority members of this board of arbitration erred in arriving at its decision, in that it was swayed, almost entirely, by the present business depression, and that it permitted its sympathy for the carrier's dollars to override its consideration for the employees' welfare.

Decisions of Industrial Commission of Colorado

Coal Miners—Clayton Coal Co.

On July 1, 1931, the Clayton Coal Co. sent the following communication to the Industrial Commission of Colorado:

To permit the development of the Morrison mine, driving of entries and air courses, to permit our full operation this coming winter, and employment of the largest number of men, we have made an agreement with our employees at a slightly reduced wage. We have and are inclosing an agreement signed by our employees, 15 in number.

Shortly afterwards the commission received a protest signed by 52 employees of the Clayton Coal Co. and various petitions signed by business and professional men of northern Colorado protesting against wage reductions of any kind.

The findings of the commission were as follows:

From the evidence introduced at this hearing it appears that this petition for a reduction in the wage scale was circulated by George Morrison, general manager of the Clayton Coal Co. Many of the employees testified that Mr. Morrison told them he wanted them to sign this petition for a reduction to protect him so that he could meet the competition from the southern coal fields; that the reduction would be temporary and that in the fall he would pay the prevailing wage

of the camp. Many of the employees who signed this petition testified they signed it because other men had signed it; some of the employees testified they had not read it, others had friends sign for them because they could not read or write. Two witnesses testified that Mr. Morrison told them that "they knew what they could do" if they did not sign the petition. Mr. Morrison denied he had made this statement and said it was not true. However, the majority of the witnesses testified that Mr. Morrison did not tell them they would lose their jobs if they did not sign the petition, but they said they were afraid they would lose their jobs if they did not comply with Mr. Morrison's request. This petition was circulated on June 26, 1931, 10 days after the new scale was put into effect by the company.

On June 16, 1931, when the new wage scale was put into effect, no notice had been received by this commission nor had any notices been posted notifying the employees of said company of the intended reduction, and then 10 days after the reduction became effective, or on June 26, the general manager of the company circulated a petition for his employees to sign whereby they agreed to accept a reduction that had been made 10 days prior to that date.

It is the opinion of this commission that the employer violated the industrial commission law of Colorado by reducing the wage of its employees on the 16th day of June, without giving them the 30 days' notice as required by law and without giving this commission the required 30 days' notice, and then circulating a petition on June 26, 1931, for its employees to sign, 10 days after the reduction had been made.

The commission has decided in several other cases that it is coercion and intimidation on the part of the employer for any superintendent, foreman, or other officer of the company to circulate a petition requesting his employees to sign and accept a reduction in wages, and to do so is not fair or just to the employees.

On August 22, 1931, the commission rendered the following decision:

It is the decision of the commission that the Clayton Coal Co. violated the industrial commission law of this State by reducing the wages of its employees in the manner pursued by said company, and it is the order of the commission that the Clayton Coal Co. pay its employees at the same wage scale in force prior to June 16, 1931, for 30 days from that date.

Coal Operators' Request for Wage Reduction Refused

A NUMBER of coal operators filed petitions with the Industrial Commission of Colorado, giving 30 days' notice of their intention to reduce the wages of their employees, and also posted a 30-day notice for the information of their employees.

Sixty-one of the employees of the Moffat Coal Co. and 49 employees of the Keystone Coal Co. filed their protest against the proposed reduction in wages with the commission.

The commission consolidated these two cases and held a hearing at Steamboat Springs, Colo., August 20, 1931. At this hearing the general superintendent of the Moffat Coal Co. contended that it was necessary to reduce wages of the employees to meet the competition of the southern coal fields; that 75 per cent of the company's coal was sold outside of Colorado, where it was hard to meet eastern competition. He further testified that under the present wage scale, his employees had only worked about one-fourth of the time during the last six months, and that it was necessary for his company to establish soup houses for its men; that he employed about 240 men and divided the work among them. The president of the Keystone Coal Co. gave practically the same reasons for putting a reduced wage scale into effect.

One employee of the Moffat Coal Co. who had worked for the company for six years said that although he had worked all the time

that work was offered he had not made over an average of $40 a month for the last year; that the rent of houses in Oak Creek was from $12 for a 1-room house to $25 and $30 for 4-room and 5-room houses, and that, with a family of five children, he found it impossible to live for less than $80 or $90 a month. Another employee of the same company said that his wages were a little higher than the average and that he had worked more time than the average man, but that he found it impossible to support a family of six children on his wages. In order to get along he was going into debt and was borrowing money from friends. An employee of the Keystone Coal Co. testified that his wages averaged $100 a month and that this was four times what the average employee of the Keystone Coal Co. was making. This the president of the Keystone Coal Co. denied, and made the following statement:

> It would not be a cut in any case as we are not paying less than reported to you, sometimes more, and we believe we have a right to pay more, and when we do we pay it on account of certain conditions whether we are in entries or something of that kind, and we believe we have the right to go back to the lowest price at any time we choose.

The findings of the commission are as follows:

> The evidence shows that under the present wage the employees of these companies are not making a decent living; in fact, they are making less than half of a living wage. If it was necessary to establish soup kitchens to keep the men and their families alive under the present wage scale, what can they do at a lower wage?
>
> While it is true that the companies have to meet competition of lower wage scale, started in the counties of Las Animas and Huerfano, of this State, we would call their attention to the fact that they have recently had a favorable decision on freight rates from the Interstate Commerce Commission. This ought to help some, and from the evidence submitted to this commission, the conditions existing seem little short of economic slavery, and should not be tolerated by the commission.
>
> The commission is further of the opinion that when the price of coal advances, which it always seems to do during the winter months, that wages should be restored. This is only fair to the employees. The laborer is worthy of his hire, and most certainly is entitled to a decent living wage for himself and his family when employed in such hazardous occupation as the mining of coal.

The commission in its decision, rendered August 27, 1931, therefore refused to approve the reduction of wages proposed by the companies.

Plumbers and Steam Fitters—Colorado Springs, Colo.

THE Industrial Commission of Colorado was served with 30 days' notice by Jardine & Knight Plumbing & Heating Co., Frank Priess, and the Marden Plumbing Co., all of Colorado Springs, Colo., of a proposed reduction, from $9.50 to $8 per day, in the wages of plumbers and steam fitters in their employ. Each of the above employers also served notice of the proposed reduction on the secretary of the United Association of Journeymen Plumbers and Steam Fitters, Local No. 58.

At a hearing held at Colorado Springs, August 27, 1931, the employers contended that only 35 per cent of the plumbers and steam fitters of Colorado Springs were members of the union; that other men following this occupation were nonunion men. They further contended that under present economic conditions it was impossible for them to pay $9.50 a day and at the same time compete with the

companies employing nonunion men at a lower wage scale. The employees contended that $9.50 was not too large a wage, that theirs was a skilled trade and that members of the union were entitled to that wage. During the hearing it was further disclosed that the Jardine & Knight Plumbing & Heating Co. had some time previously reduced the wages of the laborers in its employ from $5 to $4 a day, without giving 30 days' notice to the commission, or 30 days' notice to its employees, as provided by the industrial commission law of Colorado.

On August 29, 1931, the following decision was rendered by the commission:

> The commission is of the opinion that the employers are making a mistake in reducing the wages of their employees. At a time like this, when the whole Nation is in the midst of an economic and industrial panic, wages should not be reduced, thereby destroying the purchasing power of the wage earner.
>
> Therefore it is the decision and the award of this commission that the application of the employers for a reduction of wages of plumbers and steam fitters from $9.50 per day to $8 per day is not approved.
>
> Further, that the Jardine & Knight Plumbing & Heating Co. reinstate the wages of their laborers from $4 to $5 per day, from the time such reduction was made, and give their laborers 30 days' notice of the intended reduction, and also 30 days' notice to this commission, and that no further change be made in wages or working conditions until 30 days has expired, or until the award of the commission is issued in the event of a protest.

Decision Modifies Contract of Bakery Workers—Denver

THE Industrial Commission of Colorado received notice from eight employers of bakery workers that after July 5, 1931, they wished to change certain articles in the agreement between said employers and Local No. 26 of the Bakery and Confectionery Workers' International Union.

The employers contended that the present agreement was unfair and should be changed in four different particulars. The union contended that the present agreement was fair and should not be changed; that it had been in force for several years and had worked well for both the employers and the employees.

On July 6, 1931, the commission rendered the following decision:

> That six days or nights shall constitute a week's work; that no wages shall be paid for holidays unless employees work on holidays, in which event wages shall be paid at one and one-half times the regular wage scale; that the holidays shall consist of Christmas, Fourth of July, and Labor Day; second, that all work performed regularly between the hours of 9 o'clock p. m. and 5 o'clock a. m. shall constitute a night's work, at the night scale.

Culinary Workers—Pueblo, Colo.

ON July 9, 1931, eight employers of members of the Culinary Workers' Union, Local No. 43, Pueblo, notified members of the union and the Industrial Commission of Colorado that the contract between the employers and the union would be terminated 30 days after that date.

As the contract between the parties had contained a clause allowing either party to the contract to abrogate or terminate the contract by giving 30 days' notice, the commission in its decision rendered August 13, 1931, held that the employers were within their rights in terminating the contract after giving the notice provided for. At the same time,

however, it notified the employers that "there must be no change in working conditions, wages, or hours without giving 30 days' notice of intention to make such change to their employees and to this commission, as provided by law."

Collective Agreements in France in 1930

THERE were 72 labor agreements reported to the French Labor Bureau in 1930, according to an article in the Bulletin du Ministère du Travail for April-June, 1931 (pp. 145, 146). The agreements were divided among the different industries as follows: Agriculture, 4; food, 16; building, 16; wood and furniture, 3; hides and skins, 3; polygraphic industries, 6; metal works and mechanical construction, 3; stone and brick industries, 4; textiles and clothing, 7; transportation and warehousing, 7; miscellaneous, 3.

The information supplied to the labor office regarding the circumstances under which the agreements were concluded was incomplete, but in 30 cases the agreements were concluded as a result of a strike. The intervention of a third party was necessary in 42 cases; 22 cases were settled by labor inspectors, 11 by justices of the peace, and 9 by mayors or prefects.

Thirty-four agreements were concluded between employers' associations and trade-unions and nine between employers or groups of employers not belonging to an association and their organized workers. The parties signing the agreement were not reported in the remaining cases. The agreements are most often concluded for an indefinite time and provide for due notice before they are given up. In 30 cases, however, the agreements specified the length of time they were to remain in effect, the specified periods ranging from six months to four years.

In 14 cases the agreements specified the method of application of the 8-hour day and 40 established a minimum wage, while 15 dealt with traveling expenses; 15, overtime rates; 11, regulation of vacations and leave; 9, family allowances; 8, notification of dismissal; 7, hourly wage rates and production bonuses; 3, rules governing night work; and 2, apprenticeship.

LABOR TURNOVER

Labor Turnover In American Factories, August, 1931

AUGUST turnover rates for manufacturing as a whole and for 10 separate manufacturing industries are presented herewith.

In working turnover rates the Bureau of Labor Statistics uses the weighted arithmetic mean. The indexes for manufacturing as a whole are compiled from reports mailed to the bureau by representative establishments in over 75 industries, employing approximately 1,250,000 people. In the 10 industries for which separate indexes are presented reports were received from representative plants employing approximately 25 per cent of the employees as shown for such industries by the Census of Manufactures of 1927. In the automobile industry schedules were received from plants employing approximately 225,000 people; plants reporting for boots and shoes employed about 100,000 people; for brick, over 18,000 people; for cotton, nearly 125,000 people; for foundry and machine shops, over 150,000 people; for furniture, about 40,000 people; for iron and steel, about 225,000 people; for men's clothing, about 40,000 people; for sawmills, about 50,000 people; and for slaughtering and meat packing, about 80,000 people.

In addition to the quit, discharge, lay-off, total separation, and accession rates the bureau presents the net turnover rate. Net turnover means the rate of replacement; it is the number of jobs that are vacated and filled per 100 employees. In a plant that is increasing its force the net turnover rate is the same as the separation rate, because while more people are hired than are separated from their jobs, the number hired above those leaving is due to expansion and can not be justly charged to turnover. On the other hand, in a plant that is reducing its number of employees the net turnover rate is the same as the accession rate, for while more people are separated from the pay roll than hired the excess of separations over accessions is due to a reduction of force and therefore can not be logically charged as a turnover expense.

Table 1 shows for all industries the total separation rate subdivided into the quit, discharge, and lay-off rates, together with accession rate and the net turnover rate, presented both on a monthly and an equivalent annual basis.

TABLE 1.—AVERAGE LABOR TURNOVER RATES IN SELECTED FACTORIES IN 75 INDUSTRIES

A.—Monthly Rates

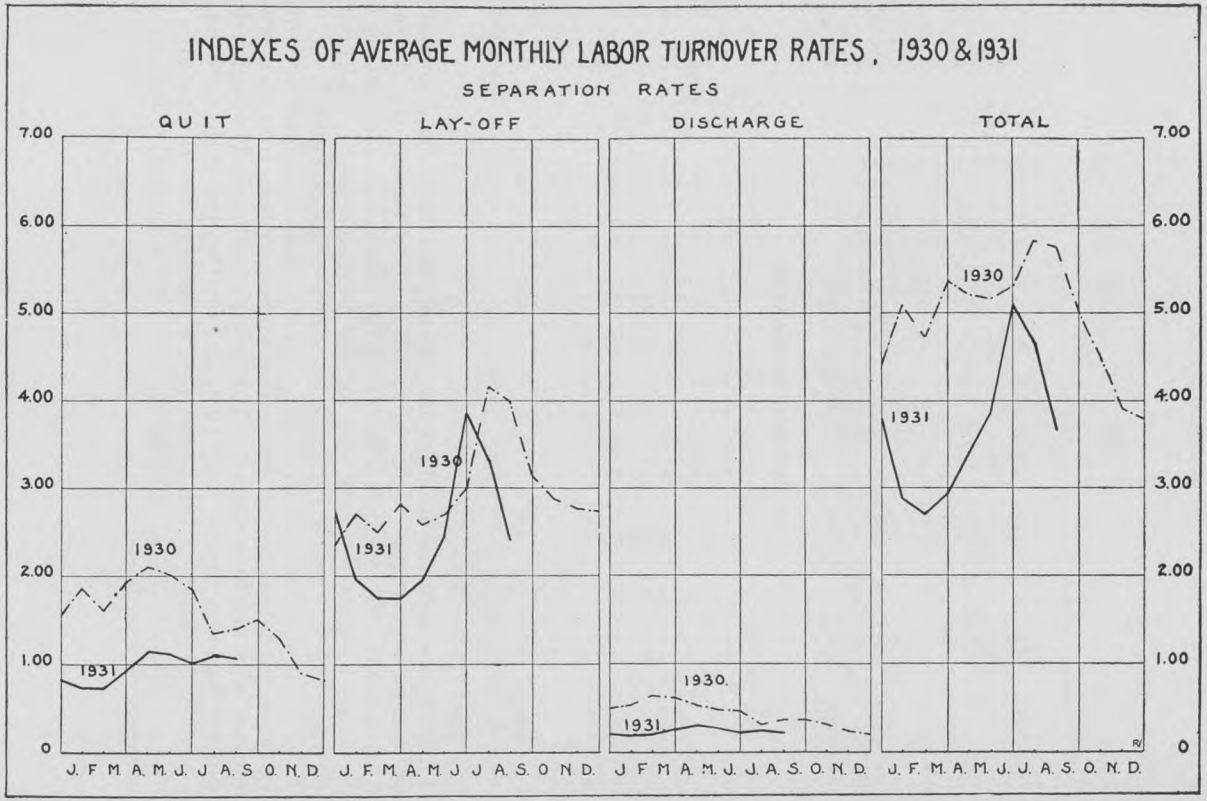
Month	Separation rates								Accession rate		Net turnover rate	
	Quit		Lay-off		Discharge		Total					
	1930	1931	1930	1931	1930	1931	1930	1931	1930	1931	1930	1931
January	1.85	0.74	2.70	1.95	0.54	0.19	5.09	2.88	3.95	2.97	3.95	2.88
February	1.60	.74	2.50	1.75	.62	.20	4.72	2.69	3.94	2.82	3.94	2.69
March	1.94	.94	2.83	1.75	.60	.26	5.37	2.95	4.15	3.67	4.15	2.95
April	2.11	1.14	2.57	1.96	.53	.31	5.21	3.41	3.55	3.06	3.55	3.06
May	2.01	1.12	2.68	2.43	.48	.28	5.17	3.83	3.28	2.79	3.28	2.79
June	1.85	1.02	3.00	3.84	.46	.23	5.31	5.09	2.92	2.41	2.92	2.41
July	1.35	1.10	4.17	3.32	.32	.25	5.84	4.67	2.51	3.02	2.51	3.02
August	1.40	1.05	3.99	2.40	.36	.22	5.75	3.67	2.71	2.60	2.71	2.60
September	1.50	------	3.14	------	.36	------	5.00	------	3.27	------	3.27	------
October	1.29	------	2.88	------	.32	------	4.49	------	2.56	------	2.56	------
November	.90	------	2.77	------	.24	------	3.91	------	2.05	------	2.05	------
December	.84	------	2.74	------	.21	------	3.79	------	2.13	------	2.13	------
Average	**1.55**	------	**3.00**	------	**.42**	------	**4.97**	------	**3.08**	------	**3.08**	------

B.—Equivalent Annual Rates

January	21.8	8.7	31.8	23.0	6.4	2.2	60.0	33.9	46.5	35.0	46.5	33.9
February	20.9	9.6	32.6	22.8	8.0	2.6	61.5	35.0	51.4	36.8	51.4	35.0
March	22.8	11.1	33.3	20.6	7.1	3.1	63.2	34.8	48.8	43.2	48.8	34.8
April	25.7	13.9	31.3	23.9	6.5	3.8	63.5	41.6	43.2	37.2	43.2	37.2
May	23.7	13.2	31.5	28.6	5.6	3.3	60.8	45.1	38.6	32.8	38.6	32.8
June	22.5	12.4	36.5	46.7	5.6	2.8	64.6	61.9	35.5	29.3	35.5	29.3
July	15.9	12.9	49.1	39.1	3.8	2.9	68.8	54.9	29.5	35.5	29.5	35.5
August	16.5	12.4	47.0	28.2	4.2	2.6	67.7	43.2	31.9	30.6	31.9	30.6
September	18.3	------	38.2	------	4.4	------	60.9	------	39.8	------	39.8	------
October	15.2	------	33.9	------	3.8	------	52.9	------	30.1	------	30.1	------
November	11.0	------	33.7	------	2.9	------	47.6	------	24.9	------	24.9	------
December	9.9	------	32.2	------	2.5	------	44.6	------	25.1	------	25.1	------
Average	**18.7**	------	**35.9**	------	**5.1**	------	**59.7**	------	**37.1**	------	**37.1**	------

There was a decrease in the quit, lay-off, discharge, and accession rates comparing August with July, 1931. Comparing the August, 1931, rates with the August, 1930, rates, decreases were also shown for each class of separation rate and for the accession rate. The charts following show in graphic form the data presented in Table 1.

Table 2 shows the quit, discharge, lay-off, accession, and net turnover rates, for automobiles, boots and shoes, cotton, iron and steel, foundries and machine shops, furniture, sawmills, and slaughtering and meat packing, for the year 1930 and for the first eight months of the year 1931, and for brick and men's clothing for the months of April to August, 1931, presented both on a monthly and on an equivalent annual basis.



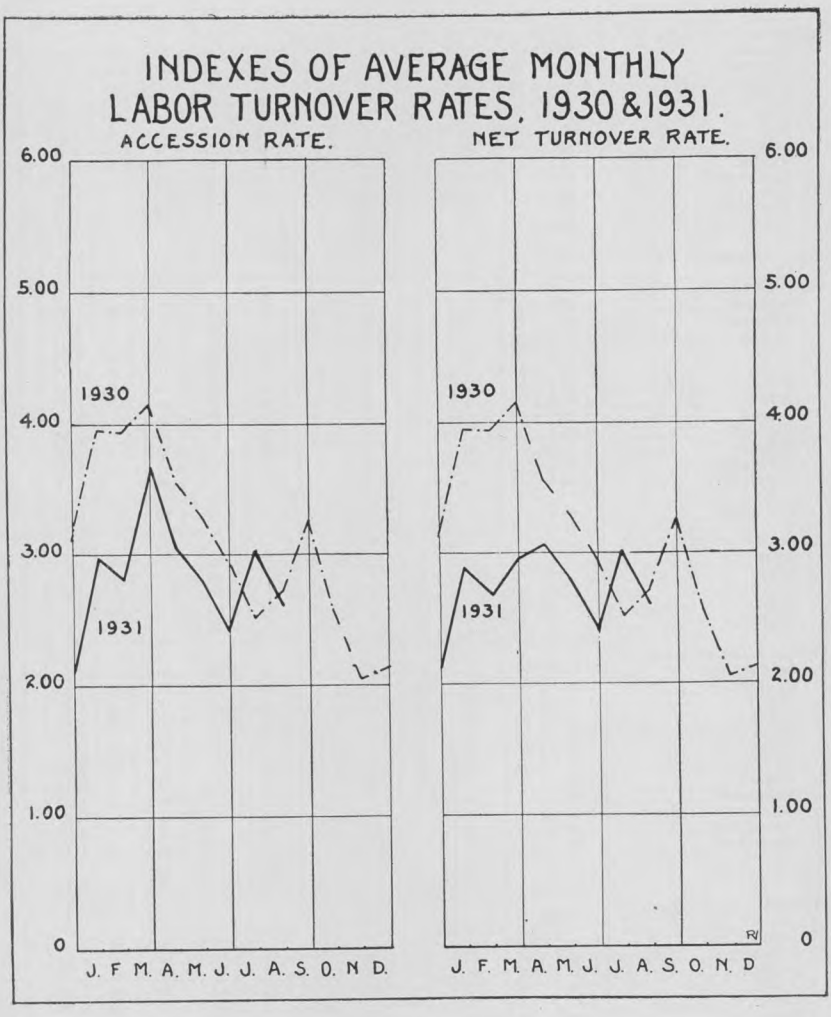


TABLE 2.—AVERAGE LABOR TURNOVER RATES IN SPECIFIED INDUSTRIES

A.—Monthly Rates

Industry and month	Separation rates								Accession rate		Net turnover rate	
	Quit		Discharge		Lay-off		Total					
	1930	1931	1930	1931	1930	1931	1930	1931	1930	1931	1930	1931
Automobiles:												
January	2.76	0.54	0.92	0.18	5.81	2.63	9.49	3.35	13.50	2.92	9.49	2.92
February	1.16	.74	.38	.21	2.31	1.71	3.85	2.66	4.74	4.12	3.85	2.66
March	1.81	1.09	.56	.39	2.04	1.71	4.41	3.19	6.92	7.76	4.41	3.19
April	2.21	1.46	.50	.44	1.97	1.86	4.68	3.76	7.45	5.21	4.68	3.76
May	2.20	1.40	.50	.39	5.59	3.07	8.29	4.86	3.98	3.41	3.98	3.41
June	1.59	.90	.39	.21	5.90	10.57	7.88	11.68	2.34	2.91	2.34	2.91
July	1.14	.99	.24	.33	9.48	6.89	10.86	8.21	2.78	4.12	2.78	4.12
August	1.23	1.10	.38	.30	7.66	3.48	9.27	4.88	3.69	2.88	3.69	2.88
September	1.29	------	.33	------	7.42	------	9.04	------	3.83	------	3.83	------
October	1.19	------	.25	------	5.39	------	6.83	------	4.02	------	4.02	------
November	.81	------	.16	------	3.80	------	4.77	------	5.95	------	4.77	------
December	.88	------	.17	------	3.69	------	4.74	------	3.43	------	3.43	------
Average	1.52	------	.40	------	5.09	------	7.01	------	5.22	------	5.22	------
Boots and shoes:												
January	1.97	1.23	.78	.37	1.27	1.88	4.02	3.48	5.97	4.48	4.02	3.48
February	1.93	1.27	.70	.31	1.37	1.23	4.00	2.81	3.09	5.88	3.09	2.81
March	2.00	1.58	.65	.50	1.34	1.16	3.99	3.24	3.18	4.92	3.18	3.24
April	2.48	1.97	.68	.42	2.13	1.53	5.29	3.92	2.76	4.34	2.76	3.92
May	2.06	1.57	.53	.49	2.47	2.37	5.06	4.43	3.19	4.95	3.19	4.43
June	1.94	1.61	.47	.40	1.82	1.85	4.23	3.86	3.78	5.18	3.78	3.86
July	2.04	2.27	.57	.53	1.76	1.40	4.37	4.20	4.74	7.16	4.37	4.20
August	2.19	2.18	.73	.44	2.84	1.80	5.76	4.42	4.08	4.15	4.08	4.15
September	2.01	------	.51	------	2.78	------	5.30	------	2.99	------	2.99	------
October	1.71	------	.47	------	2.73	------	4.91	------	2.05	------	2.05	------
November	1.00	------	.27	------	4.38	------	5.65	------	2.41	------	2.41	------
December	1.03	------	.24	------	3.88	------	5.15	------	3.66	------	3.66	------
Average	1.86	------	.55	------	2.40	------	4.81	------	3.49	------	3.30	------
Brick:												
April	------	.86	------	.61	------	4.01	------	5.48	------	8.68	------	5.48
May	------	1.77	------	.66	------	8.65	------	11.08	------	7.89	------	7.89
June	------	.80	------	.44	------	5.45	------	6.69	------	6.67	------	6.67
July	------	.93	------	.50	------	7.90	------	9.33	------	6.02	------	6.02
August	------	.80	------	.33	------	7.64	------	8.77	------	7.72	------	7.72
Cotton manufacturing:												
January	2.07	1.00	.65	.40	2.16	2.60	4.88	4.00	4.50	3.57	4.50	3.57
February	1.98	1.00	.60	.34	1.92	1.87	4.50	3.21	3.33	3.91	3.33	3.21
March	2.27	1.36	.69	.36	2.20	2.00	5.16	3.72	4.17	4.47	4.17	3.72
April	2.40	1.64	.68	.43	2.23	2.52	5.31	4.59	4.27	4.69	4.27	4.59
May	2.36	1.53	.55	.37	2.07	2.30	4.98	4.20	3.95	3.51	3.95	3.51
June	2.06	1.25	.58	.46	2.17	2.24	4.81	3.95	3.25	2.66	3.25	3.66
July	1.91	1.48	.55	.40	3.34	3.07	5.80	4.95	2.47	4.62	2.47	4.62
August	1.58	1.57	.46	.38	3.58	2.29	5.62	4.24	2.72	4.70	2.72	4.24
September	1.88	------	.46	------	2.44	------	4.78	------	4.58	------	4.58	------
October	1.41	------	.48	------	2.09	------	3.98	------	4.34	------	3.98	------
November	1.22	------	.35	------	2.18	------	3.75	------	2.93	------	2.93	------
December	.58	------	.24	------	1.92	------	2.74	------	1.46	------	1.46	------
Average	1.81	------	.52	------	2.36	------	4.69	------	3.50	------	3.47	------
Foundries and machine shops:												
January	------	.52	------	.22	------	2.32	------	3.06	------	2.93	------	2.93
February	1.36	.55	.80	.22	2.03	2.10	4.19	2.87	4.39	2.96	4.19	2.87
March	1.88	.90	.88	.25	3.24	2.72	6.00	3.87	4.63	3.38	4.63	3.38
April	1.88	.96	.80	.36	2.87	3.29	5.55	4.61	3.95	3.08	3.95	3.08
May	1.87	.77	.79	.25	4.12	4.91	6.78	5.93	3.76	2.44	3.76	2.44
June	1.29	.69	.54	.25	4.52	4.44	6.35	5.38	3.05	1.95	3.05	1.95
July	1.11	.68	.43	.20	4.58	4.71	6.12	5.59	2.26	2.63	2.26	2.63
August	1.01	.55	.45	.22	4.08	3.78	5.54	4.55	2.56	2.20	2.56	2.20
September	1.07	------	.44	------	3.82	------	5.33	------	2.45	------	2.45	------
October	.85	------	.47	------	4.01	------	5.33	------	2.27	------	2.27	------
November	.66	------	.22	------	2.87	------	3.75	------	1.85	------	1.85	------
December	.55	------	.26	------	3.10	------	3.91	------	2.05	------	2.05	------
Average	1.23	------	.55	------	3.57	------	5.35	------	3.02	------	3.02	------

TABLE 2.—AVERAGE LABOR TURNOVER RATES IN SPECIFIED INDUSTRIES—Continued

A.—Monthly Rates—Continued

Industry and month	Separation rates								Accession rate		Net turnover rate	
	Quit		Discharge		Lay-off		Total					
	1930	1931	1930	1931	1930	1931	1930	1931	1930	1931	1930	1931
Furniture:												
January	------	0.55	------	0.25	------	4.84	------	5.64	------	5.24	------	5.24
February	------	.57	------	.34	------	3.86	------	4.77	------	5.51	------	4.77
March	------	.80	------	.37	------	4.52	------	5.69	------	4.78	------	4.78
April	1.73	.95	0.64	.51	4.38	3.31	6.75	4.77	3.34	4.66	3.34	4.66
May	1.26	1.05	.52	.25	4.39	5.72	6.17	7.02	2.87	3.81	2.87	3.81
June	1.44	1.06	.41	.43	4.33	4.83	6.18	6.32	3.82	4.89	3.82	4.89
July	1.21	.81	.40	.30	4.50	3.83	6.11	4.94	5.09	5.62	5.09	4.94
August	1.18	1.13	.41	.31	3.45	3.03	5.04	4.47	5.34	4.89	5.04	4.47
September	1.09	------	.46	------	3.30	------	4.85	------	7.07	------	4.85	------
October	1.03	------	.45	------	3.61	------	5.09	------	3.72	------	3.72	------
November	.99	------	.29	------	5.92	------	7.20	------	2.48	------	2.48	------
December	.68	------	.35	------	6.66	------	7.69	------	2.35	------	2.35	------
Average	1.18	------	.44	------	4.50	------	6.12	------	4.01	------	4.01	------
Iron and steel:												
January	1.81	.71	.45	.09	1.24	1.36	3.50	2.16	5.52	2.52	3.50	2.16
February	1.91	.72	.34	.15	1.15	1.03	3.40	1.90	5.09	2.24	3.40	1.90
March	1.91	.71	.45	.12	1.22	1.38	3.58	2.21	4.06	2.03	3.58	2.03
April	2.26	.89	.42	.15	1.32	1.90	4.00	2.94	3.88	1.69	3.88	1.69
May	2.13	.87	.40	.15	1.71	2.16	4.24	3.18	3.25	1.57	3.25	1.57
June	1.87	.86	.49	.11	2.25	2.65	4.61	3.62	2.56	1.20	2.56	1.20
July	1.54	.94	.24	.12	2.29	1.74	4.07	2.80	2.27	2.32	2.27	2.32
August	1.61	1.03	.26	.10	2.05	2.67	3.92	3.80	1.91	.94	1.91	.94
September	1.45	------	.22	------	2.16	------	3.83	------	2.32	------	2.32	------
October	1.13	------	.20	------	2.25	------	3.58	------	1.74	------	1.74	------
November	1.11	------	.13	------	1.95	------	3.19	------	1.31	------	1.31	------
December	.82	------	.10	------	2.23	------	3.15	------	1.40	------	1.40	------
Average	1.63	------	.31	------	1.82	------	3.76	------	2.94	------	2.94	------
Men's clothing:												
April	------	1.40	------	.12	------	2.20	------	3.72	------	3.22	------	3.22
May	------	1.39	------	.15	------	1.46	------	3.00	------	3.10	------	3.00
June	------	1.32	------	.23	------	.56	------	2.11	------	4.05	------	2.11
July	------	1.12	------	.23	------	.97	------	2.32	------	4.16	------	2.32
August	------	1.30	------	.12	------	1.51	------	2.93	------	3.05	------	2.93
Sawmills:												
January	3.80	.97	1.18	.43	4.52	8.02	9.50	9.42	9.39	9.99	9.39	9.42
February	3.39	1.22	1.37	.50	3.99	4.56	8.75	6.28	9.11	7.44	8.75	6.28
March	3.89	1.74	1.47	.51	3.54	4.56	8.90	6.81	7.91	7.07	7.91	6.81
April	4.28	1.79	.92	.46	4.97	7.17	10.17	9.42	9.66	7.21	9.66	7.21
May	3.51	1.73	1.35	.50	8.10	6.43	12.96	8.66	10.09	7.97	10.09	7.97
June	2.93	1.13	.96	.33	5.35	8.70	9.24	10.16	5.85	6.41	5.85	6.41
July	2.68	1.35	1.07	.32	6.98	5.35	10.73	7.02	6.17	4.53	6.17	4.53
August	3.01	2.03	.93	.95	6.09	6.01	10.03	8.99	6.71	5.81	6.71	5.81
September	2.99	------	.95	------	7.64	------	11.58	------	6.93	------	6.93	------
October	2.26	------	.72	------	6.58	------	9.56	------	8.32	------	8.32	------
November	1.93	------	.83	------	7.23	------	9.99	------	4.96	------	4.96	------
December	1.39	------	.93	------	7.42	------	9.74	------	4.51	------	4.51	------
Average	3.01	------	1.06	------	6.03	------	10.10	------	7.47	------	7.47	------
Slaughtering and meat packing:												
January	2.32	1.29	.91	.61	6.68	4.40	9.91	6.30	10.02	9.50	9.91	6.30
February	2.37	1.56	.96	.68	7.70	6.48	11.03	8.72	7.39	5.02	7.39	5.02
March	2.49	1.41	.86	.37	7.51	6.88	10.86	8.66	5.23	5.19	5.23	5.19
April	2.91	1.42	.75	.47	4.47	5.02	8.13	6.91	8.47	6.31	8.13	6.31
May	2.84	1.35	.79	.43	4.14	4.13	7.77	5.91	9.01	6.92	7.77	5.91
June	2.72	1.36	.88	.52	4.59	3.90	8.19	5.78	10.34	6.08	8.19	5.78
July	2.08	1.38	.79	.49	5.34	5.59	8.21	7.46	6.92	6.46	6.92	6.46
August	2.09	1.18	.72	.39	5.14	4.56	7.95	6.13	6.34	5.06	6.34	5.06
September	2.26	------	.65	------	3.79	------	6.70	------	7.33	------	6.70	------
October	1.70	------	.73	------	4.67	------	7.10	------	7.62	------	7.10	------
November	1.12	------	.56	------	4.80	------	6.48	------	7.30	------	6.48	------
December	1.69	------	.57	------	5.59	------	7.85	------	6.24	------	6.24	------
Average	2.22	------	.76	------	5.37	------	8.35	------	7.68	------	7.68	------

TABLE 2.—AVERAGE LABOR TURNOVER RATES IN SPECIFIED INDUSTRIES—Continued

B.—Equivalent Annual Rates

Industry and month	Separation rates								Accession rate		Net turnover rate	
	Quit		Discharge		Lay-off		Total					
	1930	1931	1930	1931	1930	1931	1930	1931	1930	1931	1930	1931
Automobiles:												
January	32.5	6.4	10.8	2.1	68.4	31.0	111.7	39.5	158.9	34.4	111.7	34.4
February	15.1	9.6	5.0	2.7	30.1	22.3	50.2	34.6	61.8	53.7	50.2	34.6
March	21.3	12.8	6.6	4.6	24.0	20.1	51.9	37.5	81.4	91.3	51.9	37.5
April	26.9	17.8	6.1	5.4	24.0	22.6	57.0	45.8	90.7	63.4	57.0	45.8
May	25.9	16.5	5.9	4.6	65.8	36.1	97.6	57.2	46.8	40.1	46.8	40.1
June	19.4	11.0	4.7	2.6	71.8	128.6	95.9	142.2	28.5	35.4	28.5	35.4
July	13.4	11.7	2.8	3.9	111.6	81.1	127.8	96.7	32.7	48.5	32.7	48.5
August	14.5	12.9	4.5	3.5	90.2	41.0	109.2	57.4	43.4	33.9	43.4	33.9
September	15.7	------	4.0	------	90.3	------	110.0	------	46.6	------	46.6	------
October	14.0	------	2.9	------	63.4	------	80.3	------	47.3	------	47.3	------
November	9.9	------	1.9	------	46.2	------	58.0	------	72.4	------	58.0	------
December	10.4	------	2.0	------	43.4	------	55.8	------	40.4	------	40.4	------
Average	18.3	------	4.8	------	60.8	------	83.8	------	62.6	------	62.6	------
Boots and shoes:												
January	23.2	14.5	9.2	4.4	14.9	22.1	47.3	41.0	70.3	52.7	47.3	41.0
February	25.2	16.6	9.1	4.0	17.9	16.0	52.2	36.6	40.3	76.7	40.3	36.6
March	23.5	18.6	7.7	5.9	15.8	13.7	47.0	38.2	37.4	57.9	37.4	38.2
April	30.2	24.0	8.3	5.1	25.9	18.6	64.4	47.7	33.6	52.8	33.6	47.7
May	24.2	18.5	6.2	5.8	29.1	27.9	59.5	52.2	37.5	58.3	37.5	52.2
June	23.6	19.6	5.7	4.9	22.1	22.5	51.4	47.0	46.0	63.0	46.0	47.0
July	24.0	26.7	6.7	6.2	20.7	16.5	51.4	49.4	55.8	84.3	51.4	49.4
August	25.8	25.7	8.6	5.2	33.4	21.2	67.8	52.0	48.0	48.8	48.0	48.8
September	24.5	------	6.2	------	33.8	------	64.5	------	36.4	------	36.4	------
October	20.1	------	5.5	------	32.1	------	57.7	------	24.1	------	24.1	------
November	12.2	------	3.3	------	53.3	------	68.8	------	29.3	------	29.3	------
December	12.1	------	2.8	------	45.7	------	60.6	------	43.1	------	43.1	------
Average	22.4	------	6.6	------	28.7	------	57.7	------	41.8	------	41.8	------
Brick:												
April	------	10.5	------	7.4	------	48.8	------	66.7	------	105.6	------	66.7
May	------	20.8	------	7.8	------	101.8	------	130.4	------	92.9	------	92.9
June	------	9.7	------	5.4	------	66.3	------	81.4	------	81.2	------	81.2
July	------	10.9	------	5.9	------	93.0	------	109.8	------	70.9	------	70.9
August	------	9.4	------	3.9	------	89.9	------	103.2	------	90.9	------	90.9
Cotton manufacturing:												
January	24.4	11.8	7.7	4.7	25.4	30.6	57.5	47.1	53.0	42.0	53.0	42.0
February	25.8	13.0	7.8	4.4	25.0	24.4	58.6	41.8	43.4	51.0	43.4	41.8
March	26.7	16.0	8.1	4.2	25.9	23.5	60.7	43.7	49.1	52.6	49.1	43.7
April	29.2	20.0	8.3	5.2	27.1	30.7	64.6	55.9	52.0	57.1	52.0	55.9
May	27.8	18.0	6.5	4.4	24.4	27.1	58.7	49.5	46.5	41.3	46.5	41.3
June	25.1	15.2	7.1	5.6	26.4	27.3	58.6	48.1	39.6	44.5	39.6	44.5
July	22.5	17.4	6.5	4.7	39.3	36.1	68.3	58.2	29.1	54.4	29.1	54.4
August	18.6	18.5	5.4	4.5	42.1	27.0	66.1	49.9	32.0	55.3	32.0	49.9
September	22.9	------	5.6	------	29.7	------	58.2	------	55.7	------	55.7	------
October	16.6	------	5.6	------	24.6	------	46.8	------	51.1	------	46.8	------
November	14.8	------	4.3	------	26.5	------	45.6	------	35.7	------	35.7	------
December	6.8	------	2.8	------	22.6	------	32.2	------	17.2	------	17.2	------
Average	21.8	------	6.3	------	28.3	------	56.3	------	42.0	------	41.7	------
Foundries and machine shops:												
January	------	6.1	------	2.6	------	27.3	------	36.0	------	34.5	------	34.5
February	17.7	7.2	10.4	2.9	26.5	27.4	54.6	37.5	57.2	38.6	54.6	37.5
March	22.1	10.6	10.4	2.9	38.1	32.0	70.6	45.5	54.5	39.8	54.5	39.8
April	22.9	11.7	9.7	4.4	34.9	40.0	67.5	56.1	48.1	37.5	48.1	37.5
May	22.0	9.1	9.3	2.9	48.5	57.8	79.8	69.8	44.3	28.7	44.3	28.7
June	15.7	8.4	6.6	3.0	55.0	54.0	77.3	65.4	37.1	23.7	37.1	23.7
July	13.1	8.0	5.1	2.4	53.9	55.4	72.1	65.8	26.6	31.0	26.6	31.0
August	11.9	6.5	5.3	2.6	48.0	44.5	65.2	53.6	30.1	25.9	30.1	25.9
September	13.0	------	5.4	------	46.5	------	64.9	------	29.8	------	29.8	------
October	10.0	------	5.5	------	47.2	------	26.7	------	26.7	------	26.7	------
November	8.0	------	2.7	------	34.9	------	45.6	------	22.5	------	22.5	------
December	6.5	------	3.1	------	36.5	------	46.1	------	24.1	------	24.1	------
Average	14.8	------	6.7	------	42.7	------	64.2	------	36.5	------	36.5	------

TABLE 2.—AVERAGE LABOR TURNOVER RATES IN SPECIFIED INDUSTRIES—Continued

B.—Equivalent Annual Rates—Continued

Industry and month	Separation rates								Accession rate		Net turnover rate	
	Quit		Discharge		Lay-off		Total					
	1930	1931	1930	1931	1930	1931	1930	1931	1930	1931	1930	1931
Furniture:												
January	------	6.5	------	2.9	------	57.0	------	66.4	------	61.7	------	61.7
February	------	7.4	------	4.4	------	50.3	------	62.1	------	71.9	------	62.1
March	------	9.4	------	4.4	------	53.2	------	67.0	------	56.3	------	56.3
April	21.1	11.6	7.8	6.2	53.3	40.3	82.2	58.1	40.6	56.7	40.6	56.7
May	14.8	12.4	6.1	2.9	51.6	67.3	72.5	82.6	33.8	44.8	33.8	44.8
June	17.5	12.9	5.0	5.2	52.7	58.8	75.2	76.9	46.5	59.5	46.5	59.5
July	14.2	9.5	4.7	3.5	53.0	45.1	71.9	58.1	59.9	66.1	59.9	58.1
August	13.9	13.3	4.8	3.6	40.6	35.7	59.3	52.6	62.9	57.6	59.3	52.6
September	13.3	------	5.6	------	40.2	------	59.1	------	86.0	------	59.1	------
October	12.1	------	5.3	------	42.5	------	59.9	------	43.8	------	43.8	------
November	12.0	------	3.5	------	72.0	------	87.5	------	30.2	------	30.2	------
December	8.0	------	4.1	------	78.4	------	90.5	------	27.7	------	27.7	------
Average	14.1	------	5.2	------	53.8	------	73.1	------	47.9	------	47.9	------
Iron and steel:												
January	21.3	8.4	5.3	1.1	14.6	16.0	41.2	25.5	65.0	29.7	41.2	25.5
February	24.9	9.4	4.4	2.0	15.0	13.4	44.3	24.8	66.4	29.2	44.3	24.8
March	22.5	8.4	5.3	1.4	14.4	16.2	42.2	26.0	47.8	23.9	42.2	23.9
April	27.5	10.8	5.1	1.8	16.1	23.1	48.7	35.7	47.2	20.6	47.2	20.6
May	25.1	10.2	4.7	1.8	20.1	25.4	49.9	37.4	38.3	18.5	38.3	18.5
June	22.8	10.5	6.0	1.3	27.4	32.3	56.2	44.1	31.2	14.6	31.2	14.6
July	18.1	11.1	2.8	1.4	27.0	20.5	47.9	33.0	26.7	27.3	26.7	27.3
August	18.9	12.1	3.1	1.2	24.1	31.4	46.1	44.7	22.5	11.1	22.5	11.1
September	17.6	------	2.7	------	26.3	------	46.6	------	28.2	------	28.2	------
October	13.3	------	2.4	------	26.5	------	42.2	------	20.5	------	20.5	------
November	13.5	------	1.6	------	23.7	------	38.8	------	15.9	------	15.9	------
December	9.7	------	1.2	------	26.2	------	37.1	------	16.5	------	16.5	------
Average	19.6	------	3.7	------	21.8	------	45.1	------	35.5	------	35.5	------
Men's clothing:												
April	------	17.0	------	1.5	------	26.8	------	45.3	------	39.2	------	39.2
May	------	16.4	------	1.8	------	17.2	------	35.4	------	36.5	------	35.4
June	------	16.1	------	2.8	------	6.8	------	25.7	------	49.3	------	25.7
July	------	13.2	------	2.7	------	11.4	------	27.3	------	49.0	------	27.3
August	------	15.3	------	1.4	------	17.8	------	34.5	------	35.9	------	34.5
Sawmills:												
January	44.7	11.4	13.9	5.1	53.2	94.4	111.8	110.9	110.5	117.6	110.5	110.9
February	44.2	15.9	17.9	6.5	52.0	59.5	114.1	81.9	118.8	97.0	114.1	81.9
March	45.8	20.5	17.3	6.0	41.7	53.7	104.8	80.2	93.1	83.2	93.1	80.2
April	52.1	21.8	11.2	5.6	60.5	87.3	123.8	114.7	117.6	87.7	117.6	87.7
May	41.3	20.4	15.9	5.9	95.3	75.7	152.5	102.0	118.8	93.8	118.8	93.8
June	35.7	13.8	11.7	4.0	65.1	105.9	112.5	123.7	71.2	78.0	71.2	78.0
July	31.5	15.9	12.6	3.8	82.2	63.0	126.3	82.7	72.6	53.3	72.6	53.3
August	35.4	23.9	10.9	11.2	71.7	70.7	118.0	105.8	79.0	68.4	79.0	68.4
September	36.4	------	11.6	------	93.0	------	141.0	------	84.3	------	84.3	------
October	26.6	------	8.5	------	77.4	------	112.5	------	97.9	------	97.9	------
November	23.5	------	10.1	------	88.0	------	121.6	------	60.4	------	60.4	------
December	16.4	------	10.9	------	87.3	------	114.6	------	53.1	------	53.1	------
Average	36.1	------	12.7	------	72.3	------	121.1	------	89.8	------	89.8	------
Slaughtering and meat packing:												
January	27.3	15.2	10.7	7.2	78.6	51.8	116.6	74.2	117.9	111.8	116.6	74.2
February	30.9	20.3	12.5	8.9	100.4	84.5	143.8	113.7	96.4	65.5	96.4	65.5
March	29.3	16.6	10.1	4.4	88.4	81.0	127.8	102.0	61.6	61.1	61.6	61.1
April	35.4	17.3	9.1	5.7	54.4	61.1	98.9	84.1	103.1	76.8	98.9	76.8
May	33.4	15.9	9.3	5.1	48.7	48.6	91.4	69.6	106.0	81.4	91.4	69.6
June	33.1	16.6	10.7	6.3	55.9	47.5	99.7	70.4	125.8	74.0	99.7	70.4
July	24.5	16.2	9.3	5.8	62.9	65.8	96.7	87.8	81.4	76.0	81.4	76.0
August	24.6	13.9	8.5	4.6	60.5	53.7	93.6	72.2	74.6	59.6	74.6	59.6
September	27.5	------	7.9	------	46.1	------	81.5	------	89.2	------	81.5	------
October	20.0	------	8.6	------	55.0	------	83.6	------	89.7	------	83.6	------
November	13.6	------	6.8	------	58.4	------	78.8	------	88.8	------	78.8	------
December	19.9	------	6.7	------	65.8	------	92.4	------	73.4	------	73.4	------
Average	26.6	------	9.2	------	64.6	------	100.4	------	92.3	------	92.3	------

HOUSING

Building Permits in Principal Cities, August, 1931

THE Bureau of Labor Statistics has received building permit reports from 338 identical cities having a population of 25,000 or over for the months of July and August, 1931, and from 290 identical cities for the months of August, 1930, and August, 1931.

The cost figures as shown in the following tables apply to the cost of the buildings as estimated by the prospective builder on applying for his permit to build. No land costs are included. Only building projects within the corporate limits of the cities enumerated are shown. The States of Massachusetts, New Jersey, New York, Pennsylvania, and Illinois, through their departments of labor, are cooperating with the United States Bureau of Labor Statistics in the collection of these data.

Table 1 shows the estimated cost of new residential buildings, of new nonresidential buildings, of additions, alterations, and repairs, and of total building operations in 338 identical cities of the United States by geographic divisions.

TABLE 1.—ESTIMATED COST OF NEW BUILDINGS, OF ADDITIONS, ALTERATIONS, AND REPAIRS, AND OF TOTAL BUILDING CONSTRUCTION IN 338 IDENTICAL CITIES, AS SHOWN BY PERMITS ISSUED IN JULY AND AUGUST, 1931, BY GEOGRAPHIC DIVISIONS

Geographic division	New residential buildings						New nonresidential buildings (estimated cost)		
	Estimated cost			Families provided for in new dwellings					
	July, 1931	August, 1931	Per cent of change	July, 1931	August, 1931	Per cent of change	July, 1931	August, 1931	Per cent of change
New England	$3,511,885	$3,852,075	+9.7	585	500	−14.5	$7,766,403	$4,318,323	−44.4
Middle Atlantic	13,448,655	20,791,420	+54.6	2,910	3,913	+34.4	22,451,246	22,564,868	+0.5
East North Central	4,935,424	4,914,889	−0.4	929	956	+2.9	6,144,035	27,660,450	+350.2
West North Central	1,934,745	2,332,612	+20.6	496	605	+22.0	2,433,980	2,675,185	+9.9
South Atlantic	2,822,662	2,453,080	−13.1	702	592	−15.7	5,514,514	4,181,403	−24.2
South Central	2,285,041	2,189,734	−4.2	682	628	−7.9	6,772,565	3,677,662	−45.7
Mountain and Pacific	5,107,083	4,762,688	−6.7	1,481	1,434	−3.2	7,208,022	4,243,052	−41.1
Total	34,045,495	41,296,498	+21.3	7,785	8,628	+10.8	58,290,765	69,320,943	+18.9

Geographic division	Additions, alterations, and repairs (estimated cost)			Total construction (estimated cost)			Number of cities
	July, 1931	August, 1931	Per cent of change	July, 1931	August, 1931	Per cent of change	
New England	$2,763,831	$2,024,291	−26.8	$14,042,119	$10,194,689	−27.4	48
Middle Atlantic	7,745,956	5,833,330	−24.7	43,645,857	49,189,618	+12.7	68
East North Central	2,907,365	3,050,246	+4.9	13,986,824	35,625,585	+154.7	93
West North Central	1,141,559	1,030,657	−9.7	5,510,284	6,038,454	+9.6	24
South Atlantic	1,829,288	2,002,349	+9.5	10,166,464	8,636,832	−15.0	36
South Central	909,613	933,692	+2.6	9,967,219	6,801,088	−31.8	33
Mountain and Pacific	2,459,575	1,647,025	−33.0	14,774,680	10,652,765	−27.9	36
Total	19,757,187	16,521,590	−16.4	112,093,447	127,139,031	+13.4	338

Permits were issued during August, 1931, for building operations to cost $127,139,031, which is 13.4 per cent more than the cost of buildings for which permits were issued during July, 1931. Permits issued for new residential buildings during the month of August showed an increase in estimated cost of 21.3 per cent as compared with July. Those issued for new nonresidential buildings showed an increase of 18.9 per cent; those issued for alterations and repairs showed a decrease of 16.4 per cent.

New family dwelling units provided for 8,628 families in buildings for which permits were issued during the month of August. This is 10.8 per cent more than were provided for during July.

Increased indicated expenditures for new residential buildings were shown in the New England States, the Middle Atlantic States, and the West North Central States. Decreases were registered in the other four geographic divisions.

Three geographic divisions showed increases in indicated expenditures for new nonresidential buildings. These increases ranged from five-tenths of 1 per cent in the Middle Atlantic States to 350.2 per cent in the East North Central States. The huge increase in the East Central States was largely due to a new post-office building in the city of Chicago which is to cost nearly $16,000,000. Decreases in the estimated cost of new nonresidential buildings were shown in four geographic divisions.

Projected expenditures for additions, alterations, and repairs increased in three geographic divisions and decreased in four geographic divisions comparing August, 1931, permits with July, 1931, permits. The increases ranged from 2.6 per cent in the South Central States to 9.5 per cent in the South Atlantic States, while the decreases ranged from 9.7 per cent in the West North Central States to 33.0 per cent in the Mountain and Pacific States.

Increases in indicated expenditures for all building construction occurred in the Middle Atlantic States, the East North Central States, and the West North Central States. Decreases in estimated cost of total construction occurred in the New England States, the South Atlantic States, the South Central States, and the Mountain and Pacific States.

Table 2 shows the index numbers of families provided for and the index numbers of indicated expenditures for new residential buildings, new nonresidential buildings, for additions, alterations, and repairs, and for total building operations. These indexes are worked on the chain system with the monthly average of 1929 equaling 100.

The index number of total building operations for the month of August, 1931, stands at 47.3, which is higher than for either June or July, 1931, but lower than for August, 1930. The index number for new nonresidential buildings is higher than for any month since April, and is only surpassed by two months during the current year. The index number for new residential buildings while higher than either June or July, 1931, was considerably lower than for August, 1930. The charts on pages 146 and 147 show in graphic form the information contained in this table.

Table 3 shows the value of contracts let for public buildings by the different agencies of the United States Government during the months of July, 1931, and August, 1931, by geographic divisions.

TABLE 2.—INDEX NUMBERS OF FAMILIES PROVIDED FOR AND OF THE ESTIMATED COST OF BUILDING OPERATIONS AS SHOWN BY PERMITS ISSUED IN PRINCIPAL CITIES OF THE UNITED STATES, JANUARY, 1930, TO AUGUST, 1931, INCLUSIVE

[Monthly average, 1929=100]

Month	Families provided for	Estimated cost of—			
		New residential buildings	New nonresidential buildings	Additions, alterations, and repairs,	Total building operations
1930					
January	34.2	29.4	64.3	55.1	46.1
February	43.0	34.7	51.8	57.5	44.1
March	57.1	47.2	87.1	77.5	66.4
April	62.0	51.0	100.1	81.8	73.8
May	59.6	48.5	90.7	84.5	69.3
June	54.4	45.1	82.5	74.6	63.3
July	49.9	44.1	86.7	77.4	64.8
August	48.7	43.4	67.2	58.6	54.4
September	51.3	44.4	73.8	64.2	58.2
October	58.3	44.9	53.5	58.1	49.7
November	52.9	42.5	54.4	37.8	46.3
December	45.0	37.6	64.3	53.5	50.1
1931					
January	39.1	30.8	43.4	55.5	38.9
February	40.3	30.3	43.8	48.6	37.9
March	53.4	40.7	76.4	58.0	57.1
April	64.6	48.6	73.9	65.2	60.6
May	51.7	39.8	58.5	53.0	48.8
June	43.4	33.4	41.7	56.5	39.4
July	35.8	27.6	53.7	57.8	41.7
August	36.6	33.5	63.9	48.3	47.3

TABLE 3.—CONTRACTS LET FOR PUBLIC BUILDINGS BY DIFFERENT AGENCIES OF THE UNITED STATES GOVERNMENT DURING JULY AND AUGUST, 1931, BY GEOGRAPHIC DIVISIONS

Geographic division	July, 1931	August, 1931
New England	$337,228	$198,805
Middle Atlantic	659,826	6,560,324
East North Central	569,083	17,417,861
West North Central	254,238	472,100
South Atlantic	2,128,246	1,804,819
South Central	3,242,303	1,742,725
Mountain and Pacific	1,984,100	265,627
Total	9,175,024	28,462,261

During August, 1931, contracts were let by the United States Government for building operations throughout the United States to cost $28,462,261. This is by far the greatest amount contracted for during any month of 1931, and is over three times greater than the July contracts. The following Federal agencies issued contracts: United States Capitol Architect; Office of the Quartermaster General, War Department; Bureau of Yards and Docks, Navy Department; Supervising Architect, Treasury Department, and United States Veterans' Bureau.

Table 4 shows the value of contracts awarded by the different State governments for public buildings during the months of July, 1931, and August, 1931, by geographic divisions.

TABLE 4.—CONTRACTS AWARDED FOR PUBLIC BUILDINGS BY THE DIFFERENT STATE GOVERNMENTS DURING JULY AND AUGUST, 1931, BY GEOGRAPHIC DIVISIONS

Geographic division	July, 1931	August, 1931
New England	$3,598,023	$554,883
Middle Atlantic	4,542,542	4,596,483
East North Central	167,011	865,583
West North Central	484,900	467,229
South Atlantic	177,661	390,631
South Central	1,854,684	65,660
Mountain and Pacific	341,372	176,160
Total	11,166,193	7,116,629

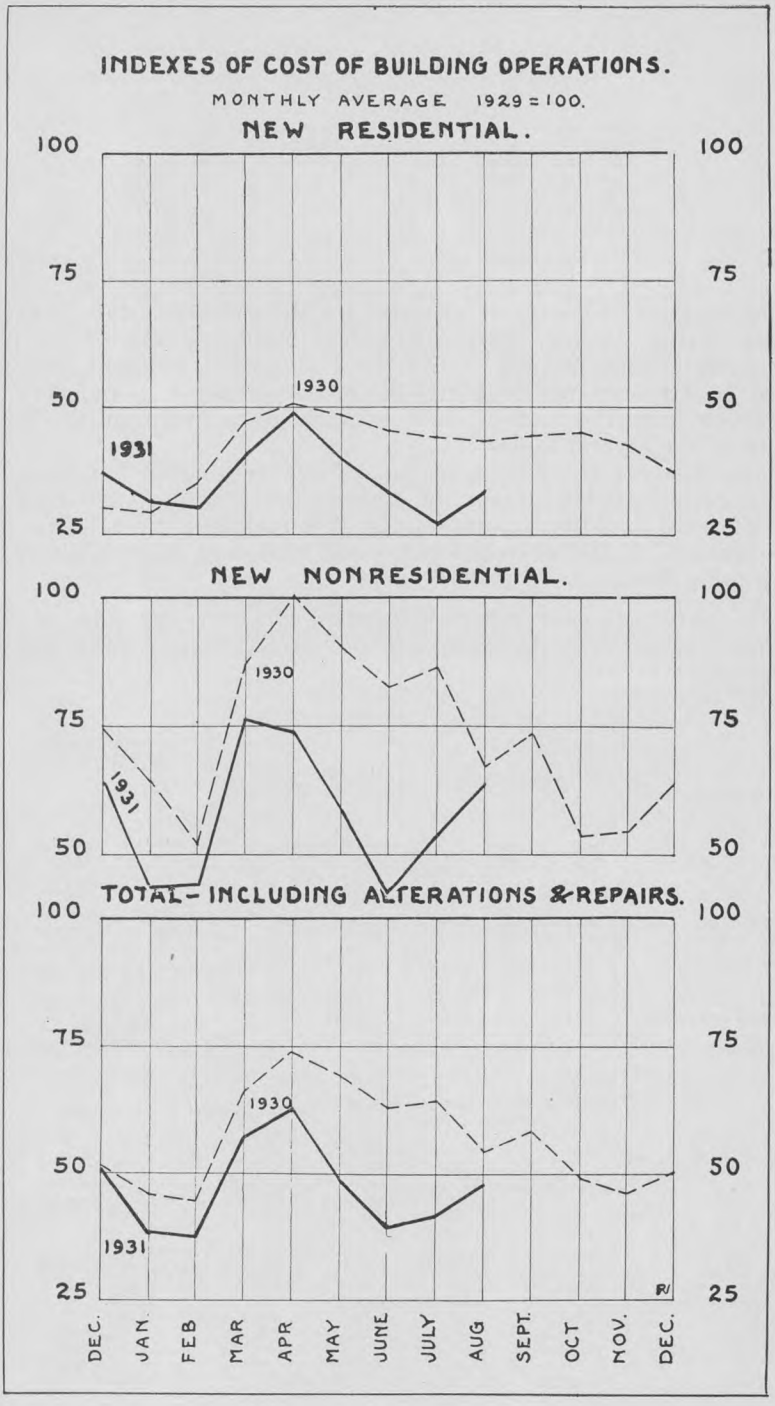
The amount of contracts awarded by the different State governments during August, 1931, for public buildings was $7,116,629. Whenever a contract was let by the Federal Government or by a State government for buildings in cities having a population of 25,000 or over the cost of such building is included in the costs shown in the several tables.

Table 5 shows the estimated cost of new residential buildings, of new nonresidential buildings, of additions, alterations, and repairs, and of total building operations in 290 identical cities having a population of 25,000 or over for August, 1930, and August, 1931, by geographic divisions.

TABLE 5.—ESTIMATED COST OF NEW BUILDINGS, OF ADDITIONS, ALTERATIONS, AND REPAIRS, AND OF TOTAL BUILDING CONSTRUCTION IN 290 IDENTICAL CITIES, AS SHOWN BY PERMITS ISSUED IN AUGUST, 1930, AND AUGUST, 1931, BY GEOGRAPHIC DIVISIONS

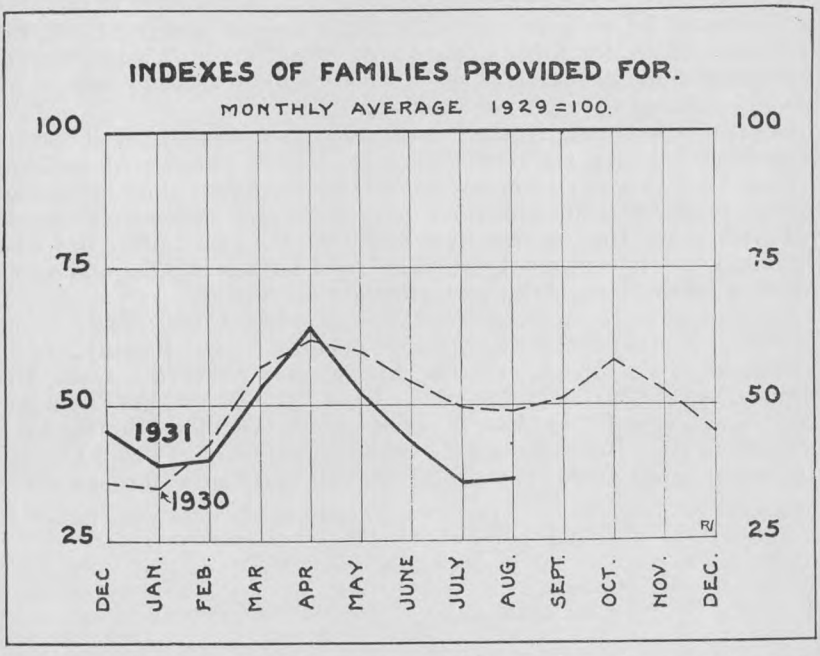
Geographic division	New residential buildings						New nonresidential buildings (estimated cost)		
	Estimated cost			Families provided for in new dwellings					
	August, 1930	August, 1931	Per cent of change	August, 1930	August, 1931	Per cent of change	August, 1930	August, 1931	Per cent of change
New England	$3,384,370	$3,783,125	+11.8	508	485	−4.5	$10,012,340	$4,308,128	−57.0
Middle Atlantic	25,016,224	20,641,770	−17.5	4,060	3,880	−4.4	17,742,470	22,545,923	+27.1
East North Central	8,741,988	4,429,089	−49.3	1,474	859	−41.7	15,668,594	26,639,148	+70.0
West North Central	1,734,127	2,289,812	+32.0	507	595	+17.4	3,356,029	2,663,410	−20.6
South Atlantic	3,209,840	2,384,030	−25.7	656	573	−12.7	4,624,915	4,098,623	−14.4
South Central	3,290,521	2,068,532	−37.1	983	581	−40.9	7,591,023	3,286,305	−56.7
Mountain and Pacific	6,223,983	4,337,416	−30.3	1,966	1,314	−33.2	7,665,036	4,135,672	−46.0
Total	51,601,053	39,933,774	−22.6	10,154	8,287	−18.4	66,660,407	67,677,209	+1.5

Geographic division	Additions, alterations, and repairs (estimated cost)			Total construction (estimated cost)			Number of cities
	August, 1930	August, 1931	Per cent of change	August, 1930	August, 1931	Per cent of change	
New England	$2,073,391	$2,008,521	−3.1	$15,470,101	$10,099,774	−34.7	45
Middle Atlantic	6,671,289	5,795,303	−13.1	49,429,983	48,982,996	−0.9	64
East North Central	3,461,981	2,816,612	−18.6	27,872,563	33,884,849	+21.6	74
West North Central	1,344,485	940,133	−30.1	6,434,641	5,893,355	−8.4	23
South Atlantic	1,840,722	1,919,457	+4.3	9,675,477	8,402,110	−13.2	32
South Central	1,369,845	839,473	−38.7	12,251,389	6,194,310	−49.4	24
Mountain and Pacific	2,650,546	1,572,553	−40.7	16,539,565	10,045,641	−39.3	28
Total	19,412,259	15,892,052	−18.1	137,673,719	123,503,035	−10.3	290



In comparing permits issued in August, 1931, with those issued in August, 1930, in these 290 identical cities, there was a decrease of 10.3 per cent in the estimated cost of total building operations. New residential buildings decreased 22.6 per cent, but new nonresidential buildings increased 1.5 per cent. Indicated expenditures for additions, alterations, and repairs decreased 18.1 per cent. The number of family dwelling units provided in new buildings decreased 18.4 per cent, comparing August, 1931, with August, 1930.

Indicated expenditures for new residential buildings increased in two geographic divisions and decreased in five. Only two of the seven geographic divisions showed increases for new nonresidential



building. The estimated cost of additions, alterations, and repairs were greater in the South Atlantic States during August, 1931, than during August, 1930. In each of the other six geographic divisions there were decreases in estimated expenditures for this class of construction. The East North Central was the only geographic division in which there was an increase in total building expenditures comparing August, 1931, with August, 1930. The number of families provided for in new dwellings decreased in six of the seven geographic divisions.

Table 6 shows the estimated cost of new residential buildings, of new nonresidential buildings and of total building operations, together with the number of families provided for in new buildings in each of the 338 identical cities for July, 1931, and August, 1931.

Reports were received from 48 cities in the New England States; 68 cities in the Middle Atlantic States; 93 cities in the East North Central States; 24 cities in the West North Central States; 36 cities in the South Atlantic States; 33 cities in the South Central States; and 36 cities in the Mountain and Pacific States.

Permits were issued for the following important building projects during the month of August, 1931: In New Haven, Conn., for a dormitory at Yale University to cost $1,300,000; in Boston, Mass., for two school buildings to cost nearly $1,000,000; in Newton, Mass., for a City Hall and memorial to cost nearly $800,000; in Worcester, Mass., for an art museum to cost $500,000; in Auburn, N. Y., for a school building to cost nearly $600,000; in Brooklyn, N. Y., for apartment houses to cost over $3,000,000; in the Borough of Manhattan for apartment houses to cost $3,600,000 and for three office buildings to cost over $7,000,000; in Philadelphia for a church to cost nearly $1,300,000; in Chicago for a school building to cost $1,500,000; in Cincinnati for factory buildings to cost over $2,000,000; in Cleveland for an institutional building to cost nearly $1,000,000; in Racine, Wis., for a hospital to cost $850,000; in Washington for two office buildings to cost $1,265,000; and in San Francisco for school buildings to cost over $700,000.

Contracts were let by the Supervising Architect of the Treasury Department during the month of August for a parcel-post building in New York City to cost nearly $5,500,000; for a post office in Chicago to cost nearly $16,000,000; for a post office and Federal courthouse in Fort Wayne, Ind., to cost over $500,000; for a post office in Cedar Rapids, Iowa, to cost nearly $400,000; and for a post office and courthouse in Little Rock, Ark., to cost $850,000.

No reports were received from New London, Conn.; Bangor and Lewiston, Maine; Pittsfield, Mass.; Concord, N. H.; Kearny, N. J.; Nanticoke, Pa.; East Cleveland, Elyria, and Zanesville, Ohio; Des Moines, Iowa; University City, Mo.; West Palm Beach, Fla.; Spartanburg, S. C.; Lynchburg, Va.; Huntington, W. Va.; Fort Smith, Ark.; Lexington, Ky.; Baton Rouge, La.; Muskogee, Okla.; Corpus Christi, Galveston, and Laredo, Tex.; and Riverside and Santa Barbara, Calif.

TABLE 6.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, JULY AND AUGUST, 1931

New England States

State and city	New residential buildings				New nonresidential buildings (estimated cost)		Total construction, including alterations and repairs (estimated cost)	
	Estimated cost		Families provided for in new dwellings					
	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931
Connecticut:								
Bridgeport	$126,900	$130,800	34	33	$33,163	$7,477	$175,688	$222,123
Bristol	6,000	30,150	1	8	5,275	1,610	11,275	34,090
Greenwich	188,500	93,500	11	8	4,450	7,500	219,100	137,460
Hartford	35,500	83,850	7	23	332,136	364,194	466,634	507,086
Meriden	52,300	17,400	7	4	2,744	2,280	71,029	27,290
New Britain	16,500	16,000	3	4	174,200	1,200	216,586	23,439
New Haven	101,550	1,407,100	15	19	1,506,325	19,200	1,691,030	1,479,229
Norwalk	104,300	70,000	17	14	7,020	5,700	125,670	86,020
Stamford	65,800	82,000	6	12	1,375	14,655	77,875	117,540
Torrington	6,000	2,000	2	1	800	5,435	13,130	9,725
Waterbury	47,500	18,000	12	5	75,615	8,550	150,615	37,450
Maine:								
Portland	63,810	35,800	17	8	16,541	4,200	101,099	67,529
Massachusetts:								
Beverly	107,700	36,800	7	6	4,110	3,150	121,695	51,100
Boston [1]	608,000	417,800	146	71	1,844,789	1,376,410	2,913,124	2,771,117

[1] Applications filed.

TABLE 6.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, JULY AND AUGUST, 1931—Continued

New England States—Continued

State and city	New residential buildings				New nonresidential buildings (estimated cost)		Total construction, including alterations and repairs (estimated cost)	
	Estimated cost		Families provided for in new dwellings					
	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931
Massachusetts—Con.								
Brockton	$47,000	$43,900	6	10	$15,025	$31,769	$72,815	$89,284
Brookline	265,500	82,000	12	9	4,000	12,990	322,905	110,945
Cambridge	111,000	19,000	4	2	939,225	32,360	1,069,990	81,895
Chelsea	17,100	4,000	4	1	100	5,645	23,800	16,654
Chicopee	16,100	9,500	3	4	9,100	1,500	39,250	13,900
Everett	13,800	4,000	5	1	706,250	79,450	743,550	87,250
Fall River	0	9,500	0	2	53,135	228,626	73,905	245,190
Fitchburg	15,750	0	3	0	1,715	75	92,195	1,105
Haverhill	500	6,300	1	4	2,975	39,100	14,440	50,925
Holyoke	8,000	26,500	1	5	6,550	2,150	34,800	38,900
Lawrence	9,500	11,600	2	4	170,042	95,726	204,273	121,576
Lowell	9,000	0	2	0	7,200	123,855	29,695	129,865
Lynn	267,400	48,700	25	11	6,960	3,200	321,305	89,455
Malden	64,400	100,400	13	23	101,820	6,581	196,990	115,631
Medford	102,700	100,900	22	22	15,650	9,725	122,442	163,875
New Bedford	0	5,000	0	1	11,950	7,000	31,125	20,370
Newton	265,500	182,500	31	23	27,225	792,156	329,855	986,096
Quincy	91,000	78,200	17	15	9,500	9,690	120,747	113,188
Revere	13,500	5,000	3	1	5,450	2,450	23,700	12,050
Salem	26,500	32,000	6	6	44,800	43,900	100,815	106,506
Somerville	11,500	19,000	4	6	2,325	7,480	48,490	40,670
Springfield	104,800	102,775	24	30	27,975	70,265	170,234	192,115
Taunton	3,900	8,850	2	2	3,625	4,690	14,212	53,263
Waltham	45,800	14,500	9	4	4,075	1,675	149,868	20,770
Watertown	20,500	37,000	4	8	56,240	13,175	91,780	59,715
Worcester	101,700	119,350	23	19	21,510	651,990	164,515	818,240
New Hampshire:								
Manchester	17,600	15,400	9	6	3,330	81,550	50,332	111,870
Rhode Island:								
Central Falls	0	0	0	0	2,170	650	4,945	2,950
Cranston	79,500	49,000	17	12	8,250	17,185	95,075	81,010
East Providence	54,775	34,800	12	8	5,585	40,979	87,925	92,668
Newport	12,500	33,500	3	7	10,200	3,980	30,860	40,490
Pawtucket	52,700	40,700	6	9	18,910	7,460	82,880	65,080
Providence	130,000	153,000	26	22	1,451,183	63,960	2,713,366	407,910
Woonsocket	2,000	14,000	1	7	3,810	3,775	14,490	42,080
Total	3,511,885	3,852,075	585	500	7,766,403	4,318,323	14,042,119	10,194,689
Per cent of change		+9.7		−14.5		−44.4		−27.4

Middle Atlantic States

New Jersey:								
Atlantic City	$74,000	$2,500	10	1	$18,620	$19,850	$126,698	$65,323
Bayonne	0	0	0	0	158,300	18,390	177,585	31,905
Belleville	50,000	53,150	14	14	3,425	4,250	53,425	64,400
Bloomfield	110,000	50,500	26	11	17,500	330,700	129,100	389,200
Camden	21,500	20,000	11	9	5,800	113,060	39,665	145,880
Clifton	117,300	65,200	21	16	71,350	4,484	191,850	74,734
East Orange	40,000	50,100	5	8	15,700	13,725	97,015	151,264
Elizabeth	44,000	30,000	8	5	1,435,500	8,000	1,484,500	38,000
Garfield	4,500	14,800	1	5	2,050	3,000	23,900	19,900
Hoboken	0	0	0	0	2,000	0	29,950	13,150
Irvington	17,500	55,625	4	12	138,110	11,175	310,860	150,193
Jersey City	36,000	27,000	13	7	99,510	33,935	184,035	96,630
Montclair	79,500	85,500	8	8	14,264	4,675	109,382	109,992
Newark	74,500	57,400	12	11	740,425	147,450	1,066,183	386,197
New Brunswick	0	1,500	0	1	9,160	1,250	20,226	9,432
Orange	21,250	34,500	2	2	28,500	2,525	60,006	55,275
Passaic	24,500	6,500	6	1	10,650	6,100	60,610	39,123
Paterson	47,200	24,200	8	7	17,487	74,750	115,216	140,542
Perth Amboy	5,500	4,800	1	1	4,100	1,650	25,194	12,490
Plainfield	73,500	71,700	10	9	4,900	16,437	120,441	107,185
Trenton	5,750	15,000	2	2	9,445	2,370	163,294	34,015
Union City	0	0	0	0	1,800	1,000	23,360	19,675
West New York	0	0	0	0	1,300	500	9,225	17,725

TABLE 6.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, JULY AND AUGUST, 1931—Continued

Middle Atlantic States—Continued

State and city	New residential buildings				New nonresidential buildings (estimated cost)		Total construction, including alterations and repairs (estimated cost)	
	Estimated cost		Families provided for in new dwellings					
	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931
New York:								
Albany	$119,800	$134,500	14	17	$382,773	$23,848	$605,962	$248,084
Amsterdam	12,000	9,500	2	2	11,030	36,000	26,680	47,000
Auburn	29,500	12,000	2	4	8,535	585,981	42,715	602,641
Binghamton	51,200	62,500	9	15	14,122	5,295	103,803	119,821
Buffalo	292,850	159,000	102	51	561,967	254,958	933,817	495,377
Elmira	16,500	22,800	5	5	10,330	4,680	39,025	40,261
Jamestown	7,700	10,000	2	3	22,475	335,075	46,687	380,692
Kingston	24,000	16,000	5	4	7,517	12,707	59,382	36,667
Lockport	0	9,000	0	3	7,800	1,275	11,350	16,930
Mount Vernon	123,500	127,500	11	12	44,700	66,150	224,020	210,115
Newburgh	28,500	6,000	5	1	42,400	6,800	74,550	22,950
New Rochelle	205,380	252,620	11	15	3,955	3,600	269,305	270,450
New York—								
The Bronx [1]	976,900	3,450,350	267	780	1,613,990	608,000	2,957,051	4,364,390
Brooklyn [1]	2,934,700	4,044,400	631	863	1,403,630	919,125	5,251,515	5,727,900
Manhattan [1]	500,000	4,620,000	42	385	506,300	14,726,466	3,353,921	20,682,236
Queens [1]	3,317,050	4,408,738	736	1,141	443,454	996,875	4,151,323	6,499,350
Richmond [1]	437,980	174,000	128	42	112,555	26,550	996,818	339,564
Niagara Falls	69,200	59,950	15	12	12,990	5,721	121,147	80.462
Poughkeepsie	44,200	24,000	6	4	250	17,300	74,750	45,400
Rochester	87,250	46,000	16	11	1,737,915	296,110	1,959,449	394,027
Schenectady	18,800	34,800	3	7	17,250	16,950	103,525	68,200
Syracuse	91,400	159,500	17	31	187,775	16,280	541,015	201,980
Troy	79,850	57,500	11	13	3,700	35,450	108,410	171,301
Utica	31,750	48,000	6	8	18,530	4,225	75,455	62,175
Watertown	12,000	10,000	2	3	1,335	2,700	26,114	46,427
White Plains	524,337	258,000	144	29	5,800	205,200	588,937	486,830
Yonkers	994,775	521,300	187	64	90,020	31,474	1,147,825	599,174
Pennsylvania:								
Allentown	1,200	42,200	1	6	2,900	116,350	41,200	201,650
Altoona	0	6,400	0	3	53,997	8,719	63,729	30,062
Bethlehem	11,000	20,000	2	7	51,850	700	72,250	42,700
Butler	0	0	0	0	0	0	0	4,300
Chester	2,500	22,300	1	8	6,275	1,800	11,675	24,300
Easton	5,800	0	1	0	11,675	2,785	20,261	4,008
Erie	43,800	90,650	15	25	340,997	48,395	407,642	175,422
Harrisburg	55,500	30,000	10	6	15,350	57,096	140,625	96,181
Hazleton	0	24,187	0	6	7,485	14,097	14,484	54,155
Johnstown	3,000	8,100	1	2	1,950	227,380	12,630	253,005
Lancaster	24,000	0	6	0	1,100	6,500	55,285	17,035
McKeesport	27,500	8,450	7	2	2,225	2,500	39,185	21,385
New Castle	13,200	8,500	2	2	2,670	1,915	17,120	11,405
Norristown	57,400	0	13	0	52,725	13,021	117,861	34,761
Philadelphia	598,500	609,300	80	88	10,452,500	1,401,735	11,504,555	2,378,694
Pittsburgh	625,300	352,450	209	76	1,191,170	327,385	1,994,202	876,351
Reading	38,000	72,700	5	11	50,800	11,050	131,044	105,392
Scranton	23,433	39,850	7	9	67,935	105,070	195,297	173,965
Wilkes-Barre	5,800	7,900	2	3	6,950	40,885	137,996	74,865
Wilkinsburg	0	8,500	0	1	15,595	4,050	22,791	17,120
Williamsport	600	0	1	0	1,703	104,259	22,046	117,098
York	34,500	32,000	6	3	30,400	5,105	107,708	43,130
Total	13,448,655	20,791,420	2,910	3,913	22,451,246	22,564,868	43,645,857	49,189,618
Per cent of change		+54.6		+34.4		+0.5		+12

East North Central States

Illinois:								
Alton	$4,700	$38,390	2	5	$4,275	$1,283	$50,941	$55,417
Aurora	26,800	19,100	4	4	19,299	86,429	72,479	112,909
Belleville	20,800	67,000	8	15	1,900	1,700	23,600	69,500
Berwyn	51,600	14,000	8	2	2,305	51,625	310,055	74,487

[1] Applications filed.

TABLE 6.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, JULY AND AUGUST, 1931—Continued

East North Central States—Continued

State and city	New residential buildings				New nonresidential buildings (estimated cost)		Total construction, including alterations and repairs (estimated cost)	
	Estimated cost		Families provided for in new dwellings					
	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931
Illinois—Continued.								
Bloomington	$0	$0	0	0	$1,000	$79,000	$5,000	$79,000
Chicago	521,150	769,380	65	72	956,975	18,468,222	1,985,512	19,778,162
Cicero	35,800	29,400	4	4	606,400	4,400	646,185	35,785
Danville	7,400	10,300	3	1	1,500	1,700	10,500	18,913
Decatur	9,000	21,000	2	5	2,525	4,075	17,625	30,075
East St. Louis	47,000	18,400	19	14	7,779	96,960	63,679	115,360
Elgin	10,790	24,250	2	6	4,500	6,075	34,109	53,521
Evanston	26,000	38,000	2	3	1,252,750	5,250	1,327,750	115,750
Granite City	0	0	0	0	0	0	300	0
Joliet	15,000	18,800	1	3	13,325	26,450	48,296	65,433
Maywood	0	0	0	0	165,935	1,500	170,232	5,820
Moline	37,150	21,100	8	6	14,370	2,170	69,841	25,978
Oak Park	37,000	14,000	3	1	41,085	151,640	84,835	166,778
Peoria	98,400	70,500	20	15	4,325	17,175	114,815	107,225
Quincy	8,500	500	4	1	1,780	2,915	12,280	3,915
Rockford	25,000	20,000	7	5	7,590	5,165	46,645	164,755
Rock Island	9,500	31,400	3	9	1,247	3,787	25,286	44,748
Springfield	65,300	32,500	15	7	15,490	12,625	112,588	144,719
Waukegan	24,000	37,000	5	7	12,150	2,750	49,300	50,150
Indiana:								
Anderson	12,685	13,000	4	5	2,068	785	28,610	25,890
East Chicago	9,000	0	2	0	54,498	0	69,298	30,274
Elkhart	9,000	11,600	1	2	1,335	10,785	17,404	33,633
Evansville	37,600	46,800	12	10	133,895	25,635	192,619	88,645
Fort Wayne	79,750	78,800	18	14	9,390	532,663	108,977	630,360
Gary	9,600	28,300	4	11	5,255	7,695	30,225	40,320
Hammond	0	21,500	0	7	422,319	4,159	429,019	39,084
Indianapolis	208,800	187,500	46	41	132,531	831,965	415,458	1,073,903
Kokomo	0	0	0	0	2,297	3,347	6,131	9,478
Lafayette	6,800	14,500	2	5	5,044	3,500	14,044	22,500
Marion	1,500	3,000	1	1	780	2,000	4,505	6,565
Michigan City	20,300	12,200	4	4	10,275	1,275	31,573	13,725
Mishawaka	2,100	5,200	2	2	1,975	770	4,995	8,410
Muncie	3,900	11,600	5	3	900	24,125	11,585	42,516
Richmond	6,000	2,500	3	1	8,500	400	21,200	2,900
South Bend	8,750	16,500	2	3	2,600	721,852	34,495	752,407
Terre Haute	3,000	0	1	0	21,605	1,332	51,355	9,299
Michigan:								
Ann Arbor	20,200	48,400	3	6	26,594	5,210	68,627	87,426
Battle Creek	47,800	2,000	7	1	8,220	116,930	58,758	121,505
Bay City	13,000	23,900	3	7	40,800	3,150	61,415	47,310
Dearborn	70,900	63,500	17	13	34,978	13,020	107,528	79,945
Detroit	700,794	648,650	138	133	661,534	191,784	1,567,187	1,133,492
Flint	60,685	137,257	13	14	68,536	84,856	157,866	247,263
Grand Rapids	30,050	42,000	9	14	26,500	26,820	73,375	97,490
Hamtramck	0	0	0	0	6,700	20,500	11,260	28,300
Highland Park	8,500	0	1	0	23,000	1,700	36,425	11,745
Jackson	10,600	6,375	2	3	13,310	20,350	34,700	34,602
Kalamazoo	23,500	22,500	5	4	1,820	1,352	41,524	46,156
Lansing	11,500	3,000	2	1	99,125	13,365	119,875	90,290
Muskegon	7,800	1,900	3	1	1,417	4,550	17,420	8,844
Pontiac	0	6,000	0	4	10,025	8,995	15,290	16,920
Port Huron	9,000	8,500	2	3	750	1,950	9,750	10,800
Saginaw	13,900	41,100	4	14	5,183	32,964	30,863	89,164
Wyandotte	19,800	30,700	5	7	2,580	2,075	26,680	34,875
Ohio:								
Akron	87,250	20,550	16	7	44,399	29,845	158,864	202,970
Ashtabula	0	7,000	0	4	1,085	5,565	7,085	35,865
Canton	13,000	5,500	3	1	21,160	80,750	50,075	92,640
Cincinnati	737,750	606,500	120	99	111,540	2,305,395	974,105	3,156,800
Cleveland	253,500	250,000	51	52	46,200	1,078,550	605,250	1,606,450
Cleveland Heights	78,000	132,000	10	19	17,965	70,890	98,640	203,890
Columbus	188,200	118,500	20	21	157,550	28,500	438,150	168,750
Dayton	58,000	43,000	13	11	26,674	40,743	118,757	120,573
Hamilton	13,450	8,900	2	1	27,720	18,455	44,180	48,670
Lakewood	29,000	16,500	2	4	3,295	69,065	35,920	87,235
Lima	0	0	0	0	750	275	9,070	12,450
Lorain	11,500	3,500	3	1	25,885	250	42,605	5,365

TABLE 6.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, JULY AND AUGUST, 1931—Continued

East North Central States—Continued

State and city	New residential buildings				New nonresidential buildings (estimated cost)		Total construction, including alterations and repairs (estimated cost)	
	Estimated cost		Families provided for in new dwellings					
	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931
Ohio—Continued.								
Mansfield	$32,900	$35,000	7	6	$15,285	$2,370	$53,261	$39,157
Marion	0	0	0	0	175	325	748	375
Massillon	4,000	0	1	0	7,825	100	12,925	1,350
Middletown	0	2,000	0	1	875	8,700	2,925	16,950
Newark	4,900	4,600	1	2	0	9,965	4,900	14,765
Norwood	0	0	0	0	9,995	15,600	12,470	17,365
Portsmouth	0	0	0	0	5,515	3,138	7,580	4,923
Springfield	7,500	7,600	2	4	1,500	10,695	64,575	21,085
Steubenville	35,400	11,000	8	3	650	600	39,350	18,850
Toledo	28,900	25,800	7	5	74,608	13,590	137,898	55,200
Warren	4,450	2,175	1	1	21,435	32,285	34,705	40,900
Youngstown	40,000	18,850	11	7	11,720	12,790	144,968	101,895
Wisconsin:								
Appleton	36,700	28,700	8	8	3,575	208,575	45,900	241,325
Eau Claire	10,900	31,500	3	8	6,900	6,100	38,975	48,151
Fond du Lac	23,700	13,100	3	4	900	700	27,650	16,730
Green Bay	39,000	15,300	9	5	45,600	7,775	96,689	33,925
Kenosha	6,400	44,700	1	5	1,500	200,985	19,580	255,920
Madison	55,400	64,800	11	13	132,735	11,845	206,447	99,781
Milwaukee	435,200	381,100	74	108	311,575	254,114	1,037,005	792,777
Oshkosh	12,280	37,252	5	11	3,700	1,920	21,215	43,677
Racine	46,800	66,200	8	8	5,625	992,385	56,032	1,064,500
Sheboygan	26,500	30,800	5	7	8,170	341,030	68,901	406,870
Superior	14,000	0	4	0	1,225	995	19,070	2,565
West Allis	53,140	48,600	14	11	3,880	40,830	58,465	210,455
Total	4,935,424	4,914,889	929	956	6,144,035	27,660,450	13,986,824	35,625,585
Per cent of change		−0.4		+2.9		+350.2		+154.7

West North Central States

Iowa:								
Burlington	$6,075	$7,000	2		$1,100	$32,800	$9,925	$42,170
Cedar Rapids	64,400	53,500	18	19	103,435	386,736	212,797	459,150
Council Bluffs	5,000	8,000	2	3	28,000	2,350	37,300	15,150
Davenport	54,105	34,875	14	8	35,856	5,205	129,391	71,636
Dubuque	17,400	15,650	6	5	5,667	33,665	34,192	69,300
Ottumwa	38,250	12,500	8	6	28,500	0	76,700	14,200
Sioux City	83,300	59,800	32	21	29,700	140,575	116,425	209,035
Waterloo	30,900	191,350	13	12	8,540	16,335	44,590	248,960
Kansas:								
Hutchinson	7,500	8,400	3	5	40,995	3,650	50,855	14,640
Kansas City	55,550	24,750	19	13	6,470	22,550	70,206	58,180
Topeka	36,950	60,500	7	8	5,280	102,300	49,170	169,233
Wichita	72,750	83,275	15	29	170,945	427,347	255,720	524,552
Minnesota:								
Duluth	47,200	46,800	11	8	11,815	6,950	98,399	80,074
Minneapolis	392,025	438,640	86	115	539,265	295,545	1,108,510	856,950
St. Paul	106,140	231,060	22	45	224,659	47,100	438,426	382,688
Missouri:								
Joplin	5,000	0	8	0	7,050	108,600	20,301	113,250
Kansas City	100,000	131,000	32	41	60,700	258,000	307,200	553,600
St. Joseph	3,750	8,500	2	4	3,675	2,930	12,745	49,355
St. Louis	485,600	552,700	120	157	414,850	173,950	1,245,649	935,193
Springfield	9,400	17,300	5	8	51,895	46,090	65,995	72,815
Nebraska:								
Lincoln	56,500	53,825	11	14	195,575	478,132	258,285	569,887
Omaha	155,500	172,950	31	48	362,733	60,540	599,403	291,090
North Dakota:								
Fargo	38,700	42,800	9	10	1,775	11,775	95,225	145,099
South Dakota:								
Sioux Falls	62,750	77,437	20	25	95,500	12,060	172,875	92,247
Total	1,934,745	2,332,612	496	605	2,433,980	2,675,185	5,510,284	6,038,454
Per cent of change		+20.6		+22.0		+9.9		+9.6

TABLE 6.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, JULY AND AUGUST, 1931—Continued

South Atlantic States

State and city	New residential buildings				New nonresidential buildings (estimated cost)		Total construction, including alterations and repairs (estimated cost)	
	Estimated cost		Families provided for in new dwellings					
	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931
Delaware:								
Wilmington	$58,500	$60,000	7	12	$530,576	$4,623	$616,310	$107,731
District of Columbia:								
Washington	1,570,375	1,395,700	363	293	550,440	3,027,958	2,574,715	5,086,581
Florida:								
Jacksonville	27,350	35,850	13	13	135,275	10,235	206,430	101,695
Miami	64,450	28,750	12	15	55,328	28,440	169,192	110,824
Orlando	1,500	3,650	5	5	350	725	15,360	18,390
St. Petersburg	20,800	11,900	9	5	3,400	6,100	30,600	43,000
Tampa	4,600	4,500	4	3	50,205	34,660	115,644	63,533
Georgia:								
Atlanta	68,750	104,050	22	40	278,775	162,468	437,467	347,402
Augusta	24,987	18,450	9	9	4,378	46,204	37,603	78,019
Columbus	9,250	1,900	7	2	0	5,900	23,775	30,030
Macon	10,100	650	7	3	6,275	30,250	22,275	40,225
Savannah	29,300	25,300	8	27	275	1,220	68,283	50,256
Maryland:								
Baltimore	260,000	177,000	45	36	3,278,400	98,600	4,157,600	742,880
Cumberland	15,600	3,900	6	1	43,485	150	62,865	11,600
Hagerstown	11,500	1,900	3	1	1,875	2,145	20,145	20,220
North Carolina:								
Asheville	1,500	2,300	2	2	6,345	385	17,915	44,710
Charlotte	55,450	108,300	16	16	13,220	19,090	80,510	141,467
Durham	20,500	24,100	5	7	22,200	2,450	63,325	37,675
Greensboro	15,000	13,500	3	2	362	6,940	24,565	38,296
High Point	33,350	46,900	10	11	40,700	27,390	90,450	76,190
Raleigh	20,740	12,000	5	1	39,770	46,955	64,635	113,725
Wilmington	11,500	80,500	4	5	15,500	36,600	37,200	150,700
Winston-Salem	16,650	5,950	5	4	60,745	5,400	97,500	22,860
South Carolina:								
Charleston	4,900	17,000	3	5	57,350	0	93,025	37,160
Columbia	33,680	36,100	11	15	970	7,350	61,612	58,377
Greenville	54,300	34,000	11	6	3,600	700	62,035	36,805
Virginia:								
Newport News	6,800	9,000	3	3	9,755	1,533	30,090	25,450
Norfolk	166,500	89,550	41	22	21,630	47,370	228,582	162,368
Petersburg	8,280	4,000	2	2	7,350	300	18,130	6,500
Portsmouth	10,100	18,250	3	5	1,115	775	21,435	27,784
Richmond	62,050	19,000	20	4	117,075	341,671	292,421	460,847
Roanoke	32,750	16,500	5	4	6,360	115,046	41,775	151,511
West Virginia:								
Charleston	7,000	21,000	2	8	129,500	2,700	155,139	44,075
Clarksburg	20,800	0	13	0	190	800	22,390	26,425
Parkersburg	4,250	6,500	2	2	1,140	7,710	11,727	26,417
Wheeling	59,500	15,130	16	3	20,600	50,560	93,739	95,104
Total	2,822,662	2,453,080	702	592	5,514,514	4,181,403	10,166,464	8,636,832
Per cent of change		−13.1		−15.7		−24.2		−15.0

South Central States

Alabama:								
Birmingham	$34,060	$10,110	12	6	$64,450	$35,832	$144,080	$84,377
Mobile	50,700	8,250	9	6	11,400	52,817	92,008	79,479
Montgomery	69,400	40,100	30	14	3,060	5,460	92,859	68,450
Arkansas:								
Little Rock	105,500	16,360	7	7	60,376	852,115	180,757	887,254
Kentucky:								
Ashland	0	0	0	0	1,300	1,750	6,550	2,900
Covington	17,500	9,900	4	3	14,765	7,775	117,575	25,390
Louisville	72,800	54,500	16	9	1,723,115	36,825	1,844,665	158,800
Newport	0	0	0	0	400	7,200	2,150	7,700
Paducah	10,250	0	3	0	6,200	750	16,450	750

TABLE 6.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, JULY AND AUGUST, 1931—Continued

South Central States—Continued

State and city	New residential buildings				New nonresidential buildings (estimated cost)		Total construction, including alterations and repairs (estimated cost)	
	Estimated cost		Families provided for in new dwellings					
	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931
Louisiana:								
Monroe	$2,515	$8,700	7	3	$3,730	$2,445	$15,786	$21,545
New Orleans	88,542	143,853	39	43	92,435	295,856	249,499	585,862
Shreveport	18,100	20,102	14	12	18,697	39,086	60,456	85,647
Oklahoma:								
Enid	10,700	2,925	5	2	200	4,005	15,150	8,355
Oklahoma City	303,500	443,200	51	47	1,398,615	580,750	1,732,240	1,041,625
Okmulgee	0	0	0	0	0	150	0	150
Tulsa	49,200	40,700	17	9	392,785	400,582	512,499	458,138
Tennessee:								
Chattanooga	31,900	37,900	14	12	59,846	12,200	116,108	87,772
Johnson City	3,500	4,450	1	3	1,500	100	5,800	5,450
Knoxville	16,200	20,880	6	5	90,324	40,986	112,374	67,902
Memphis	31,330	36,400	14	18	41,730	215,930	174,070	342,780
Nashville	109,900	126,100	43	45	74,900	32,120	209,267	233,829
Texas:								
Amarillo	63,700	24,950	20	8	61,202	328,460	131,656	363,386
Austin	98,373	109,617	53	42	94,058	17,186	218,685	189,848
Beaumont	900	12,500	1	8	40,130	1,355	71,347	38,552
Dallas	132,159	178,175	63	80	47,357	16,219	267,718	279,352
El Paso	47,880	56,732	16	19	10,270	4,965	69,300	80,110
Fort Worth	117,100	59,250	40	30	1,248,896	300,075	1,413,962	399,788
Houston	588,375	594,550	116	143	728,831	142,450	1,337,526	763,970
Port Arthur	4,600	0	4	0	255,880	3,145	272,055	13,539
San Angelo	30,200	3,435	4	3	119,500	6,025	150,525	15,265
San Antonio	149,824	102,678	66	45	45,636	228,195	236,239	360,483
Waco	21,333	20,667	6	5	6,667	4,453	33,760	29,060
Wichita Falls	5,000	2,750	1	1	54,310	400	64,103	13,580
Total	2,285,041	2,189,734	682	628	6,772,565	3,677,662	9,967,219	6,801,088
Per cent of change		−4.2		−7.9		−45.7		−31.8

Mountain and Pacific States

Arizona:								
Phoenix	$71,750	$48,790	18	10	$42,610	$11,045	$123,965	$80,328
Tucson	52,300	22,073	15	8	4,855	3,570	67,349	33,580
California:								
Alameda	12,500	0	3	0	2,780	12,930	25,356	27,410
Alhambra	82,250	51,700	23	19	24,925	600	110,950	62,425
Bakersfield	9,500	22,900	2	5	1,793	1,750	30,178	36,865
Berkeley	102,688	84,600	16	18	29,897	88,939	158,173	199,354
Fresno	52,438	21,000	10	6	5,950	1,835	73,018	59,046
Glendale	209,175	185,450	56	44	15,160	67,555	234,475	264,155
Long Beach	155,350	195,050	67	70	164,525	36,100	373,675	289,525
Los Angeles	1,471,533	1,595,222	488	563	1,511,191	1,033,834	3,751,072	3,069,847
Oakland	208,115	193,110	53	56	96,890	73,108	467,335	357,897
Pasadena	95,950	101,050	24	14	45,198	47,201	282,296	195,263
Sacramento	128,650	126,475	25	33	102,670	110,950	274,486	272,874
San Bernardino	27,034	43,500	7	9	2,150	2,425	34,859	48,190
San Diego	179,685	280,795	41	64	104,371	135,800	357,815	474,547
San Francisco	725,797	694,800	226	180	901,469	1,132,531	1,801,147	1,979,750
San Jose	50,730	92,060	16	20	6,605	13,255	122,410	128,490
Santa Ana	42,520	10,000	8	3	15,564	0	58,084	24,038
Santa Monica	72,200	51,660	23	19	7,290	32,485	86,973	90,280
Stockton	29,200	68,661	8	17	8,765	15,520	62,315	90,921
Vallejo	9,150	12,400	3	3	61,420	570	78,685	17,195
Colorado:								
Colorado Springs	18,200	8,400	7	3	1,915	650	23,105	14,835
Denver	223,400	211,500	85	51	66,000	444,750	371,500	755,015
Pueblo	9,900	5,075	6	3	2,240	2,585	18,190	32,435
Montana:								
Butte	0	0	0	0	5,990	2,305	8,057	3,655
Great Falls	28,100	22,700	7	5	5,485	254,625	39,535	289,080

TABLE 6.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, JULY AND AUGUST, 1931—Continued

Mountain and Pacific States—Continued

State and city	New residential buildings				New nonresidential buildings (estimated cost)		Total construction including alterations and repairs (estimated cost)	
	Estimated cost		Families provided for in new dwellings					
	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931	July, 1931	August, 1931
New Mexico:								
Albuquerque	$198,750	$40,662	12	13	$75,750	$1,750	$286,795	$52,909
Oregon:								
Portland	238,500	187,500	40	49	373,535	78,510	952,615	353,755
Salem	38,068	19,400	7	8	2,365	815	44,840	28,262
Utah:								
Ogden	22,500	11,300	7	6	2,000	6,550	30,900	30,650
Salt Lake City	129,500	73,800	57	31	92,124	27,225	300,263	152,690
Washington:								
Bellingham	9,800	5,800	4	2	10,200	3,000	26,559	18,570
Everett	4,000	0	1	0	715	1,570	11,160	17,980
Seattle	277,500	210,605	82	74	2,981,910	585,924	3,477,065	974,304
Spokane	71,350	42,650	18	15	280,385	5,735	383,985	62,340
Tacoma	49,000	22,000	16	13	151,330	5,055	225,495	64,305
Total	5,107,083	4,762,688	1,481	1,434	7,208,022	4,243,052	14,774,680	10,652,765
Per cent of change		−6.7		−3.2		−41.1		−27.9

Hawaii

Honolulu	$180,960	$291,147	86	57	$52,232	$38,076	$262,204	$352,398
Per cent of change		+60.9		−33.7		−27.1		+34.4

Attitudes Toward Home Ownership and Tenancy

A STUDY of attitudes toward home ownership and tenancy, made with a view to finding an explanation of the apartment-house movement, is published in the Journal of Land and Public Utility Economics (Chicago) for August, 1931, as part of an article entitled "Apartment-house increases and attitudes toward home ownership," by Coleman Woodbury. The locality of the study was the city of Chicago and its metropolitan region, but some information is also given for adjacent towns in Illinois. The social classes covered by the survey included the so-called white-collar workers, as represented by the employees of the People's Gas & Light & Coke Co. of Chicago; well-to-do professional and business men, members of the City Club of Chicago; the lower-paid professional classes, found among the faculty and staff members of Northwestern University, including full-time teachers and members of the faculties of the professional schools; organized skilled and semiskilled workers, as represented by the secretaries and delegates of trade-unions in Chicago and in towns outside of Chicago; and a miscellaneous class of workers, mostly unorganized, living on the west side of Chicago.

The information presented in the article is based on 1,882 questionnaires obtained in the latter part of 1930, 53.9 per cent of the total being furnished by owners and 46.1 per cent by renters.

Twenty-five per cent were from employees of the gas company, of whom 46.2 per cent were owners and 53.8 per cent renters; 23.6 per cent from city club members, of whom 60.4 per cent were owners and 39.6 per cent renters; 16 per cent from organized labor, of whom 61.8 per cent were owners and 38.2 per cent renters; 15.6 per cent from Northwestern University faculty and staff members, of whom 39.9 per cent were owners and 60.1 per cent renters; and 19.8 per cent from the "miscellaneous" workers, of whom 60.3 per cent were owners and 39.7 per cent renters.

The following table shows the distribution of owners and renters by income groups:

TABLE 1.—DISTRIBUTION OF OWNERS AND RENTERS BY INCOME GROUPS

Income group	Owners		Renters		Total	
	Number	Per cent of income group	Number	Per cent of income group	Number	Per cent of total
Under $1,800	215	54.6	179	45.4	394	20.9
$1,800 to $3,000	330	53.1	291	46.9	621	33.0
$3,000 to $5,000	118	41.3	168	58.7	286	15.2
$5,000 to $7,500	95	48.7	100	51.3	195	10.4
$7,500 to $10,000	74	64.9	40	35.1	114	6.1
Over $10,000	169	68.1	79	31.9	248	13.2
Unclassified	13	54.2	11	45.8	24	1.3
Total	1,014	53.9	868	46.1	1,882	100.0

Of the home renters, 60.3 per cent of those replying to the questionnaire lived in apartment houses or in apartment hotels (6.6 per cent in the latter), 23.8 per cent in 2-family houses, and 15.4 per cent in single-family houses. Of the home owners, 6.6 per cent lived in multifamily dwellings, 13.9 per cent in 2-family houses, and 78.8 per cent in single-family houses.

Seventy-eight per cent of the renters and 29 per cent of the owners had lived less than five years at their present addresses. The mobility of residence of the renters appeared to be characteristic of renters as a whole and not of apartment dwellers alone, as 70.1 per cent of a sample of renters of single-family houses had lived at their present address less than five years as compared with a corresponding percentage for apartment renters of 79.8 per cent and for renters of 2-family houses of 77.8 per cent.

The absence of children was found more frequently among renters than among home owners, 44.7 per cent of the renters covered by the study having no children as compared with 22 per cent of the home owners. Of the home owners who had children, 54.4 per cent had two or more children while only 29.7 per cent of the renters had families of this size, although it is noted that renters living in single-family and 2-family houses had almost as many children as the owners living in these types of dwellings. Only 29.1 per cent of the renters of single-family houses were childless and 45.5 per cent had two or more children; of the renters of 2-family houses, 26.6 per cent had no children and 43.5 per cent had two or more children.

Reasons for Home Ownership or Tenancy

Among the owners, the welfare of the children was most frequently given as the chief consideration leading to home ownership, followed, in the order named, by safety of investment; forced saving; amenities (defined in the article as "working around house, making gardens, etc."); protection and security; lack of play space in apartment districts; and noise in apartment districts. The prevalence of these reasons for owning a home had about the same rank in the different occupational and income classifications. When the reasons for ownership were considered by income groups, welfare of children again held first place, in the number of times mentioned, in every income class, and amenities and protection and security ranked fairly constantly in about fourth or fifth place, except that protection and security did not occur among the leading seven reasons given in the higher income groups. Investment considerations held high rank in the lower income groups, but were superseded in the higher income groups by reasons which stressed the "undesirable physical characteristics of most apartment-house districts." When the considerations entering into home ownership were classified under three heads—(1) financial reasons, (2) family-welfare reasons, and (3) negative, antiapartment, reasons—it was found that there were 1,016 citations in the first classification, 1,226 in the second, and 321 in the third.

The following reasons for renting instead of owning a dwelling were those which received most frequent mention:

1. Renting is cheaper than owning.
2. Financing costs of owning too high.
3. Tax burden on owners too heavy.
4. Investment in house too fixed.
5. Renting increases freedom.
6. Installment payments on house are dangerous.
7. Owned house a poor investment.
8. Costs incidental to purchase of house too high.
9. Land value too high.
10. Renting increases bargaining power.

The reasons ranking from 4 to 8 are said to have been given with about the same frequency. When the various reasons were classified by the frequency of their occurrence in the different income groups, the report states that the first reasons cited in every income group, except that of persons receiving under $1,800, was that "renting is cheaper than owning." In the income group under $1,800 the cost of financing the purchase of a house was the chief consideration. Financing costs of ownership came second in the income group from $1,800 to $3,000 and fourth in the group receiving from $3,000 to $5,000, but was well down the list in the higher income groups. Expense and investment reasons made up 75 per cent of the total number of reasons given, 48 per cent being expense reasons and 27 per cent investment reasons. The lowest percentage of expense and investment reasons occurred among the city club members and the highest percentage among the unskilled laborers. The ease with which renters can adjust the size of their living quarters to changes in the size of the family was emphasized by those with incomes of over $10,000.

As it was felt that childhood environment might be a determining factor in the owning or renting of a home—that persons who were reared in homes owned by their parents, and whose friends came from similar homes, might be expected to look upon home ownership as a natural thing—the questionnaire included an inquiry as to whether most of the childhood of the person reporting was spent in an owned or rented home. The replies, however, according to the article, "give practically no support to this hypothetical influence of childhood environment as indicated by home ownership of parents."

The questionnaire also contained a query as to whether either owners or renters desired to change their status as owners or renters, the particular significance of this question being to ascertain if owners were to any considerable degree becoming dissatisfied and were looking with more favor on living in apartments. Of 913 owners out of a total of 1,698 persons answering these questions, only 14 per cent wished to sell and to become renters, while 53 per cent of the 785 renters answering the query on this point wished to become owners. The replies, therefore, the article points out, "clearly indicate that the increase in multifamily houses in the Chicago region is not caused by a wholesale change of attitude toward the relative advantages of home ownership and home tenancy."

The article summarizes in the following four statements the data obtained in the questionnaire which seemed to shed the most light on the trend toward apartment-house living:

(1) Among the quasi-stable classes of persons in the Chicago region, the cost and economy considerations seem clearly to be the major group of forces contributing to the multifamily-house movement.

(2) The relative merits of home ownership as an investment play a secondary but still a prominent part in the problem of owning or renting.

(3) Considerations both of cost and of investment strength of ownership decrease in importance in the higher income classes.

(4) Nonpecuniary considerations do not seem to be of as great weight as the cost and investment reasons and, in so far as they operate, those which have been segregated seem to oppose the increase in apartment building.

The writer emphasizes that in attempting to appraise the information presented, the following points should be kept in mind: The findings of the study relate solely to conditions in and about Chicago, a city which has had a very rapid recent growth; the information was obtained during one of the deepest business and industrial depressions in the history of the country; the sample "does not give sufficient weight to the lower-income groups"; the means of securing the list of persons to whom the questionnaire was sent "unavoidably weighted the sample with the more stable and 'settled' classes of the population"; many persons may question the degree of accuracy with which most people can analyze their reasons for any line of action; and that the opinions regarding home ownership and tenancy should be treated as opinions and not as established facts.

For example, the belief expressed by many persons that home ownership is a very desirable form of investment is subject to several interesting interpretations but in itself the belief certainly does not establish the excellence of home ownership as an investment. In other words, the frequency with which any opinion is reported does not establish the statement as the truth.

Rent Control in Great Britain

IN 1930 the Minister of Health appointed a committee to inquire into the working of the rent-control acts, and to report as to whether any modifications or amendments should be made to them. The committee held a number of public hearings, examined witnesses, received written evidence from a number of important bodies and from private persons with special experience, and generally sought to secure the views of those best qualified to have opinions of value on the subject. Recently it has issued the results of its inquiries in a report which reviews briefly the course of rent control in Great Britain, surveys the present situation, and gives some recommendations as to desirable changes.[1]

Review of Rent Control

EVEN before the war there had been a noticeable shortage of houses for the working classes, and upon the stoppage of building which followed the outbreak of hostilities, this increased and extended to other classes of housing. Naturally there was a tendency to increase rents, and in 1915 an act was passed, effective for the duration of the war and for six months afterward, which was intended to prevent any increase of rent, the eviction of tenants, any increase in the rate of interest on mortgages, and the foreclosure of mortgages. This applied only to houses with rents not exceeding a fixed maximum which varied, according to location, from £26 to £35 ($126.53 to $170.33) [2] a year. Since then a series of acts, 10 in all, have been passed, dealing with the restriction of rent and mortgage interest.

At present the act of 1920 is still in force as to its principal provisions. Under its terms the field of restriction was extended to cover houses renting for from £78 to £105 ($379.59 to $510.98) according to location, but increases in rent were permitted on all houses up to 40 per cent above the 1914 figure, while mortgage interest might be raised by 1 per cent, subject to a maximum rate of 6½ per cent. In 1923 this was modified by an act providing for decontrol of all houses occupied by their owners in July, 1923, all houses which after that date came into actual possession of their landlords (except as a result of ejection following nonpayment of rent), and houses in regard to which landlords and tenants had made certain specified leases or agreements. Moreover, it was provided that rent control should not apply to new houses, i. e., those built after April, 1919, to premises used solely for business purposes, or to furnished lodgings.

Under the rent-control acts, the landlord of a controlled house can not recover possession except by an order of court, and before making such an order the court must be satisfied on all grounds that it would be reasonable to permit the eviction. The grounds which would be considered reasonable are carefully specified.

Statistics as to Present Situation

THE change in value of controlled houses made by the act of 1920 extended the protection of the acts to a much wider field than that

[1] Great Britain. Ministry of Health. Interdepartmental committee on the rent restrictions acts. Report, London, 1931. (Cmd. 3911.)
[2] Conversions into United States currency on basis of £=$4.8665.

of working-class housing. The earliest act applied, it was estimated, to about 85 per cent of the dwelling houses in Great Britain, while the acts of 1919 and 1920 extended control to houses of higher rents until about 98 per cent of all the houses in the country were brought within the limits. Since then numerous houses have been decontrolled under the act of 1923, and the committee tried to learn how extensive this movement had been and what had been its effect upon rents.

Satisfactory information in regard to these matters was difficult to secure, but so far as working-class housing is concerned, the Ministry of Labor had comprehensive data.

> The evidence which we received from them, based on extensive surveys, shows that about one-eighth of the working-class houses have become decontrolled under the provisions of the act of 1923, and that the decontrolled rents of such houses range on an average from 85 to 90 per cent above the pre-war rent (inclusive of rates) as compared with the 50 per cent increase in the rent (inclusive of rates) of a controlled house. (This 50 per cent is composed of the permitted increase of 40 per cent plus an addition for increased rates.) Thus, for example, on the Ministry of Labor's figures, a house the pre-war inclusive rent of which was 6s. [$1.46] would have an average controlled inclusive rent of 9s. [$2.19]; on decontrol the rent would rise on an average to 11s. 3d. [$2.74].

More of the higher-priced than of the working-class houses were decontrolled, owing to the facts that the more expensive were much more generally occupied by their owners, that they are more generally let on lease or agreement, and that the relative increase in their numbers since the close of the war is much greater than in the case of the cheaper working-class houses. Studying all the data available, the committee concluded that about one-eighth of the cheapest houses, between one-third and one-fourth of the more expensive working-class houses, and almost all of the most expensive houses covered have been decontrolled. The relative increase in these various types of houses has varied widely.

> Since the armistice there have been built in England and Wales over 1,500,000 new houses, of which nearly 600,000 have been built by the local authorities, and may be regarded as available for letting and as forming practically the only supply of new houses for the less well-paid classes of the population, for whom occupying ownership is rare and in most cases economically impracticable. The number of pre-war houses available for this class may be roughly estimated at * * * a number between 5,000,000 and 6,000,000. Consequently it may be said that the supply of accommodation available for the poorer section of the population appears to have been increased by about 10 per cent. On the other hand, the supply of houses for the classes who can afford to buy has been increased by about 1,000,000, which is an increase of about 50 per cent.

Recommendations

SURVEYING the progress which has been made since the war, the committee feels that the supply of the more expensive housing originally covered by the rent acts is probably already sufficient to meet the country's needs and that the supply of the less expensive middle-class housing is being brought into closer relation to the demand, but that there is still an acute shortage in the supply of the cheaper working-class housing, and that it is impossible to judge when this will be made up. The private builder, it is pointed out, can not afford to build for renting; he must sell his finished product in order to get capital for new enterprises. Therefore the more poorly paid worker, who can not buy his dwelling, must depend mainly on

the provision of housing by the local authorities, who, with the aid of the Government subsidy, build for renting. (The subsidy is available only for houses built to rent; it is open to the private builder, but in general he finds the terms inconvenient, and continues to build for sale.) The local authorities have been stimulated to new efforts by the act of 1930, but it is impossible to judge how long it will take to catch up with arrears. Therefore the committee recommends that housing should be classed in three groups and that the question of control should be decided by the relation of supply to demand in each.

The first group should include all houses having a ratable value equivalent to a weekly rent of from 30s. to 36s. ($7.30 to $8.76) in the county of London, of from 28s. to 34s. ($6.81 to $8.27) in the metropolitan police district, and of from 22s. to 27s. ($5.35 to $6.57) in the rest of England and Wales. For this group the committee feels that there is no further need of control, and accordingly recommends that it should be decontrolled at once.

The second group should include houses having a ratable value equivalent to a weekly rental of from 14s. to 17s. ($3.41 to $4.14) in the county of London, of from 13s. to 16s. ($3.16 to $3.89) in the metropolitan police district, and of from 9s. 6d. to 11s. 6d. ($2.31 to $2.80) in the rest of England and Wales. In this group supply is overtaking demand, and the committee thinks that it may well be left under the provisions of the act of 1923, with the houses becoming decontrolled as rapidly as they pass into the actual possession of the owner.

In the third group, consisting of all houses of a ratable value below the above figures, the committee feels that there is still an acute shortage, and that until this is made up, the public interest demands that they should be kept under full control. The committee therefore recommends that the decontrolling provisions of the act of 1923 shall not apply to houses in this group.

Mortgages and mortgage interest, it is thought, should be controlled so long as the mortgaged properties are controlled. In the case of houses in the first group, mortgage control should be retained for six months after the decontrol of the properties.

No recommendations are made as to changes in the rent increases permitted under the present acts, but some suggestions are made as to informing tenants as to their rights in the matter of repairs.

In a minority report one member of the committee dissents from the findings of the majority, holding that it was a mistake to have released any working-class housing from control, and that up to a value which he places for Scotland at an annual rental of £60 ($292) all housing, new or old, should be subject to rent restrictions.

WAGES AND HOURS OF LABOR

Hours and Earnings in Bituminous-Coal Mining, 1929 and 1931

THIS report presents average hours and earnings of employees in the various occupations in bituminous-coal mining in the United States, as of 1931, in comparison with like figures for 1929. The figures are the results of a study of the industry in 1931 by the Bureau of Labor Statistics, details of which will be published later in bulletin form.

The study showed that in this industry, from 1929 to 1931, the number of days worked per half month by *miners and loaders* fell from 9.1 to 7.0; the average hourly earnings based on time at face fell from 68.7 to 59.9 cents, while those based on time in mine fell from 62.6 to 54.6 cents; the daily earnings declined from $5.50 to $4.82; and the average earnings in a half monthly pay period dropped from $49.85 to $33.82. For all employees in all occupations in the industry *other than miners and loaders*, the average days worked per half month decreased from 10.2 in 1929 to 8.3 in 1931; hours actually worked dropped from 87.0 in 1929 to 69.8 in 1931; earnings per half month decreased from $52.57 in 1929 to $41.58 in 1931; and average earnings per hour decreased from 60.5 cents in 1929 to 59.5 cents in 1931.

Scope of Study

THE averages were computed from data covering hours and earnings of individual employees in 469 mines for a half-monthly pay period in the first quarter of 1931. The wage data used in compiling this report, except for a few companies which made transcripts of their records for the bureau, were taken directly from the pay rolls and other records of the companies by agents of the bureau for representative mines in Alabama, Colorado, Illinois, Indiana, Kansas, Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

The 1931 figures are for a total of 137,788 employees, or 27 per cent of the 502,993 mine workers reported by the United States Bureau of Mines engaged in the mining of bituminous coal in 1929; in the 11 States covered by this study they represent 30 per cent of the 454,815 reported by the Bureau of Mines. Of the 137,788 included in the report, 124,309, or 90 per cent, were underground or "inside" wage earners. The remaining 13,479 were known as surface or "outside" employees, though a comparatively few of them may at times work underground.

The three basic occupations in bituminous-coal mining are those of hand or pick miners, machine miners (and their helpers), and hand loaders. They represent approximately 64 per cent of all wage earners in the industry and are usually paid a rate per ton of 2,000 pounds, run of mine (that is, of coal as mined, including "slack").

Hand or pick miners undercut coal with a pick, cutting some distance back from the "face" or upright surface of the seam, separate

the coal from the seam with pick or explosives, and shovel the coal from the floor of the mine into mine cars. Machine miners undercut the seam of coal with electric or compressed-air coal-mining machines. After the seam of coal has been undercut, hand loaders usually blast the coal from the seam or bed, and with hand shovels load it into mine cars or onto conveyors, which empty into the cars. Shot-firers do the blasting in some mines. Contract loaders, machine loaders, and gang miners are of much less importance in numbers, the three occupations combined comprising only 1 per cent of the 137,788 employees covered in the 1931 study.

As the miners and loaders are usually paid at tonnage instead of time rates, very few companies keep a daily time record for such employees. It was necessary, therefore, in order to ascertain the hours worked by the miners and loaders, to arrange with mine officials to keep a special day-by-day record of the hours of each employee for a half-month pay period. Employees in all occupations inside and outside the mines, except miners and loaders, are usually paid at time rates, that is, rates per hour or day, and in a few instances per week or month. In some localities, where the mining and loading is done by mechanical means, the miners and loaders also are paid time rates. The hours worked by time workers and the earnings of both time workers and tonnage workers are of regular record.

Trend of Hours and Earnings, 1922 to 1931

TABLE 1 shows for all States combined, for 1922, 1924, 1926, 1929, and 1931, the average number of days and hours worked and average earnings made in a half month by *miners and loaders* as a group. Miners as here used include gang, hand or pick, and machine miners and helpers, and loaders include contract, hand, and machine loaders; this group actually mines the coal and loads it into mine cars. The number of mines and of wage earners by years calls for no comment except that the drop in number of mines from 535 to 469 and in number of employees from 99,405 to 90,063, from 1929 to 1931, was due to the fact that many of the mines covered in 1929 were not in operation in 1931.

The average hours and average earnings per hour presented are based on (1) time at the face, including time for lunch, and (2) total time in mine, including time for lunch and travel time inside the mine from its opening to the face, or place of work, and return. The term "face" means the perpendicular surface of the seam of coal on which the men are working, or, broadly, their place of work in the mine. The time for lunch was usually about 30 minutes, except in some mechanized mines where it was estimated that the men consumed 15 minutes for lunch while waiting for mine cars. The round-trip travel time in the different mines ranged from 10 minutes to one hour and 40 minutes. The weighted average time of travel in mine from opening to place of work in mine and return for the 90,063 miners and loaders in the 469 mines was 42 minutes per day, or 21 minutes each way.

The average number of starts by miners (days or parts of days worked in the half month) dropped from 8.9 in 1922 to 8.3 in 1924, increased to 9.5 in 1926, decreased to 9.1 in 1929 and to 7 in 1931.

The decrease from 1929 to 1931 represented 23.1 per cent. The average actual hours worked in one half month, based on time at the face including whatever time was taken for lunch, decreased from 68.1 in 1922 to 64.6 in 1924, increased to 75.4 in 1926, then dropped to 72.6 in 1929 and to 56.5 in 1931. The decrease from 1929 to 1931 represented 22.2 per cent. The average hours per start, based on time at the face including lunch, showed a gradual increase from 7.7 in 1922 to 8.1 in 1931. The average hours per start based on total time in mine did not show a corresponding increase, from 1929 to 1931, because, as shown in the table, the nonproductive average round-trip travel time was one-tenth of an hour (or 6 minutes) less in 1931 than in 1929.

The miners and loaders' average earnings per hour, based on time at the face, have shown a steady decrease since 1922, the decline from 1929 to 1931 amounting to 12.8 per cent. Except for an increase in 1926 the same is true of the average earnings per half month; from 1929 to 1931 the decrease in semimonthly earnings represented 32.1 per cent. The earnings per start (day) have also shown a decrease in each period as compared with the previous period; since 1922 they have fallen from $7.03 to $4.82, and during the 2-year period, 1929 to 1931, there has been a decrease of 12.4 per cent, or approximately the same as in earnings per hour. The decreases in both earnings per hour and earnings per start are far less than the percentage of decrease in earnings in the half month, showing that the miners and loaders mined and loaded more coal on days when there was opportunity for work in 1931 than in 1929.

TABLE 1.—AVERAGE NUMBER OF STARTS (DAYS) AND AVERAGE HOURS AND EARNINGS OF **MINERS AND LOADERS,** 1922, 1924, 1926, 1929, AND 1931

Year	Number of mines	Number of wage earners	Average number of starts (days) worked in half month	Average hours				Average earnings			
				In half month based on—		Per start (day) based on—		Per hour based on—		In half month	Per start (day)
				Time at face including lunch	Time in mine	Time at face including lunch	Time in mine	Time at face including lunch	Time in mine		
1922 [1]	200	33,360	8.9	68.1	73.7	7.7	8.3	$0.915	$0.845	$62.30	$7.03
1924	599	91,167	8.3	64.6	70.0	7.8	8.5	.843	.777	54.44	6.60
1926	556	96,010	9.5	75.4	82.2	7.9	8.6	.817	.749	61.61	6.46
1929	535	99,405	9.1	72.6	79.6	8.0	8.8	.687	.626	49.85	5.50
1931	469	90,063	7.0	56.5	61.9	8.1	8.8	.599	.546	33.82	4.82

[1] Includes data for Utah, Washington, and Wyoming.

Table 2 shows for all employees, both inside and outside the mines, in all occupations in the industry *other than miners and loaders*, average days, hours, and earnings in a half month for the same years shown in Table 1. The group of employees in Table 2 are time workers—that is, they are paid rates per hour or day in most cases, though a few are paid weekly or monthly rates. The averages are based on hours actually worked.

Except from 1929 to 1931, the variations in the averages from year to year for this group were much the same as those for miners

and loaders, which were explained in connection with Table 1. The average number of starts decreased from 10.2 in 1929 to 8.3 in 1931; or 18.6 per cent as compared with 23.1 per cent for miners and loaders, while the hours worked by all employees in the half month fell 19.8 per cent as against 22.2 for miners and loaders. The average half-month earnings of all employees showed a smaller decrease than those of miners from 1929 to 1931—20.9 per cent as against 32.1 per cent. The decrease in earnings per hour from 1929 to 1931, represented only 1.7 per cent, as compared with 12.8 per cent for miners and loaders, and the decrease in earnings per start during the same period represented 2.9 per cent as against 12.4 per cent for miners and loaders, indicating only slight changes in the time rates.

TABLE 2.—AVERAGE NUMBER OF STARTS (DAYS) AND AVERAGE HOURS AND EARNINGS OF ALL EMPLOYEES **OTHER THAN MINERS AND LOADERS**, 1922, 1924, 1926, 1929, AND 1931

Year	Number of mines	Number of wage earners	Average number of starts (days) worked in half month	Average actual hours—		Average earnings—		
				Worked in half month	Per start (day)	Made in half month	Per start (day)	Per hour
1922 [1]	200	19,388	[2] 10.1	87.8	[2] 8.7	$66.17	[2] $6.55	$0.753
1924	599	49,552	[3] 9.8	83.1	[3] 8.5	57.81	[3] 5.92	.696
1926	556	52,145	10.7	91.7	8.6	60.87	5.70	.664
1929	535	52,806	10.2	87.0	8.6	52.57	5.17	.605
1931	469	47,725	8.3	69.8	8.4	41.58	5.02	.595

[1] Includes data for Utah, Washington, and Wyoming.
[2] Not including data for 327 employees whose starts were not reported.
[3] Not including data for 636 employees whose starts were not reported.

Average Hours and Earnings, 1929 and 1931, by Occupation and State

TABLE 3 shows for each State and for all States combined, for 1929 and 1931, average number of days and hours worked, and average earnings made in a half month by employees in each of the seven occupations named below. They make up the group of miners and loaders shown in Table 1.

The 1931 figures in Table 3, cover 65,172 hand loaders, 16,963 hand or pick miners, 5,554 machine miners (cutters), 599 machine miners' helpers, 405 contract loaders, 992 machine loaders, and 378 gang miners, or a total of 90,063 employees.

In six of the seven occupations there was a marked decrease from 1929 to 1931 in all averages except hours per day based on time at face including lunch (which remained the same for four occupations, showed a slight increase in two, and in one an increase of 0.3 hour) and in average earnings per hour and per day for machine loaders, which increased approximately 4 per cent. In the comparatively unimportant occupation of gang miners there was a slight increase in the average number of days and hours worked in a half month, but the average earnings decreased, as in the other occupations. For the whole group of hand loaders there was a decrease from 1929 to 1931, of 21.3 per cent in average number of days, of 20.7 per cent in average hours based on time at face including lunch, of 13.4 per cent in average earnings per hour based on time at face, of 31.4

per cent in average earnings per half month, and of 12.8 per cent in average earnings per day. For the whole group of hand or pick miners there was during the same period a decrease of 27.7 per cent in average number of days in the half month, of 27.7 per cent in average hours per half month based on time at face, of 12.5 per cent in average earnings per hour based on time at face, of 36.7 per cent in average earnings per half month, and of 12.4 per cent in average earnings per day.

TABLE 3.—AVERAGE NUMBER OF STARTS (DAYS) AND AVERAGE HOURS AND EARNINGS OF **MINERS AND LOADERS,** 1929 AND 1931, IN SPECIFIED STATES

Occupation and State	Year	Number of mines	Number of wage earners	Average number of starts (days) worked in half month	Average hours—				Average earnings			
					In half month based on—		Per start (day) based on—		Per hour based on—		Made in half month	Per start (day)
					Time at face including lunch	Time in mine	Time at face including lunch	Time in mine	Time at face including lunch	Time in mine		
Loaders, contract:												
Alabama	1929	12	208	9.0	79.0	87.9	8.8	9.8	$0.720	$0.647	$56.86	$6.34
	1931	11	257	6.9	60.1	66.8	8.7	9.6	.582	.524	35.02	5.05
Kentucky	1929	22	221	10.2	85.8	93.3	8.4	9.1	.875	.805	75.05	7.36
	1931	17	80	7.4	58.5	64.2	7.9	8.7	1.001	.911	58.50	7.93
Pennsylvania	1929	2	8	12.1	103.3	115.1	8.5	9.5	1.337	1.199	138.05	11.39
	1931	1	3	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Tennessee	1929	1	25	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	1931	1	8	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Virginia	1929	7	18	11.1	82.0	87.3	7.4	7.9	1.077	1.012	88.34	7.95
	1931	4	15	11.0	88.3	93.8	8.0	8.5	.678	.638	59.87	5.44
West Virginia	1929	21	104	10.7	93.2	101.5	8.7	9.4	1.085	.997	101.14	9.42
	1931	8	42	7.5	72.0	77.0	9.5	10.2	1.121	1.049	80.74	10.70
Total	1929	65	584	9.7	82.9	90.8	8.6	9.4	.869	.793	72.07	7.45
	1931	42	405	7.3	62.2	68.5	8.6	9.4	.744	.676	46.27	6.37
Loaders, hand:												
Alabama	1929	19	3,137	8.2	72.4	79.5	8.8	9.7	.388	.353	28.08	3.43
	1931	17	3,028	6.1	51.2	56.7	8.4	9.3	.376	.340	19.28	3.17
Colorado	1929	13	769	6.8	53.8	57.6	7.9	8.4	.736	.688	39.62	5.78
	1931	14	1,240	7.5	60.3	65.2	8.0	8.7	.731	.676	44.04	5.86
Illinois	1929	30	9,671	9.1	74.8	81.0	8.2	8.9	.857	.791	64.12	7.03
	1931	30	7,265	5.6	46.2	50.3	8.2	8.9	.871	.800	40.22	7.12
Indiana	1929	21	2,634	8.2	62.4	66.5	7.6	8.1	.922	.865	57.52	7.02
	1931	10	1,411	5.2	39.7	42.9	7.6	8.2	.939	.869	37.30	7.15
Kansas	1929	2	80	4.0	33.6	35.8	8.4	9.0	.719	.676	24.19	6.07
	1931	1	89	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Kentucky	1929	64	9,080	8.2	65.5	71.2	8.0	8.7	.595	.547	38.98	4.77
	1931	64	8,698	5.7	45.1	49.6	8.0	8.8	.538	.489	24.26	4.28
Ohio	1929	41	6,948	8.9	69.2	75.1	7.8	8.5	.592	.545	40.93	4.61
	1931	32	6,195	7.1	55.9	61.3	7.9	8.6	.482	.440	26.95	3.79
Pennsylvania	1929	120	18,439	9.3	75.1	83.2	8.1	9.0	.601	.542	45.14	4.88
	1931	108	19,287	7.8	62.0	68.4	7.9	8.7	.534	.485	33.15	4.23
Tennessee	1929	9	488	5.9	45.1	48.1	7.6	8.1	.464	.436	20.96	3.54
	1931	11	747	6.0	50.0	53.9	8.3	8.9	.362	.335	18.06	2.99
Virginia	1929	22	2,391	9.7	72.1	77.2	7.4	8.0	.549	.513	39.62	4.09
	1931	16	2,300	8.9	67.2	73.2	7.6	8.3	.494	.454	33.23	3.75
West Virginia	1929	134	17,216	9.0	69.1	76.2	7.7	8.4	.653	.591	45.06	4.99
	1931	110	14,912	7.4	60.3	66.1	8.2	9.0	.533	.486	32.16	4.36
Total	1929	475	70,853	8.9	70.6	77.3	7.9	8.7	.648	.592	45.78	5.15
	1931	413	65,172	7.0	56.0	61.5	8.0	8.8	.561	.511	31.40	4.49
Miners, hand or pick:												
Alabama	1929	8	1,120	8.5	76.4	84.6	9.0	9.9	.531	.480	40.58	4.76
	1931	7	942	5.6	49.1	54.2	8.8	9.7	.463	.419	22.71	4.06
Colorado	1929	15	1,150	6.8	50.5	55.6	7.4	8.1	.853	.775	43.08	6.30
	1931	10	959	4.2	35.0	38.4	8.3	9.1	.664	.607	23.27	5.52

[1] Data included in total.

TABLE 3.—AVERAGE NUMBER OF STARTS (DAYS) AND AVERAGE HOURS AND EARNINGS OF **MINERS AND LOADERS,** 1929 AND 1931, IN SPECIFIED STATES—Continued

Occupation and State	Year	Number of mines	Number of wage earners	Average number of starts (days) worked in half month	Average hours— In half month based on— Time at face including lunch	In half month based on— Time in mine	Per start (day) based on— Time at face including lunch	Per start (day) based on— Time in mine	Average earnings Per hour based on— Time at face including lunch	Per hour based on— Time in mine	Made in half month	Per start (day)
Miners, hand or pick—Continued.												
Illinois	1929	14	2,488	11.3	88.5	96.7	7.9	8.6	$0.716	$0.656	$63.40	$5.63
	1931	13	2,523	6.9	54.2	58.2	7.9	8.4	.705	.656	38.17	5.53
Indiana	1929	12	1,543	9.0	61.5	65.4	6.9	7.3	.796	.749	48.95	5.47
	1931	7	805	5.6	32.5	34.9	5.8	6.2	.856	.798	27.84	4.95
Kansas	1929	7	1,252	7.3	50.9	55.9	7.0	7.7	.711	.647	36.16	4.97
	1931	7	1,486	5.1	39.9	41.9	7.9	8.3	.615	.586	24.54	4.84
Kentucky	1929	19	731	9.8	82.8	89.6	8.4	9.1	.623	.575	51.57	5.26
	1931	25	1,082	6.4	53.6	59.5	8.4	9.3	.541	.488	29.00	4.54
Ohio	1929	1	3	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Pennsylvania	1929	107	9,123	9.9	80.6	90.3	8.1	9.1	.657	.586	52.91	5.35
	1931	79	7,264	7.7	61.3	68.2	7.9	8.8	.560	.503	34.30	4.44
Tennessee	1929	10	559	8.0	61.5	65.3	7.7	8.1	.500	.471	30.79	3.84
	1931	10	436	7.7	64.8	68.6	8.4	8.9	.368	.348	23.87	3.11
West Virginia	1929	37	1,697	9.0	68.6	74.9	7.6	8.3	.669	.612	45.83	5.10
	1931	43	1,466	7.1	56.3	61.6	8.0	8.7	.606	.554	34.12	4.83
Total	1929	230	19,666	9.4	74.7	82.5	7.9	8.8	.673	.609	50.29	5.33
	1931	201	16,963	6.8	54.0	59.2	7.9	8.7	.589	.537	31.83	4.67
Miners, machine (cutters):												
Alabama	1929	15	129	9.3	87.1	95.1	9.3	10.2	.742	.680	64.65	6.92
	1931	17	131	6.7	63.9	70.0	9.5	10.4	.880	.803	56.24	8.37
Colorado	1929	10	52	6.1	48.8	52.0	8.0	8.5	1.172	1.099	57.17	9.32
	1931	14	122	8.4	68.5	73.5	8.1	8.7	1.111	1.034	76.02	9.05
Illinois	1929	32	1,122	9.9	79.2	85.8	8.0	8.6	1.139	1.052	90.29	9.10
	1931	32	1,084	6.0	49.8	53.9	8.3	9.0	1.167	1.079	58.16	9.66
Indiana	1929	22	356	9.4	71.4	75.9	7.6	8.1	1.295	1.217	92.40	9.86
	1931	14	227	7.0	55.3	58.8	7.9	8.4	1.200	1.129	66.37	9.49
Kansas	1929	2	8	4.5	39.6	42.1	8.8	9.4	.823	.773	32.56	7.24
	1931	1	9	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Kentucky	1929	60	669	9.2	80.5	86.9	8.8	9.5	.963	.892	77.48	8.43
	1931	63	684	6.3	54.3	58.9	8.6	9.4	.873	.805	47.38	7.53
Ohio	1929	41	663	10.2	84.2	91.1	8.2	8.9	.876	.810	73.78	7.21
	1931	32	608	8.3	66.0	72.3	8.0	8.7	.704	.642	46.45	5.62
Pennsylvania	1929	117	1,568	10.3	89.6	98.8	8.7	9.6	.978	.887	87.67	8.50
	1931	104	1,497	8.7	73.0	80.0	8.4	9.2	.918	.837	67.01	7.67
Tennessee	1929	9	28	6.6	54.8	57.6	8.3	8.8	.651	.619	35.65	5.42
	1931	11	38	7.4	68.6	75.9	9.3	10.3	.539	.487	36.96	5.00
Virginia	1929	21	128	11.1	99.3	104.7	8.9	9.4	.787	.746	78.14	7.02
	1931	16	152	9.2	85.9	92.0	9.4	10.0	.733	.684	62.92	6.85
West Virginia	1929	127	1,214	10.2	92.1	100.1	9.0	9.8	1.062	.976	97.77	9.54
	1931	107	1,002	8.4	76.3	82.8	9.1	9.9	.964	.887	73.49	8.78
Total	1929	456	5,937	10.0	85.0	92.4	8.5	9.3	1.018	.936	86.52	8.68
	1931	411	5,554	7.7	65.2	71.0	8.5	9.3	.940	.864	61.32	8.01
Miners, machine (cutters), helpers:												
Alabama	1929	13	101	8.1	75.4	83.1	9.3	10.2	.528	.480	39.84	4.90
	1931	15	109	6.7	61.9	68.5	9.3	10.3	.555	.501	34.34	5.16
Colorado	1929	7	18	7.4	56.6	60.6	7.7	8.2	.981	.916	55.54	7.52
	1931	5	18	6.1	50.0	56.1	8.2	9.2	.866	.773	43.35	7.09
Kansas	1929	2	9	4.3	38.1	40.4	8.8	9.3	.810	.762	30.81	7.11
	1931	1	10	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Kentucky	1929	36	269	8.6	76.0	81.8	8.9	9.6	.715	.665	54.35	6.35
	1931	36	233	6.7	59.0	64.2	8.8	9.6	.614	.563	36.20	5.40
Ohio	1931	1	5	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Pennsylvania	1929	29	183	10.4	93.8	102.2	9.0	9.8	.822	.754	77.05	7.39
	1931	15	75	6.1	55.7	61.6	9.1	10.1	.818	.740	45.57	7.48
Tennessee	1929	8	38	4.5	38.4	40.6	8.5	9.0	.410	.388	15.76	3.48
	1931	9	36	6.5	61.3	65.7	9.4	10.1	.382	.357	23.43	3.60

[1] Data included in total.

TABLE 3.—AVERAGE NUMBER OF STARTS (DAYS) AND AVERAGE HOURS AND EARNINGS OF **MINERS AND LOADERS,** 1929 AND 1931, IN SPECIFIED STATES—Continued

Occupation and State	Year	Number of mines	Number of wage earners	Average number of starts (days) worked in half month	Average hours— In half month based on— Time at face including lunch	In half month based on— Time in mine	Per start (day) based on— Time at face including lunch	Per start (day) based on— Time in mine	Average earnings Per hour based on— Time at face including lunch	Per hour based on— Time in mine	Made in half month	Per start (day)
Miners, machine (cutters), helpers—Continued.												
Virginia	1929	12	32	10.7	95.5	100.5	9.0	9.4	$0.492	$0.468	$46.98	$4.41
	1931	10	49	8.5	89.8	94.9	10.6	11.2	.555	.525	49.84	5.87
West Virginia	1929	29	115	10.3	97.7	104.8	9.5	10.2	.683	.637	66.75	6.47
	1931	20	64	7.4	76.4	82.5	10.3	11.1	.583	.539	44.53	6.00
Total	1929	136	765	9.0	81.5	88.1	9.0	9.8	.703	.650	57.25	6.34
	1931	112	599	6.7	62.8	68.3	9.3	10.1	.608	.559	38.17	5.66
Loaders, machine:												
Alabama	1929	1	28	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	1931	2	74	4.8	43.6	48.4	9.1	10.1	.455	.410	19.85	4.15
Illinois	1929	3	85	8.8	73.0	79.9	8.3	9.1	1.065	.974	77.79	8.86
	1931	11	488	7.4	62.1	66.7	8.4	9.0	1.025	.954	63.69	8.60
Indiana	1929	3	85	10.0	78.7	83.4	7.8	8.3	1.093	1.032	86.04	8.56
	1931	5	71	9.5	76.5	79.8	8.0	8.4	1.053	1.010	80.53	8.43
Kentucky	1929	4	26	9.2	85.1	92.8	9.3	10.1	.632	.579	53.76	5.87
	1931	3	12	6.4	56.4	60.0	8.8	9.4	.719	.675	40.54	6.32
Ohio	1929	1	2	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	1931	2	26	5.8	54.0	61.0	9.4	10.6	.652	.578	35.22	6.10
Pennsylvania	1929	8	72	9.5	84.8	95.1	9.0	10.0	.712	.635	60.37	6.37
	1931	6	219	6.6	53.1	57.0	8.0	8.6	.676	.629	35.85	5.42
Tennessee	1929	1	18	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Virginia	1929	3	32	11.8	112.5	117.6	9.5	10.0	.565	.541	63.56	5.39
	1931	1	17	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
West Virginia	1929	4	75	11.2	98.2	108.4	8.8	9.7	.743	.673	72.94	6.52
	1931	5	85	9.9	104.0	111.8	10.5	11.3	.537	.500	55.91	5.63
Total	1929	28	423	9.8	84.5	91.6	8.6	9.4	.810	.747	68.39	7.00
	1931	35	992	7.4	63.5	68.3	8.6	9.3	.843	.784	53.51	7.27
Miners, gang:												
Alabama	1929	1	17	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Illinois	1929	15	738	9.8	81.9	88.2	8.4	9.0	1.108	1.029	90.75	9.28
	1931	5	179	9.6	78.6	84.6	8.2	8.8	.916	.852	72.04	7.47
Indiana	1929	3	73	11.5	91.4	97.1	7.9	8.4	1.319	1.242	120.63	10.45
Kentucky	1929	3	41	5.5	43.6	47.3	8.0	8.7	.616	.567	26.84	4.91
	1931	3	12	7.3	66.3	70.9	9.0	9.7	.584	.546	38.66	5.27
Ohio	1929	2	9	10.4	60.1	67.6	5.8	6.5	1.096	.973	65.80	6.30
	1931	1	6	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Pennsylvania	1929	7	272	8.9	76.9	85.1	8.6	9.5	.721	.651	55.42	6.21
	1931	8	174	10.5	91.6	101.7	8.7	9.7	.643	.578	58.84	5.60
Tennessee	1929	2	27	9.2	76.0	79.0	8.2	8.6	.848	.816	64.48	6.99
West Virginia	1931	1	7	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Total	1929	33	1,177	9.5	79.7	86.3	8.4	9.1	1.010	.932	80.50	8.45
	1931	18	378	9.9	84.0	91.8	8.5	9.2	.774	.709	65.05	6.55

[1] Data included in total.

Hours and Earnings in Specified Occupations, 1929 and 1931

TABLE 4 presents for 1929 and 1931 the average number of starts (days) and average hours and earnings for nine of the more important inside and four outside occupations and for two groups of "other employees" in which the employees are usually time workers. The groups of employees designated in the table as "other employees" include all time workers in all occupations other than those speci-

fied; these were grouped because of lack of sufficient numbers in any one occupation to warrant separate tabulation. The employees in this table are the same as those shown in summary Table 2.

Table 4 shows that the average days and hours worked in the half month were greater for engineers and pumpmen than for any of the other occupations, as employees in these two occupations frequently work on Sunday and may also work overtime on week days. It will be seen from the table that in practically every occupation, average days, hours, and earnings in the half month, showed a marked decrease from those of 1929. Average earnings per day and per hour for the different occupations varied very little one way or the other. The averages are based on hours actually worked.

TABLE 4.—AVERAGE NUMBER OF STARTS (DAYS) AND AVERAGE HOURS AND EARNINGS OF ALL EMPLOYEES OTHER THAN **MINERS AND LOADERS,** 1929 AND 1931, BY OCCUPATION

Occupation	Year	Number of mines	Number of wage earners	Average number of starts (days) worked in half month	Average actual hours—		Average earnings—		
					Worked in half month	Per start (day)	Made in half month	Per start (day)	Per hour
Inside work									
Brakemen	1929	505	4,854	9.5	81.0	8.5	$48.31	$5.08	$0.596
	1931	454	4,339	7.4	62.6	8.5	36.05	4.89	.576
Bratticemen and timbermen	1929	456	2,901	10.6	88.3	8.3	57.19	5.39	.648
	1931	409	2,669	8.1	65.6	8.1	41.10	5.08	.626
Cagers	1929	192	392	10.9	96.1	8.8	65.79	6.03	.685
	1931	163	284	8.6	74.7	8.7	49.89	5.79	.668
Drivers	1929	282	3,811	9.5	77.8	8.2	49.52	5.24	.637
	1931	237	2,945	7.4	59.8	8.1	36.02	4.86	.602
Laborers	1929	456	7,842	9.0	75.2	8.3	40.90	4.53	.544
	1931	415	6,530	7.3	59.9	8.2	32.50	4.43	.542
Motormen	1929	504	4,860	10.3	89.6	8.7	58.21	5.64	.649
	1931	444	4,527	7.9	68.3	8.6	42.59	5.37	.624
Pumpmen	1929	390	1,148	12.3	113.5	9.2	62.45	5.06	.550
	1931	347	882	11.1	96.7	8.7	51.17	4.62	.529
Trackmen	1929	532	4,653	10.4	85.8	8.3	54.47	5.26	.635
	1931	466	4,151	8.2	66.9	8.2	40.65	4.97	.608
Trappers (boys)	1929	200	633	9.4	75.6	8.1	26.79	2.86	.354
	1931	127	388	6.6	53.3	8.1	17.88	2.71	.335
Other employees	1929	518	6,814	10.7	92.1	8.6	66.38	6.18	.721
	1931	461	7,531	9.2	77.0	8.4	55.92	6.11	.726
Total (inside)	1929	535	37,908	10.0	84.8	8.5	53.10	5.30	.626
	1931	469	34,246	8.1	67.4	8.3	41.85	5.18	.621
Outside work									
Blacksmiths	1929	516	811	11.3	99.5	8.8	67.47	5.96	.678
	1931	452	642	9.3	80.8	8.6	52.47	5.61	.650
Carpenters and car-repairmen	1929	471	1,458	10.8	92.9	8.6	56.84	5.24	.612
	1931	418	1,334	9.2	77.6	8.5	45.04	4.91	.581
Engineers	1929	313	652	12.8	111.9	8.7	79.56	6.21	.711
	1931	271	540	12.8	109.5	8.5	76.13	5.94	.695
Laborers	1929	527	7,834	10.0	86.8	8.7	42.78	4.30	.493
	1931	462	6,954	7.7	66.7	8.7	31.53	4.09	.473
Other employees	1929	506	4,143	11.1	98.7	8.9	57.53	5.18	.583
	1931	456	4,009	9.9	86.5	8.7	49.13	4.96	.568
Total (outside)	1929	534	14,898	10.6	92.5	8.8	51.21	4.85	.554
	1931	465	13,479	8.8	76.1	8.7	40.89	4.65	.538
Total (inside and outside)	1929	535	52,806	10.2	87.0	8.6	52.57	5.17	.605
	1931	469	47,725	8.3	69.8	8.4	41.58	5.02	.595

Table 5 presents, for each State and for all States combined, the average starts (days), hours and earnings of all miners and loaders in a half month in 1929 and 1931. As regards average days worked in

the half month, each of the 11 States showed a decrease from 1929 to 1931, ranging from three-tenths of an hour (or 4.3 per cent) to 3.5 hours (or 36.5 per cent). Ten of the eleven States showed marked decreases in hours worked in the half month, based on time at face, while one State showed an increase. There were no very marked changes in average hours per start, based on time at face. Nine of the eleven States showed decreases in average earnings per hour based on time at face, 1 showed practically no change, and 1 showed a small increase; as regards 1931 there was a wide range among the States, running from 37.2 cents to 95.6 cents, the average for all States combined being 59.9 cents per hour. From 1929 to 1931 every State showed a decrease in average earnings per half month; for all States combined the average dropped from $49.85 to $33.82, equivalent to a decrease of 32.1 per cent for the 90,063 employees covered. Notwithstanding the general decrease in number of days worked per half month, every State except one showed a decrease in average earnings per day, and that one showed an increase of 1 cent per day; it is interesting to note that the decrease in average earnings in the half month in the same State represented 36 per cent.

TABLE 5.—AVERAGE NUMBER OF STARTS (DAYS) AND AVERAGE HOURS AND EARNINGS OF **MINERS AND LOADERS,** 1929 AND 1931, BY STATE

State	Year	Number of mines	Number of wage earners	Average number of starts (days) worked in half month	Average hours—				Average earnings—			
					In half month based on—		Per start (day) based on—		Per hour based on—		Made in half month	Per start (day)
					Time at face, including lunch	Time in mine	Time at face, including lunch	Time in mine	Time at face, including lunch	Time in mine		
Alabama	1929	22	4,740	8.3	74.2	81.6	8.9	9.8	$0.453	$0.411	$33.58	$4.03
	1931	19	4,541	6.0	51.8	57.3	8.6	9.5	.431	.389	22.32	3.69
Colorado	1929	16	1,989	6.8	51.8	56.3	7.6	8.2	.815	.750	42.22	6.18
	1931	17	2,339	6.2	50.3	54.5	8.1	8.8	.740	.682	37.19	6.00
Illinois	1929	37	14,104	9.6	77.9	84.5	8.1	8.8	.867	.799	67.55	7.04
	1931	39	11,539	6.1	49.4	53.6	8.1	8.8	.869	.802	42.94	7.05
Indiana	1929	29	4,691	8.6	63.5	67.6	7.4	7.8	.926	.870	58.85	6.83
	1931	19	2,514	5.6	39.9	42.8	7.1	7.6	.956	.890	38.12	6.77
Kansas	1929	8	1,349	7.0	49.7	54.5	7.1	7.7	.712	.650	35.39	5.03
	1931	8	1,594	5.0	39.4	41.3	7.9	8.3	.617	.589	24.33	4.88
Kentucky	1929	64	11,037	8.4	68.2	74.1	8.1	8.8	.634	.584	43.24	5.15
	1931	65	10,801	5.8	47.0	51.6	8.1	8.9	.569	.518	26.74	4.60
Ohio	1929	41	7,625	9.0	70.5	76.5	7.8	8.5	.622	.573	43.83	4.87
	1931	32	6,840	7.2	56.9	62.3	7.9	8.6	.506	.462	28.79	3.99
Pennsylvania	1929	136	29,665	9.5	77.7	86.4	8.2	9.1	.645	.580	50.13	5.27
	1931	125	28,519	7.9	62.5	69.0	8.0	8.8	.567	.513	35.45	4.51
Tennessee	1929	15	1,183	7.0	53.8	57.1	7.7	8.2	.500	.471	26.91	3.86
	1931	14	1,265	6.7	56.0	60.0	8.4	9.0	.372	.347	20.82	3.12
Virginia	1929	22	2,601	9.8	74.3	79.4	7.6	8.1	.568	.532	42.23	4.30
	1931	16	2,533	8.9	69.1	75.1	7.8	8.5	.515	.474	35.59	4.01
West Virginia	1929	145	20,421	9.1	70.8	77.9	7.8	8.5	.689	.626	48.77	5.35
	1931	115	17,578	7.4	61.2	67.0	8.2	9.0	.572	.522	34.96	4.72
Total	1929	535	99,405	9.1	72.6	79.6	8.0	8.8	.687	.626	49.85	5.50
	1931	469	90,063	7.0	56.5	61.9	8.1	8.8	.599	.546	33.82	4.82

Table 6 presents, for each State and for all States combined, figures showing for 1929 and 1931, average starts (days), hours, and earnings in a half month for all inside and outside wage earners except miners and loaders (i. e., the same employees as covered in summary Table 2).

As previously stated, these employees are time workers, and the averages are based on hours actually worked.

Every State except one showed a decided decrease in average number of days and average hours worked in a half month. The one exception showed a slight increase. The average hours per start (day) varied very little one way or the other, the averages remaining the same in each of three States for the two years. Ten of the eleven States showed marked decreases in earnings in a half month, the increase in the remaining State being negligible. The decrease for the 47,725 employees, all States combined, was from $52.57 in 1929 to $41.58 in 1931, or 20.9 per cent.

The variation in average earnings per day and per hour, 1929 to 1931, was comparatively slight in 9 of the 11 States. Of the remaining States, one showed decreases equivalent to 11.7 per cent in average earnings per day and 11.1 per cent in average earnings per hour. The other State showed decreases equivalent to 7 per cent in average earnings per day and 4.5 per cent in average earnings per hour.

TABLE 6.—AVERAGE NUMBER OF STARTS (DAYS) AND AVERAGE HOURS AND EARNINGS, ALL EMPLOYEES **OTHER THAN MINERS AND LOADERS**, 1929 AND 1931, BY STATE

State	Year	Number of mines	Number of wage earners	Average number of starts (days) worked in half month	Average actual hours—		Average earnings—		
					Worked in half month	Per start (day)	Made in half month	Per start (day)	Per hour
Alabama	1929	22	3,019	9.5	86.1	9.1	$34.32	$3.62	$0.399
	1931	19	2,476	7.5	64.0	8.6	25.74	3.45	.402
Colorado	1929	16	1,012	8.7	72.8	8.4	56.64	6.53	.778
	1931	17	1,142	7.5	62.6	8.3	48.63	6.45	.777
Illinois	1929	37	6,226	11.2	91.6	8.2	71.40	6.38	.780
	1931	39	7,646	8.0	65.4	8.2	51.59	6.45	.789
Indiana	1929	29	2,082	10.5	85.1	8.1	66.02	6.26	.776
	1931	19	1,473	8.8	69.4	7.9	54.31	6.18	.783
Kansas	1929	8	289	9.8	80.7	8.3	52.39	5.37	.649
	1931	8	310	6.8	55.7	8.2	35.94	5.31	.646
Kentucky	1929	64	6,924	9.6	83.7	8.7	44.63	4.64	.533
	1931	65	6,755	6.9	58.5	8.4	31.26	4.50	.534
Ohio	1929	41	2,783	10.5	86.6	8.2	53.01	5.03	.612
	1931	32	2,392	8.8	71.4	8.2	38.88	4.44	.544
Pennsylvania	1929	136	12,935	10.7	93.8	8.7	59.98	5.59	.639
	1931	125	11,819	9.1	77.3	8.5	47.18	5.20	.610
Tennessee	1929	15	763	8.0	64.4	8.1	26.16	3.28	.406
	1931	14	518	8.2	66.6	8.1	26.13	3.19	.393
Virginia	1929	22	2,098	10.7	91.7	8.6	42.79	4.00	.466
	1931	16	1,899	8.7	76.5	8.8	34.56	3.96	.452
West Virginia	1929	145	14,675	9.7	82.6	8.5	46.04	4.76	.558
	1931	115	11,295	8.5	72.9	8.6	38.83	4.57	.532
Total	1929	535	52,806	10.2	87.0	8.6	52.57	5.17	.605
	1931	469	47,725	8.3	69.8	8.4	41.58	5.02	.595

Weekly Hours and Earnings, 1931

TABLE 7 presents for the miners and loaders in each of seven occupations average starts (days), hours, and earnings in one week based upon actual figures for the half month. The averages for one week were weighted. That is, the aggregate days, hours worked, and earnings of the employees in an occupation at a given mine were divided by the number of normal working-days in the half month for

the occupation and the results were multiplied by six for a 6-day occupation or by seven for a 7-day occupation. The aggregates thus obtained for the given occupation for all mines in a given State were combined and from these combined aggregates the usual averages were computed for one week. This was done for the purpose of having weekly figures available for comparison with like average hours and earnings in other industries, in most of which weekly pay periods prevail. The average number of starts (days) based upon the number made in a half month varied from 3.5 for miners, machine (cutters), to 3.2 for each of the heavier occupations in point of numbers, and the average was 3.2 for the 90,063 employees in the seven occupations combined, which is little more than half time.

The average hours, based on time at the face including lunch, which could have been made in one week, based upon the number actually worked in a half month, varied from 37.0 for the 378 gang miners to 25.7 for the 65,172 hand loaders, and to 25.1 for the 16,963 hand or pick miners. The average for the 90,063 in the seven occupations combined was 25.9 per week. A reference to Table 9 of this report, compiled by the United States Bureau of Mines, shows that the weighted average working-day of men employed in bituminous mines in 1929 was 8.08 hours, or approximately 48.5 hours per week, from which it will be seen that the 25.9 hours per week shown in Table 7 constituted little more than 50 per cent of full time.

The average earnings that could have been made in one week, based upon the amount actually made in a half month, varied from $28.68 for gang miners, to $14.73 for hand or pick miners, and to $14.43 for hand loaders. The average for all miners and loaders was $15.54 per week.

TABLE 7.—AVERAGE NUMBER OF STARTS (DAYS) AND AVERAGE HOURS AND EARNINGS PER WEEK OF **MINERS AND LOADERS**, 1931, BY OCCUPATION

Occupation	Number of mines	Number of wage earners	Average number of starts (days) worked in one week	Average hours— In one week based on— Time at face including lunch	Average hours— In one week based on— Time in mine	Average earnings made in one week
Loaders, contract	42	405	3.4	29.5	32.5	$21.73
Loaders, hand	413	65,172	3.2	25.7	28.2	14.43
Loaders, machine	35	992	3.3	28.6	30.7	24.22
Miners, gang	18	378	4.4	37.0	40.5	28.68
Miners, hand or pick	201	16,963	3.2	25.1	27.5	14.73
Miners, machine (cutters)	411	5,554	3.5	29.7	32.4	27.97
Miners, machine (cutters), helpers	112	599	3.2	29.6	32.2	18.01
Total	469	90,063	3.2	25.9	28.4	15.54

Table 8 presents for wage earners in each occupation, inside and outside the mine, except miners and loaders, average number of starts (days), hours, and earnings in one week, based on actual figures for a half month. These, also, are weighted averages.

The average number of days per week ranged from 5.9 for outside engineers to 3.0 for trappers (boys) and 3.4 for brakemen, drivers,

and laborers, inside. The average for the inside group was 3.7, for the outside group 4.1, and for the two combined 3.8 days per week. The average hours in one week ranged from 50.3 for engineers to 24.4 for trappers (boys) and to 27.4 for drivers. The average for the inside group was 31.1, for the outside group 35.3, and for the two groups combined 32.3 hours per week, or approximately 67 per cent of full time.

Average earnings that could have been made in one week, based upon the amount actually made in a half month ranged from $35.10 for engineers to $8.19 for trappers (boys) and $14.58 for outside laborers. The average for the inside group was $19.37, for the outside group $18.96, and for the 47,725 in the two groups combined $19.25.

TABLE 8.—AVERAGE NUMBER OF STARTS (DAYS) AND AVERAGE HOURS AND EARNINGS, ALL EMPLOYEES **OTHER THAN MINERS AND LOADERS,** PER WEEK, 1931, BY OCCUPATION

Occupation	Number of mines	Number of wage earners	Average number of starts (days) worked in one week	Average actual hours worked in one week	Average earnings made in one week
Inside work					
Brakemen	454	4,339	3.4	29.0	$16.71
Bratticemen and timbermen	409	2,669	3.8	30.4	19.08
Cagers	163	284	3.9	34.2	22.83
Drivers	237	2,945	3.4	27.4	16.53
Laborers	415	6,530	3.4	27.9	15.14
Motormen	444	4,527	3.7	31.6	19.71
Pumpmen	347	882	5.1	44.2	23.39
Trackmen	466	4,151	3.8	30.8	18.78
Trappers (boys)	127	388	3.0	24.4	8.19
Other employees	461	7,531	4.2	35.5	25.87
Total	469	34,246	3.7	31.1	19.37
Outside work					
Blacksmiths	452	642	4.3	37.0	24.06
Carpenters and car-repairmen	418	1,334	4.2	35.9	20.87
Engineers	271	540	5.9	50.3	35.10
Laborers	462	6,954	3.6	30.9	14.58
Other employees	456	4,009	4.6	40.4	22.94
Total	465	13,479	4.1	35.3	18.96
Grand total (inside and outside)	469	47,725	3.8	32.3	19.25

Average Working-Day in 1929

THE figures in Table 9, compiled by the United States Bureau of Mines, show for each of the years 1903 to 1929 (1909 excepted) the per cent of total bituminous-coal-mine employees having a normal working-day of 8, 9, and 10 hours, together with the weighted average working-day for each year. From the table it will be observed that in 1903, 56.4 per cent of the employees were on the 8-hour day basis, 17.1 per cent a 9-hour day, and 26.5 per cent a 10-hour day; the weighted average working-day was 8.7 hours. In comparison, the 1929 figures show that 92.5 per cent of all bituminous employees had an 8-hour day, 6.7 per cent a 9-hour day, and 0.8 per cent a 10-hour day; the weighted average working-day was 8.08 hours.

TABLE 9.—PER CENT OF MEN EMPLOYED IN BITUMINOUS COAL MINES WHO HAD AN ESTABLISHED WORKING-DAY OF 8, 9, OR 10 HOURS, 1903 TO 1929 [1]

[From United States Bureau of Mines, Department of Commerce, Coal in 1929]

Year	Per cent of total employees in mines working—			Weighted average working-day (hours)	Year	Per cent of total employees in mines working—			Weighted average working-day (hours)
	8-hour day	9-hour day	10-hour day			8-hour day	9 hour day	10-hour day	
1903	56.4	17.1	26.5	8.7	1917	79.0	12.6	8.4	8.30
1904	62.1	13.8	24.1	8.6	1918	90.6	6.7	2.7	8.12
1905	61.1	13.6	25.3	8.6	1919	95.5	3.5	1.0	8.06
1906	63.0	13.5	23.5	8.6	1920	97.1	2.0	.9	8.04
1907	64.0	11.6	24.4	8.6	1921	96.6	2.9	.5	8.04
1908	63.5	11.1	25.4	8.6	1922	95.1	4.0	.9	8.06
1910	62.1	11.3	26.6	8.6	1923	94.7	4.2	1.1	8.06
1911	62.9	10.9	26.2	8.6	1924	93.7	5.1	1.2	8.08
1912	61.6	11.5	26.9	8.6	1925	93.5	5.4	1.1	8.08
1913	61.9	15.2	22.9	8.6	1926	93.7	5.5	.8	8.07
1914	60.7	15.4	23.9	8.6	1927	93.4	5.6	1.0	8.08
1915	59.6	17.0	23.4	8.6	1928	93.1	6.1	.8	8.08
1916	58.6	17.4	24.0	8.6	1929	92.5	6.7	.8	8.08

[1] Percentages are calculated on basis of total number of men in mines definitely reported as having 8, 9, or 10 hour day. A small number of mines that work more than 10 hours or less than 8 hours have been excluded, as have also all mines for which the reports were defective or which changed their working-day during the year.

Recent Changes in Wages and Hours of Labor

INFORMATION received by the bureau regarding wage changes is presented below in two distinct groups: Part 1 relates to manufacturing establishments that report monthly figures regarding volume of employment, while Part 2 presents data obtained from new trade agreements and other miscellaneous sources. Although the effort is made, it is not always possible to avoid duplication of data as between parts 1 and 2.

Wage-Rate Changes in Manufacturing Industries

SEVEN establishments in three industries reported wage-rate increases during the month ending August 15. These increases averaged 10.6 per cent and affected 618 employees, or 41 per cent of the employees in the establishments concerned.

Two hundred and twenty-one establishments in 50 industries reported wage-rate decreases during the same period. These decreases averaging 10 per cent, affected 20,739 employees, or 63 per cent of all employees in the establishments concerned. Twenty-six of these wage-rate decreases were reported in the food group, 28 were in the textile group, 25 in the iron and steel group, 48 in the lumber group, and 21 were in the paper and printing group. Seven industries in which wage-rate decreases in 10 or more establishments were reported follow: Lumber, sawmills, 22; brick, tile, and terra cotta, 21; cotton goods, 18; furniture, 15; foundry and machine-shop products, 13; lumber, millwork, 11; and paper and pulp, 10.

WAGE CHANGES OCCURRING BETWEEN JULY 15 AND AUGUST 15, 1931

Industry	Establishments		Per cent of increase or decrease in wage rate		Employees affected		
	Total number reporting	Number reporting increase or decrease in wage rates	Range	Average	Total number	Per cent of employees: In establishments reporting increase or decrease in wage rates	Per cent of employees: In all establishments reporting
			Increases				
Dyeing and finishing textiles	133	4	10.0	10.0	500	43	1
Millinery and lace goods	122	2	10.0–17.5	13.5	106	34	1
Brick, tile, and terra cotta	709	1	10.0	10.0	12	85	(1)
Total		7	10.0–17.5	10.6	618	41	
			Decreases				
Slaughtering and meat packing	207	6	10.0	10.0	839	45	1
Confectionery	318	7	10.0–20.0	11.0	165	85	1
Ice cream	326	1	10.0	10.0	44	54	(1)
Flour	395	6	9.3–10.0	10.0	274	85	2
Baking	701	6	10.0–20.0	10.4	133	65	(1)
Cotton goods	489	18	8.5–20.0	10.4	3,192	45	2
Hosiery and knit goods	358	3	10.0	10.0	176	81	(1)
Silk goods	274	1	8.0	8.0	18	50	(1)
Woolen and worsted goods	178	1	10.0	10.0	49	66	(1)
Dyeing and finishing textiles	133	2	10.0	10.0	273	100	1
Clothing, men's	331	1	10.0	10.0	34	71	(1)
Millinery and lace goods	122	2	10.0–25.0	11.7	86	23	1
Iron and steel	194	3	10.0–18.0	10.7	1,245	63	1
Structural-iron work	166	3	8.5–20.0	9.9	226	50	1
Foundry and machine-shop products	1,046	13	5.0–25.0	9.3	1,405	79	1
Hardware	95	1	8.4	8.4	409	41	2
Machine tools	147	2	5.0–10.0	6.7	45	24	(1)
Steam fittings and steam and hot-water heating apparatus	106	2	6.0–12.5	7.8	212	43	1
Stoves	128	1	5.0–10.0	8.6	21	19	(1)
Lumber, sawmills	637	22	5.0–13.0	9.7	3,105	86	2
Lumber, millwork	338	11	5.0–20.0	11.7	420	90	4
Furniture	436	15	8.0–22.5	10.0	1,319	98	3
Leather	137	3	4.9–15.0	8.7	118	30	(1)
Boots and shoes	292	2	10.0–20.0	15.0	101	44	(1)
Paper and pulp	371	10	5.0–15.0	10.0	2,395	91	3
Paper boxes	298	1	10.0	10.0	14	40	(1)
Printing, book and job	595	5	4.0–10.7	10.3	257	59	(1)
Printing, newspapers	444	5	7.0–15.0	10.8	149	47	(1)
Fertilizers	205	7	5.0–20.0	7.3	198	77	3
Cement	113	4	10.0	10.0	649	100	4
Brick, tile, and terra cotta	709	21	6.0–20.0	10.5	856	93	3
Pottery	117	3	10.0	10.0	532	100	3
Brass, bronze, and copper products	153	3	10.0	10.0	78	95	(1)
Cigars and cigarettes	186	3	10.0	10.0	815	68	2
Agricultural implements	80	1	10.0	10.0	32	71	(1)
Electrical machinery, apparatus, and supplies	202	2	10.0–15.0	12.9	102	49	(1)
Jewelry	150	2	10.0	10.0	84	92	1
Paint and varnish	251	3	10.0	10.0	118	62	1
Rubber goods, other than boots and shoes, tires, and inner tubes	77	2	10.0	10.0	27	93	(1)
Beverages	268	2	10.0–27.0	14.2	28	27	(1)
Cash registers, adding machines, and calculating machines	47	1	5.0–10.0	8.8	25	81	(1)
Typewriters and supplies	16	1	10.0	10.0	25	100	(1)
Plated ware	31	2	10.0	10.0	85	100	1
Smelting and refining, copper, lead, and zinc	12	1	12.0	12.0	8	100	2
Cotton, small wares	80	1	10.0	10.0	100	100	1
Bolts, nuts, washers, and rivets	49	2	7.5–15.0	9.9	10	3	(1)
Plumbers' supplies	52	3	5.0–10.0	10.4	196	12	4
Tin cans and other tinware	37	1	10.0	10.0	12	100	(1)
Wirework	29	1	6.0	6.0	30	33	1
Butter	93	2	8.2–10.0	8.9	5	31	(1)
Total		221	5.0–25.0	10.0	20,739	63	

[1] Less than one-half of 1 per cent.

Part 2.—Wage Changes Reported by Trade-Unions Since June, 1931

RECENT union and other wage changes reported to the bureau are shown in the following table for 15,785 workers, 5.042 of whom obtained the 5-day week.

Changes in wages were for the most part reductions, about the only exceptions being in the printing trades, where increases ranged from 50 cents to $4.60 per week. Decreases in building trades ranged from 10 to 37½ cents per hour; light, heat, and power employees, about 7 per cent; railroad workers, 8 to 16⅔ per cent; and street railway employees, a reduction of 1 to 5 cents per hour.

One textile mill showed an increase of $2 to $3 per week and one a decrease of $3.60 per week; one coal mine reported an increase of 8 cents per ton for miners and another a decrease of $1.25 per day.

RECENT WAGE CHANGES, BY INDUSTRY, OCCUPATION, AND LOCALITY, JUNE TO SEPTEMBER, 1931

Industry, occupation and locality	Date of change	Rate of wages		Hours per week	
		Before change	After change	Before change	After change
Auto workers: Sheet metal workers, Oakland, Calif.	Aug. 11	*Per hour* $1.12½	*Per hour* $0.85	44	44
Building trades:					
Carpenters, Baltimore, Md., and vicinity	Aug. 15	1.10	[1] 1.00	40	40
Cement finishers, Wichita, Kans.	July 10	1.50	1.25	44	44
Electrical workers, Kansas City, Mo.	Sept. 1	1.50	1.65	40	40
Hod carriers, Phoenix, Ariz.	Aug. 8	1.00	.62½	40	40
Painters, decorators, and paperhangers, Memphis, Tenn.	July 27	1.12½	1.00	44	44
Plasterers—					
Bloomington, Ill., and vicinity	June 1	1.50	1.50	44	40
Los Angeles, Calif.	do	1.50	1.12½	40	40
Milwaukee, Wis.	do	1.37½–1.75	1.37½–1.75	44	40
Minneapolis, Minn.	July 1	1.50	1.25	44	44
Phoenix, Ariz.	Aug. 8	1.37½	.93¾	40	40
San Bernardino, Calif., and vicinity	June 16	1.50	1.12½	40	40
Wichita, Kans.	July 10	1.50	1.25	44	44
Stonecutters, Pittsburgh, Pa.	June 16	1.62½	1.43¾	40	40
Furniture: Upholsterers, Chicago, Ill.	July 25	.52½	.70	44	44
Light, heat, power, and water:					
Power workers, Portland, Oreg.—		*Per day*	*Per day*		
Helpers, E. M. and C.	July 1	$4.60	$4.26	48	48
Groundmen	do	5.60	5.18	48	48
Journeymen, line and construction	do	8.00	7.40	48	48
Working foremen	do	8.50	7.86	48	48
Foremen	do	9.00	8.33	48	48
Journeyman cable splicers	do	9.00	8.33	48	48
Cable splicer foremen	do	10.00	9.25	48	48
Flume maintenance men	do	4.60	4.26	48	48
Flume foremen	do	6.78	6.27	48	48
Wipers	do	5.91	5.47	48	48
Wheel tenders	do	6.16	5.70	48	48
Operators, Class A	do	6.31–7.42	5.84–6.86	48	48
Operators, Class B	do	6.16–7.08	5.70–6.55	48	48
Operators, Class C	do	5.70–6.72	5.27–6.22	48	48
Operators, Class D	do	6.16–6.36	5.70–5.88	48	48
		Per month	*Per month*		
Foremen at B. and O.	do	$200.00	$185.00	48	48
Foremen at G. and M.	do	215.00	198.83	48	48
Mail, money, and auto truck drivers	do	138.00	127.65	48	48
Derrick men	do	161.00	148.93	48	48
Multiple arc lamp trimmers or arc repairmen	do	140.00	129.50	48	48
Series arc lamp trimmers	do	165.00	152.63	48	48
Tool-room men	do	165.00	152.63	48	48
Storage-battery men	do	190.00	175.75	48	48
Line inspector foremen	do	215.00	198.87	48	48
Line patrolmen	do	164.00	151.70	48	48
Trouble dispatchers	do	186.00	172.05	48	48

[1] Emergency rate on new contracts.

RECENT WAGE CHANGES, BY INDUSTRY, OCCUPATION, AND LOCALITY, JUNE TO SEPTEMBER, 1931—Continued

Industry, occupation and locality	Date of change	Rate of wages		Hours per week	
		Before change	After change	Before change	After change
Light, heat, power, and water—Continued.					
Power workers, Portland, Oreg.—Contd.		*Per month*	*Per month*		
Storekeepers	July 1	$175.00–$210.00	$161.88–$194.25	48	48
Cable testers	do	200.00	185.00	48	48
Laboratory men	do	204.00	188.70	48	48
		Per day	*Per day*		
Truck and speeder drivers	do	$5.60	$5.18	48	48
Pole and heavy commercial truck drivers	do	6.00	5.55	48	48
Watchmen, caretakers	do	4.60	4.26	48	48
Metermen	do	6.50–8.00	6.01–7.40	48	48
Incandescent sign cleaners and lamp replacers	do	5.00	4.63	48	48
Incandescent electric sign repairmen	do	8.00	7.40	48	48
Welders	do	8.00	7.40	48	48
Tool repairmen	do	6.50	6.01	48	48
Electrical machinists	do	7.40	6.85	48	48
Inspectors	do	5.60–7.00	5.18–6.48	48	48
Storeroom men	do	6.00	5.55	48	48
Signalmen	do	8.00	7.40	48	48
Miners, coal:					
Bevier, Mo	Aug. 11	5.00	3.75	48	48
Haywood, W. Va	June 30	[2] .30	[2] .38	[3] 8	[3] 8
Printing and publishing:					
Bindery workers, New York, N. Y	Sept. 2	[4]	[4]	45	44
Compositors—		*Per week*	*Per week*		
Port Chester, N. Y., newspaper	July 1	$50.00	$51.00	44	44
Saginaw, Mich., job work	do	35.00	39.60	48	44
Machine operators—					
Des Moines, Iowa—					
Newspaper, day	Sept. 1	48.00	48.50	48	48
Newspaper, night	do	51.50	52.00	48	48
Saginaw, Mich	July 1	35.00	39.60	48	44
Machinists—					
Des Moines, Iowa—					
Newspaper, day	Sept. 1	48.00	48.50	48	48
Newspaper, night	do	51.50	52.00	48	48
Railroad workers:					
Philadelphia, Pa.—		*Per month*	*Per month*		
Clerks	July 1	[5] $550.00	[6]	44	40
Executive and general officers	do	[7] 550.00	[8]	44	40
St. Louis, Mo.—					
Clerks	Aug. 1	[4]	[9]	44	44
Officers	do	[4]	[10]	44	44
Street-railway workers, Odgen, Utah:					
Road A					
Conductors and motormen, 1-man cars—		*Per hour*	*Per hour*		
First year	June 1	$0.42	$0.37	[11]	[11]
Second year	do	.44½	.39½	[11]	[11]
Third year	do	.47	.42	[11]	[11]
Fourth year and thereafter	do	.52	.47	[11]	[11]
Road B					
Passenger trainmen—					
Conductors and motormen—					
First year	June 1	.45	.42	[11]	[11]
Second year	do	.47	.44	[11]	[11]
Third year	do	.50	.47	[11]	[11]
Fourth year and thereafter	do	.52	.49	[11]	[11]
Passenger brakemen	do	.40	.37	[11]	[11]
Freight trainmen—					
Conductors and motormen	do	.57	.54	[11]	[11]
Freight brakemen	do	.42	.39	[11]	[11]
Trolleymen	do	.40	.37	[11]	[11]

[2] Per ton.
[3] Hours per day.
[4] Not reported.
[5] Clerks' maximum salary.
[6] Reduction of 2 days' pay per month.
[7] Officers' minimum salary.
[8] 10 per cent reduction.
[9] 8⅓ per cent reduction.
[10] 10 to 16⅔ per cent reduction.
[11] Hours irregular.

RECENT WAGE CHANGES, BY INDUSTRY, OCCUPATION, AND LOCALITY, JUNE TO SEPTEMBER, 1931—Continued

Industry, occupation and locality	Date of change	Rate of wages		Hours per week	
		Before change	After change	Before change	After change
Road B—Continued					
Street-railway workers, Ogden, Utah—Contd.					
Work-train service—					
Conductors and motormen—		*Per hour*	*Per hour*		
First year	June 1	$0.45	$0.42	(11)	(11)
Second year	do	.47	.44	(11)	(11)
Third year	do	.50	.47	(11)	(11)
Fourth year and thereafter	do	.52	.49	(11)	(11)
Brakemen	do	.40	.39	(11)	(11)
Milk trains and switch engines—					
Conductors and motormen—					
First year	do	.45	.42	(11)	(11)
Second year	do	.47	.44	(11)	(11)
Third year	do	.50	.47	(11)	(11)
Fourth year and thereafter	do	.52	.49	(11)	(11)
Brakemen	do	.40	.39	(11)	(11)
Motor-coach operators	do	(4)	.37 –.54	(11)	(11)
Shopmen—					
Auto mechanic	do	(4)	.32 –.55½	(11)	(11)
Blacksmiths	do	.45 –.59	.42 –.55½	(11)	(11)
Helpers	do	.34½–.43	.32 –.40	(11)	(11)
Carpenters, passenger	do	.47 –.59	.42 –.55½	(11)	(11)
Helpers	do	.32 –.34½	.29½–.32	(11)	(11)
Carpenters, freight	do	.47	.44	(11)	(11)
Painters	do	.42½–.50	.42 –.55½	(11)	(11)
Helpers	do	.32 –.37	.32 –.40	(11)	(11)
Armature winders	do	.45 –.59	.42 –.55½	(11)	(11)
Helpers	do	.32 –.37	.29½–.34½	(11)	(11)
Machinists	do	.45 –.59	.42 –55½	(11)	(11)
Helpers	do	.32 –.37	.29½–.34½	(11)	(11)
Car repairers, passenger	do	.39½–.44½	.37 –.41½	(11)	(11)
Helpers	do	.32 –.37	.29½–.34½	(11)	(11)
Car repairs, freight	do	.44½	.41½	(11)	(11)
Helpers	do	.37	.34½	(11)	(11)
Car inspectors, freight	do	.42	.39	(11)	(11)
Pipe fitters	do	.45 –.59	.42 –.55½	(11)	(11)
Helpers	do	.32 –.37	.29½–.34½	(11)	(11)
Wiremen	do	.45 –.59	.42 –.55½	(11)	(11)
Helpers	do	.32 –.37	.29½–.34½	(11)	(11)
Barnmen	do	.39½–.44½	.37 –.41½	(11)	(11)
Helpers	do	.32 –.37	.29½–.34½	(11)	(11)
Municipal:					
Bessemer, Ala., city employees	Aug. 1	(4)	(12)	(4)	(13)
		Per year	*Per year*		
Findlay, Ohio, school employees	Sept. 1	$900–$2,000	(14)	32½	32½
Portland, Oreg., grain handlers, public docks	Aug. 1	*Per hour* $0.70–$0.75	*Per hour* $0.60–$0.65	48	48
St. Landry Parish, La., school employees	Sept. 1	(4)	(8)	(4)	(4)
Textiles:					
Rug weavers, Chicago, Ill	Aug. 17	(4)	(15)	49	49
Sheeting workers, Peabody and Salem, Mass.	June 1	(4)	(4)	48	35
		Per week	*Per week*		
Silk weavers, Pawtucket, R. I.	Aug. 17	$30.00–$32.00	$32.00–$35.00	16 50–55	16 50–55
Silk workers, Pawtucket, R. I.	Aug. 3	36.00	32.40	48	48

[4] Not reported.
[8] 10 per cent reduction.
[11] Hours irregular.
[12] 10 to 20 per cent reduction.
[13] No change.
[14] 11⅑ per cent reduction.
[15] 8 per cent reduction.
[16] 50 hours for female and 55 hours for male workers.

Wages of Civilian Employees of the United States Naval Establishment

THE present schedule of wages for civilian employees at the various navy yards and stations, which has been in effect for the past three years, will be continued into 1932, under an order of Assistant Secretary Jahncke of the Navy Department. According to a press release of that department, dated July 10, 1931, Mr. Jahncke stated

that the continuance of the present schedule "is in accordance with the action of the administration of November, 1929, for the relief of unemployment and for stabilization of labor conditions throughout the country without reduction in wages."

About 31,000 employees will be affected by the order.

Data on wages in the clothing workers' service and in the laborer, helper, and mechanical service, in selected localities, taken from the last printed schedule of wages for civilian employees under the Naval Establishment, published in 1928 and applying to the year 1929, were published in the Labor Review of the Bureau of Labor Statistics for February, 1929 (pp. 104–107).

Dismissal Compensation

A STUDY [1] of dismissal compensation has recently been completed by the industrial relations section of Princeton University. The report covers the plans of 49 companies which have adopted the principle of payment of compensation to workers who are dismissed through no fault of their own. While the plans vary in such details as classes of employees covered, service requirements, or age entitling dismissed workers to compensation, they are alike in accepting the principle of responsibility on the part of the employer for the prevention of permanent lay-offs or the alleviation of hardships when such lay-offs can not be avoided.

The report states that it is difficult to determine the extent to which reward for service and provision against distress influence the employer in providing dismissal compensation. The use of years of service contrasted to age indicates this to a certain extent, but age parallels service to such an extent that it is not possible definitely to separate the motives. The plans which have been most carefully formulated base the dismissal compensation on both age and service "showing that, in the minds of the responsible executives, neither of the two factors can be disregarded, though particular weights can be assigned to them in the formula used."

Among the secondary reasons for the establishment of compensation plans is the desire on the part of the company to offset the adverse effect on the morale of employees, who are alarmed when fellow workers are dismissed unless some assurance is given that they will be treated fairly. Without the provision of some safeguard for the jobs of their employees, adverse criticism may also extend to the surrounding community, and industry, it is said, undoubtedly attaches greater importance both to favorable and unfavorable reactions on the part of the public toward industrial relations policies since the beginning of the present depression. Another secondary reason for the payment of dismissal wages in the larger companies is to make some amends to dismissed workers, either for the loss of their expectation of assistance in their old age through a formal or informal pension plan, or of the advantages provided in group insurance coverage, sickness and accident benefits, and vacation privileges.

[1] Princeton University. Industrial Relations Section. Dismissal compensation. Princeton, 1931.

Formal dismissal compensation plans are of comparatively recent origin. Informal plans which have provided compensation for dismissed employees on particular occasions have also been used by many companies. The reaction of the public press to the action of the United States Rubber Co. in the use of dismissal compensation in closing certain New England plants was immediate and favorable, while production standards were improved or maintained by the affected workers after the announcement of the dismissal program.

In discussing the most acceptable term for compensation at time of lay-off, it is said in the report that while "dismissal compensation" is not perfect it is perhaps the most inclusive and accurate term. The use of the word "wage" is regarded as entirely unsatisfactory, both because most dismissal payments are made in lump sums and because some companies do not make payments to hourly rated employees but only to those on salary. Lay-offs may be either temporary or permanent and dismissal refers more specifically to the latter, so that as this is the class compensated, and as relative competency is usually a factor in the selection of persons to be laid off, dismissal does not seem to be too severe a term. Dismissal compensation is defined as "a payment in addition to wages or salary made to an employee whose employment is permanently terminated by the employer primarily because of circumstances over which the employee has no control."

The principal causes of permanent lay-offs are listed in the report as follows:

1. Time studies which result in speeding up machinery or showing men how to work faster and thus cause reduction in employees necessary for the operation.
2. New payment methods which cause a speeding up of operation, displacing less competent men.
3. New processes, methods, tools, or machines which require fewer operators, or workers of different skill.
4. Mergers which combine office, sales, or factory forces.
5. Decreased production due to permanent shifts in demand, cyclical depressions, or business competition.
6. Permanent closing of an office, department, branch, or factory due to business failure, lack of demand, or desire to concentrate operations in more profitable units.
7. Personal inefficiency on the part of the employee who can not adapt himself to changing conditions.

As will be seen from the list, the causes of dismissal include technological unemployment and unemployment resulting from financial, managerial, and market changes, as well as inefficiency on the part of the worker. One of the most important causes of the development of dismissal compensation is said to be the closing of plants or the transfer of processes following a merger, as the less efficient or poorly located units are often discontinued in the attempt to lower production, management, or distribution costs. Some companies have found the transfer of the less specialized workers to involve many problems for the worker and the company, while in other cases it has been possible to provide all employees in the closed plant an opportunity to work in some other operation of the company.

Although the dismissal compensation has the primary purpose of preventing hardship, it may have a tendency to curb rapid changes in technical or production policies which throw employees out of work, and to insure the adoption of better employment methods and

planning, especially if the cost of the compensation is assigned directly to the department making the dismissal.

In providing assistance for the dismissed workers several methods have been used. Many companies give advance notice so that the employees who are to be dismissed may begin to look for new jobs, while other companies have tried to find work for their men with other firms.

Types of Plans

In some companies dismissal plans are started informally to help certain employees, and the payment of the dismissal allowance is considered a special arrangement and no formal announcement is made of the plan. In other cases plans are adopted for the closing of a particular department or factory and the company may afterward decide either to adopt the plan as a standing policy or to formulate a new plan when the need arises. But more and more companies are adopting a fixed plan with schedules of the compensation payments. These schedules range from two weeks' pay for office workers alone to carefully worked out plans covering all classes of employees and based on age, service, type of position, and reasons for dismissal.

Schedules show wide differences as to minimum requirements. In examples given, the minimum service requirements for eligibility for compensation vary from 6 months to 20 years, in some instances the service requirement being lowered if the employee has reached a certain age limit. In some cases hourly rated employees are not included or the plan may apply only to salaried employees.

In general the dismissal payments follow the earnings of the employees so that the unit of compensation is a day's wages, a week's wages, or a month's salary. In a few companies, however, the dismissal payments are figured on the same basis for all employees regardless of the salary.

The length of service affects most dismissal payments, the amount of the payment increasing with each unit of service such as a week, a month, or a year. Some have provided for the payment of a lump sum to those permanently laid off, regardless of service.

Dismissals are usually compensated only when they occur through no fault of the worker, but some firms, in retiring employees because of inefficiency, pay them part of the regular dismissal compensation.

Payments may be made either in lump sums or periodically. The lump-sum payment is the one most generally used, as it allows a man more latitude in seeking other employment or gives him an opportunity to pay his debts or to start in a business which requires a small amount of capital. The payment of a lump sum is usually considered an advantage, in that connection with the company is cut off at once by a more generous payment than when the payments are spread out over a longer period. The reason underlying periodic payments is to spread the compensation over the period of readjustment and thus avoid the distress which might result if the whole sum was spent at once. "As long as periodic payments are made," the report states, "a connection with the company remains which may lead to a forlorn hope of reemployment and a tendency to remain in the community rather than to search for work elsewhere. An atmosphere of relief

rather than of reward surrounds periodic payments. To the company the payment of a lump sum indicates more sharply the cost of personnel displacement."

Several examples of the amounts of the dismissal compensation paid by different companies are given in the report. The United States Rubber Co., in closing four plants, paid compensation to 509 of approximately 3,200 workers who were displaced. Lump-sum dismissal payments were made to all employees in these plants who had 15 or more years of service and were not eligible for pensions and to all employees 45 years of age or over with 10 or more years of service. The highest payment in the different plants ranged from $1,600 to $2,088, and the median payment from $415 to $520. Another large industrial corporation has fixed the maximum dismissal compensation at 52 weeks' pay. The scale of payments is weighted for age and service so that, for example, a man of 30 who has been employed 10 years would receive 9 weeks' pay upon dismissal while a man 60 years of age and with the same period of service would receive 30 weeks' pay. An oil company gives 2 weeks' notice to men released because of lack of work, reorganization, discontinuance of positions, etc., with a half month's pay for all except temporary employees who have less than 2 years of service and a maximum of one-half month's pay for each year of service for monthly rated employees with more than 2 years' service, and for daily rated employees with more than 10 years of service or more than 5 years' service if such employees are over 50 years of age.

Periodic instead of lump-sum payments were made by the American Rolling Mill Co., in closing a plant at Elyria, Ohio, in 1929. All employees on the pay roll on the date of closing were given half pay for as many months as they had years of service, but for a maximum period of six months. The minimum payment was $50 per month. Employees on hourly and tonnage rates were paid on the basis of their average earnings during the first six months of 1929, which was considered to have been a normal operating period.

The Plymouth Cordage Co. revised its various benefit plans in March, 1931, and included a retirement wage for employees who had completed 15 years' service with the company. For such employees the dismissal compensation is equal to the earnings for the preceding six months, the total amount not to exceed $1,000. This payment is made in 26 equal installments unless the company designates some other method of settlement.

Trends in Dismissal Compensation

Because of the rapid development of dismissal compensation it is difficult, it is stated in the report, to make a precise determination of present trends. However, certain tendencies appear to be indicated by the policies of some progressive employers. There is an apparent increasing emphasis on age in some of the more elaborate plans, evidenced either by fixing a minimum age at which compensation may be paid, a different rate for employees over a certain age, or "a rapid acceleration involved in the formula or schedule used." This emphasis on age is considered reasonable in view of the rapidly increasing difficulty of securing reemployment for men over 40 or 45. As

many companies place an age limit in hiring new workers, such companies can not afford to disregard the age factor in paying compensation for lay-offs. The maintenance of a pension system providing for the payment of pensions to men reaching the age of 65 or 70 will not prevent adverse criticism if only younger men are hired and men of 45 to 65 are laid off without especial consideration. It is considered reasonable, also, that there should be a definite relationship between the compensation paid to older men who have not yet reached the retirement age and the annuities for which they might be eligible with a few more years of service. Consideration of this relationship is shown in several plans, and in one instance the intermediate step of a partial pension is included. The increase of dismissal compensation rates with age may be expected to have an effect upon employment policies, as have pension, disability, and group-insurance plans, so that in companies paying compensation on this basis there may develop an increasing objection to the hiring of older men. It is difficult to see how this effect may be eliminated, however, "unless the older men employed are exempted from pension and compensation coverage. The plight of the older unemployed is a social problem which can be met but partially by progressive companies. The first step toward its solution, however, is the prevention or indemnification of lay-offs of older men to the fullest extent possible. Only then can a company be held to be doing its share toward the solution of the problem."

While not so marked as the tendency to compensate according to age, there seems to be some tendency towards the inclusion of shorter-service men in compensation plans, especially those who are of the older ages. Under present employment and training methods, the employee of one year's service is better adapted to his job than was the case under earlier employment methods. As there has been considerable effort expended towards reducing turnover among the shorter-service men, it would seem to be inconsistent not to consider them when lay-offs become necessary. While age is the most important factor when the chances of reemployment are considered, even at the younger ages a year's service may well entitle an employee to consideration. Many companies provide notice, or wages in lieu of notice, in the event of dismissal of employees of approximately a year's service, and there is some tendency to increase the length of notice or increase the compensation as service extends beyond a year, instead of waiting for such increases until there is a relatively long service period. In a comprehensive plan of compensation for dismissal the coverage of lay-offs due to incompetency presents a difficult problem. If exit interviews are held as a regular practice it is easy to determine the voluntary quits, and discharges for mis conduct may be fairly readily checked. New employees who are incompetent are automatically eliminated by the minimum service requirements, but a more difficult problem is presented by the question of incompetency after a year or more of service. Unless incompetency arising after at least a year's employment is due to personal habits, health, or home environment, it is likely to be the result of the changing and more exacting demands of the job owing to increased speed, a change in methods, or the use of more complicated machinery. When due to these causes, it is believed that the

reduced relative competency should be considered a joint risk of the employer and employee. It is a question whether in such cases the employer should not attempt to correct the loss of efficiency through transfer or retraining, but if this is impossible the payment of a minimum dismissal compensation, it is believed, should be considered.

The merging of the dismissal-compensation plan with that of other protective plans is regarded as logical, especially for the older employees, and reserves maintained against pension and disability liabilities may be adjusted to cover dismissal allowances for such employees. Compensation for employees with shorter service with the company may be considered a pay-roll item, thus simplifying the actuarial computation of the reserve necessary to meet these payments. Payments for temporary lay-offs involve separate problems of administration and finance, however, and, it is considered, should be sharply separated from the system of compensation for permanent lay-offs.

In conclusion, it is said, "to the employee and his dependents, protection against sudden termination of income because of permanent lay-off is as important as protection against a stoppage due to disability, death, or old age. To the extent financially expedient, the employer may well seek to provide a balanced program of protection against these risks."

Wages and Cost of Living in Algeria

CERTAIN data on wages and cost of living in Algeria, derived from official statistics compiled in that country, are published in a report of the British Department of Overseas Trade on "Economic Conditions in Algeria, 1929–30." The figures below, taken from this report, give a comparison of daily wages of male and female workers in France and Algeria in specified years from 1926 to 1929.

DAILY WAGES OF MALE AND FEMALE WORKERS IN FRANCE AND ALGERIA

Year	France		Algeria	
	Francs	United States currency	Francs	United States currency
Men:				
1926	26.93	$0.87	22.70	$0.74
1928	28.44	1.11	26.75	1.05
1929	31.35	1.23	34.95	1.37
Women:				
1928	16.06	.63	15.99	.63
1929	18.30	.72	23.09	.91

The figures for Algeria for 1928 and 1929 are for the month of October and represent an increase in the wages of male workers, between the two dates, of 30.7 per cent and of female workers, of 44.4 per cent.

The relative rise in the cost of living in Algiers between 1914 (taken as 100) and 1928, 1929, and 1930 (January to September), as calcu-

lated by the Algiers Prefecture, is indicated below in figures taken from the British report:

1928	621
1929	656
1930, January to September	620

Wages in Brussels, 1931

A REPORT from Walter S. Reineck, American consul at Antwerp, Belgium, gives the average wages, shown in the following table, which were paid in the principal industries in the region of Brussels in April, 1931.

AVERAGE HOURLY WAGES PAID IN BRUSSELS DISTRICT IN APRIL, 1931

[Conversions into United States currency on basis of franc=2.78 cents]

Industry and occupation	Average hourly wages	
	Belgian currency	United States currency
Metal industries		
Mechanical construction:		
Machine workers—	*Francs*	*Cents*
Boring-machine hands	5.95–6.95	16.5–19.3
Stampers	5.00–5.95	13.9–16.5
Milling-machine workers	6.20–7.10	17.2–19.7
Slotting-machine workers	5.75–6.70	16.0–18.6
Planing-machine hands	5.75–6.70	16.0–18.6
Lathe hands	5.95–7.10	16.5–19.7
Hand workers—		
Metal fitters	5.95–6.70	16.5–18.6
Fitters (autos)	6.20–7.60	17.2–21.1
Firemen, boilers	5.20–5.95	14.5–16.5
Firemen and machinists	5.45–6.45	15.2–17.9
Toolmakers	6.45–7.60	17.9–21.1
Laborers	4.30–4.55	12.0–12.6
Foundries:		
Chippers, trimmers	5.00–5.75	13.9–16.0
Founders	5.75–6.45	16.0–17.9
Laborers	4.55–4.80	12.6–13.3
Grinders	5.00–5.95	13.9–16.5
Molders	5.95–6.70	16.5–18.6
Core makers	5.95–6.70	16.5–18.6
Coach building:		
Smiths	6.45–7.35	17.9–20.4
Plate makers	6.20–7.35	17.2–20.4
Filers	4.80–5.45	13.3–15.2
Sheet-iron workers	6.45–7.90	17.9–22.0
Boiler making, bridges, etc.:		
Fitters	5.00–6.20	13.9–17.2
Iron and coppersmiths	5.75–6.45	16.0–17.9
Cutters, sawyers	4.80–5.45	13.3–15.2
Stampers	4.80–5.45	13.3–15.2
Blacksmiths	5.00–6.45	13.9–17.9
Filers	4.80–5.45	13.3–15.2
Shop laborers	4.30–4.55	12.0–12.6
Riveters	5.00–6.20	13.9–17.2
Welders	6.45–7.60	17.9–21.1
Sheet-iron workers	5.75–6.45	16.0–17.9
Wire drawers	5.75–6.45	16.0–17.9
Wire-fence makers	5.00–5.45	13.9–15.2
Metal enameling and tinplate:		
Cutters	4.80–5.70	13.3–15.8
Enamelers	5.20–5.95	14.5–16.5
Stampers	4.80–5.70	13.3–15.8
Tinners	5.70–6.45	15.8–17.9
Laborers	4.30–4.55	12.0–12.6
Metal boxes:		
Cutters	4.80–5.70	13.3–15.8
Embossers, female	3.10–3.60	8.6–10.0
Welders, female	3.10–3.60	8.6–10.0

AVERAGE HOURLY WAGES PAID IN BRUSSELS DISTRICT IN APRIL, 1931—Continued

Industry and occupation	Average hourly wages	
	Belgian currency	United States currency
Metal industries—Continued		
Stoves, locks, plumbing, electricity:	*Francs*	*Cents*
Safe makers	5.45–6.70	15.2–18.6
Stove makers	4.80–5.95	13.3–16.5
Adjusters (locks)	4.80–6.20	13.3–17.2
Assemblers (stoves)	5.95–6.70	16.5–18.6
Assemblers, helpers	4.30–4.80	12.0–13.3
Coil winders, male	[1] 6.80	[1] 18.9
Coil winders, female	3.00–3.75	8.3–10.4
Electrical fitters	[1] 6.80	[1] 18.9
Electrical fitters' helpers	3.50–4.25	9.7–11.8
Brass industries:		
Bronze chasers	[2] 7.00	[2] 19.5
Metal decorators	[2] 7.00	[2] 19.5
Copper founders	[2] 7.00	[2] 19.5
Brass finishers	[2] 7.00	[2] 19.5
Copper molders	[2] 7.00	[2] 19.5
Polishers	[2] 7.00	[2] 19.5
Embossers	[2] 7.20	[2] 20.0
Lathe hands	[2] 7.00	[2] 19.5
Laborers, copper foundries	[2] 4.60	[2] 12.8
Chippers	[2] 4.60	[2] 12.8
Shaping-machine hands	[2] 4.60	[2] 12.8
Food industries		
Cracker makers	5.50–6.00	15.3–16.7
Bakers	6.25–7.00	17.4–19.5
Chocolate makers	5.75–6.75	16.0–18.8
Candy makers	5.75–6.75	16.0–18.8
Brewery workers	5.80	16.1
Millers	5.50–5.80	15.3–16.1
		Dollars
Cake and pastry makers	[3] 250.00–300.00	[3] 6.95–8.34
Clothing industries		*Cents*
Laundry workers, female	3.25–3.50	9.0–9.7
Embroiderers, machine	3.25–3.50	9.0–9.7
		Dollars
Shirt cutters	[4] 1,300.00–1,400.00	[4] 36.14–38.92
		Cents
Hatmakers (women's hats)	8.00–9.00	22.2–25.0
Cutters (furs)	4.75–5.50	13.2–15.3
		Dollars
Milliners	[4] 950.00–1,000.00	[4] 26.41–27.80
		Cents
Milliners, apprentices	2.75–3.50	7.6–9.7
Furriers	8.00–10.00	22.2–27.8
Tailors, bushelers	5.50–6.00	15.3–16.7
Tailors, men's clothing	6.50–7.00	18.1–19.5
Tailors, women's clothing	6.00–6.50	16.7–18.1
Tailors, female	5.50–5.75	15.3–16.0
Construction industries		
Carpenters	6.75	18.8
Cement workers	6.50	18.1
Masons	6.25	17.4
Masons' helpers	5.00	13.9
Painters	6.25–6.50	17.4–18.1
Plumbers	6.50	18.1
Plumbers' helpers	3.50–4.00	9.7–11.1
Wood and furniture		
Cabinetmakers	6.75	18.8
Furniture polishers	6.75	18.8
Wood sawyers	6.90	19.2
Upholsterers, male	6.75	18.8
Upholsterers, female	4.00–4.75	11.1–13.2
Wood turners	6.85	19.0
Mortising-machine tenders	6.45	17.9
Wood-pattern makers	8.00	22.2
Brush industry		
Brush makers	6.75	18.8

[1] Minimum.
[2] Plus 3 per cent of the total monthly salary payable the last Saturday of each month.
[3] Per week.
[4] Per month.

AVERAGE HOURLY WAGES PAID IN BRUSSELS DISTRICT IN APRIL, 1931—Continued

Industry and occupation	Average hourly wages	
	Belgian currency	United States currency
Hides and skins	*Francs*	*Cents*
Glove makers	4. 25	11. 8
Shoe cutters	6. 19– 6. 62	17. 2–18. 4
Skivers, female	5. 05	14. 0
Folders (shoes), female	4. 50	12. 5
Machine stitchers (shoes)	6. 68	18. 6
Tobacco		*Dollars*
Cigarette makers	[3] 205. 00– 210. 00	[3] 5. 70–5. 84
Cigar makers	[3] 240. 00	[3] 6. 67
		Cents
Cutting-machine operators	5. 20– 5. 40	14. 5–15. 0
Book and paper industries		*Dollars*
Stitchers and binders (book)	[3] 328. 25	[3] 9. 13
		Cents
Trimmers (paper)	5. 10	14. 2
Counters (paper)	2. 40	6. 7
Laborers (paper)	4. 30	12. 0
		Dollars
Transfer maker (lithography)	[3] 335. 25	[3] 9. 32
Feeders	[3] 190. 50	[3] 5. 30
Printers	[3] 331. 25	[3] 9. 21

[3] Per week.

Wages and Hours of Work in British Columbia, 1929 and 1930

THE following statistics on wages and hours in British Columbia are taken from the annual report of the Department of Labor of that Province for the year ending December 31, 1930.

The average full week's wages of adult males in British Columbia in various industries in 1929 and 1930 are presented in Table 1. It will be noted that the average for all industries is 56 cents less for 1930 than for 1929.

TABLE 1.—AVERAGE FULL WEEK'S WAGES OF ADULT MALES IN SPECIFIED INDUSTRIES, 1929 AND 1930

Industry group	1929	1930	Increase or decrease in 1930 as compared with 1929
Breweries	$27. 70	$27. 40	−$0. 30
Builders' materials	28. 04	27. 38	−. 66
Cigar and tobacco manufacturing	26. 58	25. 06	−1. 52
Coal mining	30. 18	29. 03	−1. 15
Coast shipping	32. 84	31. 36	−1. 48
Contracting	30. 57	30. 34	−. 23
Explosives and chemicals	24. 61	26. 66	+2. 05
Food products, manufacture of	26. 56	27. 79	+1. 23
Garment making	28. 68	28. 34	−. 34
House furnishings	26. 74	25. 54	−1. 20
Jewelry, manufacture of	36. 61	37. 85	+1. 24
Laundries, cleaning, and dyeing	28. 16	27. 16	−1. 00
Leather and fur goods, manufacture of	29. 03	28. 31	−. 72
Lumber industries	26. 54	25. 69	−. 85
Metal trades	29. 50	29. 96	+. 46
Metal mining	35. 24	33. 31	−1. 93
Miscellaneous trades and industries	26. 21	25. 88	−. 33
Oil refining	30. 50	29. 78	−. 72
Paint manufacturing	25. 58	25. 85	+. 27
Printing and publishing	40. 81	39. 34	−1. 47
Pulp and paper manufacturing	27. 87	27. 39	−. 48
Shipbuilding	30. 25	30. 35	+. 10
Smelting	33. 09	30. 05	−3. 04
Street railways, gas, water, power, telephones, etc	30. 70	30. 02	−. 68
Wood manufacture (n. e. s.)	25. 49	26. 03	+. 54
Total	29. 20	28. 64	−. 56

According to Table 2 there were 7,253 adult male workers in British Columbia in 1930 being paid wage rates of less than $19 per week, 1,377 being paid less than $15 per week.[1]

TABLE 2.—NUMBER OF ADULT MALE WORKERS EMPLOYED AT LOW WAGE RATES, 1929 AND 1930

Weekly rate	1929	1930
$8 to $8.99		3
$9 to $9.99	1	47
$10 to $10.99	97	57
$11 to $11.99	27	88
$12 to $12.99	49	182
$13 to $13.99	110	184
$14 to $14.99	494	816
$15 to $15.99	588	954
$16 to $16.99	1,267	1,024
$17 to $17.99	1,550	1,950
$18 to $18.99	1,409	1,948
Total	5,592	7,253

The average weekly working hours of the 4,704 British Columbia firms making returns for 1930 were 48.62 as compared with 48.25 for the preceding year. In Table 3 the average weekly hours of work are given by industries for both 1929 and 1930:

TABLE 3.—AVERAGE WEEKLY HOURS OF WORK, BY INDUSTRIES, 1929 AND 1930

Industry	1929	1930	Increase or decrease in 1930 as compared with 1929
Breweries	46.77	47.18	+0.41
Builders' materials, etc	46.96	47.09	+.13
Cigar and tobacco manufacturing	44.40	45.00	+.60
Coal mining	48.03	48.03	(a)
Coast shipping	51.05	53.94	+2.89
Contracting	45.16	45.16	(a)
Explosives, chemicals, etc	46.04	45.30	−.74
Food products, manufacture of	51.01	52.23	+1.22
Garment making	44.87	44.08	−.79
House furnishings	45.53	45.25	−.28
Jewelry, manufacture of	44.24	44.07	−.17
Laundries, cleaning and dyeing	46.62	46.06	−.56
Leather and fur goods, manufacture of	46.70	46.67	−.03
Lumber industries:			
Logging	47.31	48.44	+1.13
Logging railways	48.61	50.09	+1.48
Mixed plants	48.00	48.00	(a)
Lumber dealers	47.63	47.59	−.04
Planing mills	49.14	48.68	−.46
Sawmills	49.12	48.95	−.17
Shingle mills	47.86	47.84	−.02
Metal trades	45.87	45.88	+.01
Metal mining	53.96	52.29	−1.67
Miscellaneous trades and industries	46.10	47.32	+1.22
Oil refining	51.61	54.61	+3.00
Paint manufacturing	45.09	44.40	−.69
Printing and publishing	45.44	45.52	+.08
Pulp and paper manufacturing	48.35	48.32	−.03
Shipbuilding	44.15	44.35	+.20
Smelting	52.72	52.01	−.71
Street railways, gas, water, power, etc	44.61	46.25	+1.64
Wood manufacture (not elsewhere specified)	47.03	45.92	−1.11
Total	48.25	48.62	+.37

[a] No change.

[1] Based on reports from firms making returns.

Trade-Union Report on Hours and Earnings in the German Textile Industry

THE agreement and wage section of the German Union of Textile Workers investigated the actual earnings of male and female workers in the most important branches of the textile industry in Germany from December, 1929, to May, 1931, and has published its findings in a recent report [1] from which the following data are taken.

The dates covered by the investigation were not the same for all branches of the industry, the distribution being as follows: Worsted spinning in December, 1929 and 1930; wool in January, 1930 and 1931; cotton weaving in February, 1930 and 1931; cotton spinning in March, 1930 and 1931; jute in April, 1930 and 1931; and hosiery in May, 1930 and 1931.

TABLE 1.—TOTAL NUMBER OF PERSONS EMPLOYED AND NUMBER COVERED BY STUDY

Branch of industry	Number of locality	Number of establishments	Persons employed					
			Total			Number covered by investigation		
			Males	Females	Both sexes	Males	Females	Both sexes
Worsted spinning	26	32	9,130	17,670	26,800	4,695	12,218	16,913
Wool	38	139	14,061	13,529	27,590	10,565	10,838	21,403
Cotton spinning	28	30	4,161	7,215	11,376	2,015	5,550	7,565
Weaving, undyed cotton	18	24	3,977	4,417	8,394	1,762	2,549	4,311
Weaving, dyed cotton	23	32	5,546	6,671	12,217	2,229	3,683	5,912
Jute	11	12	2,224	5,060	7,284	1,168	4,572	5,740
Hosiery	18	37	2,892	4,301	7,193	2,627	3,904	6,531
Total:								
December, 1930–May, 1931	162	306	41,991	58,863	100,854	25,061	43,314	68,375
December, 1929–May, 1930	130	221	34,512	47,477	81,989	19,859	35,131	54,990

Table 2 shows the average weekly working hours and the average hourly and weekly earnings in each of the branches of the industry, by sex.

[1] Deutscher Textilarbeiter-Verband. Abteilung für Tarife und Löhne. Erhebungen über die Effektiv-Verdienste in der Textilindustrie, Dezember, 1930–Mai, 1931. Berlin, 1931.

TABLE 2.—AVERAGE HOURS PER WEEK AND AVERAGE HOURLY AND WEEKLY EARNINGS IN PRINCIPAL BRANCHES OF TEXTILE INDUSTRY IN GERMANY [1]

[Conversions into United States currency on basis of mark=23.8 cents, pfennig=0.238 cent]

Branch of industry and sex of workers	Hours of work per week		Hourly earnings				Weekly earnings			
			December, 1929–May, 1930 [1]		December, 1930–May, 1931 [1]		December, 1929–May, 1930 [1]		December, 1930–May, 1931 [1]	
	December, 1929–May, 1930 [1]	December, 1930–May, 1931 [1]	German currency	United States currency	German currency	United States currency	German currency	United States currency	German currency	United States currency
			Pfennigs	*Cents*	*Pfennigs*	*Cents*	*Marks*		*Marks*	
Worsted spinning:										
Male	46.3	46.4	76.4	18.2	77.3	18.4	35.37	$8.42	35.87	$8.54
Female	45.7	46.8	56.0	13.3	54.3	12.9	25.59	6.09	25.41	6.05
Wool:										
Male	46.6	42.0	85.8	20.4	85.9	20.4	39.98	9.52	36.08	8.59
Female	45.8	41.9	64.2	15.3	63.8	15.2	29.40	7.00	26.73	6.36
Cotton spinning:										
Male	44.0	39.0	72.5	17.3	67.0	15.9	31.90	7.59	26.13	6.22
Female	45.9	39.2	61.4	14.6	56.5	13.4	28.18	6.71	22.15	5.27
Weaving, undyed cotton:										
Male	47.2	40.5	79.8	19.0	78.5	18.7	37.67	8.97	31.79	7.57
Female	47.0	40.3	65.1	15.5	62.9	15.0	30.60	7.28	25.35	6.03
Weaving, dyed cotton:										
Male	39.8	37.4	78.1	18.6	77.3	18.4	31.08	7.40	28.91	6.88
Female	40.2	39.0	60.2	14.3	61.0	14.5	24.20	5.76	23.79	5.66
Jute:										
Male	39.1	41.0	77.0	18.3	68.4	16.3	30.11	7.17	28.04	6.67
Female	40.5	40.5	55.1	13.1	51.6	12.3	22.32	5.31	20.90	4.97
Hosiery:										
Male	45.4	43.6	111.6	26.6	96.2	22.9	50.67	12.06	41.94	9.98
Female	44.9	44.4	64.0	15.2	56.0	13.3	28.74	6.84	24.86	5.92
Average:										
Male	44.9	42.2	83.9	20.0	81.7	19.4	37.67	8.97	34.48	8.21
Female	44.3	42.7	60.4	14.4	57.9	13.8	26.76	6.37	24.72	5.88

[1] Data for worsted spinning relate to December, 1929 and 1930; wool to January, 1930 and 1931; cotton weaving to February, 1930 and 1931; cotton spinning to March, 1930 and 1931; jute to April, 1930 and 1931; and hosiery to May, 1930 and 1931.

As the above figures show, the average hourly earnings in all branches of textile industry has been lowered by 2.6 per cent for male and by 4.1 per cent for female workers during the period indicated in the table.

The actual earnings were above agreement wages, as shown in Table 3:

TABLE 3.—PER CENT BY WHICH ACTUAL EARNINGS EXCEEDED AGREEMENT RATES

Branch of industry and sex of workers	Per cent by which actual earnings exceeded agreement rates in—		Branch of industry and sex of workers	Per cent by which actual earnings exceeded agreement rates in—	
	Dec. 1929–May, 1930 [1]	Dec. 1930–May, 1931 [1]		Dec. 1929–May, 1930 [1]	Dec. 1930–May, 1931 [1]
Worsted spinning:			Jute:		
Males	6.8	9.7	Males	21.9	12.6
Females	5.3	5.2	Females	15.5	13.7
Wool:			Hosiery:		
Males	21.2	20.4	Males	61.3	47.3
Females	11.1	9.5	Females	51.3	38.6
Cotton spinning:					
Males	12.3	7.9	Average:		
Females	14.8	10.3	Males	22.9	19.6
Weaving, undyed cotton:			Females	15.5	11.5
Males	10.8	6.3			
Females	12.2	6.8			
Weaving, dyed cotton:					
Males	13.6	11.5			
Females	11.3	7.3			

[1] Data for worsted spinning relate to December, 1929 and 1930; wool to January, 1930 and 1931; cotton weaving to February, 1930 and 1931; cotton spinning to March, 1930 and 1931; jute to April, 1930 and 1931; and hosiery to May, 1930 and 1931.

Table 4 shows actual average weekly working hours and hourly and weekly earnings in each of the principal branches of the industry by occupation and sex:

TABLE 4.—WEEKLY HOURS OF LABOR AND ACTUAL HOURLY AND WEEKLY EARNINGS IN PRINCIPAL BRANCHES OF GERMAN TEXTILE INDUSTRY, BY OCCUPATION AND SEX

Worsted spinning [1]

[Conversions into United States currency on basis of mark=23.8 cents; pfennig=0.238 cent]

Occupation and sex	Average weekly working hours	Average hourly earnings		Average rates established by agreement		Weekly earnings	
		German currency	United States currency	German currency	United States currency	German currency	United States currency
Males		*Pfennigs*	*Cents*	*Pfennigs*	*Cents*	*Marks*	
Sorters	42.4	107.4	25.6	89.1	21.2	45.54	$10.84
Willowers	46.2	75.0	17.9	71.0	16.9	34.65	8.25
Card tenders	46.8	79.8	19.0	76.2	18.1	37.35	8.89
Washers	47.9	78.0	18.6	71.5	17.0	37.36	8.89
Combers	47.1	71.6	17.0	70.5	16.8	33.72	8.03
Spinners, automatic looms	47.2	93.4	22.2	86.1	20.5	44.08	10.49
Piecers and doffers	47.1	73.5	17.5	----	----	34.62	8.24
Bobbin setters	45.8	40.4	9.6	----	----	18.50	4.40
Average (including piecers and doffers and bobbin setters)	46.4	77.3	18.4	----	----	35.87	8.54
Average (excluding piecers and doffers and bobbin setters)	46.1	88.3	21.0	80.5	19.2	40.71	9.69

[1] Data for worsted spinning relate to December, 1929 and 1930; woolen to January, 1930 and 1931; cotton weaving to February, 1930 and 1931; cotton spinning to March, 1930 and 1931; jute industry to April, 1930 and 1931; and hosiery to May, 1930 and 1931.

TABLE 4.—WEEKLY HOURS OF LABOR AND ACTUAL HOURLY AND WEEKLY EARNINGS IN PRINCIPAL BRANCHES OF GERMAN TEXTILE INDUSTRY, BY OCCUPATION AND SEX—Continued

Worsted spinning—Continued

Occupation and sex	Average weekly working hours	Average hourly earnings		Average rates established by agreement		Weekly earnings	
		German currency	United States currency	German currency	United States currency	German currency	United States currency
Females		*Pfennigs*	*Cents*	*Pfennigs*	*Cents*	*Marks*	
Sorters	45.5	65.8	15.7	60.0	14.3	29.94	$7.13
Willowers	46.2	45.7	10.9	45.7	10.9	21.11	5.02
Card feeders	47.3	49.5	11.8	46.9	11.2	23.41	5.57
Washers	47.2	49.0	11.7	47.8	11.4	23.13	5.50
Dryers	46.2	45.7	10.9	45.7	10.9	21.11	5.02
Combers	47.7	50.8	12.1	48.8	11.6	24.23	5.77
Drawing-frame tenders	46.3	54.0	12.9	51.5	12.3	25.00	5.95
Piecers and doffers	47.1	59.2	14.1	----	----	27.88	6.64
Bobbin setters	45.8	36.3	8.6	----	----	16.63	3.96
Ring spinners	47.2	56.1	13.4	54.0	12.9	26.48	6.30
Spoolers	45.8	54.9	13.1	50.8	12.1	25.14	5.98
Twisters	47.1	56.5	13.4	52.7	12.5	26.61	6.33
Reelers	47.1	57.0	13.6	52.8	12.6	26.85	6.39
Doublers	46.9	50.7	12.1	50.6	12.0	23.78	5.67
Average (including piecers and doffers and bobbin setters)	46.8	54.3	12.9	----	----	25.41	6.05
Average (excluding piecers and doffers and bobbin setters)	46.8	54.5	13.0	51.8	12.3	25.51	6.07

Woolen [1]

Males							
Willowers	39.3	71.7	17.1	66.4	15.8	28.18	$6.71
Cleaners	38.9	82.2	19.6	71.2	16.9	31.98	7.61
Card tenders	38.1	76.7	18.3	69.8	16.6	29.22	6.95
Spinners, automatic looms	34.2	91.0	21.7	71.7	70.1	31.12	7.41
Piecers and doffers	37.0	57.8	13.8	----	----	21.39	5.09
Warpers	42.2	90.1	21.4	67.8	16.1	38.02	9.05
Weavers	43.0	90.3	21.5	73.1	17.4	38.83	9.24
Shearers	40.7	74.4	17.7	71.3	17.0	30.28	7.21
Fullers	40.7	73.9	17.6	70.8	16.9	30.08	7.14
Teaselers	38.6	68.8	16.4	66.1	15.7	26.56	6.32
Washers	38.1	70.0	16.7	67.2	16.0	26.67	6.35
Dyers	42.0	71.4	17.0	68.4	16.3	29.99	7.14
Average (including piecers and doffers)	42.0	85.9	20.4	----	----	36.08	8.59
Average (excluding piecers and doffers)	42.2	86.8	20.7	72.1	17.2	36.36	8.65
Females							
Willowers	41.6	54.5	13.0	53.4	12.7	22.67	5.40
Card feeders	38.1	58.5	13.9	53.7	12.8	22.29	5.31
Spinners	38.6	57.9	13.8	54.1	12.9	22.35	5.32
Piecers and doffers	38.5	49.6	11.8	----	----	19.10	4.55
Twisters	42.0	64.0	15.2	54.2	12.9	26.88	6.40
Spoolers	42.5	55.8	13.3	52.0	12.4	23.72	5.64
Warpers	43.3	68.8	16.4	62.8	14.9	29.79	7.09
Weavers	40.7	70.8	16.9	67.0	15.9	28.82	6.86
Shearers	41.9	53.2	12.7	49.8	11.9	22.29	5.31
Teaselers	43.8	53.5	12.7	52.2	12.4	23.43	5.58
Pickers	42.0	56.5	13.4	51.5	12.3	23.73	5.65
Menders	44.4	69.8	16.6	62.7	14.9	30.99	7.38
Average (including piecers and doffers)	41.9	63.8	15.2	----	----	26.73	6.36
Average (excluding piecers and doffers)	42.1	64.5	15.4	58.9	14.0	27.15	6.46

[1] Data for worsted spinning relate to December, 1929 and 1930; woolen to January, 1930 and 1931; cotton weaving to February, 1930 and 1931; cotton spinning to March, 1930 and 1931; jute industry to April, 1930 and 1931; and hosiery to May, 1930 and 1931.

TABLE 4.—WEEKLY HOURS OF LABOR AND ACTUAL HOURLY AND WEEKLY EARNINGS IN PRINCIPAL BRANCHES OF GERMAN TEXTILE INDUSTRY, BY OCCUPATION AND SEX—Continued

Weaving, undyed cotton[1]

Occupation and sex	Average weekly working hours	Average hourly earnings		Average rates established by agreement		Weekly earnings	
		German currency	United States currency	German currency	United States currency	German currency	United States currency
Males		*Pfennigs*	*Cents*	*Pfennigs*	*Cents*	*Marks*	
Sizers	43.7	80.5	19.2	74.5	17.7	35.18	$8.38
Twisters	38.0	78.0	18.6	70.7	16.8	29.64	7.05
Weavers on—							
2 narrow looms	34.7	36.6	8.7			[2] 12.70	[2] 3.02
2 wide looms	43.9	78.9	18.8	71.1	16.9	34.64	8.24
3 narrow looms	43.4	70.3	16.7	67.3	16.0	30.51	7.26
3 wide looms	41.0	76.1	18.1	67.9	16.2	31.20	7.43
4 narrow looms	40.4	75.8	18.0	72.0	17.1	30.62	7.29
4 wide looms	38.0	79.0	18.8	74.3	17.7	30.02	7.19
5 looms	37.6	77.8	18.5			29.25	6.96
6 looms	36.1	74.7	17.8			26.97	6.42
8 looms	42.4	72.7	17.3			30.82	7.34
Average	40.8	75.2	17.9	70.9	16.9	30.68	7.30
Jacquard weavers on—							
2 looms	40.0	42.7	10.2			[2] 17.08	[2] 4.07
3 looms	36.2	74.3	17.7			26.90	6.40
4 looms	34.6	87.1	20.7			30.14	7.17
Average	35.6	78.7	18.7			28.02	6.67
Weavers on automatic reshuttling looms:							
5 looms	34.0	87.4	20.8			29.72	7.07
6 looms	34.5	83.9	20.0			28.95	6.89
7 looms	43.5	75.5	18.0			32.84	7.82
8 looms	44.4	69.0	16.4			30.64	7.29
9 looms	40.0	42.9	10.2			[2] 17.16	[2] 4.08
10 looms	48.7	71.7	17.1			34.92	8.31
12 looms	46.0	86.0	20.5			39.56	9.42
13 looms	20.0	51.4	12.2			[2] 10.28	[2] 2.45
14 looms	45.6	79.3	18.9			36.16	8.61
15 looms	45.5	72.3	17.2			32.90	7.83
16 looms	42.8	92.9	22.1			39.76	9.46
18 looms	45.6	86.0	20.5			39.13	9.31
20 looms	33.9	109.3	26.0			37.05	8.81
26 looms	31.0	82.6	19.7			25.61	6.10
Average	41.1	87.6	20.8			36.00	8.57
Average, males	40.5	78.5	18.7			31.79	7.57
Females							
Spoolers	41.2	57.8	13.8	52.2	12.4	23.81	5.67
Twisters	46.6	55.7	13.3	56.6	13.5	25.96	6.18
Warpers	39.8	61.0	14.5	54.6	13.0	24.28	5.78
Twisters-in and winders	39.4	59.4	14.1	55.0	13.1	23.40	5.57
Pickers	39.6	53.4	12.7	49.5	11.8	21.15	5.03
Weavers on—							
2 narrow looms	44.9	56.5	13.4	55.3	13.2	25.37	6.04
2 wide looms	27.4	63.1	15.0	57.5	13.7	17.29	4.11
3 narrow looms	38.9	63.5	15.1	59.8	14.2	24.70	5.88
3 wide looms	32.0	42.7	10.2	63.8	15.2	13.66	3.25
4 narrow looms	40.1	68.7	16.4	65.4	15.6	27.55	6.56
4 wide looms	38.8	67.8	16.1	73.3	17.4	26.31	6.26
6 looms	40.2	84.0	20.0			33.77	8.03
Average	39.8	66.1	15.7	62.5	14.9	26.31	6.26

[3] Data for worsted spinning relate to December, 1929 and 1930; woolen to January, 1930 and 1931; cotton weaving to February, 1930 and 1931; cotton spinning to March, 1930 and 1931; jute industry to April, 1930 and 1931; and hosiery to May, 1930 and 1931.

[2] Apprentices.

TABLE 4.—WEEKLY HOURS OF LABOR AND ACTUAL HOURLY AND WEEKLY EARNINGS IN PRINCIPAL BRANCHES OF GERMAN TEXTILE INDUSTRY, BY OCCUPATION AND SEX—Continued

Weaving, undyed cotton—Continued

Occupation and sex	Average weekly working hours	Average hourly earnings		Average rates established by agreement		Weekly earnings	
		German currency	United States currency	German currency	United States currency	German currency	United States currency
Females—Continued							
Jacquard weavers on—		*Pfennigs*	*Cents*	*Pfennigs*	*Cents*	*Marks*	
2 looms	39.3	49.1	11.7	-------	-------	[3] 19.30	[3] $4.59
3 looms	38.9	68.7	16.4	-------	-------	26.72	6.36
Average	39.0	63.7	15.2	-------	-------	24.84	5.91
Weavers on automatic reshuttling looms:							
4 looms	48.0	67.0	15.9	-------	-------	32.16	7.65
6 looms	40.0	56.1	13.4	-------	-------	22.44	5.34
8 looms	44.3	56.3	13.4	-------	-------	24.94	5.94
10 looms	42.4	71.4	17.0	-------	-------	30.27	7.20
12 looms	43.1	67.8	16.1	-------	-------	29.22	6.95
14 looms	40.0	70.0	16.7	-------	-------	28.00	6.66
16 looms	43.0	84.3	20.0	-------	-------	36.25	8.63
20 looms	20.0	80.0	19.0	-------	-------	16.00	3.80
26 looms	31.0	76.7	18.3	-------	-------	23.78	5.66
Average	39.0	72.6	17.3	-------	-------	28.31	6.74
Average, females	40.3	62.9	15.0	-------	-------	25.35	6.03

Weaving, dyed cotton [1]

Males							
Warpers	41.9	80.4	19.1	70.9	16.9	33.69	$8.02
Beamers	49.5	70.4	16.8	63.0	15.0	34.85	8.29
Sizers	42.6	74.7	17.8	70.0	16.7	31.82	7.57
Twisters-in and winders	38.1	80.4	19.1	70.8	16.9	30.64	7.29
Weavers on—							
1 narrow loom	40.5	34.1	8.2	-------	-------	13.81	3.29
1 wide loom	44.0	66.1	15.7	56.1	13.4	29.08	6.92
2 narrow looms	42.6	62.6	14.9	65.1	15.5	26.87	6.40
2 wide looms	35.5	75.3	17.9	66.3	15.8	26.73	6.36
3 narrow looms	31.9	76.2	18.1	67.3	16.0	24.31	5.79
3 wide looms	36.9	78.1	18.6	74.7	17.8	28.82	6.86
4 narrow looms	37.3	81.0	19.3	72.0	17.1	30.21	7.19
4 wide looms	45.4	78.8	18.8	80.2	19.1	35.78	8.52
6 narrow looms	34.0	81.9	19.5	69.4	16.5	27.85	6.63
8 narrow looms	45.0	101.4	24.0	-------	-------	45.63	10.86
Average	36.0	75.1	17.9	67.7	16.1	27.04	6.44
Jacquard weavers on—							
1 loom	35.0	57.1	13.6	55.9	13.3	19.99	4.76
2 looms	39.1	81.6	19.4	71.8	17.1	31.91	7.59
3 looms	46.8	84.5	20.1	76.1	18.1	39.55	9.41
4 looms	44.0	84.1	20.0	72.1	17.2	37.34	8.89
8 looms	45.0	105.5	25.0	-------	-------	47.48	11.30
Average	40.3	81.3	19.3	71.7	17.1	32.76	7.80
Weavers on automatic reshuttling looms:							
5 looms	42.0	75.8	18.0	-------	-------	31.84	7.58
8 looms	45.7	76.8	18.3	-------	-------	35.10	8.35
12 looms	40.9	98.5	23.4	-------	-------	40.29	9.59
16 looms	26.3	106.0	25.2	-------	-------	27.88	6.64
24 looms	26.3	109.0	25.9	-------	-------	28.67	6.82
Average	31.2	100.8	24.0	-------	-------	31.45	7.49
Average, males	37.4	77.3	18.4	-------	-------	28.91	6.88

[1] Data for worsted spinning relate to December, 1929 and 1930; woolen to January, 1930 and 1931; cotton weaving to February, 1930 and 1931; cotton spinning to March, 1930 and 1931; jute industry to April, 1930 and 1931; and hosiery to May, 1930 and 1931.

[3] Includes 8 apprentices.

TABLE 4.—WEEKLY HOURS OF LABOR AND ACTUAL HOURLY AND WEEKLY EARNINGS IN PRINCIPAL BRANCHES OF GERMAN TEXTILE INDUSTRY, BY OCCUPATION AND SEX—Continued

Weaving, dyed cotton—Continued

Occupation and sex	Average weekly working hours	Average hourly earnings		Average rates established by agreement		Weekly earnings	
		German currency	United States currency	German currency	United States currency	German currency	United States currency
Females		*Pfennigs*	*Cents*	*Pfennigs*	*Cents*	*Marks*	
Spoolers	37.4	54.3	12.9	49.6	11.8	20.31	$4.83
Twisters	41.9	57.3	13.6	49.9	11.9	24.01	5.71
Warpers	38.1	60.5	14.4	55.6	13.2	23.05	5.49
Twisters-in and winders	43.7	60.9	14.5	57.1	13.6	26.61	6.33
Trimmers	39.4	54.1	12.9	51.4	12.2	21.32	5.07
Menders	45.0	52.6	12.5	50.6	12.0	23.67	5.63
Weavers on—							
1 narrow loom	43.1	55.6	13.2	50.6	12.0	23.96	5.70
1 wide loom	43.8	57.6	13.7	50.6	12.0	25.23	6.00
2 narrow looms	39.5	60.1	14.3	56.4	13.4	23.74	5.65
2 wide looms	43.5	61.7	14.7	60.3	14.4	26.84	6.39
3 narrow looms	34.6	70.7	16.8	61.8	14.7	24.26	5.77
4 narrow looms	38.8	75.2	17.9	72.7	17.3	29.18	6.94
4 wide looms	34.1	71.0	16.9	75.4	17.9	24.21	5.76
Average	40.1	65.4	15.6	61.7	14.7	26.23	6.24
Jacquard weavers, on:							
1 loom	32.0	51.4	12.2	50.6	12.0	16.45	3.92
2 looms	34.7	63.6	15.1	59.4	14.1	22.07	5.25
4 looms	39.7	71.8	17.1	66.8	15.9	28.50	6.78
Average	34.9	63.4	15.1	59.3	14.1	22.13	5.27
Weavers on automatic reshuttling looms:							
4 looms	48.0	74.9	17.8			35.95	8.56
6 looms	35.6	82.2	19.6			29.26	6.96
8 looms	32.9	60.4	14.4			19.87	4.73
14 looms	33.5	82.2	19.6			27.54	6.55
16 looms	26.3	92.1	21.9			24.22	5.76
Average	32.7	81.7	19.4			26.72	6.36
Average, females	39.0	61.0	14.5			23.79	5.66

Cotton spinning[1]

Males							
Cotton shakers	39.1	67.4	16.0	63.9	15.2	26.35	$6.27
Card tenders	39.5	67.0	15.9	63.4	15.1	26.47	6.30
Spinners	39.1	85.9	20.4	76.8	18.3	33.59	7.99
Piecers and doffers	39.6	71.6	17.0			28.35	6.75
Bobbin haulers	37.2	43.6	10.4			16.22	3.86
Average (including piecers and doffers and bobbin haulers)	39.0	67.0	15.9			26.13	6.22
Average (excluding doffers and piecers and bobbin haulers)	39.3	73.4	17.5	68.0	16.2	28.85	6.87
Females							
Cotton shakers	39.3	49.8	11.9	47.9	11.4	19.57	4.66
Card tenders	34.6	49.4	11.8	48.2	11.5	17.09	4.07
Drawing-frame tenders	38.6	57.0	13.6	51.5	12.3	22.00	5.24
Piecers and doffers	35.1	64.0	15.2			22.75	5.41
Bobbin haulers	40.4	40.1	9.5			16.20	3.86
Fly-frame tenders	38.9	57.8	13.8	51.8	12.3	22.48	5.35
Ring-frame spinners	39.2	58.0	13.8	52.5	12.5	22.74	5.41
Twisters	41.6	52.8	12.6	49.0	11.7	21.96	5.23

[1] Data for worsted spinning relate to December, 1929 and 1930; woolen to January, 1930 and 1931; cotton weaving to February, 1930 and 1931; cotton spinning to March, 1930 and 1931; jute industry to April, 1930 and 1931; and hosiery to May, 1930 and 1931.

TABLE 4.—WEEKLY HOURS OF LABOR AND ACTUAL HOURLY AND WEEKLY EARNINGS IN PRINCIPAL BRANCHES OF GERMAN TEXTILE INDUSTRY, BY OCCUPATION AND SEX—Continued

Cotton spinning—Continued

Occupation and sex	Average weekly working hours	Average hourly earnings		Average rates established by agreement		Weekly earnings	
		German currency	United States currency	German currency	United States currency	German currency	United States currency
Females—Continued		*Pfennigs*	*Cents*	*Pfennigs*	*Cents*	*Marks*	
Spoolers	39.2	55.0	13.1	50.0	11.9	21.56	$5.13
Reelers	39.8	55.5	13.2	49.4	11.8	20.89	4.97
Doublers	42.7	54.8	13.0	50.6	12.0	23.40	5.57
Average (including piecers and doffers and bobbin haulers)	39.2	56.5	13.4	----	----	22.15	5.27
Average (excluding piecers and doffers and bobbin haulers)	39.2	56.7	13.5	51.4	12.3	22.23	5.29

Jute [1]

Males							
Batchers	41.7	67.6	16.1	60.9	14.5	28.19	$6.71
Carders	43.0	65.8	15.7	58.9	14.0	28.29	6.74
Section hands	46.6	70.4	16.8	64.3	15.3	32.81	7.81
Cutters	42.1	34.2	8.1	----	----	[4] 14.40	[4] 3.43
Sizers	41.1	73.1	17.4	65.8	15.7	30.04	7.15
Beamers	33.4	73.6	17.5	68.0	16.2	24.58	5.85
Harness men	40.5	105.1	25.0	71.1	16.9	42.57	10.13
Weavers on—							
1 loom	41.2	61.7	14.7	60.1	14.3	25.42	6.05
2 looms	43.2	70.2	16.7	62.7	14.9	30.33	7.22
3 looms	36.5	92.6	22.0	----	----	33.80	8.04
4 looms	36.5	118.8	28.2	----	----	43.36	10.32
Mangle tenders	38.6	72.1	17.2	64.4	15.3	27.83	6.62
Calender tenders	37.3	71.4	17.0	65.0	15.5	26.53	6.31
Finishers	39.5	67.6	16.1	62.6	14.9	26.70	6.35
Pickers	34.8	67.9	16.2	67.7	16.1	23.63	5.62
Average (including cutters, male and female)	41.0	68.4	16.3	----	----	28.04	6.67
Average (excluding cutters, male and female)	40.9	71.3	17.0	63.3	15.1	29.16	6.94
Females							
Carders	40.8	45.0	10.7	41.6	9.9	18.36	4.37
Drawers	41.2	47.3	11.3	43.8	10.4	19.49	4.64
Preparers	38.0	53.1	12.6	47.3	11.3	20.18	4.80
Spinners	41.1	55.9	13.3	47.2	11.2	22.98	5.47
Piecers and doffers	37.2	44.9	10.7	41.6	9.9	16.70	3.97
Section hands	37.5	54.6	13.0	46.2	11.0	20.48	4.87
Cutters	38.7	29.5	7.0	----	----	11.42	2.72
Spoolers	39.1	55.8	13.3	47.6	11.3	21.82	5.19
Twisters	35.8	50.6	12.0	46.6	11.1	18.12	4.31
Cap spinners	40.6	57.0	13.6	48.0	11.4	23.14	5.51
Reelers	38.3	54.9	13.1	45.6	10.9	21.03	5.01
Weavers on—							
1 loom	41.9	53.4	12.7	46.1	11.0	22.38	5.33
2 looms	40.2	55.4	13.2	53.3	12.7	22.27	5.30
Knotters	42.5	54.9	13.1	46.1	11.0	23.33	5.55
Pickers	42.7	49.0	11.7	44.0	10.5	20.92	4.98
Finishers	40.8	60.5	14.4	47.7	11.4	24.68	5.87
Average (including cutters, male and female)	40.5	51.6	12.3	----	----	20.90	4.97
Average (excluding cutters, male and female)	40.7	53.1	12.6	46.7	11.1	21.61	5.14

[1] Data for worsted spinning relate to December, 1929 and 1930; woolen to January, 1930 and 1931; cotton weaving to February, 1930 and 1931; cotton spinning to March, 1930 and 1931; jute industry to April, 1930 and 1931; and hosiery to May, 1930 and 1931.

[4] Young workers.

TABLE 4.—WEEKLY HOURS OF LABOR AND ACTUAL HOURLY AND WEEKLY EARNINGS IN PRINCIPAL BRANCHES OF GERMAN TEXTILE INDUSTRY, BY OCCUPATION AND SEX—Continued

Hosiery[1]

Occupation and sex	Average weekly working hours	Average hourly earnings		Average rates established by agreement		Weekly earnings	
		German currency	United States currency	German currency	United States currency	German currency	United States currency
Males		*Pfennigs*	*Cents*	*Pfennigs*	*Cents*	*Marks*	
Spoolers	44.9	61.6	14.7	54.7	13.0	27.66	$6.58
Loopers	44.4	53.4	12.7	39.8	9.5	23.71	5.64
Knitters	43.4	104.3	24.8	69.1	16.4	45.26	10.77
Knitters, leggers, on—							
Small machines	42.7	95.4	22.7	69.1	16.4	40.74	9.70
Large machines	44.2	109.2	26.0	69.2	16.5	48.27	11.48
Knitters, footers, on—							
Small machines	44.4	108.4	25.8	69.1	16.4	48.13	11.45
Large machines	43.1	129.1	30.7	69.2	16.5	55.64	13.24
Shapers	48.2	89.1	21.2	60.6	14.4	42.95	10.22
Pressers	46.1	74.3	17.7	66.2	15.8	34.25	8.15
Average	43.6	96.2	22.9	65.3	15.5	41.94	9.98
Females							
Spoolers	44.0	56.0	13.3	40.1	9.5	24.64	5.86
Loopers	43.6	60.9	14.5	39.9	10.0	26.55	6.32
Standard workers	47.7	58.3	13.9	41.1	9.8	27.81	6.62
Trimmers	44.9	51.5	12.3	40.0	9.5	23.12	5.50
Seamers	44.1	55.3	13.2	40.0	9.5	24.39	5.80
Toppers	45.6	57.1	13.6	40.3	10.0	26.04	6.20
Shapers	41.6	62.3	14.8	44.6	10.6	25.92	6.17
Framers	41.7	49.7	11.8	40.9	9.7	20.72	4.93
Finishers	45.1	48.7	11.6	40.7	9.7	21.96	5.23
Time rate	46.2	45.6	10.9	40.6	9.7	21.07	5.01
Piece rate	42.5	56.4	13.4	40.9	9.7	23.97	5.70
Average	44.4	56.0	13.3	40.4	9.6	24.86	5.92

[1] Data for worsted spinning relate to December, 1929 and 1930; woolen, to January, 1930 and 1931; cotton weaving to February, 1930 and 1931; cotton spinning to March, 1930 and 1931; jute industry to April, 1930 and 1931; and hosiery, May, 1930 and 1931.

Wages and Hours of Labor in the Paper Industry in Germany, 1930

THE results of an investigation of wages and hours of labor in the paper industry in Germany in May, 1930, have been published by the German Federal Statistical Office.[1] The investigation covered 27,499 workers in 327 establishments in 297 localities, employed in the manufacture of paper, cardboard, cellulose, and wood pulp, or about one-third of the adult workers engaged in the paper industry in Germany. About three-fourths of the workers investigated were paid on a time-rate basis and about one-fourth on a piece-rate basis.

The table following shows the average hourly earnings, excluding overtime and family allowances, the agreement hourly wages or wages on piece-rate basis, the average weekly hours, including overtime, and the average gross weekly earnings, including overtime and family allowances.

[1] Germany. Federal Statistical Office. Wirtschaft und Statistik, No. 7, 1931, pp. 286–289.

EARNINGS, WAGE RATES, AND HOURS OF WORK IN THE GERMAN PAPER INDUSTRY IN 1930, BY OCCUPATIONS

[Conversions into United States currency on basis of mark=23.8 cents, pfennig=0.238 cent]

Occupation	Average hourly earnings, excluding overtime and family allowances		Agreement hourly rates on time or piecework basis		Average working hours per week, including overtime	Average gross weekly earnings, including overtime and family allowances	
	German currency	United States currency	German currency	United States currency		German currency	United States currency
Time rates (including production bonus)	*Pfennigs*	*Cents*	*Pfennigs*	*Cents*		*Marks*	
Paper-machine operators	109.6	26.1	96.2	22.9	47.7	53.94	$12.84
First paper-machine assistants	90.0	21.9	83.2	19.8	46.9	43.57	10.37
Beater men, paper	92.1	21.9	84.3	20.1	46.2	43.68	10.40
Calender men and cutting-machine operators	85.9	20.7	82.6	19.7	45.3	40.04	9.53
Cardboard-machine operators	90.5	21.5	81.9	19.5	49.0	46.18	10.98
Takers-off, cardboard	74.2	17.7	71.3	17.0	46.0	34.92	8.31
Beater men, cardboard	81.2	19.3	76.5	18.2	47.5	39.87	9.49
Assistant beater men	77.2	18.4	73.8	17.6	45.6	36.25	8.63
Boiler men, cellulose	98.2	23.4	86.0	20.5	51.1	54.00	12.85
Machine operators, cellulose	93.4	22.2	84.5	20.1	50.7	50.83	12.10
Chopper men	81.8	19.5	77.4	18.4	48.8	41.59	9.90
Takers-off, wood pulp	77.8	18.5	76.2	18.1	47.5	38.14	9.08
Wood peelers	82.5	19.6	76.4	18.2	46.4	39.01	9.28
Assistants, unskilled, male	79.2	18.8	75.1	17.9	46.9	38.34	9.12
Female employees	53.5	12.7	50.3	12.0	43.0	23.07	5.49
Piece rates							
First paper-machine assistants	103.7	24.7	102.0	24.3	40.7	42.81	10.19
Calender men and cutting-machine operators	110.0	26.2	99.1	23.6	44.6	49.35	11.75
Takers-off, cardboard	93.1	22.2	91.8	21.8	45.6	42.44	10.10
Machine operators, cellulose	96.6	23.0	99.2	23.6	48.6	48.28	11.49
Wood peelers	101.4	24.1	90.2	21.5	44.8	46.26	11.01
Assistants, unskilled, male	106.4	25.3	87.5	20.8	44.8	48.90	11.64
Female employees	62.7	14.9	59.1	14.1	41.7	26.19	6.23

Emergency Tax on Wages in Germany

THE Second Emergency Order for the Safeguarding of the National Finances and Economic Structure, signed by the Federal President on June 5, 1931, makes provision for special taxation. Pursuant to these provisions a special emergency tax is to be levied upon wages and salaries.[1] The tax scale is as follows:

Monthly wage or salary	Per cent
Up to 300 marks [2] ($71.40)	1.0
301 to 400 marks ($71.64 to $95.20)	1.5
401 to 500 marks ($95.44 to $119)	2.0
501 to 600 marks ($119.24 to $142.80)	2.5
601 to 700 marks ($143.04 to $166.60)	3.0
701 to 1,000 marks ($166.84 to $238)	3.5
1,001 to 1,500 marks ($238.38 to $357)	4.0
1,501 to 3,000 marks ($357.24 to $714)	4.5
3,001 marks ($714.24) and over	5.0

[1] Report from United States consulate general, Berlin, week ending June 27, 1931.
[2] Conversions into United States currency on basis of mark=23.8 cents.

Wages in Tokyo in June, 1931

THE wages of Tokyo workers in June, 1931, in various occupations, are shown in the following table compiled from data in the June, 1931, issue of the Monthly Report on Current Economic Conditions, published by the Tokyo Chamber of Commerce and Industry:

DAILY WAGES IN TOKYO, JUNE, 1931

[Conversions into United States currency on basis of yen at par=50 cents]

Occupation	Daily wage		Index numbers (June, 1930=100)
	Japanese currency	United States currency	
	Yen		
Textile industry:			
Silk reelers, female	0.80	$0.40	90.9
Cotton spinners, female	1.01	.51	70.1
Silk throwers, female	.90	.45	104.7
Cotton weavers, machine, female	.92	.46	97.9
Silk weavers, hand, female	1.42	.71	97.9
Hosiery knitters, male	2.20	1.10	90.2
Hosiery knitters, female	1.30	.65	94.2
Metal industry:			
Lathemen	2.99	1.50	81.5
Finishers	3.72	1.86	114.1
Founders	2.53	1.27	79.6
Blacksmiths	2.82	1.41	100.4
Wooden-pattern makers	3.97	1.99	101.3
Stone, glass, and clay products:			
Cement makers	2.40	1.20	94.5
Glassmakers	2.34	1.17	89.3
Potters	1.75	.88	101.2
Tile makers (shape)	1.45	.73	89.5
Chemical industry:			
Matchmakers, male	1.15	.58	74.2
Matchmakers, female	.65	.33	86.7
Oil pressers	1.50	.75	98.7
Paper industry:			
Makers of Japanese paper	1.50	.75	100.0
Makers of printing paper	1.80	.90	93.7
Leather industry: Leather makers	2.93	1.47	107.7
Food industry:			
Flour millers	1.89	.95	100.0
Saké brewery workers	1.50	.75	100.0
Soy brewery workers	2.20	1.10	88.0
Sugar refinery workers	2.39	1.20	100.0
Confectioners (Japanese cake)	1.77	.89	100.0
Canners	1.68	.84	91.3
Wearing apparel industry:			
Tailors (for European dress)	2.46	1.23	100.0
Shoemakers	2.22	1.11	92.9
Clogmakers	1.40	.70	87.5
Building industry:			
Carpenters	2.28	1.14	85.4
Plasterers	2.53	1.27	86.3
Stonemasons	2.93	1.47	88.8
Bricklayers	2.80	1.40	86.7
Roofing-tile layers	2.75	1.38	84.6
Painters	2.34	1.17	87.6
Woodworking industry:			
Sawyers (machine)	1.80	.90	79.6
Joiners	1.95	.98	95.1
Lacquerers	2.05	1.03	83.7
Printing industry:			
Compositors	3.32	1.66	96.2
Bookbinders	2.39	1.20	92.6
Day laborers:			
Stevedores	2.31	1.16	101.3
Day laborers, male	1.46	.73	84.4
Day laborers, female	.77	.39	90.6
Fishermen	1.82	.91	102.8
Domestic service:			
Servants, male	.94	.47	89.5
Servants, female	.88	.44	86.3
Other industries:			
Rope makers	1.45	.73	96.7
Mat makers (Tatami)	2.45	1.23	83.6

TREND OF EMPLOYMENT

Summary for August, 1931

Employment decreased 0.3 per cent in August, 1931, as compared with July, 1931, and pay-roll totals decreased 1.1 per cent.

The industrial groups surveyed, the number of establishments reporting in each group, the number of employees covered, and the total pay rolls for one week, for both July and August, together with the per cent of change in August, are shown in the following summary:

SUMMARY OF EMPLOYMENT AND PAY-ROLL TOTALS, JULY AND AUGUST, 1931

Industrial group	Establishments	Employment		Per cent of change	Pay roll in 1 week		Per cent of change
		July, 1931	August, 1931		July, 1931	August, 1931	
1. Manufacturing	**15,509**	**2,931,551**	**2,907,362**	[1] **−0.6**	**$65,161,870**	**$64,265,552**	[1] **−1.0**
2. Coal mining	**1,508**	**276,338**	**280,944**	**+1.7**	**5,330,882**	**5,449,538**	**+2.2**
Anthracite	160	89,062	92,099	+3.4	2,133,662	2,239,690	+5.0
Bituminous	1,348	187,276	188,845	+0.8	3,197,220	3,209,848	+0.4
3. Metalliferous mining	**296**	**36,531**	**36,246**	**−0.8**	**820,678**	**798,776**	**−2.7**
4. Quarrying and nonmetallic mining	**800**	**31,177**	**30,236**	**−3.0**	**662,746**	**637,466**	**−3.8**
5. Crude petroleum producing	**542**	**21,928**	**20,931**	**−4.5**	**725,247**	**689,624**	**−4.9**
6. Public utilities	**12,338**	**689,393**	**683,851**	**−0.8**	**20,912,174**	**20,641,738**	**−1.3**
Telephone and telegraph	8,133	307,023	304,716	−0.8	8,944,372	8,842,308	−1.1
Power, light, and water	3,699	238,690	236,693	−0.8	7,499,433	7,405,708	−1.2
Electric railroad operation and maintenance, exclusive of car shops	506	143,680	142,442	−0.9	4,468,369	4,393,722	−1.7
7. Trade	**12,321**	**365,521**	**357,793**	**−2.1**	**9,227,666**	**8,940,468**	**−3.1**
Wholesale	2,371	67,539	67,331	−0.3	2,049,171	2,021,021	−1.4
Retail	9,950	297,982	290,462	−2.5	7,178,495	6,919,447	−3.6
8. Hotels	**2,050**	**142,431**	**141,705**	**−0.5**	[2] **2,236,659**	[2] **2,197,722**	**−1.7**
9. Canning and preserving	**915**	**56,306**	**78,699**	**+39.8**	**744,181**	**1,050,394**	**+41.1**
10. Laundries	**449**	**38,623**	**37,981**	**−1.7**	**718,181**	**694,936**	**−3.2**
11. Dyeing and cleaning	**189**	**7,942**	**7,527**	**−5.2**	**173,978**	**161,367**	**−7.2**
Total	**46,917**	**4,597,741**	**4,583,275**	**−0.3**	**106,714,262**	**105,527,491**	**−1.1**

Recapitulation by Geographic Divisions

Geographic division [3]							
New England	6,791	521,270	522,294	+0.2	$12,015,498	$12,050,720	+0.3
Middle Atlantic	7,709	1,342,805	1,339,002	−0.3	32,985,774	32,885,680	−0.3
East North Central	9,967	1,240,537	1,221,029	−1.6	29,806,831	29,055,627	−2.5
West North Central	4,850	292,154	294,250	+0.7	6,995,446	6,867,452	−1.8
South Atlantic	4,759	482,441	484,677	+0.5	8,950,806	8,904,617	−0.5
East South Central	2,435	194,728	192,382	−1.2	3,199,671	3,111,370	−2.8
West South Central	3,366	171,032	168,117	−1.7	3,941,381	3,780,804	−4.1
Mountain	1,667	84,100	84,799	+0.8	2,037,334	2,038,713	+0.1
Pacific	5,373	268,674	276,725	+3.0	6,781,521	6,832,508	+0.8
All divisions	**46,917**	**4,597,741**	**4,583,275**	**−0.3**	**106,714,262**	**105,527,491**	**−1.1**

[1] Weighted per cent of change for the combined 54 manufacturing industries, repeated from Table 2, p. 206, the remaining per cents of change, including total, are unweighted.

[2] Cash payments only; see note 3, p. 220.

[3] *New England:* Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont. *Middle Atlantic:* New Jersey, New York, Pennsylvania. *East North Central:* Illinois, Indiana, Michigan, Ohio, Wisconsin. *West North Central:* Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota. *South Atlantic:* Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia. *East South Central:* Alabama, Kentucky, Mississippi, Tennessee. *West South Central:* Arkansas, Louisiana, Oklahoma, Texas. *Mountain:* Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, Utah, Wyoming. *Pacific:* California, Oregon, Washington.

The per cents of change shown for the total figures represent only the changes in the establishments reporting, as the figures for the several industrial groups are not weighted according to the relative importance of each group.

Increased employment and earnings in August were shown in 3 of the 15 industrial groups surveyed. Anthracite mining reported gains of 3.4 per cent and 5 per cent in the two items, respectively; bituminous coal mining showed an increase of 0.8 per cent in employment and 0.4 per cent in pay-roll totals; and the seasonal August activities in the canning and preserving industry were reflected by gains of 39.8 per cent in number of workers and 41.1 per cent in employees' earnings. The remaining 12 industrial groups reported a falling-off in employment and pay-roll totals over the month interval. In 7 instances the decreases in employment were less than 1 per cent. The greatest losses in employment and earnings were shown in the dyeing and cleaning industrial group, which reported a decline of 5.2 per cent in number of workers coupled with a decrease of 7.2 per cent in pay-roll totals.

Employment increased in 5 of the 9 geographic divisions and increased earnings were reported in 3 divisions. The Pacific division reported the greatest gain in each item, 3 per cent in employment and 0.8 per cent in earnings. The Mountain and the New England divisions also reported increases in both number of workers and amount of earnings, and the West North Central division and the South Atlantic division reported increased employment coupled with a falling-off in pay-roll totals. The remaining four divisions reported decreased employment and earnings, the greatest losses being shown in the West South Central division which reported a loss of 1.7 per cent in employment and 4.1 per cent in pay-roll totals.

PER CAPITA WEEKLY EARNINGS IN AUGUST, 1931, AND COMPARISON WITH JULY, 1931, AND AUGUST, 1930

Industrial group	Per capita weekly earnings in August, 1931	Per cent of change August, 1931, compared with—	
		July, 1931	August, 1930
1. Manufacturing	$22.10	−0.4	−9.6
2. Coal mining:			
Anthracite	24.32	+1.5	−14.8
Bituminous	17.00	−0.4	−17.6
3. Metalliferous mining	22.04	−1.9	−19.9
4. Quarrying and nonmetallic mining	21.08	−0.8	−16.8
5. Crude petroleum producing	32.95	−0.4	−8.1
6. Public utilities:			
Telephone and telegraph	29.02	−0.4	+3.7
Power, light, and water	31.29	−0.4	+0.1
Electric railroads	30.85	−0.8	−2.5
7. Trade:			
Wholesale	30.02	−1.1	−3.7
Retail	23.82	−1.1	−4.0
8. Hotels (cash payments only) [1]	15.51	−1.2	−7.0
9. Canning and preserving	13.35	+1.0	−20.8
10. Laundries	18.30	−1.6	[2]
11. Dyeing and cleaning	21.44	−2.1	[2]
Total	23.02	−0.8	[2]

[1] The additional value of board, room, and tips can not be computed.
[2] Data not available.

Per capita earnings for August, 1931, given in the preceding table must not be confused with full-time weekly rates of wages; they are actual per capita weekly earnings computed by dividing the total number of employees reported into the total amount of pay roll in the week reported, and the "number of employees" includes all persons who worked any part of the period reported—that is, part-time workers as well as full-time workers.

Comparisons are made with per capita earnings in July, 1931, and with August, 1930, where data are available.

For convenient reference the latest data available relating to all employees, excluding executives and officials, on Class I railroads, drawn from Interstate Commerce Commission reports, are shown in the following statement. These reports are for the months of June and July, instead of for July and August, 1931, consequently the figures can not be combined with those presented in the summary table.

EMPLOYMENT AND PAY-ROLL TOTALS, CLASS I RAILROADS

Industry	Number on pay roll		Per cent of change	Amount of pay roll in entire month		Per cent of change
	June 15, 1931	July 15, 1931		June, 1931	July, 1931	
Class I railroads	1,301,902	1,294,392	−0.6	$175,321,519	$176,449,287	+0.6

The total number of employees included in this summary is 5,877,667 whose combined earnings in one week amount to approximately $145,000,000.

1. Employment in Selected Manufacturing Industries in August, 1931

Comparison of Employment and Pay-Roll Totals in Manufacturing Industries, July and August, 1931

EMPLOYMENT in manufacturing industries in August, 1931, decreased 0.6 per cent as compared with July, and pay-roll totals decreased 1.0 per cent.

These changes are based upon returns from 13,573 identical establishments in 54 of the principal manufacturing industries in the United States having in August 2,670,956 employees whose combined earnings in one week were $58,895,079.

The bureau's weighted index of employment for August, 1931, is 70.0, as compared with 70.4 for July, 1931, 72.2 for June, 1931, and 79.9 for August, 1930; the index of pay-roll totals for August, 1931, is 58.5, as compared with 59.1 for July, 1931, 62.5 for June, 1931, and 73.9 for August, 1930.

Of the 12 groups of manufacturing industries on which the bureau's indexes of employment and pay rolls are based, the leather and the textile groups of industries were the only groups reporting both increased employment and earnings. Nine of the 10 industries composing the textile group reported increased employment in August, as compared with July. The food group of industries showed no change in employment in August, as compared with July, while earnings in this group were 1.6 per cent below the level of the previous month. The remaining 9 groups of industries used in computing the bureau's

indexes of employment and earnings reported decreased employment and pay rolls.

The greatest decrease in employment over the month interval, 3.5 per cent, was shown in the miscellaneous group of industries, which includes, among others, the electrical machinery, automobile tire, and shipbuilding industries. The iron and steel group reported decreased employment and earnings of 2.8 per cent and 4.9 per cent, respectively, and the vehicles group reported 2.3 per cent fewer employees in August, coupled with a drop of 3.5 per cent in pay-roll totals. Employment in the nonferrous metals group was 2.5 per cent below the level of the previous month, and the chemicals group reported a loss of 1.9 per cent in number of workers. The remaining groups—lumber, paper, stone-clay-glass, and tobacco—reported decreases of less than 1 per cent over the month interval.

Increased employment was reported in 24 of the 54 manufacturing industries on which the bureau's indexes of employment and pay-roll totals are based. The most pronounced gains in employment in these separate industries were largely seasonal and were shown in the following industries: Pianos, 18.5 per cent; millinery, 14.1 per cent; stoves, 9.6 per cent; women's clothing, 8.1 per cent; fertilizers, 7.1 per cent; and confectionery, 7.0 per cent. The furniture industry reported a gain of 3.4 per cent and the boot and shoe industry reported an increase of 2.9 per cent in employment in August, as compared with July.

The outstanding decreases in employment in these 54 industries from July to August were 11.1 per cent in machine tools, 11 per cent in agricultural implements, 6.8 per cent in rubber boots and shoes, and 6.2 per cent in shipbuilding. Foundries and machine shops reported 3.8 per cent fewer employees; automobiles, 2.6 per cent; iron and steel, 2.1 per cent; and employment in cotton goods decreased 1.5 per cent.

An additional group of 31 manufacturing industries surveyed but not yet included in the bureau's indexes of employment and pay-roll totals will be found at the end of Table 1. The combined total of these 31 industries showed an increase of 0.3 per cent in employment and 0.6 per cent in earnings. These percentage figures represent only the changes in the establishments reporting, as the industries composing this group are not weighted according to the relative importance in the group.

Increases in employment were shown in 12 of the 31 industries included, the greatest gains having been reported in the following industries: Beet sugar, 32.3 per cent; wirework, 10.5 per cent; radio, 9.5 per cent; iron and steel forgings, 7.7 per cent; and cash registers and calculating machines, 5.1 per cent. The greatest falling-off in employment in this group over the month interval was shown in the aluminum manufactures industry which reported a decline of 20.2 per cent. The cottonseed oil, cake, and meal industry reported 14.8 per cent fewer employees, aircraft, 13.6 per cent, and employment in the turpentine and rosin industry decreased 10.7 per cent in August, as compared with July.

The West North Central and the South Atlantic geographic divisions reported small increases in employment in August, and the New England division reported increased earnings; the remaining divisions

reported both decreased employment and earnings, the greatest decreases in both items being shown in the West South Central States.

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL MANUFACTURING ESTABLISHMENTS IN JULY AND AUGUST, 1931, BY INDUSTRIES

Industry	Establishments reporting	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		July, 1931	August, 1931		July, 1931	August, 1931	
Food and kindred products	**1,961**	**215,596**	**215,847**	(1)	**$5,386,592**	**$5,306,183**	(1)
Slaughtering and meat packing	207	82,935	82,126	−1.0	2,139,119	2,068,427	−3.3
Confectionery	318	29,325	31,377	+7.0	479,927	538,730	+12.3
Ice cream	326	14,566	14,383	−1.3	470,642	454,032	−3.5
Flour	395	16,035	15,944	−0.6	398,845	397,670	−0.3
Baking	701	64,332	63,690	−1.0	1,646,133	1,609,019	−2.3
Sugar refining, cane	14	8,313	8,327	+0.2	251,926	238,305	−5.4
Textiles and their products	**2,395**	**538,507**	**546,441**	(1)	**9,110,395**	**9,411,851**	(1)
Cotton goods	489	182,944	180,269	−1.5	2,468,316	2,411,913	−2.3
Hosiery and knit goods	358	86,429	87,974	+1.8	1,293,838	1,351,105	+4.4
Silk goods	262	44,713	45,863	+2.6	801,724	849,119	+5.9
Woolen and worsted goods	190	59,396	60,638	+2.1	1,221,666	1,264,355	+3.5
Carpets and rugs	30	17,772	18,095	+1.8	373,465	364,738	−2.3
Dyeing and finishing textiles	133	35,331	35,916	+1.7	797,033	837,647	+5.1
Clothing, men's	331	58,621	60,436	+3.1	1,164,229	1,218,386	+4.7
Shirts and collars	103	16,327	16,556	+1.4	226,240	225,070	−0.5
Clothing, women's	377	24,900	26,922	+8.1	537,607	596,511	+11.0
Millinery and lace goods	122	12,074	13,772	+14.1	226,277	293,007	+29.5
Iron and steel and their products	**1,922**	**496,478**	**482,763**	(1)	**10,672,609**	**10,150,147**	(1)
Iron and steel	194	209,253	204,836	−2.1	4,366,994	4,169,166	−4.5
Cast-iron pipe	40	9,070	8,846	−2.5	177,022	160,714	−9.2
Structural-iron work	166	23,193	23,252	+0.3	585,390	555,041	−5.2
Foundry and machine-shop products	1,046	172,036	165,462	−3.8	3,787,965	3,545,417	−6.4
Hardware	95	25,190	24,244	−3.8	454,880	453,221	−0.4
Machine tools	147	19,730	17,532	−11.1	489,839	439,751	−10.2
Steam fittings and steam and hot-water heating apparatus	106	23,646	22,850	−3.4	506,337	491,912	−2.8
Stoves	128	14,360	15,741	+9.6	304,182	334,925	+10.1
Lumber and its products	**1,411**	**157,952**	**157,469**	(1)	**2,743,031**	**2,711,143**	(1)
Lumber, sawmills	637	85,338	83,442	−2.2	1,400,741	1,341,203	−4.3
Lumber, millwork	338	24,020	23,793	−0.9	483,349	470,783	−2.6
Furniture	436	48,594	50,234	+3.4	858,941	899,157	+4.7
Leather and its products	**429**	**130,489**	**133,919**	(1)	**2,590,797**	**2,691,991**	(1)
Leather	137	23,876	24,164	+1.2	565,120	576,707	+2.1
Boots and shoes	292	106,613	109,755	+2.9	2,025,677	2,115,284	+4.4
Paper and printing	**1,708**	**226,512**	**225,741**	(1)	**6,739,617**	**6,702,664**	(1)
Paper and pulp	371	75,475	75,557	+0.1	1,682,430	1,715,771	+2.0
Paper boxes	298	22,641	22,919	+1.2	474,838	481,710	+1.4
Printing, book and job	595	53,940	54,143	+4.4	1,728,279	1,722,697	−0.3
Printing, newspapers	444	74,456	73,122	−1.8	2,854,070	2,782,486	−2.5
Chemicals and allied products	**457**	**89,119**	**87,371**	(1)	**2,575,725**	**2,482,315**	(1)
Chemicals	148	30,529	29,855	−2.2	803,937	785,134	−2.3
Fertilizers	205	6,255	6,698	+7.1	111,156	111,366	+0.2
Petroleum refining	104	52,335	50,818	−2.9	1,660,632	1,585,815	−4.5
Stone, clay, and glass products	**1,128**	**105,332**	**104,710**	(1)	**2,203,589**	**2,176,366**	(1)
Cement	113	19,011	18,085	−4.9	486,004	455,206	−6.3
Brick, tile, and terra cotta	709	30,350	29,107	−4.1	530,296	498,302	−6.0
Pottery	117	15,365	15,838	+3.1	272,933	299,656	+9.8
Glass	189	40,606	41,680	+2.6	914,356	923,202	+1.0
Metal products, other than iron and steel	**234**	**44,219**	**43,207**	(1)	**898,931**	**879,516**	(1)
Stamped and enameled ware	81	16,184	16,031	−0.9	305,438	311,136	+1.9
Brass, bronze and copper products	153	28,035	27,176	−3.1	593,493	568,380	−4.2

See footnotes at end of table.

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL **MANUFACTURING** ESTABLISHMENTS IN JULY AND AUGUST, 1931, BY INDUSTRIES—Continued

Industry	Establishments reporting	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		July, 1931	August, 1931		July, 1931	August, 1931	
Tobacco products	**213**	**56,235**	**56,120**	(1)	**$833,602**	**$820,404**	(1)
Chewing and smoking tobacco and snuff	27	8,160	8,425	+3.2	128,430	131,398	+2.3
Cigars and cigarettes	186	48,075	47,695	−0.8	705,172	689,006	−2.3
Vehicles for land transportation	**1,245**	**381,687**	**372,899**	(1)	**9,694,853**	**9,264,893**	(1)
Automobiles	215	263,605	256,880	−2.6	6,497,258	6,140,894	−5.5
Carriages and wagons	45	706	687	−2.7	14,748	14,256	−3.3
Car building and repairing, electric-railroad	451	26,655	26,045	−2.3	787,365	755,820	−4.0
Car building and repairing, steam-railroad	534	90,721	89,287	−1.6	2,395,482	2,353,923	−1.7
Miscellaneous industries	**470**	**253,865**	**244,469**	(1)	**6,375,473**	**6,297,606**	(1)
Agricultural implements	80	9,282	8,264	−11.0	196,480	171,325	−12.8
Electric machinery, apparatus, and supplies	202	146,557	141,660	−3.3	3,771,378	3,773,323	+0.1
Pianos and organs	57	3,490	4,135	+18.5	75,944	92,528	+21.8
Rubber boots and shoes	9	12,516	11,670	−6.8	223,182	225,991	+1.3
Automobile tires and inner tubes	37	49,513	48,251	−2.5	1,271,854	1,223,382	−3.8
Shipbuilding	85	32,507	30,489	−6.2	836,635	811,057	−3.1
Total—54 industries used in computing index-numbers of employment and pay roll	**13,573**	**2,695,991**	**2,670,956**	(1)	**59,825,214**	**58,895,079**	(1)
Industries added since February, 1929, for which data for the index-base year (1926) are not available	**1,936**	**235,650**	**236,406**	(2)	**5,336,656**	**5,370,473**	(2)
Rayon	18	24,162	24,466	+1.3	485,251	489,537	+0.9
Radio	46	22,546	24,698	+9.5	510,314	561,361	+10.0
Aircraft	38	7,080	6,119	−13.6	226,632	195,449	−13.8
Jewelry	150	11,755	11,964	+1.8	209,866	245,026	+16.8
Paint and varnish	251	15,295	14,853	−2.9	410,339	389,548	−5.1
Rubber goods, other than boots, shoes, tires, and inner tubes	77	18,146	17,818	−1.8	394,833	381,061	−3.5
Beet sugar	44	3,004	3,974	+32.3	81,824	98,405	+20.3
Beverages	268	12,407	12,023	−3.1	390,691	372,646	−4.6
Cash registers, adding machines, and calculating machines	47	15,225	15,998	+5.1	405,949	437,564	+7.8
Typewriters and supplies	16	9,419	9,160	−2.7	191,027	178,335	−6.6
Butter	93	2,709	2,648	−2.3	63,695	61,998	−2.7
Cotton, small wares	80	7,098	6,932	−2.3	128,307	122,104	−4.8
Corsets and allied garments	22	3,619	3,695	+2.1	59,813	60,389	+1.0
Men's furnishing goods	57	3,791	3,653	−3.6	58,649	57,158	−2.5
Fur-felt hats	24	4,503	4,604	+2.2	82,931	91,963	+10.9
Bolts, nuts, washers and rivets	49	6,007	5,941	−1.1	122,369	121,322	−0.9
Cutlery (not including silver and plated cutlery) and edge tools	76	6,124	6,040	−1.4	122,697	114,686	−6.5
Forgings, iron and steel	17	2,477	2,668	+7.7	51,666	55,403	+7.2
Plumbers' supplies	52	5,063	4,914	−2.9	104,387	103,334	−1.0
Tin cans and other tinware	37	6,498	6,567	+1.1	145,584	145,457	−0.1
Tools, not including edge tools, machine tools, files, or saws	101	6,245	5,971	−4.4	122,271	115,594	−5.5
Wirework	29	2,064	2,280	+10.5	51,590	56,626	+9.8
Turpentine and rosin	21	1,297	1,158	−10.7	23,450	19,854	−15.3
Cottonseed oil, cake, and meal	16	519	442	−14.8	9,559	9,725	+1.7
Soap	30	5,875	5,800	−1.3	153,906	163,642	+6.3
Marble, granite, slate, and other stone products	159	6,781	6,617	−2.4	184,003	177,878	−3.3
Aluminum manufactures	14	3,212	2,563	−20.2	78,198	60,294	−22.9
Clocks, time recording devices, and clock movements	21	6,307	6,290	−0.3	113,125	120,051	+6.1

See footnotes at end of table.

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL **MANUFACTURING** ESTABLISHMENTS IN JULY AND AUGUST, 1931, BY INDUSTRIES—Continued

Industry	Establishments reporting	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		July, 1931	August, 1931		July, 1931	August, 1931	
Industries added since February, 1929—Continued.							
Gas and electric fixtures, lamps, lanterns, and reflectors	40	5,903	5,940	+0.6	$146,471	$141,852	−3.2
Plated ware	31	9,925	10,027	+1.0	196,946	211,101	+7.2
Smelting and refining, copper, lead, and zinc	12	594	583	−1.9	10,313	11,110	+7.7
All industries	**15,509**	**2,931,551**	**2,907,362**	(2)	**65,161,870**	**64,265,552**	(2)

RECAPITULATION BY GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISION [3]							
New England	1,908	370,460	370,318	−(4)	$7,818,040	$7,874,286	+0.7
Middle Atlantic	3,918	845,349	841,320	−0.5	19,984,891	19,953,930	−0.2
East North Central	3,634	901,211	885,366	−1.8	21,116,935	20,531,277	−2.8
West North Central	1,494	157,019	157,482	+0.3	3,702,196	3,620,416	−2.2
South Atlantic	1,860	330,697	330,920	+0.1	5,604,881	5,590,493	−0.3
East South Central	711	108,910	107,396	−1.4	1,748,855	1,701,955	−2.7
West South Central	816	82,599	80,719	−2.3	1,794,932	1,706,156	−4.9
Mountain	308	28,542	28,164	−1.3	729,457	708,463	−2.9
Pacific	860	106,764	105,677	−1.0	2,661,683	2,578,576	−3.1
All divisions	**15,509**	**2,931,551**	**2,907,362**	(2)	**65,161,870**	**64,265,552**	(2)

[1] The per cent of change has not been computed for the reason that the figures in the preceding columns are unweighted and refer only to the establishments reporting; for the weighted per cent of change, wherein proper allowance is made for the relative importance of the several industries, so that the figures may represent all establishments of the country in the industries here represented, see Table 2.

[2] The per cent of change has not been computed for the reason that the figures in the preceding columns are unweighted and refer only to the establishments reporting.

[3] See footnote 3, p. 200.

[4] Less than one-tenth of 1 per cent.

TABLE 2.—PER CENT OF CHANGE, JULY, 1931, TO AUGUST, 1931, 12 GROUPS OF **MANUFACTURING** INDUSTRIES AND TOTAL OF 54 INDUSTRIES

Computed from the index numbers of each group, which are obtained by weighting the index numbers of the several industries of the group, by the number of employees, or wages paid in the industries]

Group	Per cent of change July to August, 1931		Group	Per cent of change July to August, 1931	
	Number on pay roll	Amount of pay roll		Number on pay roll	Amount of pay roll
Food and kindred products	(1)	−1.6	Stone, clay, and glass products	−0.8	−1.0
Textiles and their products	+2.0	+4.2	Metal products, other than iron and steel	−2.5	−2.4
Iron and steel and their products	−2.8	−4.9	Tobacco products	−0.4	−1.7
Lumber and its products	−0.4	−1.5	Vehicles for land transportation	−2.3	−3.5
Leather and its products	+2.5	+3.8	Miscellaneous industries	−3.5	−1.0
Paper and printing	−0.3	−0.6			
Chemicals and allied products	−1.9	−3.2	**Total: 54 industries**	**−0.6**	**−1.0**

[1] No change.

Comparison of Employment and Pay-Roll Totals in Manufacturing Industries, August, 1931, with August, 1930

EMPLOYMENT in manufacturing industries in August, 1931, was 12.4 per cent below the level of August, 1930, and pay-roll totals were 20.8 per cent lower. Each of the 12 groups of manufacturing industries showed decreased employment and pay-roll totals in this year-to-year comparison, the decrease in earnings in each instance being greater than the decline in employment.

Two groups—textiles and leather—showed practically no change in employment in August, 1931, as compared with August, 1930, the decrease over the year interval being less than 1 per cent.

The iron and steel group and the lumber group of industries showed the greatest losses in employment over the 12-month period, both groups reporting declines of over 21 per cent in number of workers, coupled with decreases in earnings of 37.2 per cent and 33.2 per cent, respectively.

Five of the 54 industries on which the bureau's indexes of employment and pay rolls are based had more employees at the end of the 12-month period than at the beginning. The woolen and worsted goods industry reported an increase of 10.5 per cent in employment and 11.7 per cent in earnings over the year interval. The carpet and rug industry reported a gain of 4.2 per cent in number of employees, cotton goods showed an increase of 2.9 per cent, and employment in the hosiery and knit goods industry was 2.1 per cent above the level of the corresponding month of the preceding year. The boot and shoe industry reported an increase in employment of one-tenth of 1 per cent.

The outstanding decrease in both employment and earnings in this year-to-year comparison was shown in the agricultural implement industry, which reported a decline of 54.7 per cent in employment coupled with a loss of 57.7 per cent in pay-roll totals.

The carriage and wagon, machine tool, and fertilizer industries reported losses in employment ranging from 32.3 per cent to 36.9 per cent with more pronounced decreases in employees' earnings. Three industries—foundries and machine shops, brick, and sawmills—reported declines of approximately 26 per cent in employment over the year interval, and 5 additional industries—structural-iron work, petroleum refining, cement, steam-railroad car building and repairing, and shipbuilding—showed losses of over 20 per cent in August, 1931, as compared with August, 1930. The iron and steel industry had 15.6 per cent fewer employees and the automobile industry reported 14.1 per cent fewer employees than the corresponding month of 1930.

Each of the nine geographic divisions reported decreased employment and pay-roll totals over the 12-month interval, the New England States showing the smallest decrease in employment, 5.7 per cent, and the West South Central States reporting the greatest falling off in number of employees, 20.2 per cent.

TABLE 3.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN 54 **MANUFACTURING** INDUSTRIES, AUGUST, 1931, WITH AUGUST, 1930

[The per cents of change for each of the 12 groups of industries and for the total of all industries are weighted in the same manner as are the per cents of change in Table 2]

Industry	Per cent of change August, 1931, compared with August, 1930	
	Number on pay roll	Amount of pay roll
Food and kindred products	**−5.4**	**−11.1**
Slaughtering and meat packing	−6.5	−10.6
Confectionery	−1.9	−10.8
Ice cream	−7.8	−12.7
Flour	−7.7	−14.5
Baking	−4.7	−10.5
Sugar refining, cane	−9.0	−13.4
Textiles and their products	**−0.3**	**−3.6**
Cotton goods	+2.9	+4.6
Hosiery and knit goods	+2.1	−5.2
Silk goods	−16.3	−18.3
Woolen and worsted goods	+10.5	+11.7
Carpets and rugs	+4.2	+7.9
Dyeing and finishing textiles	−2.9	+1.3
Clothing, men's	−1.3	−9.6
Shirts and collars	−2.6	−8.4
Clothing, women's	−5.8	−15.8
Millinery and lace goods	−3.5	−6.2
Iron and steel and their products	**−21.4**	**−37.2**
Iron and steel	−15.6	−36.3
Cast-iron pipe	−17.5	−33.0
Structural-iron work	−21.6	−35.9
Foundry and machine-shop products	−26.4	−40.4
Hardware	−15.2	−26.1
Machine tools	−34.3	−36.8
Steam fittings and steam and hot-water heating apparatus	−17.1	−30.7
Stoves	−17.8	−27.7
Lumber and its products	**−21.9**	**−33.2**
Lumber, sawmills	−26.1	−38.3
Lumber, millwork	−14.7	−26.5
Furniture	−15.5	−27.3
Leather and its products	**−0.9**	**−5.7**
Leather	−5.3	−9.3
Boots and shoes	+0.1	−4.5
Paper and printing	**−7.9**	**−12.8**
Paper and pulp	−9.8	−19.5
Paper boxes	−8.9	−14.0
Paper and printing—Contd.		
Printing, book and job	−10.1	−15.4
Printing, newspapers	−3.7	−6.2
Chemicals and allied products	**−18.5**	**−21.7**
Chemicals	−10.6	−12.8
Fertilizers	−36.9	−42.3
Petroleum refining	−22.9	−27.0
Stone, clay, and glass products	**−16.0**	**−27.2**
Cement	−23.9	−32.1
Brick, tile, and terra cotta	−26.2	−43.7
Pottery	−7.6	−17.4
Glass	−2.7	−8.6
Metal products, other than iron and steel	**−13.4**	**−23.1**
Stamped and enameled ware	−6.5	−15.5
Brass, bronze, and copper products	−16.5	−26.1
Tobacco products	**−5.9**	**−14.2**
Chewing and smoking tobacco and snuff	−4.7	−10.0
Cigars and cigarettes	−6.1	−14.7
Vehicles for land transportation	**−18.3**	**−22.3**
Automobiles	−14.1	−13.3
Carriages and wagons	−32.3	−38.2
Car building and repairing, electric-railroad	−15.7	−20.6
Car building and repairing, steam-railroad	−22.5	−30.0
Miscellaneous industries	**−19.8**	**−25.9**
Agricultural implements	−54.7	−57.7
Electrical machinery, apparatus, and supplies	−19.0	−24.4
Pianos and organs	−19.4	−34.7
Rubber boots and shoes	−16.4	−19.8
Automobile tires	−10.3	−19.9
Shipbuilding	−21.8	−29.1
Total: 54 industries	**−12.4**	**−20.8**

RECAPITULATION BY GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISION		
New England	−5.7	−12.0
Middle Atlantic	−13.9	−23.5
East North Central	−15.4	−22.3
West North Central	−12.0	−18.1
South Atlantic	−6.3	−13.6
East South Central	−11.9	−21.3
West South Central	−20.2	−27.8
Mountain	−16.5	−11.7
Pacific	−16.0	−27.4
All divisions	**−12.4**	**−20.8**

Per Capita Earnings in Manufacturing Industries

ACTUAL per capita weekly earnings in August, 1931, for each of the 85 manufacturing industries surveyed by the Bureau of Labor Statistics, together with per cents of change in August, 1931, as compared with July, 1931, and August, 1930, are shown in Table 4.

Per capita earnings in August, 1931, for the combined 54 chief manufacturing industries of the United States, upon which the bureau's indexes of employment and pay rolls are based, were 0.4 per cent less than in July, 1931, and 9.6 per cent less than August, 1930.

The actual average per capita weekly earnings in August, 1931, for the 54 manufacturing industries were $22.05; the average per capita earnings for all of the 85 manufacturing industries surveyed were $22.10.

Per capita earnings given in Table 4 must not be confused with full-time weekly rates of wages. They are actual per capita weekly earnings, computed by dividing the total number of employees reported into the total amount of pay roll in the week reported, and the "number of employees" includes all persons who worked any part of the period reported—that is, part-time workers as well as full-time workers.

TABLE 4.—PER CAPITA WEEKLY EARNINGS IN **MANUFACTURING** INDUSTRIES IN AUGUST, 1931, AND COMPARISON WITH JULY, 1931, AND AUGUST, 1930

Industry	Per capita weekly earnings in August, 1931	Per cent of change August, 1931, compared with—	
		July, 1931	August, 1930
Food and kindred products:			
Slaughtering and meat packing	$25.19	−2.3	−4.3
Confectionery	17.17	+4.9	−9.0
Ice cream	31.57	−2.3	−5.5
Flour	24.94	+0.3	−7.4
Baking	25.26	−1.3	−6.2
Sugar refining, cane	28.62	−5.6	−4.8
Textiles and their products:			
Cotton goods	13.38	−0.8	+1.7
Hosiery and knit goods	15.36	+2.6	−7.2
Silk goods	18.51	+3.2	−2.6
Woolen and worsted goods	20.85	+1.4	+1.0
Carpets and rugs	20.16	−4.0	+3.5
Dyeing and finishing textiles	23.32	+3.4	+4.1
Clothing, men's	20.16	+1.5	−8.7
Shirt and collars	13.59	−1.9	−6.3
Clothing, women's	22.16	+2.6	−11.1
Millinery and lace goods	21.28	+13.6	−2.6
Iron and steel and their products:			
Iron and steel	20.35	−2.5	−24.7
Cast-iron pipe	18.17	−6.9	−18.9
Structural-iron work	23.87	−5.4	−18.3
Foundry and machine-shop products	21.43	−2.7	−19.2
Hardware	18.69	+3.5	−13.2
Machine tools	25.08	+1.0	−3.8
Steam fittings and steam and hot-water heating apparatus	21.53	+0.6	−16.5
Stoves	21.28	+0.5	−12.0
Lumber and its products:			
Lumber sawmills	16.07	−2.1	−16.4
Lumber, millwork	19.79	−1.6	−13.9
Furniture	17.90	+1.2	−14.3
Leather and its products:			
Leather	23.87	+0.8	−4.3
Boots and shoes	19.27	+1.4	−4.7
Paper and printing:			
Paper and pulp	22.71	+1.9	−10.8
Paper boxes	21.02	+0.2	−5.4
Printing, book and job	31.82	−0.7	−6.1
Printing, newspapers	38.05	−0.7	−2.6

TABLE 4.—PER CAPITA WEEKLY EARNINGS IN **MANUFACTURING** INDUSTRIES IN AUGUST, 1931, AND COMPARISON WITH JULY, 1931, AND AUGUST, 1930—Continued

Industry	Per capita weekly earnings in August, 1931	Per cent of change August, 1931, compared with—	
		July, 1931	August, 1930
Chemicals and allied products:			
Chemicals	$26.30	−0.1	−2.3
Fertilizers	16.63	−6.4	−8.7
Petroleum refining	31.21	−1.6	−5.5
Stone, clay, and glass products:			
Cement	25.17	−1.5	−11.2
Brick, tile, and terra cotta	17.12	−2.0	−23.7
Pottery	18.92	+6.5	−10.4
Glass	22.15	−1.6	−5.8
Metal products, other than iron and steel:			
Stamped and enameled ware	19.41	+2.9	−9.7
Brass, bronze, and copper products	20.91	−1.2	−11.9
Tobacco products:			
Chewing and smoking tobacco and snuff	15.60	−0.9	−5.3
Cigars and cigarettes	14.45	−1.5	−9.2
Vehicles for land transportation:			
Automobiles	23.91	−3.0	+0.8
Carriages and wagons	20.75	−0.7	−8.6
Car building and repairing, electric-railroad	29.02	−1.8	−5.9
Car building and repairing, steam-railroad	26.36	−0.2	−9.7
Miscellaneous industries:			
Agricultural implements	20.73	−2.1	−6.6
Electrical machinery, apparatus, and supplies	26.64	+3.5	−6.6
Pianos and organs	22.38	+2.8	−19.2
Rubber boots and shoes	19.37	+8.6	−4.1
Automobile tires and inner tubes	25.35	−1.3	−10.6
Shipbuilding	26.60	+3.3	−9.1
Industries added since February, 1929, for which data for the index base year (1926) are not available:			
Rayon	20.01	−0.3	+3.0
Radio	22.73	+0.4	−15.8
Aircraft	31.94	−0.2	−2.2
Jewelry	20.48	+14.7	−6.4
Paint and varnish	26.23	−2.2	−4.8
Rubber goods, other than boots, shoes, tires, and inner tubes	21.39	−1.7	−6.7
Beet sugar	24.76	−9.1	[1]
Beverages	30.99	−1.6	[1]
Cash registers, adding machines, and calculating machines	27.35	+2.6	[1]
Typewriters and supplies	19.47	−4.0	[1]
Butter	23.41	−0.4	[1]
Cotton, small wares	17.61	−2.6	[1]
Corsets and allied garments	16.34	−1.1	[1]
Men's furnishing goods	15.65	+1.2	[1]
Fur-felt hats	19.97	+8.4	[1]
Bolts, nuts, washers, and rivets	20.42	+0.2	[1]
Cutlery (not including silver and plated cutlery) and edge tools	18.99	−5.2	[1]
Forgings, iron and steel	20.77	−0.4	[1]
Plumbers' supplies	21.03	+2.0	[1]
Tin cans and other tinware	22.15	−1.1	[1]
Tools, not including edge tools, machine tools, files, or saws	19.36	−1.1	[1]
Wirework	24.84	−0.6	[1]
Turpentine and rosin	17.15	−5.1	[1]
Cottonseed oil, cake, and meal	22.00	+19.4	[1]
Soap	28.21	+7.7	[1]
Marble, granite, slate, and other stone products	26.88	−1.0	[1]
Aluminum manufactures	23.52	−3.4	[1]
Clocks, time-recording devices, and clock movements	19.09	+6.4	[1]
Gas and electric fixtures, lamps, lanterns, and reflectors	23.88	−3.7	[1]
Plated ware	21.05	+6.1	[1]
Smelting and refining, copper, lead, and zinc	19.06	+9.8	[1]

[1] Data not available.

Index Numbers of Employment and Pay-Roll Totals in Manufacturing Industries

TABLE 5 shows the general index of employment in manufacturing industries and the general index of pay-roll totals, by months, from January, 1923, to August, 1931, together with the average indexes of each of the years 1923 to 1930, inclusive.

Index numbers showing relatively the variation in number of persons employed and in pay-roll totals in each of the 54 manufacturing industries upon which the bureau's general indexes are based and in each of the 12 groups of industries, and also general indexes for the combined 12 groups of industries, are shown in Table 6 for August, 1930, and June, July, and August, 1931.

In computing the general indexes and the group indexes the index numbers of separate industries are weighted according to the relative importance of the industries.

TABLE 5.—GENERAL INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS IN **MANUFACTURING** INDUSTRIES, JANUARY, 1923, TO AUGUST, 1931

[Monthly average, 1926=100]

Month	Employment									Pay-roll totals								
	1923	1924	1925	1926	1927	1928	1929	1930	1931	1923	1924	1925	1926	1927	1928	1929	1930	1931
Jan.	106.6	103.8	97.9	100.4	97.3	91.6	95.2	90.2	73.1	95.8	98.6	93.9	98.0	94.9	89.6	94.5	87.6	62.3
Feb.	108.4	105.1	99.7	101.5	99.0	93.0	97.4	90.3	74.1	99.4	103.8	99.3	102.2	100.6	93.9	101.8	90.7	67.0
Mar.	110.8	104.9	100.4	102.0	99.5	93.7	98.6	89.8	74.8	104.7	103.3	100.8	103.4	102.0	95.2	103.9	90.8	68.5
Apr.	110.8	102.8	100.2	101.0	98.6	93.3	99.1	89.1	74.5	105.7	101.1	98.3	101.5	100.8	93.8	104.6	89.8	67.4
May	110.8	98.8	98.9	99.8	97.6	93.0	99.2	87.7	74.1	109.4	96.5	98.5	99.8	99.8	94.1	104.8	87.6	66.6
June	110.9	95.6	98.0	99.3	97.0	93.1	98.8	85.5	72.2	109.3	90.8	95.7	99.7	97.4	94.2	102.8	84.1	62.5
July	109.2	92.3	97.2	97.7	95.0	92.2	98.2	81.6	70.4	104.3	84.3	93.5	95.2	93.0	91.2	98.2	75.9	59.1
Aug.	108.5	92.5	97.8	98.7	95.1	93.6	98.6	79.9	70.0	103.7	87.2	95.4	98.7	95.0	94.2	102.1	73.9	58.5
Sept.	108.6	94.3	98.9	100.3	95.8	95.0	99.3	79.7	-----	104.4	89.8	94.4	99.3	94.1	95.4	102.6	74.2	-----
Oct.	108.1	95.6	100.4	100.7	95.3	95.9	98.3	78.6	-----	106.8	92.4	100.4	102.9	95.2	99.0	102.3	72.7	-----
Nov.	107.4	95.5	100.7	99.5	93.5	95.4	94.8	76.5	-----	105.4	91.4	100.4	99.6	91.6	96.1	95.1	68.3	-----
Dec.	105.4	97.3	100.8	98.9	92.6	95.5	91.9	75.1	-----	103.2	95.7	101.6	99.8	93.2	97.7	92.0	67.4	-----
Av.	**108.8**	**98.2**	**99.2**	**100.0**	**96.4**	**93.8**	**97.5**	**83.7**	[1] **72.9**	**104.3**	**94.6**	**97.7**	**100.0**	**96.5**	**94.5**	**100.4**	**80.3**	[1] **64.0**

[1] Average for 8 months.

Following Table 6 are two charts which represent the 54 separate industries combined and show the course of pay-roll totals as well as the course of employment for each month of the years 1926 to 1930, and January to August, 1931, inclusive.

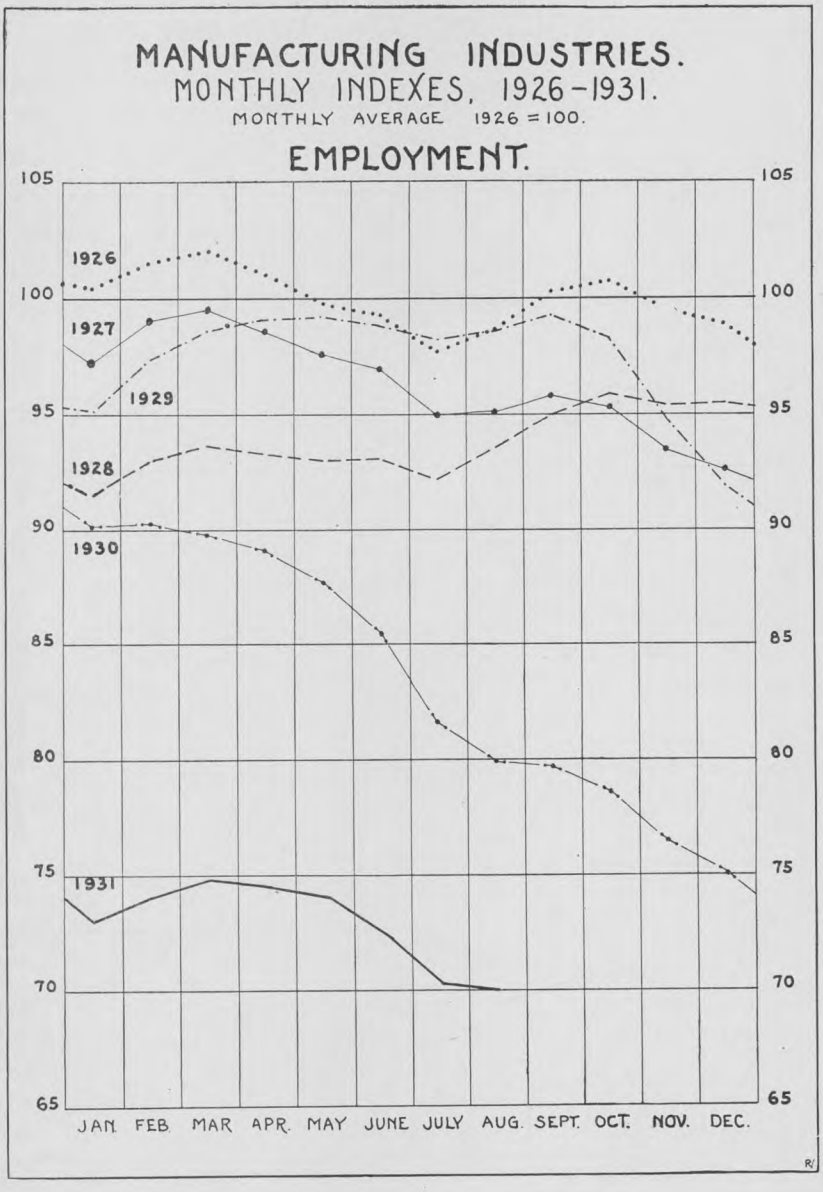
TABLE 6.—INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS IN **MANUFACTURING** INDUSTRIES, AUGUST, 1930, AND JUNE, JULY, AND AUGUST, 1931

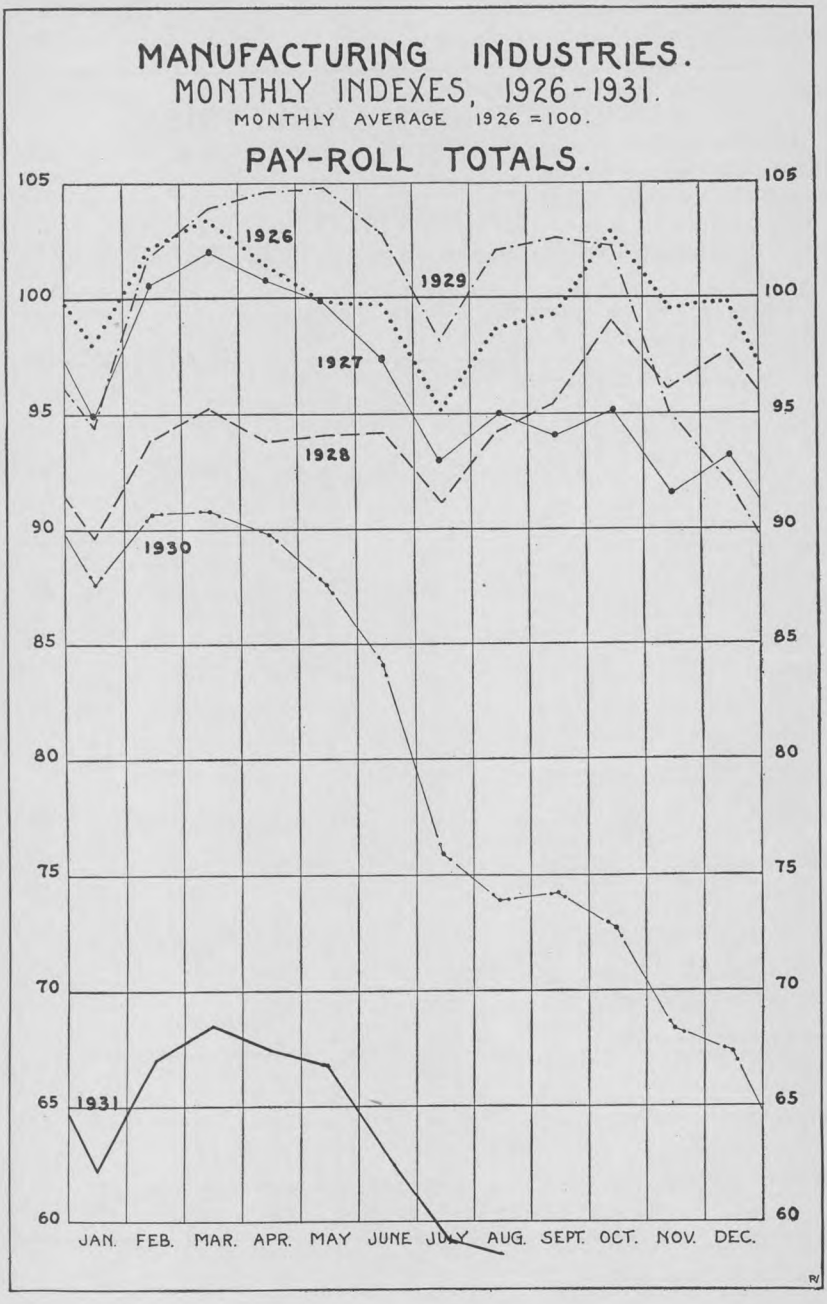
(Monthly average, 1926=100)

Industry	Employment				Pay-roll totals			
	1930	1931			1930	1931		
	August	June	July	August	August	June	July	August
General index	**79.9**	**72.2**	**70.4**	**70.0**	**73.9**	**62.5**	**59.1**	**58.5**
Food and kindred products	**92.6**	**88.1**	**87.6**	**87.6**	**95.1**	**87.2**	**85.9**	**84.5**
Slaughtering and meat packing	94.3	90.2	89.1	88.2	96.8	91.0	89.5	86.5
Confectionery	75.4	77.3	69.2	74.0	75.2	72.5	59.8	67.1
Ice cream	101.1	90.3	94.5	93.2	100.4	87.3	90.7	87.6
Flour	97.5	85.3	90.5	90.0	101.0	81.5	86.7	86.4
Baking	96.1	91.9	92.5	91.6	96.9	89.7	88.8	86.7
Sugar refining, cane	92.6	80.7	84.2	84.3	94.8	81.6	86.8	82.1
Textiles and their products	**77.8**	**77.5**	**76.1**	**77.6**	**69.4**	**65.5**	**64.2**	**66.9**
Cotton goods	72.9	77.0	76.2	75.0	61.5	68.1	65.8	64.3
Hosiery and knit goods	79.6	81.9	79.9	81.3	70.9	72.4	64.4	67.2
Silk goods	78.0	67.4	63.6	65.3	72.1	58.1	55.6	58.9
Woolen and worsted goods	78.4	80.9	84.8	86.6	72.9	74.5	78.6	81.4

TABLE 6.—INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS IN MANUFACTURING INDUSTRIES, AUGUST, 1930, AND JUNE, JULY, AND AUGUST, 1931—Continued

Industry	Employment				Pay-roll totals			
	1930	1931			1930	1931		
	August	June	July	August	August	June	July	August
Textiles and their products—Con.								
Carpets and rugs	73.5	77.1	75.2	76.6	54.7	63.0	60.4	59.0
Dyeing and finishing textiles	86.6	86.0	82.7	84.1	76.4	76.2	73.7	77.4
Clothing, men's	79.7	73.3	76.3	78.7	71.9	55.6	62.1	65.0
Shirts and collars	74.3	72.7	71.4	72.4	64.5	57.8	59.4	59.1
Clothing, women's	85.0	84.9	74.1	80.1	75.4	62.4	57.2	63.5
Millinery and lace goods	80.2	72.4	67.9	77.4	71.0	56.6	51.4	66.6
Iron and steel and their products	**80.5**	**67.4**	**65.1**	**63.3**	**71.7**	**52.0**	**47.3**	**45.0**
Iron and steel	80.8	70.7	69.7	68.2	72.5	54.1	48.3	46.2
Cast-iron pipe	68.5	59.2	58.0	56.5	66.0	48.6	48.6	44.2
Structural-iron work	92.0	71.2	71.9	72.1	90.2	58.7	61.0	57.8
Foundry and machine shop products	82.7	66.6	63.3	60.9	73.0	51.6	46.5	43.5
Hardware	73.1	66.7	64.4	62.0	59.8	48.8	44.3	44.2
Machine tools	82.6	65.3	61.1	54.3	69.8	50.6	49.1	44.1
Steam fittings and steam and hot-water heating apparatus	62.0	54.6	53.2	51.4	54.0	40.0	38.5	37.4
Stoves	73.0	62.6	54.8	60.0	60.0	46.0	39.4	43.4
Lumber and its products	**66.3**	**54.1**	**52.0**	**51.8**	**60.6**	**43.9**	**41.1**	**40.5**
Lumber, sawmills	65.4	51.6	49.3	48.3	60.1	41.9	38.7	37.1
Lumber, millwork	61.7	54.3	53.1	52.6	59.2	47.3	44.6	43.5
Furniture	71.6	60.4	58.5	60.5	62.7	45.8	43.6	45.6
Leather and its products	**86.5**	**78.8**	**83.6**	**85.7**	**77.3**	**64.5**	**70.2**	**72.9**
Leather	84.6	77.3	79.2	80.1	83.5	73.1	74.2	75.7
Boots and shoes	87.0	79.2	84.7	87.1	75.5	62.1	69.0	72.1
Paper and printing	**96.9**	**90.2**	**89.5**	**89.2**	**99.0**	**89.6**	**86.8**	**86.3**
Paper and pulp	90.0	81.0	81.1	81.2	86.3	71.2	68.1	69.5
Paper boxes	89.0	80.9	80.1	81.1	90.7	79.8	76.9	78.0
Printing, book and job	98.3	88.7	88.1	88.4	100.5	87.5	85.2	85.0
Printing, newspapers	106.5	106.2	104.5	102.6	109.0	107.9	104.8	102.2
Chemicals and allied products	**89.7**	**75.3**	**74.5**	**73.1**	**91.6**	**75.2**	**74.1**	**71.7**
Chemicals	92.4	83.8	84.5	82.6	90.1	81.0	80.5	78.6
Fertilizers	70.1	44.5	41.3	44.2	70.7	44.2	40.7	40.8
Petroleum refining	92.9	75.4	73.7	71.6	96.6	75.1	73.8	70.5
Stone, clay, and glass products	**72.3**	**64.9**	**61.2**	**60.7**	**65.0**	**53.6**	**47.8**	**47.3**
Cement	80.5	64.2	64.5	61.3	77.8	60.4	56.3	52.8
Brick, tile, and terra cotta	66.1	52.9	50.9	48.8	57.7	37.9	34.6	32.5
Pottery	80.0	77.9	71.7	73.9	65.0	58.5	48.9	53.7
Glass	72.9	76.1	69.1	70.9	67.7	69.5	61.3	61.9
Metal products, other than iron and steel	**76.3**	**69.3**	**67.8**	**66.1**	**67.5**	**57.9**	**53.2**	**51.9**
Stamped and enameled ware	75.1	72.6	70.8	70.2	67.1	62.0	55.6	56.7
Brass, bronze, and copper products	76.9	67.7	66.3	64.2	67.7	56.3	52.2	50.0
Tobacco products	**86.1**	**81.7**	**81.3**	**81.0**	**81.8**	**72.6**	**71.4**	**70.2**
Chewing and smoking tobacco and snuff	87.4	81.8	80.7	83.3	87.2	77.1	76.8	78.5
Cigars and cigarettes	85.9	81.7	81.4	80.7	81.1	72.0	70.8	69.2
Vehicles for land transportation	**73.9**	**65.3**	**61.8**	**60.4**	**64.1**	**58.0**	**51.6**	**49.8**
Automobiles	78.0	74.3	68.8	67.0	56.5	60.4	51.8	49.0
Carriages and wagons	54.8	37.1	38.1	37.1	60.7	40.0	38.8	37.5
Car building and repairing, electric-railroad	86.0	76.5	74.2	72.5	85.5	74.4	70.8	67.9
Car building and repairing, steam-railroad	69.4	56.7	54.7	53.8	70.4	54.4	50.1	49.3
Miscellaneous industries	**88.5**	**78.5**	**73.6**	**71.0**	**84.3**	**68.3**	**63.1**	**62.5**
Agricultural implements	69.1	43.9	35.2	31.3	56.8	32.0	27.6	24.0
Electrical machinery, apparatus, and supplies	95.2	82.4	79.7	77.1	91.3	73.0	68.9	69.0
Pianos and organs	42.8	31.8	29.1	34.5	36.0	22.9	19.3	23.5
Rubber boots and shoes	74.6	66.2	67.0	62.4	64.6	48.1	51.1	51.8
Automobile tires and inner tubes	77.4	73.3	71.1	69.4	72.4	70.5	60.2	58.0
Shipbuilding	113.7	98.0	94.8	88.9	114.8	89.8	84.0	81.4





Time Worked in Manufacturing Industries in August, 1931

REPORTS as to working time of employees in August were received from 12,265 establishments in 64 manufacturing industries. Two per cent of the establishments were idle, while employees in 55 per cent were working full time, and employees in 43 per cent were working part time.

Employees in the establishments in operation in August were working an average of 89 per cent of full time, this percentage showing no change in average full-time operation over the month interval.

Employees in the 43 per cent of the establishments working part time in August were averaging 75 per cent of full-time operation.

TABLE 7.—PROPORTION OF FULL TIME WORKED IN **MANUFACTURING** INDUSTRIES BY ESTABLISHMENTS REPORTING IN AUGUST, 1931

Industry	Establishments reporting		Per cent of establishments in which employees worked		Average per cent of full time reported by—	
	Total number	Per cent idle	Full time	Part time	All operating establishments	Establishments operating part time
Food and kindred products	**1,753**	(1)	**77**	**22**	**95**	**79**
Slaughtering and meat packing	174	1	74	25	97	88
Confectionery	276	2	42	56	86	75
Ice cream	267		81	19	97	84
Flour	366		80	20	95	74
Baking	658	(1)	90	10	98	82
Sugar refining, cane	12		58	42	94	84
Textiles and their products	**1,983**	**3**	**62**	**35**	**92**	**78**
Cotton goods	444	2	56	43	90	77
Hosiery and knit goods	307	1	58	41	91	78
Silk goods	249	8	69	22	95	77
Woolen and worsted goods	163	2	67	31	94	80
Carpets and rugs	25		48	52	89	79
Dyeing and finishing textiles	128	1	48	51	88	75
Clothing, men's	257	3	71	26	95	81
Shirts and collars	79	3	59	38	95	88
Clothing, women's	242	5	69	26	94	78
Millinery and lace goods	89	2	60	38	92	80
Iron and steel and their products	**1,690**	**1**	**24**	**74**	**76**	**69**
Iron and steel	132	8	24	68	77	69
Cast-iron pipe	39	8	10	82	69	65
Structural-iron work	157	1	38	62	86	77
Foundry and machine-shop products	956	(1)	25	74	76	67
Hardware	59		8	92	72	69
Machine tools	135	3	15	82	74	70
Steam fittings and steam and hot water-heating apparatus	99	1	16	83	71	65
Stoves	113	2	26	73	77	69
Lumber and its products	**1,096**	**3**	**39**	**58**	**83**	**72**
Lumber, sawmills	465	5	40	55	83	70
Lumber, millwork	282	1	37	62	85	76
Furniture	349	3	39	58	83	71
Leather and its products	**380**	**1**	**59**	**39**	**93**	**82**
Leather	118	2	63	36	93	81
Boots and shoes	262	1	58	41	93	82
Paper and printing	**1,467**	(1)	**61**	**38**	**93**	**81**
Paper and pulp	270	1	53	46	89	76
Paper boxes	257		38	62	87	80
Printing, book and job	549		55	45	92	83
Printing, newspapers	391		91	9	99	90
Chemicals and allied products	**337**	**3**	**66**	**31**	**93**	**78**
Chemicals	128	1	61	38	92	77
Fertilizers	146	6	59	35	92	78
Petroleum refining	63		95	5	99	88

[1] Less than one-half of 1 per cent.

TABLE 7.—PROPORTION OF FULL TIME WORKED IN **MANUFACTURING** INDUSTRIES BY ESTABLISHMENTS REPORTING IN AUGUST, 1931—Continued

Industry	Establishments reporting		Per cent of establishments in which employees worked		Average per cent of full time reported by—	
	Total number	Per cent idle	Full time	Part time	All operating establishments	Establishments operating part time
Stone, clay, and glass products	**814**	**10**	**56**	**34**	**90**	**72**
Cement	89	7	82	11	97	75
Brick, tile, and terra cotta	482	13	49	39	87	71
Pottery	105	3	41	56	85	75
Glass	138	9	76	14	95	72
Metal products, other than iron and steel	**201**		**31**	**69**	**84**	**77**
Stamped and enameled ware	67		40	60	90	83
Brass, bronze, and copper products	134		27	73	81	74
Tobacco products	**200**	**2**	**32**	**66**	**88**	**82**
Chewing and smoking tobacco and snuff	25		44	56	92	86
Cigars and cigarettes	175	2	30	67	87	81
Vehicles for land transportation	**1,039**	(1)	**58**	**42**	**90**	**76**
Automobiles	173	1	34	65	82	72
Carriages and wagons	38	3	47	50	88	74
Car building and repairing, electric-railroad	408		80	20	97	87
Car building and repairing, steam-railroad	420		47	53	87	75
Miscellaneous industries	**411**	**2**	**34**	**64**	**85**	**77**
Agricultural implements	75	4	31	65	81	72
Electrical machinery, apparatus, and supplies	169	1	21	78	84	79
Pianos and organs	46	11	15	74	75	70
Rubber boots and shoes	7		43	57	87	77
Automobile tires and inner tubes	34		44	56	92	85
Shipbuilding	80		68	33	94	83
Industries added in 1929 and 1930	**894**	**1**	**67**	**32**	**93**	**78**
Radio	39		56	44	94	86
Rayon	11		55	45	92	82
Aircraft	36		83	17	98	87
Jewelry	127	3	35	61	83	73
Paint and varnish	277	1	61	38	92	79
Rubber goods, other than boots, shoes, tires, and inner tubes	72		51	49	91	81
Beet sugar	43	2	91	7	99	84
Beverages	237	(1)	91	9	99	80
Cash registers	41		78	22	96	82
Typewriters	11		45	55	80	63
Total	**12,265**	**2**	**55**	**43**	**89**	**75**

[1] Less than one-half of 1 per cent.

2. Employment in Nonmanufacturing Industries in August, 1931

IN THE following table are presented, by geographic divisions, the data for 14 groups of nonmanufacturing industries, the totals for which also appear in the summary of employment and pay-roll totals, page 100.

Three of these industrial groups reported increased employment and pay-roll totals in August, as compared with July. The usual seasonal activity in August in the canning and preserving industry was reflected by gains of 39.8 per cent in employment and 41.1 per cent in earnings, and anthracite and bituminous coal mining reported increases in both the number of employees and earnings over the

preceding month. The remaining 11 industrial groups reported both decreased employment and pay-roll totals. The declines in employment and earnings in the crude petroleum producing industry were due largely to the enforced reduction in crude petroleum production in effect in several States.

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL **NONMANUFACTURING** ESTABLISHMENTS IN JULY AND AUGUST, 1931, BY INDUSTRIES

Geographic division	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		July, 1931	August, 1931		July, 1931	August, 1931	
		Anthracite mining					
Middle Atlantic	**160**	**89,062**	**92,099**	**+3.4**	**$2,133,662**	**$2,239,690**	**+5.0**
		Bituminous coal mining					
Middle Atlantic	404	55,300	55,252	−0.1	$916,722	$883,977	−3.6
East North Central	163	25,152	24,747	−1.6	457,282	465,898	+1.9
West North Central	54	3,818	4,184	+9.6	68,289	69,782	+2.2
South Atlantic	326	47,469	47,771	+0.6	876,131	881,023	+0.6
East South Central	243	41,471	41,307	−0.4	585,154	571,773	−2.3
West South Central	26	1,735	1,890	+8.9	30,293	30,487	+0.6
Mountain	120	10,829	12,131	+12.0	229,791	270,387	+17.7
Pacific	12	1,502	1,563	+4.1	33,558	36,521	+8.8
All divisions	**1,348**	**187,276**	**188,845**	**+0.8**	**3,197,220**	**3,209,848**	**+0.4**
		Metalliferous mining					
Middle Atlantic	6	664	612	−7.8	$12,453	$11,733	−5.8
East North Central	44	9,723	9,713	−0.1	161,870	154,315	−4.7
West North Central	60	6,186	6,073	−1.8	158,224	150,774	−4.7
East South Central	14	2,454	2,260	−7.9	46,791	36,027	−23.0
West South Central	46	1,179	1,169	−0.8	22,518	19,857	−11.8
Mountain	97	14,155	14,294	+1.0	361,729	366,061	+1.2
Pacific	29	2,170	2,125	−2.1	57,093	60,009	+5.1
All divisions	**296**	**36,531**	**36,246**	**−0.8**	**820,678**	**798,776**	**−2.7**
		Quarrying and nonmetallic mining					
New England	99	4,024	4,004	−0.5	$111,191	$99,869	−10.2
Middle Atlantic	121	6,850	6,844	−0.1	157,971	153,436	−2.9
East North Central	225	6,770	6,419	−5.2	156,727	154,654	−1.3
West North Central	99	1,916	1,935	+1.0	41,892	45,344	+8.2
South Atlantic	103	5,222	5,077	−2.8	81,360	76,783	−5.6
East South Central	64	2,885	2,717	−5.8	36,600	36,018	−1.6
West South Central	50	2,454	2,239	−8.8	49,229	42,555	−13.6
Mountain	5	121	105	−13.2	3,646	3,481	−4.5
Pacific	34	935	896	−4.2	24,130	25,326	+5.0
All divisions	**800**	**31,177**	**30,236**	**−3.0**	**662,746**	**637,466**	**−3.8**
		Crude petroleum producing					
Middle Atlantic	32	240	314	+30.8	$6,228	$7,882	+26.6
East North Central	20	310	304	−1.9	5,973	5,657	−5.3
West North Central	19	487	444	−8.8	12,646	10,914	−13.7
South Atlantic	11	388	370	−4.6	10,038	9,336	−7.0
East South Central	9	232	186	−19.8	4,789	4,096	−14.5
West South Central	340	16,171	15,193	−6.0	537,033	499,737	−6.9
Mountain	21	299	277	−7.4	10,152	8,470	−16.6
Pacific	90	3,801	3,843	+1.1	138,388	143,532	+3.7
All divisions	**542**	**21,928**	**20,931**	**−4.5**	**725,247**	**689,624**	**−4.9**

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL **NONMANUFACTURING** ESTABLISHMENTS IN JULY AND AUGUST, 1931, BY INDUSTRIES—Continued

Geographic division	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		July, 1931	August, 1931		July, 1931	August, 1931	
		Telephone and telegraph					
New England	725	27,737	27,729	−(1)	$866,852	$873,371	+0.8
Middle Atlantic	1,275	98,098	97,603	−0.5	3,230,468	3,209,861	−0.6
East North Central	1,468	68,458	67,474	−1.4	1,875,249	1,837,972	−2.0
West North Central	1,364	28,756	28,577	−0.6	719,844	702,727	−2.4
South Atlantic	560	19,815	19,642	−0.9	542,510	538,419	−0.8
East South Central	618	9,884	9,828	−0.6	221,121	218,670	−1.1
West South Central	728	17,117	17,002	−0.7	393,011	388,192	−1.2
Mountain	509	7,478	7,398	−1.1	184,229	179,109	−2.8
Pacific	886	29,680	29,463	−0.7	911,088	893,987	−1.9
All divisions	**8,133**	**307,023**	**304,716**	**−0.8**	**8,944,372**	**8,842,308**	**−1.1**
		Power, light, and water					
New England	260	22,257	22,235	−0.1	$720,742	$717,206	−0.5
Middle Atlantic	374	61,398	60,924	−0.8	2,028,053	2,015,991	−0.6
East North Central	687	56,590	56,624	+0.1	1,830,704	1,829,688	−0.1
West North Central	480	26,530	26,559	+0.1	772,703	767,425	−0.7
South Atlantic	272	21,603	21,332	−1.3	659,748	651,408	−1.3
East South Central	166	6,930	6,750	−2.6	173,440	169,211	−2.4
West South Central	587	16,372	16,575	+1.2	447,489	447,781	+0.1
Mountain	119	5,258	5,203	−1.0	161,949	160,178	−1.1
Pacific	754	21,752	20,491	−5.8	704,605	646,820	−8.2
All divisions	**3,699**	**238,690**	**236,693**	**−0.8**	**7,499,433**	**7,405,708**	**−1.2**
		Electric railroads [2]					
New England	40	13,700	13,755	+0.4	$488,152	$492,314	+0.9
Middle Atlantic	152	37,040	36,779	−0.7	1,180,968	1,154,054	−2.3
East North Central	101	41,437	41,314	−0.3	1,318,445	1,284,175	−2.6
West North Central	59	13,896	13,579	−2.3	413,268	406,371	−1.7
South Atlantic	55	11,718	11,589	−1.1	321,223	317,709	−1.1
East South Central	13	2,706	2,702	−0.1	72,570	69,444	−4.3
West South Central	33	5,085	4,932	−3.0	133,761	130,801	−2.2
Mountain	15	2,000	2,022	+1.1	54,012	53,290	−1.3
Pacific	38	16,098	15,770	−2.0	485,970	485,564	−0.1
All divisions	**506**	**143,680**	**142,442**	**−0.9**	**4,468,369**	**4,393,722**	**−1.7**
		Wholesale trade					
New England	596	14,138	14,025	−0.8	$432,044	$423,440	−2.0
Middle Atlantic	291	8,166	8,095	−0.9	258,829	260,447	+0.6
East North Central	285	10,695	10,629	−0.6	321,248	316,235	−1.6
West North Central	211	12,564	12,545	−0.2	367,190	361,670	−1.5
South Atlantic	200	3,793	3,794	+(1)	112,662	110,772	−1.7
East South Central	59	1,577	1,595	+1.1	43,094	42,344	−1.7
West South Central	313	5,612	5,676	+1.1	160,845	156,102	−2.9
Mountain	83	1,769	1,760	−0.5	57,707	57,253	−0.8
Pacific	333	9,225	9,212	−0.1	295,552	292,758	−0.9
All divisions	**2,371**	**67,539**	**67,331**	**−0.3**	**2,049,171**	**2,021,021**	**−1.4**

See footnotes at end of table.

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL **NONMANUFACTURING** ESTABLISHMENTS IN JULY AND AUGUST, 1931, BY INDUSTRIES—Continued

Geographic division	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		July, 1931	August, 1931		July, 1931	August, 1931	
		Retail trade					
New England	2,876	54,333	53,022	−2.4	$1,329,698	$1,296,607	−2.5
Middle Atlantic	344	69,812	66,567	−4.6	1,852,804	1,749,674	−5.6
East North Central	2,574	71,661	70,269	−1.9	1,771,803	1,715,256	−3.2
West North Central	576	18,177	18,005	−0.9	392,599	386,082	−1.7
South Atlantic	1,005	20,080	19,550	−2.6	439,253	415,116	−5.5
East South Central	362	7,860	7,536	−4.1	145,958	140,283	−3.9
West South Central	220	11,598	11,526	−0.6	236,898	225,463	−4.8
Mountain	197	4,927	4,741	−3.8	104,420	99,398	−4.8
Pacific	1,796	39,534	39,246	−0.7	905,062	891,568	−1.5
All divisions	**9,950**	**297,982**	**290,462**	**−2.5**	**7,178,495**	**6,919,447**	**−3.6**
		Hotels [3]					
New England	144	9,776	10,835	+10.8	$148,672	$161,232	+8.4
Middle Atlantic	422	47,261	47,253	−(1)	783,416	776,467	−0.9
East North Central	386	28,452	28,070	−1.3	465,597	451,021	−3.1
West North Central	276	13,782	13,462	−2.3	190,050	182,051	−4.2
South Atlantic	160	10,718	10,241	−4.5	151,916	144,166	−5.1
East South Central	95	5,871	5,717	−2.6	67,893	65,615	−3.4
West South Central	144	8,373	8,129	−2.9	105,463	101,743	−3.5
Mountain	99	3,052	3,055	+0.1	50,368	50,374	+(1)
Pacific	324	15,146	14,943	−1.3	273,284	265,053	−3.0
All divisions	**2,050**	**142,431**	**141,705**	**−0.5**	**2,236,659**	**2,197,722**	**−1.7**
		Canning and preserving					
New England	74	1,336	2,985	+123.4	$23,830	$41,479	+74.1
Middle Atlantic	95	10,636	12,654	+19.0	169,776	209,373	+23.3
East North Central	279	13,227	13,454	+1.7	188,844	180,503	−4.4
West North Central	67	3,117	5,656	+81.5	50,185	62,403	+24.3
South Atlantic	119	3,686	7,254	+96.8	34,031	54,999	+61.6
East South Central	36	1,318	1,850	+40.4	15,198	19,573	+28.8
West South Central	35	1,239	1,652	+33.3	6,575	9,733	+48.0
Mountain	59	3,856	3,847	−0.2	57,749	50,180	−13.1
Pacific	151	17,891	29,347	+64.0	197,993	422,061	+113.2
All divisions	**4915**	**56,306**	**78,699**	**+39.8**	**744,181**	**1,050,304**	**+41.1**
		Laundries					
New England	51	2,605	2,600	−0.2	$55,228	$52,582	−4.8
Middle Atlantic	90	11,367	11,258	−1.0	232,662	226,208	−2.8
East North Central	79	5,496	5,360	−2.5	106,676	100,872	−5.4
West North Central	59	4,937	4,821	−2.3	84,874	81,345	−4.2
South Atlantic	53	6,173	6,074	−1.6	96,072	94,720	−1.4
East South Central	27	1,821	1,771	−2.7	24,081	23,357	−3.0
West South Central	17	1,166	1,092	−6.3	16,529	15,893	−3.8
Mountain	19	1,567	1,551	−1.0	26,592	26,466	−0.5
Pacific	54	3,491	3,454	−1.1	75,467	73,493	−2.6
All divisions	**449**	**38,623**	**37,981**	**−1.7**	**718,181**	**694,936**	**−3.2**

See footnotes at end of table.

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL **NONMANUFACTURING** ESTABLISHMENTS IN JULY AND AUGUST, 1931, BY INDUSTRIES—Continued

Geographic division	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		July, 1931	August, 1931		July, 1931	August, 1931	
	Dyeing and cleaning						
New England	18	904	786	−13.1	$21,049	$18,334	−12.9
Middle Atlantic	25	1,562	1,428	−8.6	36,871	32,957	−10.6
East North Central	22	1,355	1,286	−5.1	29,478	28,104	−4.7
West North Central	32	969	928	−4.2	21,486	20,148	−6.2
South Atlantic	35	1,079	1,063	−1.5	20,981	19,673	−6.2
East South Central	18	809	767	−5.2	14,127	13,004	−7.9
West South Central	11	332	323	−2.7	6,805	6,304	−7.4
Mountain	16	247	251	+1.6	5,533	5,603	+1.3
Pacific	12	685	695	+1.5	17,648	17,240	−2.3
All divisions	**189**	**7,942**	**7,527**	**−5.2**	**173,978**	**161,367**	**−7.2**

[1] Less than one-tenth of 1 per cent.
[2] Not including electric-railroad car building and repairing; see manufacturing industries, Table 1, p. 205, et seq.
[3] The amount of pay roll given represents cash payments only; the additional value of board, room, and tips can not be computed.
[4] Included in the total of 915 establishments reporting in August were 77 establishments which were closed in July but had resumed operation in August, and 9 establishments which were operating in July and reported a seasonal closing in August, 1931. There were also 170 additional canning establishments whose reports were not included in the total number of reporting establishments, as the plants had been seasonally closed for a period of 2 or more months.

TABLE 2.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN **NONMANUFACTURING** INDUSTRIES, AUGUST, 1931, WITH AUGUST, 1930

Industry	Per cent of change August, 1931, compared with August, 1930		Industry	Per cent of change August, 1931, compared with August, 1930	
	Number on pay roll	Amount of pay roll		Number on pay roll	Amount of pay roll
Anthracite mining	−16.1	−28.4	Electric railroads	−8.7	−11.1
Bituminous coal mining	−13.7	−28.8	Wholesale trade	−8.9	−12.3
Metalliferous mining	−29.4	−43.4	Retail trade	−4.4	−8.3
Quarrying and nonmetallic mining	−22.8	−35.8	Hotels	−8.6	−15.0
Crude petroleum producing	−28.8	−34.5	Canning and preserving	−23.0	−39.1
Telephone and telegraph	−13.1	−10.0	Laundries	[1]	[1]
Power, light, and water	−9.9	−9.8	Dyeing and cleaning	[1]	[1]

[1] Data not available.

Indexes of Employment and Pay-Roll Totals for Nonmanufacturing Industries

TABLE 3 shows the index numbers of employment and pay-roll totals for anthracite, bituminous coal, and metalliferous mining, quarrying, crude petroleum producing, telephone and telegraph, power, light, and water, electric railroads, wholesale and retail trade, hotels, and canning and preserving, by months, from January, 1930, to August, 1931, with the monthly average for 1929 as 100.

TABLE 3.—INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS FOR **NONMANUFACTURING** INDUSTRIES, JANUARY, 1930, TO AUGUST, 1931

[Monthly average, 1929=100]

Year and month	Anthracite mining		Bituminous coal mining		Metalliferous mining		Quarrying and nonmetallic mining		Crude petroleum producing		Telephone and telegraph		Power, light, and water		Operation and maintenance of electric railroads [1]		Wholesale trade		Retail trade		Hotels		Canning and preserving	
	Employment	Pay-roll totals	Employment	Pay-roll totals	Employment	Pay-roll totals	Employment	Pay-roll totals	Employment	Pay-roll totals	Employment	Pay-roll totals	Employment	Pay-roll totals	Employment	Pay-roll totals	Employment	Pay-roll totals	Employment	Pay-roll totals	Employment	Pay-roll totals	Employment	Pay-roll totals
1930																								
January	102.1	105.8	102.5	101.4	95.7	92.7	79.6	71.9	92.7	94.0	101.6	105.1	99.6	99.7	97.1	97.8	100.0	100.0	98.9	99.7	100.4	100.3	46.1	50.3
February	106.9	121.5	102.4	102.1	92.3	92.5	79.8	73.5	90.8	88.6	100.2	101.9	98.8	100.4	95.1	95.7	98.5	98.3	94.4	96.0	102.4	103.8	45.7	51.5
March	82.6	78.5	98.6	86.4	90.9	90.8	83.0	80.0	89.3	91.3	99.4	105.8	99.7	102.1	94.4	95.4	97.7	99.7	93.9	95.5	102.4	104.4	49.7	50.8
April	84.1	75.0	94.4	81.7	89.3	88.3	87.4	85.4	86.8	86.6	98.9	103.4	100.7	102.6	95.2	97.1	97.3	97.9	97.3	97.5	100.1	100.3	74.8	72.6
May	93.8	98.8	90.4	77.5	87.5	85.6	90.8	90.2	89.8	85.4	99.7	103.2	103.4	104.5	95.2	96.0	96.8	97.4	96.7	97.3	98.0	98.4	65.7	66.9
June	90.8	94.3	88.4	75.6	84.6	81.6	90.3	90.9	90.2	87.1	99.8	103.4	104.6	107.8	94.8	97.0	96.5	98.6	93.9	96.8	98.0	98.1	83.0	81.5
July	91.6	84.0	88.0	68.9	80.5	71.9	89.9	85.5	89.9	88.5	100.0	106.6	105.9	106.7	95.3	95.6	96.0	96.0	89.0	91.7	101.3	99.8	126.3	112.7
August	80.2	78.8	89.2	71.1	79.0	71.0	89.3	85.8	87.7	86.0	98.8	102.5	106.4	106.6	92.9	92.1	95.0	93.6	85.6	87.6	101.5	98.6	185.7	172.0
September	93.8	91.6	90.5	74.9	78.1	69.9	87.7	82.5	85.0	84.0	96.8	102.2	105.2	106.1	91.8	90.5	94.8	93.6	92.0	92.4	100.1	97.1	246.6	214.8
October	99.0	117.2	91.8	79.4	77.2	68.6	84.7	79.3	85.2	82.6	94.5	100.9	104.8	105.6	91.0	88.9	94.2	92.9	95.5	95.1	97.5	95.5	164.7	140.0
November	97.2	98.0	92.5	79.1	72.8	63.4	78.3	66.8	83.6	80.0	93.0	97.9	103.4	103.7	89.3	87.7	92.6	91.0	98.4	96.8	95.2	93.6	96.7	82.9
December	99.1	100.0	92.5	77.7	70.1	59.9	70.2	59.9	77.4	77.2	91.6	101.3	103.2	106.3	88.8	88.6	92.0	91.3	115.1	107.7	93.5	91.5	61.6	57.4
Average	**93.4**	**95.3**	**93.4**	**81.3**	**83.2**	**78.0**	**84.3**	**79.3**	**87.4**	**85.9**	**97.9**	**102.9**	**103.0**	**104.3**	**93.4**	**93.5**	**96.0**	**95.9**	**95.9**	**96.2**	**99.2**	**98.5**	**103.9**	**96.1**
1931																								
January	90.6	89.3	93.9	73.3	68.3	55.0	64.4	50.4	74.8	71.5	90.5	96.3	99.2	98.6	86.9	85.6	89.5	87.5	90.0	89.4	95.0	91.0	48.9	46.1
February	89.5	101.9	91.5	68.3	65.3	54.6	66.6	54.4	73.2	70.0	89.2	94.8	97.8	99.7	86.6	87.1	88.2	88.4	87.1	86.7	96.8	93.7	48.3	48.6
March	82.0	71.3	88.8	65.2	63.5	52.8	70.0	58.2	72.2	73.2	88.6	97.9	96.7	102.4	86.4	88.1	87.4	89.1	87.8	87.5	96.8	93.4	53.0	50.3
April	85.2	75.2	85.9	58.6	63.9	51.4	76.1	62.6	69.8	66.3	88.1	95.0	97.1	97.6	86.8	86.6	87.4	85.2	90.1	88.3	95.9	89.9	59.6	57.1
May	80.3	76.1	82.4	54.4	62.4	49.3	75.0	62.3	67.8	64.7	87.4	94.1	97.6	98.7	85.9	85.1	87.1	84.7	89.9	88.0	92.5	87.7	56.0	56.0
June	76.1	66.7	78.4	52.4	60.0	46.1	72.3	60.1	65.0	62.7	86.9	95.0	97.2	98.3	85.3	84.8	87.1	84.1	89.1	87.6	91.6	85.4	70.6	58.6
July	65.1	53.7	76.4	50.4	56.2	41.3	71.0	57.3	65.3	59.2	86.6	93.3	96.7	97.4	85.6	83.3	86.8	83.3	83.9	83.3	93.3	85.2	102.2	74.2
August	67.3	56.4	77.0	50.6	55.8	40.2	68.9	55.1	62.4	56.3	85.9	92.3	95.9	96.2	84.8	81.9	86.5	82.1	81.8	80.3	92.8	83.8	142.9	104.7

[1] Not including electric-railroad car building and repairing; see vehicles group, manufacturing industries, Table 1, p. 205, et seq.

Employment in Building Construction in August, 1931

DATA for each of the 27 localities surveyed by the Bureau of Labor Statistics, together with similar information supplied by three cooperating State bureaus, which collect this information within their respective jurisdictions, appear in the following table. This table shows the number of identical firms reporting for both months, the number of employees, and the amount of earnings in one week in July and August, 1931, together with the per cents of change over the month period. The results of the compilation for the 27 localities surveyed by the Federal bureau have been issued in a preliminary press release, and therefore, to avoid any seeming contradiction of reports, the totals of the two groups are shown separately. However, to present as much available information as possible concerning the building-construction industry, a combined total of the two groups, together with the per cents of change occurring from July to August is given at the end of the table.

COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL FIRMS IN THE **BUILDING-CONSTRUCTION** INDUSTRY, JULY AND AUGUST, 1931

Locality	Number of firms reporting	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		July, 1931	August, 1931		July, 1931	August, 1931	
Atlanta	125	1,793	1,602	−10.7	$34,205	$29,748	−13.0
Birmingham	77	980	1,035	+5.6	19,543	19,246	−1.5
Charlotte, N. C	40	958	899	−6.2	21,491	19,534	−9.1
Cleveland	412	5,822	5,321	−8.6	212,552	193,888	−8.8
Dallas	108	1,675	1,490	−11.0	41,419	36,886	−10.9
Denver	175	1,126	1,074	−4.6	32,628	32,355	−0.8
Des Moines	67	817	719	−12.0	24,092	20,667	−14.2
Hartford	237	2,180	2,212	+1.5	71,003	70,909	−0.1
Indianapolis	176	2,417	2,152	−11.0	79,326	70,421	−11.2
Jacksonville	51	402	394	−2.0	7,416	8,432	+13.7
Louisville	121	1,196	1,093	−8.6	27,848	24,711	−11.3
Memphis	84	577	666	+15.4	13,521	14,198	+5.0
Minneapolis	234	3,197	3,430	+7.3	90,607	99,845	+10.2
New Orleans	125	3,457	4,198	+21.4	65,959	78,503	+19.0
Oklahoma City	87	1,099	1,058	−3.7	32,176	33,398	+3.8
Omaha	111	1,417	1,308	−7.7	44,548	37,465	−15.9
Portland, Me	84	621	710	+14.3	19,080	20,678	+8.4
Portland, Oreg	174	1,517	1,412	−6.9	47,364	44,639	−5.8
Providence	216	2,522	2,496	−1.0	77,651	73,220	−5.7
Richmond	142	1,954	1,797	−8.0	49,387	42,360	−14.2
St. Louis	450	4,321	4,029	−6.8	156,851	138,413	−11.8
Salt Lake City	78	413	439	+6.3	10,563	11,154	+5.6
Seattle	184	2,507	2,381	−5.0	77,553	70,760	−8.8
Washington	440	10,540	10,713	+1.6	319,323	321,838	+0.8
Wheeling	46	310	344	+11.0	7,733	8,688	+12.3
Wichita	54	681	574	−15.7	17,376	12,401	−28.6
Wilmington, Del	101	1,688	1,760	+4.3	46,178	44,884	−2.8
Total, 27 cities	4,199	56,187	55,306	−1.6	1,647,393	1,579,241	−4.1
Baltimore, Md.[1]	76	1,982	1,976	−0.3	44,938	45,449	+1.1
Massachusetts [1]	713	9,804	10,140	+3.4	356,549	353,228	−0.9
Wisconsin [1]	70	2,944	3,018	+2.5	72,227	74,324	+2.9
Total, 3 cooperating State bureaus	859	14,730	15,134	+2.7	473,714	473,001	−0.2
Total, all localities	5,058	70,917	70,440	−0.7	2,121,107	2,052,242	−3.2

[1] Date supplied by cooperating State bureaus.

Data concerning the building-construction industry, appearing in the foregoing table, have not been included in the summary table, shown at the beginning of this trend of employment section.

The several industrial groups in the summary table are not weighted according to their relative importance, and the bureau's monthly employment survey of the building-construction industry, while being steadily expanded, has not yet attained sufficient volume to represent its proper proportion in comparison with the other 15 industrial groups in the summary table.

Employment on Class I Steam Railroads in the United States

THE monthly trend of employment from January, 1923, to July, 1931, on Class I railroads—that is, all roads having operating revenues of $1,000,000 or over—is shown by the index numbers published in Table 1. These index numbers are constructed from monthly reports of the Interstate Commerce Commission, using the monthly average for 1926 as 100.

TABLE 1.—INDEX OF EMPLOYMENT ON CLASS I STEAM RAILROADS IN THE UNITED STATES, JANUARY, 1923, TO JULY, 1931

[Monthly average, 1926=100]

Month	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	98.3	96.9	95.6	95.8	95.5	89.3	88.2	86.3	73.7
February	98.6	97.0	95.4	96.0	95.3	89.0	88.9	85.4	72.7
March	100.5	97.4	95.2	96.7	95.8	89.9	90.1	85.5	72.9
April	102.0	98.9	96.6	98.9	97.4	91.7	92.2	87.0	73.5
May	105.0	99.2	97.8	100.2	99.4	94.5	94.9	88.6	73.9
June	107.1	98.0	98.6	101.6	100.9	95.9	96.1	86.5	72.8
July	108.2	98.1	99.4	102.9	101.0	95.6	96.6	84.7	72.4
August	109.4	99.0	99.7	102.7	99.5	95.7	97.4	83.7	----
September	107.8	99.7	99.9	102.8	99.1	95.3	96.8	82.2	----
October	107.3	100.8	100.7	103.4	98.9	95.3	96.9	80.4	----
November	105.2	99.0	99.1	101.2	95.7	92.9	93.0	77.0	----
December	99.4	96.0	97.1	98.2	91.9	89.7	88.8	74.9	----
Average	104.1	98.3	97.9	100.0	97.5	92.9	93.3	83.5	[1]73.1

[1] Average for 7 months.

Table 2 shows the total number of employees on the 15th day each of July, 1930, and June and July, 1931, and pay-roll totals for the entire months.

In these tabulations data for the occupational group reported as "executives, officials, and staff assistants" are omitted.

TABLE 2.—EMPLOYMENT AND EARNINGS OF RAILROAD EMPLOYEES, JULY, 1930, AND JUNE AND JULY, 1931

[From monthly reports of Interstate Commerce Commission. As data for only the more important occupations are shown separately, the group totals are not the sum of the items under the respective groups]

Occupation	Number of employees at middle of month			Total earnings		
	July, 1930	June, 1931	July, 1931	July, 1930	June, 1931	July, 1931
Professional, clerical, and general	252,527	224,357	222,232	$37,434,769	$33,202,013	$32,981,199
Clerks	140,357	122,216	120,974	19,702,239	17,021,539	16,943,637
Stenographers and typists	23,363	20,933	20,667	3,071,511	2,766,491	2,738,562
Maintenance of way and structures	383,985	310,044	303,825	36,081,045	28,360,419	27,777,398
Laborers, extra gang and work train	59,930	39,040	37,325	4,524,676	2,752,381	2,612,727
Laborers, track and roadway section	198,084	165,031	160,927	14,356,168	11,319,432	11,019,169
Maintenance of equipment and stores	397,588	343,686	342,915	52,067,759	42,927,953	42,733,661
Carmen	83,768	71,450	71,148	12,445,325	10,022,263	9,956,413
Machinists	50,129	45,540	45,533	7,681,863	6,564,094	6,566,881
Skilled trades helpers	87,168	74,978	74,867	9,651,256	7,827,501	7,787,611
Laborers (shops, engine houses, power plants, and stores)	33,120	28,307	28,088	3,187,491	2,563,417	2,594,117
Common laborers (shops, engine houses, power plants, and stores)	44,072	36,794	36,962	3,375,465	2,707,268	2,703,310
Transportation, other than train, engine, and yard	180,585	161,739	160,563	23,165,773	20,171,680	20,505,796
Station agents	28,758	27,685	27,725	4,684,152	4,386,370	4,444,470
Telegraphers, telephoners, and towermen	21,654	19,520	19,491	3,439,638	2,999,497	3,081,037
Truckers (stations, warehouses, and platforms)	27,273	23,928	23,114	2,556,581	2,136,118	2,130,949
Crossing and bridge flagmen and gatemen	19,887	18,946	18,957	1,562,882	1,466,999	1,468,293
Transportation (yardmasters, switch tenders, and hostlers)	20,148	17,633	17,553	4,027,984	3,374,149	3,430,951
Transportation, train and engine	280,309	244,443	247,304	57,151,833	47,285,305	49,020,282
Road conductors	32,180	28,042	28,250	7,873,170	6,583,298	6,846,815
Road brakemen and flagmen	61,929	54,105	54,745	10,939,097	8,964,152	9,339,305
Yard brakemen and yard helpers	46,613	41,019	41,199	8,102,791	6,654,722	6,843,683
Road engineers and motormen	38,018	32,959	33,453	10,398,275	8,660,129	9,023,482
Road firemen and helpers	38,598	33,590	34,406	7,607,948	6,265,011	6,536,824
All employees	1,515,142	1,301,902	1,294,392	209,929,143	175,321,519	176,449,287

Changes in Employment and Pay Rolls in Various States

THE following data as to changes in employment and pay rolls have been compiled from reports received from the various State labor offices:

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES

Monthly period

State, and industry group	Per cent of change, July to August, 1931	
	Employment	Pay roll
Arkansas		
Auto dealers, garages	+3.6	−2.8
Auto bodies, wood parts	−49.5	−74.5
Bakeries and cafés		−5.2
Beverages		−4.3
Brick and tile	+7.4	−.7
Candy and confections	−3.8	−3.9
Cooperage, heading, veneer	−8.5	−4.4
Cotton compresses, gins, and products	−1.7	−.7
Coal mines	+5.2	−29.2
Furniture manufactures	−4.1	−15.1
Flour, grain, feed, fertilizer	−10.2	
Glass factories	−2.5	−2.4
Handles, hubs, spokes	+5.5	+18.2
Hotels	−1.9	−.9
Laundries	−9.3	−5.9
Lumber mills	+2.2	+1.8
Machinery, foundries, parts, smelters	−18.3	−14.9
Newspapers and printers	−1.2	−2.6
Packing houses	+2.3	+6.4
Petroleum products	+7.0	+3.1
Sand, gravel, stone	+3.7	+2.1
Textile mills, garment	+1.8	+4.5
Public utilities	+12.6	+12.9
Wholesale and retail	−1.5	−1.1
Miscellaneous	−24.3	−21.1
Contractors	−50.1	−49.5
	June to July, 1931	
California		
Stone, clay, and glass products	−8.6	−11.2
Metals, machinery, and conveyances	−3.8	−5.5
Furniture and fixtures	+3.8	+4.9
Other wood manufactures	−.7	−8.7
Leather and rubber goods	−4.7	−16.9
Petroleum producing and refining	−3.9	−5.3
Other miscellaneous chemical products	+3.0	−2.5
Printing	+.4	−2.0
Publishing	−1.6	−1.9
Paper goods	+.4	−3.7
Textiles	+1.0	−2.9
Clothing, millinery, and laundering	−.2	−.1
Foods, beverages, and tobacco	+20.4	+6.7
Motion pictures	−20.3	−16.1
Miscellaneous	−6.9	−11.9
All industries	+1.9	−4.3

State, and industry group	Per cent of change, July to August, 1931	
	Employment	Pay roll
Illinois		
Stone, clay, and glass products	−2.1	−12.0
Metals, machinery, and conveyances	−1.6	−.9
Wood products	−2.5	−7.4
Furs and leather goods	+1.0	−2.5
Chemicals, oils, paints, etc.	−3.6	−9.8
Printing and paper goods	+4.9	+3.6
Textiles	−10.5	-15.4
Clothing and millinery	−4.5	+2.9
Foods, beverages, and tobacco	+3.2	+.3
Miscellaneous	−1.6	−5.3
All manufacturing	−.5	−1.3
Trade, wholesale and retail	+.2	−2.6
Services	−.9	−2.7
Public utilities	−2.0	−.4
Coal mining	−20.3	−19.3
Building and contracting	+9.3	+6.5
All nonmanufacturing	−2.5	−1.4
All industries	−1.2	−1.3
Iowa		
Food and kindred products	−.1	
Textiles	+8.8	
Iron and steel works	+.7	
Lumber products	−9.7	
Leather products	−2.2	
Paper products, printing, and publishing	+4.4	
Patent medicines, chemicals, and compounds	.0	
Stone and clay products	−2.7	
Tobacco and cigars	−14.8	
Railway car shops	+.1	
Various industries	−2.8	
All industries	+.3	
Maryland		
Food products	−1.1	+0.1
Textiles	+.7	−3.1
Iron and steel and their products	+.9	+8.5
Lumber and its products	+.7	+.1
Leather and its products	−.2	+18.1
Rubber tires	-1.4	−.3
Paper and printing	-3.3	−.2
Chemicals and allied products	+.9	+1.3
Stone, clay, and glass products	−9.1	−6.9

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

Monthly period—Continued

State, and industry group	Per cent of change, July to August, 1931	
	Employment	Pay roll
Maryland—Continued		
Metal products, other than iron and steel	+5.4	+6.5
Tobacco products	−2.7	−13.5
Transportation equipment	+5.3	−3.1
Car building and repairing	+.6	+.8
Miscellaneous	−21.4	−17.4
All manufacturing	−.3	+2.9
Retail establishments	−1.9	−6.4
Wholesale establishments	+1.0	+.1
Public utilities	−.5	+2.4
Coal mines	+2.0	−14.0
Hotels	−5.6	−5.3
Quarries	−1.3	−9.8
Building construction	+.2	+.4
Laundries	−1.0	−2.4
Cleaning and dyeing establishments	−.9	−5.4

State, and industry group	Employment—index numbers (1925–1927=100)	
	July, 1931	August, 1931
Massachusetts		
Boot and shoe cut stock and findings	85.7	91.3
Boots and shoes	66.5	71.5
Bread and other bakery products	103.2	99.6
Clothing, men's	57.9	59.4
Clothing, women's	72.9	84.2
Confectionery	55.7	78.8
Cotton goods	53.1	55.1
Dyeing and finishing textiles	76.7	86.7
Electrical machinery, apparatus, and supplies	62.8	60.7
Foundry and machine-shop products	76.8	72.9
Furniture	63.8	67.6
Hosiery and knit goods	63.8	71.1
Leather, tanned, curried, and finished	95.0	96.7
Paper and wood pulp	75.6	74.6
Printing and publishing	91.8	90.9
Rubber footwear	66.4	68.1
Rubber goods, tires, and tubes	57.7	55.3
Silk goods	45.6	47.9
Textile machinery and parts	63.6	63.5
Woolen and worsted goods	77.4	79.5
All industries	67.6	69.1

State, and industry group	Per cent of change, July to August, 1931	
	Employment	Pay roll
Michigan		
Paper and printing	+0.7	+1.4
Chemicals and allied products	−.2	+.3
Stone, clay, and glass products	+5.8	+3.1
Metal products, not iron and steel	−2.0	+1.5
Iron and steel products	−17.8	+.5
Lumber and its products	−2.5	+4.0
Leather and its products	−2.7	+5.4
Food and kindred products	+1.0	−3.4
Textiles and their products	+9.1	+14.9
Tobacco products	+1.3	−5.4
Vehicles for land transportation	−5.2	+7.0
Miscellaneous	−2.3	−14.6
All industries	−5.1	+.3

State, and industry group	June to July, 1931	
New Jersey		
Food and kindred products	−1.7	−0.6
Textiles and their products	+.0	+.0
Iron and steel and their products	−2.1	+.6
Lumber and its products	−3.5	−7.3
Leather and its products	−7.3	−5.2
Tobacco products	−.9	+5.1
Paper and printing	−2.6	−4.0
Chemicals and allied products	−1.4	−2.4
Stone, clay, and glass products	−5.9	−8.5
Metal products other than iron and steel	−2.2	−4.3
Vehicles for land transportation	+.0	−3.7
Miscellaneous	−.3	−1.5
All industries	−1.5	−1.5

State, and industry group	July to August, 1931	
New York		
Stone, clay, and glass	+2.1	+2.4
Miscellaneous stone and minerals	+1.6	+6.6
Lime, cement, and plaster	−1.5	−3.7
Brick, tile, and pottery	−3.6	−5.8
Glass	+12.9	+12.4

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

Monthly period—Continued

State, and industry group	Per cent of change, July to August, 1931	
	Employment	Pay roll
New York—Continued		
Metals and machinery	−6.0	−6.4
Silver and jewelry	+7.1	+8.9
Brass, copper, and aluminum	−12.4	−17.0
Iron and steel	−3.1	−8.1
Structural and architectural iron	−2.1	−8.7
Sheet metal and hardware	−1.3	−1.2
Firearms, tools, and cutlery	−2.7	−2.4
Cooking, heating, and ventilating apparatus	−1.2	−4.2
Machinery, including electrical apparatus	−7.5	−8.9
Automobiles, carriages, and airplanes	−10.2	−7.4
Railroad equipment and repair	−4.6	−1.7
Boat and ship building	−14.3	−3.3
Instruments and appliances	−3.8	−5.7
Wood manufactures	+5.4	+3.4
Saw and planing mills	−2.2	−2.4
Furniture and cabinetwork	+5.5	+4.0
Pianos and other musical instruments	+26.4	+27.9
Miscellaneous wood	+2.2	−1.7
Furs, leather, and rubber goods	+2.1	+1.0
Leather	+3.7	+3.0
Furs and fur goods	−3.2	−5.2
Shoes	+1.4	−.3
Other leather and canvas goods	+18.3	+30.4
Rubber and gutta-percha	−18.2	−23.0
Pearl, horn, bone, etc.	+12.7	+11.3
Chemicals, oils, paints, etc.	−2.8	−2.6
Drugs and chemicals	+.7	−3.1
Paints and colors	−1.4	−3.4
Oil products	−1.6	+2.0
Miscellaneous chemicals	−6.2	−6.1
Paper	−.5	+.4
Printing and paper goods	−1.8	−3.2
Paper boxes and tubes	+2.3	+3.6
Miscellaneous paper goods	−3.7	−5.4
Printing and bookmaking	−2.0	−3.4
Textiles	+3.9	+3.5
Silk and silk goods	+3.5	+9.3
Wool manufactures	+5.4	+1.9
Cotton goods	+.8	+2.2
Knit goods (excluding silk)	+3.8	+5.1
Other textiles	+3.4	+2.8
Clothing and millinery	+7.4	+12.2
Men's clothing	+1.9	+5.0
Men's furnishings	+2.3	+3.4
Women's clothing	+16.7	+21.6
Women's underwear	+6.2	+5.2
New York—Continued		
Clothing and millinery—Continued.		
Women's headwear	+42.4	+62.3
Miscellaneous sewing	+10.0	+10.2
Laundering and cleaning	−2.3	−3.6
Food and tobacco	−1.0	−.9
Flour, feed, and cereal	+3.3	+.9
Canning and preserving	−17.1	−5.5
Other groceries	+.2	−4.7
Meat and dairy products	−1.7	−2.2
Bakery products	−.8	−2.6
Candy	+13.4	+16.0
Beverages	−3.6	−2.2
Tobacco	+.5	+.4
Water, light, and power	+.3	−1.7
All industries	−.4	−.8
Oklahoma		
Cottonseed-oil mills	+70.2	+39.6
Food production:		
Confections	+83.3	+65.4
Flour mills	−12.0	−12.5
Meat and poultry	+.5	−7.3
Lead and zinc:		
Mines and mills	−3.2	+6.1
Smelters	+7.5	+14.8
Metals and machinery:		
Machine shops	+.1	+2.8
Oil industry:		
Production, etc.	−7.4	−13.8
Refineries	+6.3	+4.8
Public utilities:		
Steam railroad shops	+.9	+6.3
Street railways	−.3	−.9
Water, light, etc.	−.7	+.5
Stone, clay, and glass:		
Brick and tile	−16.7	−12.9
Cement and plaster	−23.2	−34.8
Crushed stone, sand, and gravel	+17.8	+19.7
Glass manufacture	−15.8	−24.7
Textiles and cleaning:		
Textile manufacture	+.4	+28.6
Laundries and cleaning	−3.0	−8.5
Pennsylvania		
Metal products	+.3	−2.1
Transportation equipment	−1.7	−1.3
Textile products	+2.8	+10.8
Foods and tobacco	−.2	−1.9
Stone, clay, and glass products	+2.9	−1.3
Lumber products	+5.2	+17.2
Chemical products	−3.7	−2.3
Leather and rubber products	+2.5	+5.9
Paper and printing	+.3	+1.5
All manufacturing	+.7	+.9

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

Monthly period—Continued

State, and industry group	Per cent of change, June to July, 1931	
	Employment	Pay roll
Wisconsin		
Manual		
Logging	−13.5	−26.0
Mining:		
Lead and zinc	.0	−16.7
Iron	−.6	−7.5
Stone crushing and quarrying	−6.0	−12.8
Manufacturing:		
Stone and allied industries	−4.6	−16.6
Metal	−4.4	−16.5
Wood	−4.7	−8.4
Rubber	−47.2	−40.4
Leather	+1.7	−6.4
Paper	+.8	−6.8
Textiles	−3.7	−13.0
Foods[1]	+1.7	+2.6
Foods[2]	+77.8	+45.2
Printing and publishing	−3.2	−6.6
Chemicals (including soap, glue, and explosives)	−3.4	−12.4
All manufacturing	−3.7	−11.6
Construction:		
Building	−1.4	+1.1
Highway	+21.3	+16.6
Wisconsin—Continued		
Manual—Continued		
Construction—Contd.		
Railroad	−14.9	−13.7
Marine dredging, sewer digging	+1.6	−5.5
Communication:		
Steam railways	+2.3	+3.2
Electric railways	+10.7	+6.3
Express, telephone, telegraph	−1.8	−1.7
Light and power	−.3	−1.4
Wholesale trade	+.5	−2.6
Hotels and restaurants	−4.0	
Laundering and dyeing	+1.4	−2.2
Nonmanual		
Manufacturing, mines, and quarries	−.6	+.1
Construction	−5.3	−7.0
Communication	+.1	−1.6
Wholesale trade	−.7	−2.3
Retail trade—sales force only	−5.8	−5.2
Miscellaneous professional services	−.2	−.7

Yearly period

State, and industry group	Per cent of change, July, 1930, to July, 1931	
	Employment	Pay roll
California		
Stone, clay, and glass products	−24.4	−31.4
Metals, machinery, and conveyances	−21.7	−30.5
Wood manufactures	−22.0	−32.0
Leather and rubber goods	−8.5	−13.4
Chemicals, oils, paints, etc.	−25.1	−34.8
Printing and paper goods	−11.1	−11.5
Textiles	−1.6	−1.0
Clothing, millinery, and laundering	−2.7	−7.6
Foods, beverages, and tobacco	−16.4	−30.0
Miscellaneous[3]	−22.1	−32.1
All industries	−18.6	−28.7
Public utilities	−12.4	−16.9
Wholesale and retail	−8.0	−12.0

State, and industry group	Employment—index numbers (1925–1927 =100)	
	August, 1930	August, 1931
Illinois		
Stone, clay, and glass products	81.5	65.4
Metals, machinery, and conveyances	85.5	64.2
Wood products	59.2	44.0
Furs and leather goods	87.7	99.7
Chemicals, oils, paints, etc.	88.4	77.7
Printing and paper goods	105.0	93.3
Textiles	76.0	82.0
Clothing and millinery	78.4	71.1
Foods, beverages, and tobacco	88.0	79.5
All manufacturing	84.9	70.1
Trade, wholesale and retail	69.1	64.0
Public utilities	99.9	91.0

[1] Excluding canning and preserving. [2] Including canning and preserving. [3] Includes motion pictures.

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

Yearly period—Continued

State, and industry group	Employment—index numbers (1925–1927 = 100)	
	August, 1930	August, 1931
Illinois—Continued		
Coal mining	67.5	54.3
Building and contracting	71.9	47.8
All industries	86.4	73.8
Massachusetts		
Boot and shoe cut stock and findings	96.4	91.3
Boots and shoes	85.6	71.5
Bread and other bakery products	104.2	99.6
Clothing, men's	66.7	59.4
Clothing, women's	95.5	84.2
Confectionery	88.7	78.8
Cotton goods	50.4	55.1
Dyeing and finishing textiles	83.6	86.7
Electrical machinery, apparatus, and supplies	72.7	60.7
Foundry and machine-shop products	97.8	72.9
Furniture	81.9	67.6
Hosiery and knit goods	72.4	71.1
Leather, tanned, curried, and finished	99.1	96.7
Paper and wood pulp	85.1	74.6
Printing and publishing	100.6	90.9
Rubber footwear	75.6	68.1
Rubber goods, tires, and tubes	67.0	55.3
Silk goods	61.7	47.9
Textile machinery and parts	62.4	63.5
Woolen and worsted goods	71.7	79.5
All industries	75.7	69.1

State, and industry group	Per cent of change, August, 1930, to August, 1931	
	Employment	Pay roll
Michigan		
Paper and printing	−10.0	−16.8
Chemicals and allied products	−14.1	−17.0
Stone, clay, and glass products	−21.5	−31.0
Metal products, not iron and steel	−7.1	−6.9
Iron and steel products	−26.6	−26.5
Lumber and its products	−24.0	−32.5
Leather and its products	−10.6	−25.6
Food and kindred products	−10.0	−17.2
Textiles and their products	+3.6	−5.4
Tobacco products	−.5	−12.1
Vehicles for land transportation	−20.4	−20.0
Miscellaneous	−26.5	−36.8
All industries	−19.7	−20.8

State, and industry group	Per cent of change, August, 1930, to August, 1931	
	Employment	Pay roll
New York		
Stone, clay, and glass	−11.4	−18.4
Miscellaneous stone and minerals	−15.0	−22.2
Lime, cement, and plaster	−4.6	−7.1
Brick, tile, and pottery	−11.9	−25.7
Glass	−13.0	−17.8
Metals and machinery	−24.6	−35.2
Silver and jewelry	−20.9	−39.4
Brass, copper, and aluminum	−28.9	−40.7
Iron and steel	−13.9	−30.8
Structural and architectural iron	−26.5	−35.8
Sheet metal and hardware	−14.4	−21.6
Firearms, tools, and cutlery	−30.3	−42.3
Cooking, heating, and ventilating apparatus	−13.4	−21.3
Machinery, including electrical apparatus	−25.4	−38.7
Automobiles, carriages, and airplanes	−33.2	−40.7
Railroad equipment and repairs	−23.5	−30.7
Boat and ship building	−46.6	−51.7
Instruments and appliances	−22.1	−29.7
Wood manufactures	−18.2	−27.4
Saw and planing mills	−18.1	−21.1
Furniture and cabinetwork	−25.0	−37.0
Pianos and other musical instruments	−16.6	−33.1
Miscellaneous wood	−8.4	−12.7
Furs, leather, and rubber goods	−6.3	−7.3
Leather	+6.8	+8.5
Furs and fur goods	−2.6	−14.2
Shoes	−3.0	+.5
Other leather and canvas goods	−22.4	−28.9
Rubber and gutta-percha	−28.3	−35.4
Pearl, horn, bone, etc.	+6.2	−1.1
Chemicals, oils, paints, etc.	−13.7	−16.7
Drugs and chemicals	−8.9	−13.6
Paints and colors	−8.1	−13.8
Oil products	−9.4	−7.7
Miscellaneous chemicals	−21.0	−25.9
Paper	−8.4	−12.1
Printing and paper goods	−9.7	−12.1
Paper boxes and tubes	−9.5	−12.1
Miscellaneous paper goods	−14.0	−14.5
Printing and bookmaking	+9.1	−11.9
Textiles	+2.0	−1.7
Silk and silk goods	−14.3	−21.3
Wool manufactures	+2.7	+5.6
Cotton goods	+181.2	+139.4
Knit goods (excluding silk)	+3.5	−.4
Other textiles	−12.2	−15.6

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

Yearly period—Continued

State, and industry group	Per cent of change, August, 1930, to August, 1931	
	Employment	Pay roll
New York—Continued		
Clothing and millinery	−5.9	−10.8
Men's clothing	−11.8	−12.4
Men's furnishings	−2.8	−7.4
Women's clothing	−8.6	−15.7
Women's underwear	−1.9	−12.5
Women's headwear	+13.8	+1.4
Miscellaneous sewing	−7.0	−6.2
Laundering and cleaning	−.7	−1.2
Foods and tobacco	−9.1	−12.8
Flour, feed, and cereals	+1.2	−2.9
Canning and preserving	−24.6	−30.4
Other groceries	−22.3	−22.4
Meat and dairy products	−13.2	−16.7
Bakery products	−8.8	−9.6
Candy	+18.4	+3.9
Beverages	−6.6	−9.6
Tobacco	+5.7	−4.4
Water, light, and power	−6.7	−3.5
All industries	−13.4	−20.4

State, and industry group	Per cent of change, August, 1930, to August, 1931	
	August, 1930	August, 1931
Pennsylvania		
Metal products	−23.0	−42.5
Transportation equipment	−33.8	−52.1
Textile products	−3.7	−4.9
Foods and tobacco	−3.7	−8.4
Stone, clay, and glass products	−13.8	−34.1
Lumber products	−21.0	−19.4
Chemical products	−7.4	−17.4
Leather and rubber products	−1.8	−8.7
Paper and printing	−7.6	−15.4
All manufacturing	−15.8	−31.6

WHOLESALE AND RETAIL PRICES

Retail Prices of Food in August, 1931

THE following tables are compiled from simple averages of the actual selling prices [1] received monthly by the Bureau of Labor Statistics from retail dealers.

Table 1 shows for the United States retail prices of food August 15, 1930, and July 15 and August 15, 1931, as well as the percentage changes in the year and in the month. For example, the retail price per pound of potatoes was 3.1 cents on August 15, 1930; 2.3 cents on July 15, 1931; and 2.2 cents on August 15, 1931. These figures show decreases of 29 per cent in the year, and 4 per cent in the month.

The cost of various articles of food combined shows a decrease of 16.7 per cent August 15, 1931, as compared with August 15, 1930, and an increase of 0.6 per cent August 15, 1931, as compared with July 15, 1931.

TABLE 1.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE OR DECREASE AUGUST 15, 1931, COMPARED WITH JULY 15, 1931, AND AUGUST 15, 1930

[Percentage changes of five-tenths of 1 per cent and over are given in whole numbers]

Article	Unit	Average retail price on—			Per cent of increase (+) or decrease (−) Aug. 15, 1931, compared with—	
		Aug. 15, 1930	July 15, 1931	Aug. 15, 1931	Aug. 15, 1930	July 15, 1931
		Cents	*Cents*	*Cents*		
Sirloin steak	Pound	44.6	39.2	39.5	−11	+1
Round steak	do	39.4	34.4	34.6	−12	+1
Rib roast	do	32.3	28.3	28.5	−12	+1
Chuck roast	do	24.9	20.8	20.8	−16	0
Plate beef	do	16.8	13.4	13.3	−21	−1
Pork chops	do	36.7	31.8	33.3	−9	+5
Bacon, sliced	do	42.0	37.0	36.5	−13	−1
Ham, sliced	do	53.3	46.1	46.1	−14	0
Lamb, leg of	do	33.7	30.0	29.6	−12	−1
Hens	do	33.8	30.8	30.9	−9	+0.3
Salmon, red, canned	do	32.6	33.4	32.9	+1	−1
Milk, fresh	Quart	14.0	12.1	12.1	−14	0
Milk, evaporated	16-oz. can	10.0	9.2	8.8	−12	−4
Butter	Pound	47.4	31.7	34.4	−27	+9
Oleomargarine (all butter substitutes).	do	25.4	18.4	18.1	−29	−2
Cheese	do	33.9	26.2	26.5	−22	+1
Lard	do	16.5	13.0	12.8	−22	−2
Vegetable lard substitute	do	24.2	23.2	23.2	−4	0
Eggs, strictly fresh	Dozen	38.8	28.6	31.9	−18	+12
Bread	Pound	8.7	7.5	7.4	−15	−1
Flour	do	4.5	3.6	3.4	−24	−6
Corn meal	do	5.3	4.5	4.5	−15	0
Rolled oats	do	8.7	8.0	7.9	−9	−1
Corn flakes	8-oz. package	9.4	8.8	8.8	−6	0
Wheat cereal	28-oz. package	25.4	23.9	24.0	−6	−0.4

[1] In addition to monthly retail prices of food and coal, the bureau publishes periodically the prices of gas and electricity for household use in each of 51 cities. At present this information is being collected in June and December of each year.

TABLE 1.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE OR DECREASE AUGUST 15, 1931, COMPARED WITH JULY 15, 1931, AND AUGUST 15, 1930—Continued

[Percentage changes of five-tenths of 1 per cent and over are given in whole numbers]

Article	Unit	Average retail price on—			Per cent of increase (+) or decrease (−) Aug. 15, 1931, compared with—	
		Aug. 15, 1930	July 15, 1931	Aug. 15, 1931	Aug. 15, 1930	July 15, 1931
		Cents	*Cents*	*Cents*		
Macaroni	Pound	19.2	16.6	16.5	−14	−1
Rice	do	9.5	8.1	8.1	−15	0
Beans, navy	do	11.5	7.9	7.8	−32	−1
Potatoes	do	3.1	2.3	2.2	−29	−4
Onions	do	5.2	4.9	4.3	−17	−12
Cabbage	do	4.3	3.7	4.0	−7	+8
Pork and beans	No. 2 can	10.9	10.3	10.4	−5	+1
Corn, canned	do	15.3	13.2	13.2	−14	0
Peas, canned	do	16.1	13.9	13.9	−14	0
Tomatoes, canned	do	12.4	10.1	10.0	−19	−1
Sugar	Pound	6.1	5.6	5.7	−7	+2
Tea	do	77.4	74.7	75.3	−3	+1
Coffee	do	40.1	32.5	32.4	−19	−0.3
Prunes	do	16.1	11.8	11.7	−27	−1
Raisins	do	11.9	11.3	11.2	−6	−1
Bananas	Dozen	29.9	25.7	24.1	−19	−6
Oranges	do	63.7	38.2	37.3	−41	−2
Weighted food index					−16.7	+0.6

Table 2 shows for the United States average retail prices of specified food articles on August 15, 1913, and on August 15 of each year from 1925 to 1931, together with percentage changes in August of each of these specified years compared with August, 1913. For example, the retail price per pound of flour was 3.3 cents on August 15, 1913; 6.1 cents on August 15, 1925; 6.0 cents on August 15, 1926; 5.6 cents on August 15, 1927; 5.4 cents on August 15, 1928; 5.2 cents on August 15, 1929; 4.5 cents on August 15, 1930; and 3.4 cents on August 15, 1931.

As compared with August 15, 1913, these figures show increases of 85 per cent in August, 1925; 82 per cent in August, 1926; 70 per cent in August, 1927; 64 per cent in August, 1928; 58 per cent in August, 1929; 36 per cent in August, 1930; and 3 per cent in August, 1931.

The cost of the various articles of food combined showed an increase of 18.6 per cent in August 1931, as compared with August, 1913.

TABLE 2.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE AUGUST 15 OF CERTAIN SPECIFIED YEARS COMPARED WITH AUGUST 15, 1913

[Percentage changes of five tenths of 1 per cent and over are given in whole numbers]

Article	Average retail prices on Aug. 15—								Per cent of increase Aug. 15 of each specified year compared with Aug. 15, 1913						
	1913	1925	1926	1927	1928	1929	1930	1931	1925	1926	1927	1928	1929	1930	1931
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*							
Sirloin steak--pound--	26.4	42.0	41.8	43.7	51.0	52.4	44.6	39.5	59	58	66	93	98	69	50
Round steak----do----	23.2	36.2	36.2	38.1	45.1	47.0	39.4	34.6	56	56	64	94	103	70	49
Rib roast-------do----	20.2	30.3	30.4	31.7	36.6	38.0	32.3	28.5	50	50	57	81	88	60	41
Chuck roast-----do----	16.5	22.1	22.5	23.9	29.6	31.1	24.9	20.8	34	36	45	79	88	51	26
Plate beef------do----	12.2	13.9	14.3	15.3	19.6	21.3	16.8	13.3	14	17	25	61	75	38	9
Pork chops-----do----	21.9	40.0	40.5	37.7	39.9	40.4	36.7	33.3	83	85	72	82	84	68	52
Bacon, sliced----do----	28.3	49.3	52.0	46.5	44.8	44.7	42.0	36.5	74	84	64	58	58	48	29
Ham, sliced-----do----	28.4	54.9	60.7	54.3	55.0	56.8	53.3	46.1	93	114	91	94	100	88	62
Lamb, leg of----do----	18.9	38.7	39.2	39.2	40.2	40.3	33.7	29.6	105	107	107	113	113	78	57
Hens------------do----	21.5	36.2	37.9	35.4	36.8	39.4	33.8	30.9	68	76	65	71	83	57	44
Salmon, red, canned ----------pound--	-----	32.3	38.2	32.9	34.2	31.7	32.6	32.9	-----	-----	-----	-----	-----	-----	-----
Milk, fresh-----quart--	8.8	13.9	13.9	14.1	14.1	14.3	14.0	12.1	58	58	60	60	63	59	38
Milk, evaporated -------16-ounce can--	-----	11.5	11.4	11.6	11.2	10.8	10.0	8.8	-----	-----	-----	-----	-----	-----	-----
Butter--------pound--	35.4	54.1	50.6	51.4	55.4	53.8	47.4	34.4	53	43	45	56	52	34	[1]3
Oleomargarine (all butter substitutes) ----------pound--	-----	30.3	30.2	28.0	27.3	27.1	25.4	18.1	-----	-----	-----	-----	-----	-----	-----
Cheese----------do----	22.0	36.8	35.7	37.0	38.4	37.8	33.9	26.5	67	62	68	75	72	54	20
Lard------------do----	16.1	24.3	22.7	18.9	18.7	18.4	16.5	12.8	51	41	17	16	14	2	[1]20
Vegetable lard substitute --------pound--	-----	25.9	25.9	25.0	24.8	24.8	24.2	23.2	-----	-----	-----	-----	-----	-----	-----
Eggs, strictly fresh ----------dozen--	33.0	48.9	44.9	42.0	45.0	48.3	38.8	31.9	48	36	27	36	46	18	[1]3
Bread----------pound--	5.6	9.4	9.4	9.3	9.2	9.0	8.7	7.4	68	68	66	64	61	55	32
Flour-----------do----	3.3	6.1	6.0	5.6	5.4	5.2	4.5	3.4	85	82	70	64	58	36	3
Corn meal------do----	3.0	5.4	5.1	5.2	5.3	5.3	5.3	4.5	80	70	73	77	77	77	50
Rolled oats-----do----	-----	9.2	9.0	9.0	8.9	8.9	8.7	7.9	-----	-----	-----	-----	-----	-----	-----
Corn flakes ---8-ounce package--	-----	10.9	10.9	9.7	9.5	9.5	9.4	8.8	-----	-----	-----	-----	-----	-----	-----
Wheat cereal --28-ounce package--	-----	24.6	25.4	25.5	25.6	25.5	25.4	24.0	-----	-----	-----	-----	-----	-----	-----
Macaroni-----pound--	-----	20.4	20.2	20.1	19.8	19.7	19.2	16.5	-----	-----	-----	-----	-----	-----	-----
Rice------------do----	8.7	11.3	11.6	10.7	9.9	9.8	9.5	8.1	30	33	23	14	13	9	[1]7
Beans, navy----do----	-----	10.3	9.2	9.5	12.6	14.4	11.5	7.8	-----	-----	-----	-----	-----	-----	-----
Potatoes--------do----	1.9	4.4	3.6	3.4	2.2	4.0	3.1	2.2	132	89	79	16	111	63	16
Onions----------do----	-----	8.0	5.9	6.4	5.4	6.4	5.2	4.3	-----	-----	-----	-----	-----	-----	-----
Cabbage--------do----	-----	5.5	4.3	4.4	4.1	5.6	4.3	4.0	-----	-----	-----	-----	-----	-----	-----
Pork and beans ----------No. 2 can--	-----	12.4	11.8	11.5	11.6	11.9	10.9	10.4	-----	-----	-----	-----	-----	-----	-----
Corn, canned----do----	-----	18.4	16.4	15.6	15.9	15.8	15.3	13.2	-----	-----	-----	-----	-----	-----	-----
Peas, canned----do----	-----	18.4	17.5	16.7	16.7	16.6	16.1	13.9	-----	-----	-----	-----	-----	-----	-----
Tomatoes, canned ----------No. 2 can--	-----	13.7	11.8	12.0	11.6	13.8	12.4	10.0	-----	-----	-----	-----	-----	-----	-----
Sugar, granulated ----------pound--	5.6	7.0	7.0	7.3	7.1	6.6	6.1	5.7	25	25	30	27	18	9	2
Tea------------do----	54.4	75.9	77.1	77.6	77.4	77.5	77.4	75.3	40	42	43	42	42	42	38
Coffee----------do----	29.8	50.9	51.0	47.4	49.4	49.3	40.1	32.4	71	71	59	66	65	35	9
Prunes----------do----	-----	17.3	17.2	15.5	13.8	15.0	16.1	11.7	-----	-----	-----	-----	-----	-----	-----
Raisins---------do----	-----	14.4	14.8	14.3	13.5	11.8	11.9	11.2	-----	-----	-----	-----	-----	-----	-----
Bananas-------dozen--	-----	34.5	34.5	33.7	31.6	31.9	29.9	24.1	-----	-----	-----	-----	-----	-----	-----
Oranges---------do----	-----	59.8	50.7	53.8	64.2	45.6	63.7	37.3	-----	-----	-----	-----	-----	-----	-----
All articles combined [2]	-----	-----	-----	-----	-----	-----	-----	-----	59.0	54.3	51.1	52.9	58.8	42.4	18.6

[1] Decrease.

[2] Beginning with January, 1921, index numbers showing the trend in the retail cost of food have been composed of the articles shown in Tables 1 and 2, weighted according to the consumption of the average family. From January, 1913, to December, 1920, the index numbers included the following articles: Sirloin steak, round steak, rib roast, chuck roast, plate beef, pork chops, bacon, ham, lard, hens, flour, corn meal, eggs, butter, milk, bread, potatoes, sugar, cheese, rice, coffee, and tea.

Table 3 shows the trend in the retail cost of three important groups of food commodities, viz, cereals, meats, and dairy products, by years,

from 1913 to 1930, and by months for 1929, 1930, and 1931. The articles within these groups are as follows:

Cereals: Bread, flour, corn meal, rice, rolled oats, corn flakes, wheat cereal, and macaroni.

Meats: Sirloin steak, round steak, rib roast, chuck roast, plate beef, pork chops, bacon, ham, hens, and leg of lamb.

Dairy products: Butter, cheese, fresh milk, and evaporated milk.

TABLE 3.—INDEX NUMBERS OF RETAIL COST OF CEREALS, MEATS, AND DAIRY PRODUCTS FOR THE UNITED STATES, 1913 TO AUGUST, 1931

[Average cost in 1913=100.0]

Year and month	Cereals	Meats	Dairy products	Year and month	Cereals	Meats	Dairy products
1913: Average for year	100.0	100.0	100.0	1929—Continued.			
1914: Average for year	106.7	103.4	97.1	October	163.5	189.2	149.3
1915: Average for year	121.6	99.6	96.1	November	163.6	184.1	147.0
1916: Average for year	126.8	108.2	103.2	December	162.9	181.8	144.9
1917: Average for year	186.5	137.0	127.6	1930: Average for year	158.0	175.8	136.5
1918: Average for year	194.3	172.8	153.4	January	162.9	183.6	138.9
1919: Average for year	198.0	184.2	176.6	February	161.6	183.1	138.5
1920: Average for year	232.1	185.7	185.1	March	160.9	183.0	137.6
1921: Average for year	179.8	158.1	149.5	April	160.3	183.3	138.9
1922: Average for year	159.3	150.3	135.9	May	159.8	181.5	137.0
1923: Average for year	156.9	149.0	147.6	June	160.1	179.9	133.7
1924: Average for year	160.4	150.2	142.8	July	158.6	175.2	133.9
1925: Average for year	176.2	163,0	147.1	August	156.9	169.9	137.4
1926: Average for year	175.5	171.3	145.5	September	156.4	173.3	138.8
1927: Average for year	170.7	169.9	148.7	October	154.4	171.1	137.8
1928: Average for year	167.2	179.2	150.0	November	152.4	164.0	135.3
1929: Average for year	164.1	188.4	148.6	December	151.6	161.6	129.8
January	164.1	180.9	151.9	1931:			
February	164.1	180.3	152.6	January	147.1	159.5	123.6
March	164.1	182.8	152.4	February	144.6	153.4	120.2
April	164.1	187.5	148.9	March	142.4	152.5	120.5
May	163.5	191.2	147.5	April	138.9	151.4	116.5
June	163.0	192.4	146.8	May	137.7	149.3	110.3
July	163.5	195.9	146.8	June	136.3	145.7	108.3
August	164.7	196.0	147.1	July	134.3	147.8	109.6
September	165.2	194.2	148.1	August	132.0	149.1	111.9

Index Numbers of Retail Prices of Food in the United States

IN TABLE 4 index numbers are given which show the changes in the retail prices of specified food articles, by years, for 1913 and 1920 to 1930,[2] by months for 1930 and 1931. These index numbers, or relative prices, are based on the year 1913 as 100.0, and are computed by dividing the average price of each commodity for each month and each year by the average price of that commodity for 1913. These figures must be used with caution. For example, the relative price of sirloin steak for the year 1930 was 182.7, which means that the average money price for the year 1930 was 82.7 per cent higher than the average money price for the year 1913. As compared with the relative price, 196.9 in 1929, the figures for 1930 show a decrease of 14.2 points, but a decrease of 7.2 per cent in the year.

In the last column of Table 4 are given index numbers showing changes in the retail cost of all articles of food combined. Since January, 1921, these index numbers have been computed from the average prices of the articles of food shown in Tables 1 and 2, weighted according to the average family consumption in 1918. (See March, 1921, issue, p. 25.) Although previous to January, 1921, the number of food articles varied, these index numbers have been so computed

[2] For index numbers of each month, January, 1913, to December, 1928, see Bulletin No. 396, pp. 44 to 61; and Bulletin No. 495, pp. 32 to 45. Index numbers for 1929 are published in each Labor Review, February, 1930, to February, 1931.

as to be strictly comparable for the entire period. The index numbers based on the average for the year 1913 as 100.0 are 118.3 for June, 1931, and 119.0 for July, 1931.

TABLE 4.—INDEX NUMBERS OF RETAIL PRICES OF PRINCIPAL ARTICLES OF FOOD BY YEARS, 1913, 1920 TO 1930, AND BY MONTHS FOR 1930 AND 1931

[Average for year 1913=100.0]

Year and month	Sirloin steak	Round steak	Rib roast	Chuck roast	Plate beef	Pork chops	Bacon	Ham	Lamb, leg of	Hens	Milk	Butter
1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1920	172.1	177.1	167.7	163.8	151.2	201.4	193.7	206.3	207.9	209.9	187.6	183.0
1921	152.8	154.3	147.0	132.5	118.2	166.2	158.2	181.4	178.3	186.4	164.0	135.0
1922	147.2	144.8	139.4	123.1	105.8	157.1	147.4	181.4	193.7	169.0	147.2	125.1
1923	153.9	150.2	143.4	126.3	106.6	144.8	144.8	169.1	194.2	164.3	155.1	144.7
1924	155.9	151.6	145.5	130.0	109.1	146.7	139.6	168.4	196.3	165.7	155.1	135.0
1925	159.8	155.6	149.5	135.0	114.1	174.3	173.0	195.5	204.2	171.8	157.3	143.1
1926	162.6	159.6	153.0	140.6	120.7	188.1	186.3	213.4	206.3	182.2	157.3	138.6
1927	167.7	166.4	158.1	148.1	127.3	175.2	174.8	204.5	205.8	173.2	158.4	145.2
1928	188.2	188.3	176.8	174.4	157.0	165.7	163.0	196.7	208.5	175.6	159.6	147.5
1929	196.9	199.1	185.4	186.9	172.7	175.7	161.1	204.1	212.2	186.4	160.7	143.9
1930	182.7	184.8	172.7	170.0	155.4	171.0	156.7	198.5	185.7	166.7	157.3	120.4
January	192.9	195.5	183.3	184.4	172.7	168.1	157.0	199.3	206.9	178.4	159.6	121.9
February	191.3	194.2	181.8	184.4	171.9	167.6	157.8	200.7	201.6	179.3	158.4	122.7
March	190.6	192.8	181.3	182.5	170.2	171.9	157.8	201.1	193.7	179.8	157.3	121.9
April	190.2	193.3	181.3	182.5	168.6	176.7	157.4	200.4	189.4	179.3	157.3	125.6
May	190.2	192.8	179.8	179.4	164.5	171.9	156.7	200.7	189.9	175.6	157.3	120.9
June	188.6	191.5	177.3	175.6	160.3	174.3	156.7	200.7	193.7	167.6	157.3	113.1
July	182.3	184.3	171.7	166.3	149.6	173.8	156.7	200.0	188.9	161.5	157.3	114.1
August	175.6	176.7	163.1	155.6	138.8	174.8	155.6	198.1	178.3	158.7	157.3	123.8
September	177.2	178.0	166.7	160.0	142.1	186.2	158.1	198.9	179.9	159.6	157.3	127.2
October	175.2	176.2	164.1	158.7	142.1	180.5	157.8	197.4	173.5	158.7	157.3	124.8
November	170.5	170.9	160.6	154.4	139.7	156.2	155.9	193.7	166.1	153.1	157.3	118.5
December	168.9	169.1	159.6	153.8	139.7	149.5	153.0	191.4	164.6	150.2	151.7	111.0
1931:												
January	167.3	168.2	159.1	152.5	138.0	141.9	148.9	188.1	166.1	153.5	149.4	98.4
February	161.4	161.0	154.0	145.6	131.4	131.4	145.2	183.3	164.6	148.8	146.1	94.8
March	158.7	157.8	153.0	141.9	128.1	140.0	143.0	178.4	164.0	150.2	144.9	97.4
April	157.5	156.5	150.0	139.4	124.8	141.4	141.1	175.5	165.6	153.1	141.6	91.9
May	155.5	154.7	147.0	135.6	119.8	143.3	139.3	172.9	165.1	148.8	138.2	81.5
June	152.4	151.1	142.9	130.6	112.4	140.0	136.7	170.6	161.9	146.0	134.8	80.7
July	154.3	154.3	142.9	130.0	110.7	151.4	137.0	171.4	158.7	144.6	136.0	82.8
August	155.5	155.2	143.9	130.0	109.9	158.6	135.2	171.4	156.6	145.1	136.0	89.8

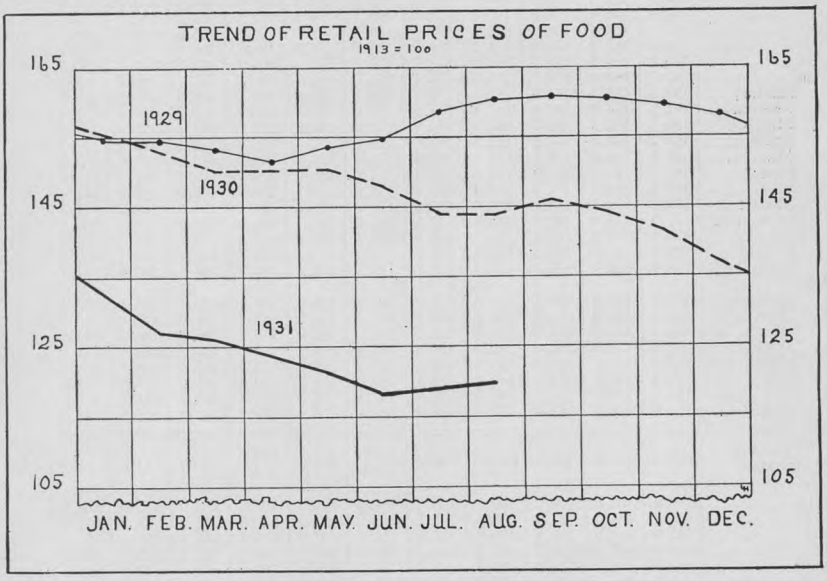
Year and month	Cheese	Lard	Eggs	Bread	Flour	Corn meal	Rice	Potatoes	Sugar	Tea	Coffee	All articles [1]
1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1920	188.2	186.7	197.4	205.4	245.5	216.7	200.0	370.6	352.7	134.7	157.7	203.4
1921	153.9	113.9	147.5	176.8	175.8	150.0	109.2	182.4	145.5	128.1	121.8	153.3
1922	148.9	107.6	128.7	155.4	154.5	130.0	109.2	164.7	132.7	125.2	121.1	141.6
1923	167.0	112.0	134.8	155.4	142.4	136.7	109.2	170.6	183.6	127.8	126.5	146.2
1924	159.7	120.3	138.6	157.1	148.5	156.7	116.1	158.8	167.3	131.4	145.3	145.9
1925	166.1	147.5	151.0	167.9	184.8	180.0	127.6	211.8	130.9	138.8	172.8	157.4
1926	165.6	138.6	140.6	167.9	181.8	170.0	133.3	288.2	125.5	141.0	171.1	160.6
1927	170.1	122.2	131.0	166.1	166.7	173.3	123.0	223.5	132.7	142.5	162.1	155.4
1928	174.2	117.7	134.5	162.5	163.6	176.7	114.9	158.8	129.1	142.3	165.1	154.3
1929	171.9	115.8	142.0	160.7	154.5	176.7	111.5	188.2	120.0	142.6	164.8	156.7
1930	158.8	107.6	118.8	155.4	142.4	176.7	109.2	211.8	112.7	142.5	136.2	147.1
January	169.2	108.9	160.6	158.9	154.5	180.0	110.3	229.4	120.0	143.4	147.0	155.4
February	167.0	108.2	136.8	157.1	154.5	176.7	110.3	229.4	118.2	143.2	143.3	153.0
March	164.7	107.0	102.3	157.1	151.5	176.7	109.2	229.4	116.4	142.8	140.6	150.1
April	162.9	106.3	100.0	157.1	148.5	176.7	110.3	241.2	114.5	142.5	138.9	151.2
May	162.0	105.7	97.7	157.1	145.5	176.7	109.2	252.9	114.5	142.5	137.2	150.1
June	157.9	105.1	97.4	157.1	145.5	176.7	109.2	247.1	110.9	143.0	136.2	147.9
July	155.2	103.2	101.7	157.1	139.4	176.7	109.2	194.1	110.9	142.6	135.6	144.0
August	153.4	104.4	112.5	155.4	136.4	176.7	109.2	182.4	110.9	142.3	134.6	143.7
September	154.8	110.8	124.9	155.4	133.3	176.7	110.3	188.2	107.3	142.1	132.6	145.6
October	154.8	112.0	129.9	153.6	130.3	176.7	109.2	182.4	105.5	141.9	131.2	144.4
November	152.9	110.8	140.3	151.8	127.3	173.3	106.9	170.6	107.3	141.4	129.9	141.4
December	150.2	105.7	120.6	151.8	124.2	173.3	105.8	170.6	107.3	141.4	129.2	137.2
1931:												
January	145.2	99.4	104.6	146.4	121.2	170.0	102.3	170.6	107.3	141.0	126.8	132.8
February	141.2	91.8	78.8	142.9	121.2	166.7	102.3	158.8	107.3	140.6	125.2	127.0
March	137.1	89.9	82.6	141.1	118.2	166.7	98.9	158.8	105.5	139.7	121.8	126.4
April	132.6	89.9	79.4	137.5	115.2	163.3	96.6	164.7	103.6	138.2	116.1	124.0
May	124.0	85.4	71.9	137.5	112.1	153.3	95.4	164.7	101.8	136.9	112.4	121.0
June	119.9	82.3	74.8	135.7	112.1	150.0	94.3	141.2	101.8	136.8	111.1	118.3
July	118.6	82.3	82.9	133.9	109.1	150.0	93.1	135.3	101.8	137.3	109.1	119.0
August	119.9	81.0	92.5	132.1	103.0	150.0	93.1	129.4	103.6	138.4	108.7	119.7

[1] 22 articles in 1913–1920; 42 articles in 1921–1931.

The curve shown in the chart below pictures more readily to the eye the changes in the cost of the food budget than do the index numbers given in the table.

Comparison of Retail Food Costs in 51 Cities

TABLE 5 shows for 39 cities the percentage of increase or decrease in the retail cost of food [3] August, 1931, compared with the average cost in the year 1913, in August, 1930, and July, 1931. For 12 other cities comparisons are given for the 1-year and the 1-month periods; these cities have been scheduled by the bureau at different dates since 1913. The percentage changes are based on actual retail prices secured each month from retail dealers and on the average consumption of these articles in each city.[4]



Effort has been made by the bureau each month to have all schedules for each city included in the average prices. For the month of August, 99.4 per cent of all the firms supplying retail prices in the 51 cities sent in a report promptly. The following-named 41 cities had a perfect record; that is, every merchant who is cooperating with the bureau sent in his report in time for his prices to be included in the city averages: Atlanta, Baltimore, Birmingham, Bridgeport, Butte, Charleston (S. C.), Chicago, Cincinnati, Cleveland, Columbus, Dallas, Denver, Detroit, Fall River, Houston, Indianapolis, Jacksonville, Los Angeles, Louisville, Manchester, Memphis, Milwaukee, Minneapolis, Mobile, New Haven, New Orleans, New York, Norfolk, Omaha, Philadelphia, Portland (Me.), Portland (Oreg.), Providence, Richmond, Rochester, St. Louis, St. Paul, San Francisco, Savannah, Scranton, and Springfield (Ill.).

[3] For list of articles, see note 2, page 233.

[4] The consumption figures used for January, 1913, to December, 1920, for each article in each city are given in the Labor Review for November, 1918, pp. 94 and 95. The consumption figures which have been used for each month, beginning with January, 1921, are given in the Labor Review for March, 1921, p. 26.

TABLE 5.—PERCENTAGE CHANGE IN THE RETAIL COST OF FOOD IN AUGUST, 1931, COMPARED WITH THE COST IN JULY, 1931, AUGUST, 1930 AND WITH THE AVERAGE IN THE YEAR 1913, BY CITIES

City	Percentage increase August, 1931, compared with 1913	Percentage decrease August, 1931, compared with August, 1930	Percentage increase August, 1931, compared with July, 1931	City	Percentage increase August, 1931, compared with 1913	Percentage decrease August, 1931, compared with August, 1930	Percentage increase August 1931, compared with July, 1931
United States	19.7	16.7	0.6	Milwaukee	24.5	14.2	0.6
				Minneapolis	22.0	14.7	[1] 1.5
Atlanta	19.1	17.2	[1] 0.4	Mobile		18.7	0.9
Baltimore	24.9	15.0	0.9	Newark	22.5	11.9	1.3
Birmingham	16.7	21.8	0.5	New Haven	25.0	14.0	0.4
Boston	23.6	16.1	1.8				
Bridgeport		12.9	2.0	New Orleans	13.9	20.4	[1] 0.1
				New York	26.5	13.9	0.9
Buffalo	22.6	16.9	0.9	Norfolk		17.6	0.1
Butte		11.2	0.4	Omaha	14.3	16.1	[1] 0.4
Charleston, S. C	23.9	17.9	0.5	Peoria		19.0	[1] 0.1
Chicago	34.4	13.1	1.7				
Cincinnati	26.9	17.0	0.1	Philadelphia	27.9	10.7	1.2
				Pittsburgh	20.4	15.8	0.5
Cleveland	14.6	19.0	1.2	Portland, Me		13.4	1.8
Columbus		17.4	0.7	Portland, Oreg	7.8	16.1	[1] 0.4
Dallas	13.0	20.4	1.1	Providence	23.3	15.1	2.9
Denver	10.5	13.5	0.2				
Detroit	20.8	17.7	2.7	Richmond	21.4	19.0	0.2
				Rochester		18.6	0.4
Fall River	15.0	18.4	[1] 0.5	St. Louis	22.6	16.3	[1] 0.3
Houston		19.6	1.6	St. Paul		16.0	[1] 1.9
Indianapolis	16.1	18.1	0.9	Salt Lake City	6.0	14.5	0.3
Jacksonville	11.6	18.6	0.3				
Kansas City	17.7	15.1	[1] 1.2	San Francisco	17.3	17.7	[1] 3.0
				Savannah		18.8	1.8
Little Rock	8.6	23.0	[1] 1.6	Scranton	25.8	16.9	0.6
Los Angeles	7.6	17.8	1.7	Seattle	15.7	13.8	0.3
Louisville	12.3	21.1	[1] 0.1	Springfield, Ill		21.0	[1] 0.3
Manchester	22.2	14.3	2.0	Washington	29.9	12.9	1.1
Memphis	8.5	22.1	[1] 0.5				

[1] Decrease.

Retail Prices of Coal in August, 1931 [1]

THE following table shows the average retail prices of coal on August 15, 1930, and July 15, and August 15, 1931, for the United States and for each of the cities from which retail food prices have been obtained. The prices quoted are for coal delivered to consumers but do not include charges for storing the coal in cellar or coal bin where an extra handling is necessary.

In addition to the prices for Pennsylvania anthracite, prices are shown for Colorado, Arkansas, and New Mexico anthracite in those cities where these coals form any considerable portion of the sales for household use.

The prices shown for bituminous coal are averages of prices of the several kinds sold for household use.

AVERAGE RETAIL PRICES OF COAL PER TON OF 2,000 POUNDS, FOR HOUSEHOLD USE, ON AUGUST 15, 1930, AND JULY 15 AND AUGUST 15, 1931

City, and kind of coal	1930, Aug. 15	1931	
		July 15	Aug. 15
United States:			
Pennsylvania anthracite—			
Stove—			
Average price	$14.88	$14.61	$14.76
Index (1913=100)	192.6	189.1	191.1
Chestnut—			
Average price	$14.57	$14.59	$14.73
Index (1913=100)	184.1	184.3	186.1
Bituminous—			
Average price	$8.70	$8.09	$8.11
Index (1923=100)	160.1	148.9	149.3
Atlanta, Ga.:			
Bituminous, prepared sizes	$7.27	$6.67	$6.66
Baltimore, Md.:			
Pennsylvania anthracite—			
Stove	14.00	13.50	13.75
Chestnut	13.50	13.25	13.50
Bituminous, run of mine—			
High volatile	7.71	7.61	7.25
Birmingham, Ala.:			
Bituminous, prepared sizes	7.00	6.36	6.39
Boston, Mass.:			
Pennsylvnia anthracite—			
Stove	15.75	14.95	15.05
Chestnut	15.25	14.95	15.10
Bridgeport, Conn.:			
Pennsylvania anthracite—			
Stove	14.50	14.00	14.00
Chestnut	14.50	14.00	14.00
Buffalo, N. Y.:			
Pennsylvania anthracite—			
Stove	13.42	13.00	13.20
Chestnut	12.92	13.00	13.20
Butte, Mont.:			
Bituminous, prepared sizes	10.94	10.49	10.49
Charleston, S. C.:			
Bituminous, prepared sizes	9.67	9.67	9.67
Chicago, Ill.:			
Pennsylvania anthracite—			
Stove	16.38	16.25	16.50
Chestnut	15.93	16.25	16.50
Bituminous—			
Prepared sizes—			
High volatile	8.06	7.54	7.78
Low volatile	10.64	10.36	10.61
Run of mine—			
Low volatile	7.75	7.23	7.23
Cincinnati, Ohio:			
Bituminous—			
Prepared sizes—			
High volatile	$6.05	$5.30	$5.55
Low volatile	8.03	7.28	7.53
Cleveland, Ohio:			
Pennsylvania anthracite—			
Stove	14.56	14.06	14.25
Chestnut	14.25	13.94	14.13
Bituminous—			
Prepared sizes—			
High volatile	6.83	6.53	6.64
Low volatile	9.43	8.79	9.07
Columbus, Ohio:			
Bituminous—			
Prepared sizes—			
High volatile	5.82	5.54	5.34
Low volatile	7.19	6.75	6.83
Dallas, Tex.:			
Arkansas anthracite—Egg	14.75	13.50	13.25
Bituminous, prepared sizes	12.17	11.92	11.00
Denver, Colo.:			
Colorado anthracite—			
Furnace, 1 and 2 mixed	15.13	15.13	15.00
Stove, 3 and 5 mixed	15.13	15.13	15.00
Bituminous, prepared sizes	10.18	8.23	8.24
Detroit, Mich.:			
Pennsylvania anthracite—			
Stove	14.44	14.50	14.50
Chestnut	14.31	14.50	14.50
Bituminous—			
Prepared sizes—			
High volatile	8.18	7.03	7.00
Low volatile	9.46	7.94	8.14
Run of mine—			
Low volatile	7.67	7.13	7.19
Fall River, Mass.:			
Pennsylvania anthracite—			
Stove	16.00	15.25	15.50
Chestnut	15.75	15.25	15.50
Houston, Tex.:			
Bituminous, prepared sizes	11.60	10.20	10.40
Indianapolis, Ind.:			
Bituminous—			
Prepared sizes—			
High volatile	5.92	5.82	5.80
Low volatile	8.38	8.25	8.25
Run of mine—			
Low volatile	7.05	6.70	6.75

[1] Prices of coal were formerly secured semiannually and published in the March and September issues of the Labor Review. Since June, 1920, these prices have been secured and published monthly.

AVERAGE RETAIL PRICES OF COAL PER TON OF 2,000 POUNDS, FOR HOUSEHOLD USE, ON AUGUST 15, 1930, AND JULY 15 AND AUGUST 15, 1931—Continued

City, and kind of coal	1930, Aug. 15	1931	
		July 15	Aug. 15
Jacksonville, Fla.:			
Bituminous, prepared sizes	$11.00	$10.00	$9.50
Kansas City, Mo.:			
Arkansas anthracite—			
Furnace	12.17	11.38	11.31
Stove No. 4	12.88	12.50	12.50
Bituminous, prepared sizes	7.00	6.27	6.27
Little Rock, Ark.:			
Arkansas anthracite—Egg	13.00	12.00	11.50
Bituminous, prepared sizes	9.10	9.00	8.61
Los Angeles, Calif.:			
Bituminous, prepared sizes	16.00	15.50	15.75
Louisville, Ky.:			
Bituminous—			
Prepared sizes—			
High volatile	6.21	5.08	5.03
Low volatile	8.50	7.75	7.75
Manchester, N. H.:			
Pennsylvania anthracite—			
Stove	16.42	16.00	16.00
Chestnut	16.42	16.00	16.00
Memphis, Tenn.:			
Bituminous, prepared sizes	7.82	7.03	7.00
Milwaukee, Wis.:			
Pennsylvania anthracite—			
Stove	15.75	15.65	15.85
Chestnut	15.30	15.61	15.85
Bituminous—			
Prepared sizes—			
High volatile	7.75	7.45	7.51
Low volatile	10.53	9.75	9.75
Minneapolis, Minn.:			
Pennsylvania anthracite—			
Stove	17.15	17.61	17.81
Chestnut	16.70	17.61	17.81
Bituminous—			
Prepared sizes—			
High volatile	9.99	9.91	9.91
Low volatile	12.89	12.34	12.40
Mobile, Ala.			
Bituminous, prepared sizes	8.82	8.25	8.27
Newark, N. J.:			
Pennsylvania anthracite—			
Stove	13.77	13.30	13.42
Chestnut	13.27	13.32	13.42
New Haven, Conn.:			
Pennsylvania anthracite—			
Stove	14.65	14.55	14.65
Chestnut	14.65	14.55	14.65
New Orleans, La.:			
Bituminous, prepared sizes	9.11	8.07	8.07
New York, N. Y.:			
Pennsylvania anthracite—			
Stove	13.63	13.46	13.75
Chestnut	13.13	13.46	13.75
Norfolk, Va.:			
Pennsylvania anthracite—			
Stove	14.50	14.00	14.00
Chestnut	14.50	14.25	14.00
Bituminous—			
Prepared sizes—			
High volatile	7.38	6.50	6.50
Low volatile	9.00	8.50	8.50
Run of mine—			
Low volatile	7.00	6.50	6.50
Omaha, Nebr.:			
Bituminous, prepared sizes	9.62	9.04	8.89
Peoria, Ill.:			
Bituminous, prepared sizes	6.28	6.13	6.05
Philadelphia, Pa.:			
Pennsylvania anthracite—			
Stove	13.42	12.75	13.00
Chestnut	13.00	12.67	13.00
Pittsburgh, Pa.:			
Pennsylvania anthracite—			
Chestnut	$14.75	$14.00	$14.00
Bituminous, prepared sizes	5.05	4.86	4.86
Portland, Me.:			
Pennsylvania anthracite—			
Stove	16.56	16.32	16.32
Chestnut	16.56	16.32	16.32
Portland, Oreg.:			
Bituminous, prepared sizes	13.12	12.54	12.57
Providence, R. I.:			
Pennsylvania anthracite—			
Stove	[1] 15.75	[1] 15.25	[1] 15.25
Chestnut	[1] 15.75	[1] 15.25	[1] 15.25
Richmond, Va.:			
Pennsylvania anthracite—			
Stove	14.50	14.00	14.00
Chestnut	14.50	14.00	14.00
Bituminous—			
Prepared sizes—			
High volatile	8.25	7.67	7.33
Low volatile	8.37	8.31	8.31
Run of mine—			
Low volatile	6.75	6.75	6.75
Rochester, N. Y.:			
Pennsylvania anthracite—			
Stove	14.60	13.78	14.18
Chestnut	14.10	13.78	14.18
St. Louis, Mo.:			
Pennsylvania anthracite—			
Stove	16.25	16.47	16.47
Chestnut	16.00	16.47	16.41
Bituminous, prepared sizes	6.14	5.51	5.67
St. Paul, Minn.:			
Pennsylvania anthracite—			
Stove	17.60	17.65	17.86
Chestnut	17.15	17.65	17.86
Bituminous—			
Prepared sizes—			
High volatile	10.23	9.60	9.72
Low volatile	13.25	12.51	12.54
Salt Lake City, Utah:			
Bituminous, prepared sizes	8.40	7.63	7.63
San Francisco, Calif.:			
New Mexico anthracite—			
Cerillos egg	25.00	25.00	25.00
Colorado anthracite—			
Egg	24.50	24.50	24.50
Bituminous, prepared sizes	15.75	16.00	16.00
Savannah, Ga.:			
Bituminous, prepared sizes	[2] 9.62	[2] 9.62	[2] 9.28
Scranton, Pa.:			
Pennsylvania anthracite—			
Stove	10.07	9.80	10.10
Chestnut	9.70	9.78	10.08
Seattle, Wash.:			
Bituminous, prepared sizes	10.55	9.80	10.20
Springfield, Ill.:			
Bituminous, prepared sizes	4.37	4.34	4.34
Washington, D. C.:			
Pennsylvania anthracite—			
Stove	[3] 15.48	[3] 14.91	[3] 15.15
Chestnut	[3] 14.98	[3] 14.91	[3] 15.15
Bituminous—			
Prepared sizes—			
High volatile	[3] 8.42	[3] 8.36	[3] 8.41
Low volatile	[3] 11.18	[3] 10.77	[3] 10.86
Run of mine—			
Mixed	[1] 7.81	[3] 7.77	[3] 7.78

[1] The average price of coal delivered in bins is 50 cents higher than here shown. Practically all coal is delivered in bin.

[2] All coal sold in Savannah is weighed by the city. A charge of 10 cents per ton or half ton is made. This additional charge has been included in the above price.

[3] Per ton of 2,240 pounds.

Comparison of Retail-Price Changes in the United States and in Foreign Countries

THE principal index numbers of retail prices published by foreign countries have been brought together with those of this bureau in the subjoined table after having been reduced, in most cases, to a common base, namely, prices for July, 1914, equal 100. This base was selected instead of the average for the year 1913, which is used in other tables of index numbers of retail prices compiled by the bureau, because of the fact that in numerous instances satisfactory information for 1913 was not available. Some of the countries shown in the table now publish index numbers of retail prices on the July, 1914, base. In such cases, therefore, the index numbers are reproduced as published. For other countries the index numbers here shown have been obtained by dividing the index for each month specified in the table by the index for July, 1914, or the nearest period thereto as published in the original sources. As stated in the table, the number of articles included in the index numbers for the different countries differs widely. These results, which are designed merely to show price trends and not actual differences in the several countries, should not, therefore, be considered as closely comparable with one another. In certain instances, also, the figures are not absolutely comparable from month to month over the entire period, owing to slight changes in the list of commodities and the localities included on successive dates.

INDEX NUMBERS OF RETAIL PRICES IN THE UNITED STATES AND IN OTHER COUNTRIES

Country	United States	Canada	Belgium	Czecho-slovakia	Den-mark	Finland	France (except Paris)	France (Paris)	Germany
Number of localities	51	60	59	Entire country	100	21	320	1	71
Commodities included	42 foods	29 foods	56 (foods, etc.)	29 foods	53 foods	36 foods	13 (11 foods)	13 (11 foods)	Foods
Computing agency	Bureau of Labor Statistics	Department of Labor	Ministry of Industry and Labor	Office of Statistics	Government Statistical Department	Central Bureau of Statistics	Ministry of Labor	Ministry of Labor	Federal Statistical Bureau
Base=100	July, 1914	July, 1914	April, 1914	July, 1914	July, 1914	January–June, 1914	August, 1914	July, 1914	October, 1913–July, 1914
1924									
January	146	145	480	836	194	1089	[1] 401	376	127
April	138	137	498	829	----------	1035	[1] 395	380	123
July	140	134	493	837	200	1052	[1] 401	360	126
October	145	139	513	877	----------	1156	[1] 428	383	134
1925									
January	151	145	521	899	215	1130	[1] 442	408	137
April	148	142	506	901	----------	1137	[1] 435	409	144
July	156	141	509	916	210	1145	[1] 451	421	154
October	158	147	533	875	----------	1165	[1] 471	433	151
1926									
January	161	157	527	854	177	1090	[1] 503	480	143
April	159	153	529	832	----------	1085	[1] 523	503	142
July	154	149	637	876	159	1105	[1] 610	574	145
October	157	147	705	888	----------	1126	[1] 647	624	145
1927									
January	156	153	755	914	156	1092	[1] 586	592	151
April	150	146	774	923	152	1069	[1] 572	580	150
July	150	147	790	962	153	1102	[1] 553	557	157
October	153	148	804	907	152	1156	[1] 526	520	152
1928									
January	152	151	813	913	152	1126	[1] 522	530	152
April	149	146	807	905	152	1119	[1] 530	532	151
July	150	146	811	943	153	1155	[1] 536	[2] 111	154
October	153	152	834	907	146	1183	[1] 562	[2] 115	152
1929									
January	151	152	856	900	147	1156	[3] 117	[2] 122	153
April	148	148	860	901	150	1118	[3] 118	[2] 125	154
July	155	148	874	925	149	1116	[3] 118	[2] 128	156
October	157	157	894	879	146	1137	[3] 120	[2] 124	154
1930									
January	152	160	895	872	145	1048	----------	[2] 124	150
February	150	159	890	865	----------	1022	[2] 118	[2] 121	148
March	147	157	879	853	----------	1006	----------	[2] 120	145
April	148	151	870	851	140	975	----------	[2] 119	143
May	147	151	867	852	----------	945	[2] 116	[2] 120	142
June	145	150	866	865	----------	937	----------	[2] 120	143
July	141	147	869	886	137	969	----------	[2] 122	146
August	141	144	872	857	----------	995	[2] 127	[2] 127	145
September	142	140	874	839	----------	976	----------	[2] 129	142
October	141	139	875	830	133	944	----------	[2] 129	140
November	138	138	872	818	----------	934	[2] 132	[2] 131	138
December	134	136	859	810	----------	903	----------	[2] 132	135
1931									
January	130	133	846	798	127	893	----------	[2] 132	134
February	124	127	825	789	----------	883	[2] 131	[2] 132	131
March	124	123	811	779	----------	879	----------	[2] 131	130
April	121	119	808	780	123	870	----------	[2] 130	129
May	118	115	803	784	----------	849	[2] 128	[2] 129	130
June	116	110	798	811	----------	842	----------	[2] 128	131

[1] For succeeding month. [2] In gold. [3] In gold; for succeeding month.

INDEX NUMBERS OF RETAIL PRICES IN THE UNITED STATES AND IN OTHER COUNTRIES

Country	Italy	Netherlands (The Hague)	Norway	Sweden	Switzerland	United Kingdom	South Africa	India (Bombay)	Australia	New Zealand
Number of localities	47	1	31	49	33	630	9	1	30	25
Commodities included	20 foods and charcoal	Foods	Foods	50 (43 foods, 7 fuel and light)	Foods	21 foods	24 foods	17 foods	46 foods and groceries	59 foods
Computing agency	Ministry of National Economy	Central Bureau of Statistics	Central Bureau of Statistics	Social Board	Labor Office (revised)	Ministry of Labor	Office of Census and Statistics	Labor Office (revised)	Bureau of Census and Statistics	Census and Statistics Office
Base=100	1913	1921	July, 1914	July, 1914	July, 1914	July, 1914	1914	July, 1914	July, 1914	July, 1914
1924										
January	527	[4] 82.5	230	163	173	175	120	154	155	150
April	527	[4] 81.7	240	159	169	167	122	143	150	150
July	538	[4] 80.8	248	159	170	162	117	151	148	148
October	556	[4] 82.3	264	172	174	172	120	156	146	145
1925										
January	609	[4] 80.2	277	170	172	178	120	152	148	147
April	606	[4] 86.7	276	170	169	170	124	153	152	149
July	605	[4] 81.3	260	169	169	167	120	152	156	151
October	645	[4] 79.3	228	166	168	172	119	148	157	155
1926										
January	658	[4] 76.6	216	162	165	171	116	151	155	154
April	633	[4] 80.1	198	158	161	159	119	150	163	151
July	645	[4] 73.5	198	156	159	161	117	155	159	149
October	662	[4] 75.7	191	157	160	163	120	153	153	147
1927										
January	629	[4] 76.3	180	156	158	167	116	155	158	148
April	606	[4] 77.0	169	151	156	155	119	151	151	145
July	540	[4] 76.5	175	151	157	159	119	154	152	144
October	530	[4] 79.5	173	155	159	161	119	148	159	143
1928										
January	531	[4] 81.6	170	153	159	162	119	151	154	147
April	522	[4] 79.4	171	154	156	155	119	140	154	144
July	516	[4] 76.2	173	157	157	157	116	143	152	147
October	536	[4] 75.2	163	153	158	157	115	142	150	149
1929										
January	565	[4] 76.0	158	150	157	159	115	146	161	149
April	566	[4] 72.3	156	150	154	150	119	145	162	147
July	558	[4] 74.5	157	151	155	149	116	145	160	146
October	546	[4] 73.1	160	150	158	156	113	147	165	147
1930										
January	548	----------	156	145	155	157	112	145	153	146
February	536	----------	154	144	154	154	111	143	151	145
March	525	69.7	152	142	153	150	111	139	151	144
April	522	----------	152	140	152	143	113	138	151	144
May	510	----------	151	140	150	140	113	137	150	144
June	509	68.8	151	140	151	138	112	137	149	143
July	507	----------	151	140	152	141	109	136	147	143
August	506	----------	151	139	152	144	108	133	146	141
September	508	71.6	151	139	152	144	107	134	141	140
October	513	----------	150	137	152	143	108	127	138	139
November	512	----------	149	136	151	144	108	123	135	139
December	482	69.0	147	134	149	141	108	116	134	137
1931										
January	463	----------	145	133	148	138	108	111	135	135
February	450	----------	143	132	146	136	107	106	133	130
March	446	66.8	142	133	144	134	107	103	131	126
April	446	----------	141	132	142	129	107	104	131	125
May	449	----------	138	130	141	129	108	102	129	125
June	----------	68.7	137	127	141	127	106	101	128	124

[4] For second month following.

Index Numbers of Wholesale Prices in August, 1931

THE downward movement of wholesale prices which was halted in July took a slight upward trend in August, as shown by the index number as computed by the Bureau of Labor Statistics of the United States Department of Labor. This index number, which includes 550 commodities or price series weighted according to the importance of each article and based on the average prices for 1926 as 100.0, was 70.2 for August, an increase of three-tenths of 1 per cent over July having an index of 70.0. When compared with August, 1930, with an index of 84.0, a decrease of 16⅔ per cent has been recorded.

Farm products as a group averaged slightly more than 2 per cent below July prices. Decided decreases took place in corn, oats, cotton, and hay, with smaller declines recorded for rye, sheep, lambs, light hogs, onions, and potatoes. Increases were shown for calves, cows, steers, live poultry, eggs, lemons, oranges, and beans.

Price increases among foods were reported for butter, cheese, fresh and cured beef, hams, dressed veal, and dressed poultry, resulting in a net increase of nearly 1 per cent for the group as a whole. Food articles averaging lower than in July were bacon, coffee, smoked and canned salmon, mutton, cured pork, condensed and evaporated milk, lard, and rice.

Hides and skins moved downward during the month, while leather showed an upward trend. No change was reported for boots and shoes and other leather products. The group as a whole decreased about three-fourths of 1 per cent.

In the group of textile products, cotton goods and other textiles showed further price decreases, while silk and rayon and woolen and worsted goods showed little or no change in average prices. The group as a whole decreased nearly 2 per cent within the month.

Marked increases in the price of petroleum products caused a rise of 7 per cent in the fuel and lighting group as a whole. Anthracite and bituminous coal advanced slightly with no change taking place in coke.

Among metals there were negligible decreases in iron and steel products and other metal products with a larger decrease for nonferrous metals. Automobiles and agricultural implements showed no change from the July level, whereas, a slight decrease was recorded for the group as a whole.

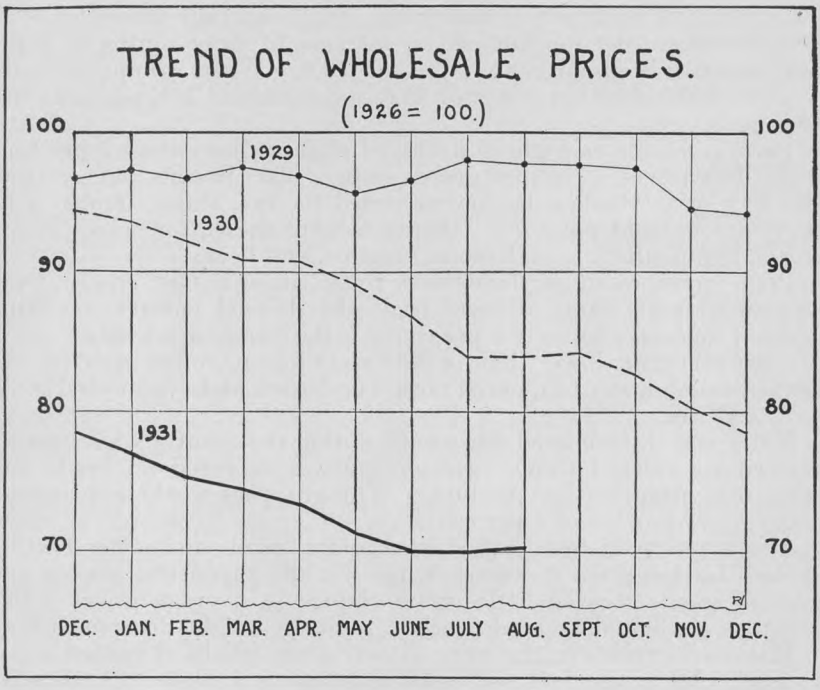
Lumber, brick, and paint materials continued to move downward in August. No change was reported for cement while a slight advance took place in other building materials. A decrease of less than 1 per cent is shown for the group as a whole.

Further price recessions during August for chemicals, drugs and pharmaceuticals, mixed fertilizers, and fertilizer materials caused the chemicals and drugs group to decline a little more than 2 per cent. Both furniture and furnishings in the group of house-furnishing goods continued to move downward in the month.

A marked decrease took place in the prices of cattle feed, rubber, and other miscellaneous articles during the month. No change was reported for paper and pulp and automobile tires. The group of miscellaneous commodities as a whole decreased 4 per cent.

Raw materials as a whole averaged lower than in July as did also semimanufactured articles. Finished products, on the other hand, advanced from July to August.

In the large group of nonagricultural commodities, including all articles other than farm products, and among all commodities other



than farm products and foods, the August prices showed an upward movement from those for the month before.

Between July and August increases took place in 94 instances, decreases in 186 instances, while in 270 instances no change occurred.

INDEX NUMBERS OF WHOLESALE PRICES BY GROUPS AND SUBGROUPS OF COMMODITIES (1926=100.0)

Groups and subgroups	August, 1930	July, 1931	August, 1931	Purchasing power of the dollar August, 1931
All commodities	84.0	70.0	70.2	1.425
Farm products	84.9	64.9	63.5	1.575
Grains	80.4	49.0	44.8	2.232
Livestock and poultry	84.6	63.0	67.0	1.493
Other farm products	86.7	71.3	67.3	1.486
Foods	87.1	73.1	73.7	1.357
Butter, cheese, and milk	97.9	80.9	82.5	1.212
Meats	93.1	73.4	76.0	1.316
Other foods	79.4	69.7	68.8	1.453
Hides and leather products	98.9	89.2	88.5	1.130
Hides and skins	91.2	72.7	69.1	1.447
Leather	99.9	89.8	90.3	1.107
Boots and shoes	100.6	93.5	93.5	1.070
Other leather products	104.9	101.3	101.3	.987
Textile products	77.7	65.4	64.2	1.558
Cotton goods	85.0	72.4	69.8	1.433
Silk and rayon	57.6	45.0	44.8	2.232
Woolen and worsted goods	86.6	75.3	75.3	1.328
Other textile products	63.5	52.1	50.9	1.965
Fuel and lighting materials	75.4	58.2	62.3	1.605
Anthracite coal	87.8	90.8	92.2	1.085
Bituminous coal	88.6	83.5	83.7	1.195
Coke	83.8	81.5	81.5	1.227
Gas	99.8	103.5	[1]	
Petroleum products	60.9	30.3	37.5	2.667
Metals and metal products	92.7	87.5	87.1	1.148
Iron and steel	90.1	87.1	86.6	1.155
Nonferrous metals	72.7	59.4	58.0	1.724
Agricultural implements	94.9	94.5	94.5	1.058
Automobiles	102.5	98.9	98.9	1.011
Other metal products	98.4	92.5	92.1	1.086
Building materials	87.4	75.8	75.4	1.326
Lumber	81.1	66.3	66.0	1.515
Brick	82.5	80.5	80.4	1.244
Cement	91.7	75.8	75.8	1.319
Structural steel	84.3	84.3	81.7	1.224
Paint materials	83.7	69.5	66.8	1.497
Other building materials	98.7	88.7	89.3	1.120
Chemicals and drugs	87.3	77.3	75.5	1.325
Chemicals	92.1	80.1	78.5	1.274
Drugs and pharmaceuticals	66.8	61.6	61.4	1.629
Fertilizer materials	83.3	78.7	74.4	1.344
Mixed fertilizers	92.7	80.2	78.7	1.271
House-furnishing goods	95.9	88.0	87.5	1.143
Furniture	96.5	92.4	91.9	1.088
Furnishings	95.3	84.3	83.7	1.195
Miscellaneous	71.2	61.0	58.5	1.709
Cattle feed	104.8	55.8	50.8	1.969
Paper and pulp	83.8	80.1	80.1	1.248
Rubber	20.3	13.2	11.2	8.929
Automobile tires	52.0	45.7	45.7	2.188
Other miscellaneous	94.5	82.6	75.5	1.325
Raw materials	81.8	64.3	64.1	1.560
Semimanufactured articles	78.1	69.5	68.3	1.464
Finished products	86.4	74.0	74.6	1.340
Nonagricultural commodities	83.8	71.5	72.1	1.387
All commodities less farm products and foods	83.3	71.8	72.3	1.383

[1] Data not yet available.

Index Numbers of Wholesale Prices in Shanghai, China

THE National Tariff Commission at Shanghai, China, announces that a revision has been made in the index numbers of wholesale prices in Shanghai. The more important changes consist in the method of classification and choice of commodities, the use of the geometric average in place of the arithmetic average, and the adoption of the average for the year 1926 as the base period instead of 1913. A complete account of the revision will soon be issued by the commission in its Statistical Series, No. VII, The Revision of Price Index Numbers.

The preliminary statement announcing the change shows that the commodities included in the revised index have been classified into eight major classifications and a general figure. In the following table are presented the indexes by groups for the years 1926 to 1930, inclusive, and the months of 1930 and 1931 through July.

INDEX NUMBERS OF WHOLESALE PRICES IN SHANGHAI, CHINA, 1926 TO JULY, 1931

[1926=100.0]

Year and month	Cereals	Other food products and provisions	Textile fibers and their products	Metals	Fuel and lighting	Building materials	Chemicals and their products	Miscellaneous	General index
1926	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1927	100.6	108.1	100.9	109.1	112.7	105.4	102.6	102.1	104.4
1928	89.6	108.7	102.1	102.9	104.0	103.0	101.2	102.0	101.7
1929	97.2	109.5	101.9	111.0	104.1	108.1	105.8	104.2	104.5
1930	110.3	120.3	105.6	136.2	117.1	118.2	120.1	111.4	114.8
1930									
January	108.1	112.9	103.4	123.2	103.4	108.3	108.8	105.5	108.3
February	111.5	115.7	105.1	129.1	107.3	111.2	112.3	108.6	111.3
March	110.5	115.0	105.0	131.0	107.0	114.7	115.5	106.6	111.3
April	113.0	113.5	104.7	129.4	106.3	114.9	115.2	107.3	111.2
May	112.5	111.2	103.4	130.2	112.7	115.1	116.0	107.5	111.0
June	118.4	121.1	106.3	144.5	119.4	120.0	124.4	112.9	117.5
July	121.7	126.6	107.8	144.4	122.7	124.7	125.0	115.2	120.4
August	117.6	125.8	107.6	144.2	122.1	123.1	128.7	114.7	119.6
September	114.8	126.3	106.5	137.2	125.5	120.5	124.9	114.5	118.4
October	100.8	123.7	106.6	138.5	123.6	120.0	121.6	114.6	115.4
November	98.5	120.8	105.8	136.7	123.5	121.7	121.6	112.9	114.1
December	93.1	121.1	104.7	141.9	125.2	123.0	123.8	112.4	113.6
1931									
January	93.1	127.1	111.9	161.1	131.9	127.8	135.5	116.3	119.7
February	96.5	139.1	122.7	164.1	142.5	131.0	141.3	119.9	127.4
March	95.8	131.3	119.8	164.3	146.3	135.1	146.0	122.1	126.1
April	91.9	131.0	121.4	160.2	152.4	137.2	147.3	122.7	126.2
May	95.0	137.6	118.9	159.5	153.1	136.0	147.6	123.8	127.5
June	94.0	141.8	121.4	157.4	152.9	137.1	153.2	126.0	129.2
July	90.6	140.1	120.7	152.9	152.7	136.2	155.2	123.2	127.4

IMMIGRATION AND EMIGRATION

Statistics of Immigration for July, 1931

By J. J. Kunna, Chief Statistician, United States Bureau of Immigration

ALIENS admitted to the United States in the first month of the new fiscal year beginning July 1, 1931, totaled 15,535. This is 7,854 less than the average admitted during the preceding 12 months. There was, however, a large outward movement of passengers in July last, 27,878 aliens having left here during the month, or 3,635 above the monthly average number of alien departures for the fiscal year ended June 30, 1931.

Many Americans responded to the lure of strange countries during July, 1931, when the vacation exodus to Europe is at its height. The statistics show that 46,961 United States citizens left the country during this month. The women outnumbered the men among these departures, the females comprising 25,504 and the males 21,457, the vast majority of whom were bound for Europe via New York, 34,639, or 73.8 per cent of the total for the month, having embarked at that port. July, 1931, also saw the return of many tourists, 30,944 American citizens having arrived at all ports this month.

Deportations in July, 1931, show an increase over the corresponding month of either of the two previous years, 1,681 aliens having been deported under warrant proceedings during July, 1931, compared with 1,440 for July, 1930, and 1,261 in July, 1929.

Aliens debarred from entering the United States during July last numbered 761, but only 91 of these were rejected at the seaports of entry. The other 670 were refused admission at points along the land borders, 577 having been turned back to Canada and 93 to Mexico. At New York, where the majority of the immigrants continue to land, 9,313 aliens sought admission during the month, of whom 51 were debarred, or less than 6 out of every thousand applicants; many of these were stowaways and seamen seeking permanent admission to the United States without first having obtained visas from American consuls.

Of the 15,535 aliens of all classes admitted during July last under the immigration act of 1924, 9,262, or 59.6 per cent, entered at New York and 3,266 at the other seaports, 2,593 came in over the northern land border and 414 over the southern border. Only one-eleventh of the New York arrivals were charged to the quota, 842 of the aliens coming in that way being quota immigrants, while 4,013 were temporary visitors and persons passing through the country on their way elsewhere, 3,416 were returning residents, and 127 were admitted under the act as natives of nonquota countries. Husbands, wives, and unmarried children of American citizens numbered 620, and the miscellaneous classes 244. The two principal classes of admissions under the act at points along the land borders included 1,743 visitors

and persons passing through the United States, and 740 natives of nonquota countries.

Canada, Italy, Great Britain, Germany, and Mexico in the order named, were the principal countries from which the newcomers came during July, 1931, about three-fifths of the total immigrants admitted this month coming from these five countries. Nearly three-fifths of the permanent July departures were destined to Europe, 4,266 out of a total of 7,428 emigrant aliens for the month giving countries on that Continent as their future homes. Great Britain, France, Germany, Italy, and Poland were the principal destinations of these emigrants.

INWARD AND OUTWARD PASSENGER MOVEMENT, 1930-31, AND JULY, 1931

Period	Inward					Aliens debarred from entering [1]	Outward					Aliens deported after entering [2]
	Aliens admitted			United States citizens arrived	Total		Aliens departed			United States citizens departed	Total	
	Immigrant	Nonimmigrant	Total				Emigrant	Nonemigrant	Total			
Fiscal year ended June 30, 1931	97,139	183,540	280,679	439,897	720,576	9,744	61,882	229,034	290,916	446,386	737,302	18,142
July, 1931	3,174	12,361	15,535	30,944	46,479	761	7,428	20,450	27,878	46,961	74,839	1,681

[1] These aliens are not included among arrivals, as they were not permitted to enter the United States.
[2] These aliens are included among aliens departed, they having entered the United States, legally or illegally, and later being deported.

PUBLICATIONS RELATING TO LABOR

Official—United States

CONNECTICUT.—Commission Appointed to Study Pension Systems in the State of Connecticut. *Report. Hartford, 1931. 102 pp. (Public document No. 82.)*

The commission reports that the State pension system maintained by Connecticut for 11 years is noncontributory and dependent for administration "upon the discretion of the Board of Finance and Control." Its cost is rapidly increasing, pension payments are made out of current income, and there is no attempt to establish reserves for the accruing liabilities. The commission considers this situation undesirable and recommends the adoption of a new plan, applicable to all State employees except elected officials, judges, teachers eligible under the State teachers' retirement system, and commissioners who are heads of departments. In the opinion of the commission, retirement after 20 years' service should be optional at 65 for men and 60 for women, and compulsory at 70 for men and 65 for women, and the amount of the pension should be based on the amount of the salary, up to $6,000, and the years of service. The plan should provide for return of contributions in case of death or withdrawal before qualifying for a pension.

GEORGIA.—Department of Commerce and Labor. *Seventeenth and eighteenth reports, for the fiscal years 1929 and 1930. Atlanta, 1931. 62 pp.*

Included among the establishments for which wages are given are textile mills, garment factories, cotton-oil mills, fertilizer factories, foundries, machine and general repair shops, electric power and light plants, ice factories, and ice-cream factories.

ILLINOIS.—Department of Labor. *Twelfth annual report, July 1, 1928, to June 30, 1929. Springfield, 1930. 123 pp.*

The data relating to workmen's compensation are reviewed in this issue. The report also covers the activities of the division of free employment offices, the division of inspection of private employment agencies, the division of factory inspection, the industrial commission, and the general advisory board of the free employment offices.

INDIANA.—Board of Industrial Aid for the Blind. *Sixteenth annual report, for the fiscal year ending September 30, 1930. Fort Wayne, 1931. 34 pp.*

Reviewed in this issue.

MASSACHUSETTS.—Department of Labor and Industries. *Annual report for the year ending November 30, 1930. Boston, 1931. 152 pp., maps, chart. (Public document No. 104.)*

Data from this report, relating to the occupational diseases investigated in Massachusetts in 1930, are given in this issue.

MISSOURI.—Workmen's Compensation Commission. *Third annual report, for the period from January 1, 1929, through December 31, 1929. Jefferson City [1930]. 149 pp.*

Reviewed in this issue.

NEVADA.—Industrial Commission. *Biennial report, reviewing the administration of the Nevada industrial insurance act for the period July 1, 1928, to June 30, 1930. Carson City, 1931. 46 pp.*

Reviewed in this issue.

OHIO.—Department of Industrial Relations. *Ninth annual report, including the annual report of the Industrial Commission, for the fiscal year July 1, 1929, to June 30, 1930. Columbus, 1931. 44 pp.*

The data relating to workmen's compensation show that 243,341 claims for compensation were filed with the commission during the fiscal year 1929–30 by or for injured workers or their dependents, an increase of 3,900 as compared with the preceding year. The claims consisted of 1,234 fatal cases, 62,772 cases in which the duration of disability exceeded seven days, and 179,335 cases involving medical expenses only as the duration of disability was seven days or less.

The report also covers enforcement of labor laws; the public employment service; inspection of factories and buildings, mines, and steam boilers; and licensing of steam engineers.

PENNSYLVANIA.—Department of Internal Affairs. Bureau of Statistics. *Report on productive industries, public utilities, and miscellaneous statistics of the Commonwealth for the year 1928. Harrisburg, 1930. 495 pp.*

Includes considerable wage data.

—— Department of Labor and Industry. Bureau of Workmen's Compensation. *Annual report, 1930.* [*Harrisburg, 1931.*] *23 pp.* (*Mimeographed.*)

Reviewed in this issue.

UTAH.—Industrial Commission. [*Biennial report, July 1, 1928, to June 30, 1930.*] *Bulletin No. 1: Synopsis of decisions rendered by the Industrial Commission in workmen's compensation cases, and digest of supreme court rulings. 314 pp. Bulletin No. 2: Financial statements of the State Insurance Fund, the Industrial Commission of Utah, Firemen's Pension Fund, and the Employees' Combined Injury Benefit Fund. 19 pp. Bulletin No. 3: Industrial accident statistical report. 143 pp. Bulletin No. 4: Coal and metal mines report, including report of factory and labor inspections and of wage collection. 171 pp. Bulletin No. 5: Utah agricultural statistics, compiled by the U. S. Department of Agriculture, Bureau of Agricultural Economics. 28 pp.* [*Salt Lake City, 1931?*]

Bulletin No. 3 is reviewed in this issue of the Labor Review. Data from Bulletin No. 4, relating to wages of miners and wage collections, were published in the issue for June, 1931.

WISCONSIN.—Compensation Insurance Board. *1930 report. Madison, 1931. 75 pp.*

Describes briefly the principles of rate making in connection with the State workmen's compensation act, and contains tables showing earned premiums and incurred losses of insurance companies writing workmen's compensation in Wisconsin, by carrier and by industrial group.

WYOMING.—Workmen's Compensation Department. *Fifteenth report, for the 12 months ending December 31, 1930. Fifth report, Coal Mine Catastrophe Insurance Premium Fund. Eighth report, Wyoming Peace Officers' Indemnity Fund. Cheyenne,* [*1931*]. *151 pp.*

The report on workmen's compensation is reviewed in this issue.

UNITED STATES.—Congress. Senate. *Report No. 1838 (71st Cong., 3d sess.): Prices of food products. Washington, 1931. 21 pp.*

—— —— —— Committee on Education and Labor. *Rehabilitation and vocational education of crippled persons. Hearing (71st Cong., 3d sess.) on S. 6227, February 28, 1931, a bill to provide for cooperation with the several States and Territories in the physical rehabilitation, education, vocational guidance, and vocational education of physically handicapped children and their placement and follow-up in employment, and for other purposes. Washington, 1931. 59 pp.*

—— Department of Labor. Bureau of Labor Statistics. *Bulletin No. 539: Wages and hours of labor in cotton-goods manufacturing, 1910 to 1930. Washington, 1931. 44 pp.*

Summary figures from this survey were published in the Labor Review for November, 1930 (pp. 164–169).

—— —— Children's Bureau. *Bureau Publication No. 204: Children of working mothers in Philadelphia. Part I.—The working mothers, by Clara Mortenson Beyer. Washington, 1931. 39 pp.*

UNITED STATES.—President's Emergency Committee for Employment. *Community Plans and Action, No. 8: Five "made work" programs. Washington, 1931. 52 pp.* (*Mimeographed.*)

Reviewed in this issue.

Official—Foreign Countries

BELGIUM.—Caisse Générale d'Épargne et de Retraite. *Compte rendu des opérations et de la situation, 1930. Brussels, 1931. 96 pp.*

An account of the operations of the General Savings and Retirement Fund for the year 1930.

BRITISH COLUMBIA (CANADA).—Department of Labor. *Annual report for the year ended December 31, 1930. Victoria, 1931. 80 pp., charts.*

Wage data from this report are published in this issue.

—— Workmen's Compensation Board. *Fourteenth annual report, for the year ending December 31, 1930. Victoria, 1931. 30 pp.*

Reviewed in this issue.

CANADA.—Department of Labor. *Tenth report on organization in industry, commerce, and the professions in Canada, 1931. Ottawa, 1931. 140 pp.*

The various associations covered are classified in 18 groups. So far as returns were made, the date of formation, the membership, and the objects of each organization are given, also the names and addresses of the chief executive officers for the present year.

FRANCE.—Ministère du Travail, de l'Hygiène, de l'Assistance et de la Prévoyance sociales. Conseil supérieur du Travail. *Trente-troisième session, Novembre 1929. Paris, 1930. 224 pp.*

A report of the proceedings of the thirty-third session of the French Superior Labor Council, dealing with the subjects of legislation on apprenticeship, posting of labor laws in industrial establishments, regulation of labor in family workshops, and sanitation of company houses.

GERMANY.—Reichskohlenrat. *Statistische Übersicht über die Kohlenwirtschaft im Jahre 1930. Berlin, 1931. 116 pp., charts.*

Contains statistical information in regard to the coal industry in Germany and other countries in 1930, including data on workers engaged in the industry, working hours, wages, and prices.

GREAT BRITAIN.—Department of Overseas Trade. *Economic conditions in Algeria, 1929–30, by G. P. Churchill, and in Tripolitania, October, 1930, by Francis Patron. London, 1931. 62 pp.*

Certain information on wages and cost of living in Algeria, taken from this report, are given in this issue.

—— Foreign Office. *Russia No. 1 (1931): A selection of documents relative to the labor legislation in force in the Union of Soviet Socialist Republics. London, 1931. 200 pp.* (*Cmd. 3775.*)

—— Home Office. Factory Department. *Annual report for the year 1930. London, 1931. 172 pp.* (*Cmd. 3927.*)

The report of the senior medical inspector of factories is reviewed in this issue.

—— India Office. *Statement exhibiting the moral and material progress and condition of India during the year 1929–30. London, 1931. 496 pp., maps, charts, illus.*

Ministry of Health. *Interim report of departmental committee on regional development. London, 1931. 15 pp.* (*Cmd. 3915.*)

The committee was appointed in January, 1931, to consider the development schemes advised in the reports of the regional planning committees, with special reference to their probable cost, their economic returns, and the amount of employment likely to be afforded by them.

GREAT BRITAIN.—Ministry of Health. *Report of the interdepartmental committee on the rent restrictions acts. London, 1931. 62 pp. (Cmd. 3911.)*

Reviewed in this issue.

—— Ministry of Labor. London Advisory Council for Juvenile Employment. *Seventh annual report, 1930. London, 1931. 32 pp.*

The general depression made itself felt in London to an increasing degree during 1930, so that the number of placements made by the council, 75,191, was somewhat less than in either of the two years immediately preceding. The decrease in openings was especially marked for the age group 16 to 18, the demand for younger children being on the whole well maintained.

—— Registry of Friendly Societies. *Report for the year 1929. Part 2: Friendly societies. London, 1931. 64 pp.*

Contains a general discussion of the aims and work of the registered societies with a digest of some of the most important legal cases of the year, and statistics as to membership, etc.

—— —— *Report for the year 1930. Part 3: Industrial and provident societies; section II, directory and summary tables. London, 1931. 153 pp.*

GREECE.—[Direction de la Statistique.] *Annuaire statistique de la Grèce, 1930. Année 1. Athens, 1931. 494 pp., charts.*

The statistical yearbook of Greece for 1930 contains a section on industry, covering production, number of workers, wages of tobacco workers, and mining statistics. Most of the data are for the year 1928 and preceding years.

INTERNATIONAL LABOR OFFICE.—*The age of admission of children to employment in nonindustrial occupations. (Third item on agenda of International Labor Conference, 16th session, 1932.) Geneva, 1931. 38 pp. (World Peace Foundation, Boston, American distributor.)*

—— *The protection of seamen in case of sickness, including the treatment of seamen injured on board ship. I. The individual liability of the shipowner towards sick or injured seamen. II. Sickness insurance for seamen. (Second item on agenda of International Labor Conference, second discussion, report II.) Geneva, 1931. 343 pp. (World Peace Foundation, Boston, American distributor.)*

—— *Studies and Reports, Series F (industrial hygiene), No. 13: Silicosis (supplement). Resolutions adopted by the International Conference held at Johannesburg, August 13–27, 1930. Geneva, 1930. 24 pp. (World Peace Foundation, Boston, American distributor.)*

This pamphlet contains the reports of the various committees appointed by the conference for the consideration of different questions relating to the problem of silicosis. The conference did not bring out any important new facts in regard to the disease, but the recommendations emphasize the need for further research along several lines.

ITALY.—Associazione Nazionale per la Prevenzione degli Infortuni sul Lavoro. *Relazione sull'attività dell'associazione nell'anno 1929. Milan, [1931?]. 191pp.*

Account of the activities of the association for the prevention of accidents to labor during the year 1929.

—— —— *Statistica degli infortuni in agricoltura sotto l'aspetto delle causali (anno 1928). Milan, 1931. 174 pp.*

Statistics of accidents occurring in agriculture in Italy during 1928, based on reports of agricultural insurance societies.

NEW SOUTH WALES (AUSTRALIA).—Registrar of Friendly Societies. *Friendly societies and trade unions: Report for the 12 months ended June 30, 1930. Sydney, 1931. 25 pp.*

SWEDEN.—[Socialdepartementet.] Socialstyrelsen. *Arbetslösheten inom fackförbunden. Stockholm, 1931. 152 pp.*

Report on a study of unemployment among the members of labor unions in Sweden, from 1920 to 1929, including data on unemployment by industries and age, influence of trade agreements upon unemployment, etc.

SWITZERLAND.—Bureau Fédéral des Assurances. *Rapport sur les entreprises privées en matière d'assurance en Suisse en 1929. Berne, 1931. 104*, 143 pp.*

Report of the Swiss Federal Insurance Bureau upon the operation of private insurance funds, covering life insurance and insurance against accidents.

ZURICH (SWITZERLAND).—Statistisches Amt. *Statistisches Jahrbuch der Stadt Zürich, 1930. Zurich, 1931. [Various paging.] Map, charts.*

Includes statistics on housing, employment and unemployment, unemployment insurance, cooperation, etc., in the city of Zurich, Switzerland, in 1930.

Unofficial

BARNES, HARRY. *The slum—its story and solution. London, P. S. King & Son (Ltd.), 1931. 398 pp.*

The objective of all housing campaigns, the author holds, "is nothing more and nothing less than a separate dwelling for each family, with adequate accommodation, set in surroundings clean and comely." This objective, he believes, is attainable, and may even be in sight. A historical review of the public attitude toward the housing of the poor is followed by a discussion of the present situation and of the prospect for effective action under the recent housing acts.

BARNES, RALPH M. *Industrial engineering and management—problems and policies. New York, McGraw-Hill Book Co. (Inc.), 1931. 366 pp., diagrams, illus.*

Part I of the volume covers industrial plant design and equipment, and Part II, time and motion study, wages, and manufacturing costs.

BIRNIE, ARTHUR. *An economic history of Europe, 1760–1930. New York, Dial Press, 1930. 289 pp.*

The subjects covered include the revolution in industry, agriculture, transport, commerce, and commercial policy; the political and industrial labor movements; the cooperative movement; profit sharing and copartnership; social insurance; and factory and poor laws.

BONVOISIN, G., AND MAIGNAN, G. *Allocations familiales et caisses de compensation. Paris, Librairie du Recueil Sirey, 22, Rue Soufflot, 1930. 352 pp.*

The two authors of this volume on family-allowance funds are, respectively, the general director of the central committee of family allowances and the director of the compensation fund of the Paris region.

BOTTAI, JOSÉ. *Experiencia corporativa. Madrid, Ministerio de Trabajo y Previsión, Sección de publicidad, 1929. 160 pp. (Biblioteca de Política Social, Vol. III.)*

A description of the Fascist form of government in Italy, by the Italian Minister of Corporations.

BOURBOUSSON, E. *Traité général de la nationalité dans les cinq parties du monde. Paris, Recueil Sirey, 1931. 613 pp.*

A general treatise on nationality in different countries, covering the status of married women, naturalization, and loss of nationality. The laws, decrees, ordinances, etc., are given by country.

CHEYNEY, ALICE S. *Text for a model international labor conference (one session). New York City, League of Nations Association (Inc.), Educational Committee, 6 East 39th Street, 1931. 31 pp. (Educational Publications No. 10.)*

COMITÉ CENTRAL DES ALLOCATIONS FAMILIALES. *X^e Congrès National des Allocations familiales, Lille, Boulogne, Calais, Tournai, Liége, Anvers, 19–24 Mai, 1930. Compte rendu. Paris–17^e, 31, rue Guyot, [1931?]. 240 pp.*

A brief report on this Tenth National Congress on Family Allowances was published in the September, 1930, issue of the Labor Review.

CONFERENCE OF TEACHERS IN WORKERS' EDUCATION. *What next in workers' education? Seventh annual conference, at Brookwood, February 21–23, 1930. Edited by a committee of Local 189, American Federation of Teachers. Brookwood, Katonah, N. Y., 1930. 74 pp.*

The subjects on the program included workers' education in the United States, the problem of the South, political action and workers' education, the labor press and workers' education, and the next step in workers' education.

DEUTSCHER TEXTILARBEITER-VERBAND. *Abteilung für Tarife und Löhne. Erhebungen über die Effektiv-Verdienste in der Textilindustrie, Dezember, 1930–Mai, 1931. [Berlin?], 1931. 156 pp. (Mimeographed.)*

Data on wages of textile workers, taken from this report, are given in this issue.

DURAND, PAUL. *L'Application pratique de la loi sur les assurances sociales. Paris, Éditions Spes, 1930. 325 pp.*

This volume contains a discussion of the principal features of the French social insurance law and foreign experience with social insurance, a commentary on the juridical aspects of the French law, and a practical guide to its operation for employers and employees. The appendixes contain a chronological list of laws and decrees; the text of the law of 1928 and the amended law of 1930, and of the various decrees; and a bibliography.

ELTON, GODFREY. *England, arise! London, Jonathan Cape (Ltd.), 1931. 286 pp.*

A study of the development of the socialist movement in Great Britain in the form of sketches of its leaders and of the conditions which called them forth. The author feels that imported methods of socialist propaganda have had little success in England, but that a characteristic native movement has been developed.

FISHER, V. E., AND HANNA, JOSEPH V. *The dissatisfied worker. New York, Macmillan Co., 1931. 260 pp.*

According to the authors, a very considerable part of vocational maladjustment and industrial unrest is but a manifestation of emotional maladjustment which in most cases is the natural result of emotional maldevelopment.

GRIGAUT, MAURICE. *Histoire du travail et des travailleurs. Paris, Librairie Delagrave, 1931. 311 pp., illus.*

A history of agricultural, industrial, and commercial labor in France, covering economic conditions and political events affecting the condition of the workers in the different periods.

HAENSEL, PAUL. *The economic policy of Soviet Russia. London, P. S. King & Son (Ltd.), 1930. 190 pp.*

Contains a review of economic plans in Soviet Russia, as observed and understood by the author, including a chapter on the economic position of the working class.

INTERNATIONAL CHAMBER OF COMMERCE. American Section. *Employment regularization in the United States of America. Washington, D. C., 1931. 84 pp., charts.*

INTERNATIONALE UNION DER HOTEL-, RESTAURANT- UND CAFÉ-ANGESTELLTEN. *6. Internationale Konferenz, Paris, 19. bis 21. Mai, 1931. Berlin, N 24, Elsässer Strasse 86–88, 1931. 120 pp.*

A report on the Sixth International Conference of the Hotel, Restaurant, and Bar Workers' Unions held in Paris May 19–21, 1931, including reports on wages and labor conditions of these workers in various countries.

JOINT COMMITTEE ON UNEMPLOYMENT RELIEF OF THE STATE BOARD OF SOCIAL WELFARE AND THE STATE CHARITIES AID ASSOCIATION. *Work relief: A memorandum on work as a means of providing unemployment relief. New York City, 105 East 22d Street, June, 1931. 22 pp.*

Reviewed in this issue.

LABOR YEARBOOK (BRITISH), 1931. *Issued by the General Council of the Trades-Union Congress and the national executive of the Labor Party. London, Labor Publications Department, 1931. 567 pp.*

In addition to the usual material this issue contains a discussion of the world depression, with a brief summary of its possible causes and the remedial measures suggested. Considerable space is devoted to the international relations of labor.

NATIONAL CHILD LABOR COMMITTEE. *Administration of the child labor law in Ohio, by Charles E. Gibbons and Chester T. Stansbury. New York City, 331 Fourth Avenue, 1931. 66 pp.*

NATIONAL INDUSTRIAL CONFERENCE BOARD (INC.). *Industrial relations: Administration of policies and programs. New York, 247 Park Avenue, 1931. 114 pp.*

This report covers the methods followed in 302 companies in administering their industrial-relations policies. The purpose of the study was to determine whether something like a standard method is being developed as a result of the experience with different types of policies. The trend away from the paternalistic attitude in the development of sound employer and employee relations is emphasized in the report.

NATIONAL SAFETY COUNCIL (INC.). *Industrial accident statistics, 1931 edition. Chicago, 20 North Wacker Drive, 1931. 39 pp., charts.*

Data on the accident experience of establishments reporting to the National Safety Council, taken from this publication, are given in this issue of the Labor Review.

NEW YORK UNIVERSITY. Washington Square College. Department of Economics. *Economic behavior—an institutional approach. Boston, Houghton Mifflin Co., 1931. 2 vols.*

The six books into which the work is divided deal, respectively, with the following subjects: The pecuniary basis of industrial society, funds and their uses, market practices, the rôle of the consumers, the rôle of the workers, and change and control.

NIXON, JOHN. *The authentic history of civil service superannuation. London, P. S. King & Son (Ltd.), 1930. 65 pp.*

A brief account of the development of the civil-service pension system in Great Britain, given mainly in the form of quotations from official documents, with only such connecting matter as is required for continuity.

PAISH, GEORGE. *The way to recovery. New York, G. P. Putnam's Sons, 1931. 161 pp.*

PERSON, H. S. *Scientific management as a philosophy and technique of progressive industrial stabilization. [The Hague, International Industrial Relations Association?], 1931. 64 pp.*

By the managing director of the Taylor Society, New York. Issued for study by members of the 1931 World Social Economic Congress, held at Amsterdam in August.

PITTSBURGH FEDERATION OF SOCIAL AGENCIES. Bureau of Social Research. *Bibliography of studies of social conditions in the Pittsburgh area, 1920–1930. Pittsburgh, 805–807 Wabash Building, 1931. 85 pp.*

PRINCETON UNIVERSITY. Industrial Relations Section. *Dismissal compensation. Princeton, 1931. 46 pp. (Mimeographed.)*

Reviewed in this issue.

ROGERS, THOMAS WESLEY, STUDENCKI, WALLACE P., AND OBSENICA, PETER. *The occupational experience of one hundred unemployed persons in Bloomington, Ind. Bloomington, Ind., Indiana University, Bureau of Business Research, 1931. 61 pp., map. (Mimeographed.)*

Statistics from this report are published in this issue.

SOZIALRECHTLICHES JAHRBUCH. *Band II. Edited by Theodor Brauer. Berlin, J. Bensheimer, 1931. 210 pp.*

This yearbook of social legislation contains legislative information in regard to trade organizations and trade training in Germany.

SPATES, T. G., AND RABINOVITCH, G. S. *Unemployment insurance in Switzerland—the Ghent system nationalized, with compulsory features. New York, Industrial Relations Counselors (Inc.), 1931. 276 pp., map.*

This is a very comprehensive survey of the developments and present operations under the unemployment-insurance system of Switzerland. It constitutes the third in a series of studies of unemployment insurance being published by the Industrial Relations Counselors (Inc.), the other two volumes thus far published being Unemployment Benefits in the United States and Unemployment Insurance in Great Britain. It is announced that similar studies for Belgium and Germany are in preparation.

STREET, ELWOOD. *Social work administration. New York, Harper & Bros., 1931. 467 pp.*

THOMAS, S. EVELYN. *British banks and the finance of industry. London, P. S. King & Son (Ltd.), 1931. 290 pp.*

The author holds that the nation "is now faced with an economic upheaval as radical as the industrial revolution of the early nineteenth century," that the banking and general monetary policy of the country must play an important rôle in its development, and that at present the British banks are not fully undertaking the new responsibilities, being handicapped by an adherence to the too rigid and limited policies of the past.

TOKYO Chamber of Commerce and Industry. *The annual statistical report, 1930. Tokyo, 1931. 266 pp.*

Includes wage and price statistics as recent as December, 1930. Later figures, however, are published in the June, 1931, Monthly Bulletin of the Tokyo Chamber of Commerce and Industry, some of which are presented in this issue of the Labor Review.

UFFICIO SPECIALE D'INFORMAZIONI LEGALI ED AMMINISTRATIVE PER L'APPLICAZIONE DELLA LEGISLAZIONE SOZIALE (Rome, Italy). *Codico del lavoro. Rome, 1930. 1491 pp.*

Third edition of the Italian labor code, with notes and index. Prepared in collaboration with the publication Il Diretto del Lavoro.

VOCATIONAL ADJUSTMENT BUREAU [NEW YORK CITY]. *A therapeutic industrial experiment: The Vab workshop. [New York, 1931?]. 3 pp.*

Reviewed in this issue.

WALSH, WILLIAM J. *The United Mine Workers of America as an economic and social force in the anthracite territory. Washington, Catholic University of America, 1931. 200 pp.*

A study of the history of the anthracite industry for the purpose of ascertaining the economic and social contacts of the United Mine Workers of America with the lives of the people in the anthracite coal region. One chapter deals with the contractual relations between the anthracite operators and the mine workers from 1903 to the present agreement, effective from September 1, 1930, to April 1, 1936.

WOODS, HILDA M., AND RUSSELL, WILLIAM T. *An introduction to medical statistics. London, P. S. King & Son (Ltd.), 1931. 125 pp., charts.*

This book is intended for the use of medical students who are planning to go into public health work. It presents methods for the analysis of vital statistics and the construction of charts or graphs.

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