

A STUDY OF THE VOCATIONAL NEEDS OF KANSAS WITH

RECOMMENDATIONS FOR A STATE PROGRAM

by

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INTRODUCTION

When one begins a study of vocational education he is immediately brought face to face with the problem of definition of terms. Just what is vocational education? That it is a form of education all are agreed. We are coming more and more to think of vocational education as a function of the public school. But when we attempt to draw a definite line between vocational and non-vocational subjects as taught in our schools we find that such a division is practically impossible. For example, Latin is not usually considered as a vocational subject, but does it not take on a vocational aspect for the prospective teacher of Latin? Thus we see that the term vocational education may have a very broad interpretation. Vocational education as discussed in this study will be limited to the subjects included in the following vocations: agriculture, manufacturing and mechanical industries, mining, home economics and commercial pursuits.

For some time our public schools have been criticized for their apparent failure to properly prepare students to enter vocations through which they may become economically independent. Vocational efficiency is one of the fundamental aims of education. If the public school is to fill its proper place in our democratic society it must not only

give vocational training, but it must also aid the student in finding his position in life. The school's responsibility does not cease here. The school must follow up the student after he has entered the vocation of his choice, aid him in making necessary adjustments, and in some cases help him to find an entirely new occupation.

Guidance is of two kinds. Educational guidance seeks to direct and assist the student in the selection of those subjects or courses from which it is hoped that he will obtain the greatest benefit. Vocational guidance aims to assist the student to select the vocation or life work for which he is best fitted and in which he can hope to attain the greatest possible satisfaction. Briefly stated, these are the functions of the two types of guidance. There are many phases of each of these, but they will not be discussed here. We see immediately the very close relationship which exists between these forms of guidance. When properly carried out educational guidance becomes vocational guidance and vice versa. Each must make use of all of the possible information which can be gathered regarding the individual in question. These will include such factors as health, intelligence, school marks, home and social environment, interests, and aptitudes. It must never be assumed, however, that guidance consists of making choices for the

student. Always the final choice must be left to the individual. The function of guidance is merely to offer advice and assistance in the making of this choice. Certain requirements, to be sure, are necessary, but guidance has no part here except as requirements may depend upon choices previously made.

There are several types of vocational schools now in existence. Briefly defined, the most common of these are as follows:

(1) The unit trade school is designed to give instruction in one particular trade to persons over fourteen years of age. No less than half the time of such school is given to practical work on a useful or productive basis. This school is in session at least nine months, of four weeks each, per year. Each week consists of at least thirty clock hours.

(2) The general industrial school is equipped to give trade or industrial instruction of a general nature to persons over fourteen years of age and is maintained especially for cities of less than 25,000 population. This school also gives at least one half of its time to practical work on a useful or productive basis. The length of term is the same as for the unit trade school.

(3) The part-time trade extension school is designed

for people over fourteen years of age and less than eighteen years of age who have entered upon work of a trade or industrial pursuit. The term of instruction in this school must not be for less than 144 hours per year.

(4) The part-time trade preparatory school is intended for persons over fourteen years of age and less than eighteen years of age who have entered upon employment. Its special purpose is to fit these young people for some trade or industrial pursuit other than the one in which they are employed. This school must be in session at least 144 hours per year.

(5) The part-time general continuation school is maintained for persons over fourteen years of age and less than eighteen years of age who have entered upon employment. It offers instruction in subjects intended to enlarge the civic or vocational intelligence of young workers. Such instruction must be given for not less than 144 hours per year.

(6) The evening industrial school offers instruction in any particular trade supplemental to the day employment to persons over sixteen years of age who have entered upon employment.

The public high school has also become an important factor in vocational education. Many such schools are operating under the Smith-Hughes law. Other types of

schools which are really vocational, but which will not receive serious consideration in this study, are the correspondence schools and the technical high schools.

In a study of the vocational needs of the state of Kansas and in making recommendations regarding a state program of vocational education it is necessary to determine which of these types of schools are best adapted to the needs of this state. There is undoubtedly some place for all of the above named schools, but some seem to meet the particular demands of the state better than others. First and probably most important is the public secondary school which offers training in vocations. Agriculture is the dominant industry of Kansas and the public high schools are playing a great part in the training of farmers. Home economics is another phase of vocational education which is receiving special emphasis in our public secondary schools. Business training is also an important feature of the junior and senior high schools. The general industrial school which is adapted to cities having a population of less than 25,000 is a very good type of school for Kansas. Manufacturing and mechanical industries rank next to agriculture in importance in regard to the number of people employed. Few cities in the state have a population larger than that required for the general industrial school. Hence, it seems

that for industrial training of a general nature this school has a special place in our vocational program. There is a great need for vocational training among adults and the evening school is especially designed to meet this need. Evening schools are being conducted in the state in industrial, agricultural, and home making subjects. All of these seem to show very satisfactory results. In cities where the demand for workers in certain particular industries is great enough to warrant, there should be and are being established unit trade schools. Kansas does not have so great a problem of child labor as do many of the other states, but in our cities especially we have need for the general continuation school. The state law requires that young people remain in school until they are sixteen years of age, or until they have completed the elementary school. When compared with the other states of the union we find that Kansas has a very commendable record for maintaining school attendance. For the per cent of children between the ages of seven and thirteen, inclusive, who are attending school Kansas ranks fifteenth. In comparing the percentages of school attendance for the ages of fourteen and fifteen, sixteen and seventeen, and eighteen to twenty, inclusive, this state ranks eighth in each case.* Thus we

* U. S. Census Reports 1920.

find in Kansas a greater tendency for a larger per cent of people to remain in school longer than is the case in many other states. The time will probably come, however, when Kansas will require the attendance of young workers at the general continuation school. Since this state does not have so many young workers it does not have the need for so many part-time trade schools as do many other states. During the spring semester of 1928 there were only three part-time trade classes in the state with an enrollment of thirty seven pupils.*

STATEMENT OF PROBLEM.

The purpose of this study has been to determine the occupations which are most prominent among Kansas, to determine the types of vocational education needed to meet the demands of these occupations, and to recommend a program of public vocational education. As will be pointed out later the state has already made rapid progress in the direction of an efficient vocational program during the past few years. However, much remains to be done. This study is not intended to cover any phase of training for

* Kansas Annual Descriptive Report of the State Board for Vocational Education to the Federal Board for Vocational Education for Year Ending June 30, 1928.

the professions or any vocations which demand training of more than high school grade, except in so far as it may touch upon training for adults in the evening school. The study is to include only schools that are under public supervision and control. It should be mentioned in passing, however, that a great deal of commendable work is being done in the field of vocational education by privately owned institutions.

Studies have been made of the legal aspects of the problem both from a national and a state viewpoint. This of course has included the recommendations of the State and Federal Boards for Vocational Education. Statistics have been gathered covering the most outstanding vocations in Kansas. Recommendations of authorities upon the question of vocational guidance and vocational education have also been studied.

ACCOUNT OF FINDINGS.

On February 23, 1917, President Wilson approved an act passed by the Sixty fourth Congress which is commonly known as the Smith-Hughes Law. Briefly stated the main provisions of this law are as follows*:

* United States Statutes at Large, Sixty fourth Congress, 1915-17 Vol. XXXIX Part I. Public Laws. Chapter 114. pp 929-936.

The Federal government agrees to cooperate "with the states in paying the salaries of teachers, supervisors and directors of agricultural subjects, and teachers of trade, home economics and industrial subjects, and in the preparation of teachers of agriculture, trade, industrial and home economics subjects; and for the purpose of making studies, investigations and reports to aid in the organization and conduct of vocational education ..."

The act provides that the appropriations granted shall be gradually increased until they have reached the following amounts which are in effect at present: for the teaching of agricultural subjects, \$3,000,000.00 per year; for trade, industrial and home economics subjects, \$3,000,000.00 per year, provided that not more than 20% of this amount shall be spent to pay the salaries of teachers of home economics subjects; for preparing teachers, supervisors and directors of agricultural subjects, and teachers of trade, industrial and home economics subjects, \$1,000,000.00 per year. For each dollar given by the Federal government to the state, the state or local community or both must expend a dollar from its own treasury for the same purpose. In fact, the state or local community must bear all of the expense of carrying on its vocational education and, providing it has met the requirements, it will be reimbursed by

the Federal government for one half of the sum spent. The amount of money appropriated for the teaching of agriculture is to be allotted to the states in the proportion which the rural population of the state bears the total rural population of the United States. The amount of money appropriated for the teaching of trade, industrial and home economics subjects is to be allotted to the states in the proportion which the urban population of the state bears to the total urban population of the United States. The amount of money appropriated for the training of teachers is to be allotted to the states in the proportion which the population of the state bears to the population of the United States. In each of the three types of appropriations mentioned above the minimum amount to be granted to any state is set at \$10,000.00.

The act creates the Federal Board for Vocational Education to carry out the provisions of the act and to supervise and assist the states in carrying on their vocational programs. Two hundred thousand dollars is appropriated annually for the use of the Federal Board aside from salaries.

In order to receive the benefits of the Smith-Hughes Law the states are required to accept the provisions of the law through acts of their respective legislatures. They

must provide for State Boards of Vocational Education to work in connection with the Federal Board. These State Boards make plans for carrying out the provisions of the act and submit these plans to the Federal Board for approval. They are also required to make annual reports to the Federal Board.

All vocational education under this act must be of less than college grade and must be under public supervision and control. No part of the Federal money shall be used to purchase supplies, buy equipment or maintain buildings. All of these must be supplied by the state or local community and no reimbursement from Federal funds will be made for them.

The Federal Board is required to ascertain whether or not the states are meeting the requirements of the act and to report to the Secretary of the Treasury all of the states so complying. The Secretary of the Treasury will then make payments to the states in quarterly installments. If any of this money is not used by the state the sum not used will be deducted from the next annual payment to the state. If the money is diminished or lost the state must make up the loss before any more allotments will be made.

In March 1917 the legislature of Kansas passed an act accepting the provisions of the Federal vocational education

act.* The State Board of Education was designated as the State Board for Vocational Education and the State Treasurer was designated as the custodian of funds received under the act. The law provides for a State Director of Vocational Education who shall give half of his time to the supervision of trade and industrial education, a State Supervisor of Vocational Agriculture, and a State Supervisor of Home Economics.

Table I shows the amount of money which Kansas has received or is to receive from the Federal government under the provisions of the Smith-Hughes Law.

TABLE I.
ALLOTMENT OF FEDERAL VOCATIONAL EDUCATION FUNDS FOR KANSAS**

For year ending	Total	Agriculture: For salaries of teachers, supervisors, & directors.	Trade, Industry, & Home Economics: For salaries of teachers.	Teacher training: For salaries of teachers & maintenance of teacher training.
June 30 1921	\$63,370.24	\$30,323.85	\$14,594.55	\$18,451.84
June 30 1922	67,609.35	33,595.76	17,207.23	16,806.36
June 30 1923	76,076.52	39,195.06	20,075.10	16,806.36
June 30 1924	84,543.69	44,794.35	22,942.98	16,806.36
June 30 1925	101,478.02	55,992.94	28,678.72	16,806.36
June 30 1926	118,412.35	67,191.52	34,414.47	16,806.36

* Laws of Kansas. 1917

** Bulletin No.1 Federal Board for Vocational Education. Revised Edition Issued May 1922.

The amount allotted for the year ending June 30, 1926 is the same as the amount allotted for each year following until 1930.

Thus we see that when the state spends at least one dollar from its treasury for every dollar received from the Federal government we are spending over two hundred and thirty thousand dollars each year for salaries of vocational teachers and the training of such teachers. This amount will be reapportioned among the several states in compliance with the Federal law after the census of 1930.

Table II shows the percentage relationship between the number of people in Kansas over ten years of age who are gainfully employed and the total population over ten years of age. From this table we see that 44.8 per cent of the people in Kansas are gainfully employed.

Table III shows the percentage relationship existing between the number of people in Kansas over ten years of age who are gainfully employed in various occupations and the total number of employed people over ten years of age.

TABLE II
 PER CENT OF PERSONS IN KANSAS OVER 10 YEARS OF AGE
 WHO ARE EMPLOYED IN THE FOLLOWING OCCUPATIONS.*

Occupation	Per cent
Agriculture, forestry, & animal husbandry	16.7
Manufacturing & mechanical industries	8.7
Trade	4.1
Domestic & personal service	2.9
Professional service	2.8
Clerical occupations	2.4
Extraction of minerals	1.5
Public service	0.9
Total per cent employed	44.8

* Data from U. S. Census Reports 1920.

TABLE III
 PER CENT OF PERSONS IN KANSAS OVER 10 YEARS OF AGE, GAINFULLY
 EMPLOYED, WHO ARE ENGAGED IN THE FOLLOWING OCCUPATIONS.*

Occupation	Per cent
Agriculture, forestry, & animal husbandry	37.3
Manufacturing & mechanical industries	19.3
Trade	10.8
Transportation	9.2
Domestic & personal service	6.6
Professional service	6.2
Clerical occupations	5.3
Extraction of minerals	3.3
Public service	2.0
Total	100.0

* Data from U. S. Census Reports 1920.

Both of the foregoing tables point out that agriculture is by far the most important industry of Kansas. Hence, it is natural and right that agriculture should receive the greater amount of attention in our vocational education program. As has been stated this is being done to a very large extent in the public high schools. Last year Kansas had ninety eight vocational agriculture schools, approved under the Smith-Hughes law, which were reaching slightly less than seventy per cent of the farm boys.* Many other schools are offering courses in vocational agriculture similar to that offered in the Smith-Hughes schools, but which are not operating under that law and are not receiving benefits from it. In the year ending June 30, 1928 there were fifteen evening classes in agriculture which had a total enrollment of 935 pupils.**

Table IV shows in detail the number of persons over ten years of age in the state who are engaged in the different phases of agriculture.

* Kansas Annual Descriptive Report of the State Board for Vocational Education to the Federal Board for Vocational Education, for Year Ending June 30, 1928.

** Ibid.

TABLE IV
NUMBER OF PERSONS IN KANSAS OVER 10 YEARS OF AGE WHO ARE
GAINFULLY EMPLOYED.*

Occupation	Male	Female
Agriculture, forestry & animal husbandry	227,633	5,479
Dairy farmers, farmers, & stock raisers	162,991	3,713
Dairy farmers	853	61
Farmers, general farms	159,514	3,577
Stock raisers	2,624	75
Dairy farm, farm, & stock farm laborers	58,317	1,055
Dairy farm laborers	408	50
Farm laborers (home farm)	21,005	637
Farm laborers (working out)	35,985	350
Stock herders, drovers, & feeders	919	18
Dairy farm, farm, garden, orchard, etc., foremen	1,434	317
Fishermen & oystermen	35	...
Foresters, forest rangers, & timber cruisers	8	...
Gardeners, florists, fruit growers, & nurserymen	2,435	193
Garden, greenhouse, orchard, & nursery laborers	886	71
Lumbermen, raftsmen, & woodchoppers	275	...
Owners & managers of log & timber camps	4	...
Other agriculture & animal husbandry pursuits	1,248	130

* Data from U. S. Census Reports 1920.

For further information a study was made to determine the sections of the state in which agriculture was the most prominent industry. In order to do this the percentages of people gainfully employed who were engaged in agriculture in each county of the state was determined. Figure 1 shows the result of this study. It must be born in mind, however, that the data used in making Figure 1 are not the same as are used in Table IV. The source of information from which Table IV is made gives no information for the various counties, but covers the entire state as a whole. The statistics used in making Figure 1 are based upon the number of persons over twenty one years of age who are gainfully employed, while Table IV is based upon the number of persons over ten years of age who are gainfully employed. In making Figure 1 it was possible to use more recent material than was possible for Table IV. Hence, Table IV is based upon figures of 1920 and Figure 1 is based upon figures of 1926. It is believed that in spite of these differences both Table IV and Figure 1 may be used in a comparative way to advantage.

Figure 1 bears out the information given in Tables II and III. Sixty six counties in Kansas had in 1926 more than one half of their population over twenty one years of age who were gainfully employed engaged in agriculture. It

should be noted also that the greater number of these counties are in the western half of the state. Of course, the population in this section of the state is not so dense as it is in the eastern part of the state, but there are many counties in the west where over seventy per cent of the above described population is engaged in agriculture. Several counties in the eastern part of the state have a percentage above sixty. The significance of these facts will be pointed out more in detail later.

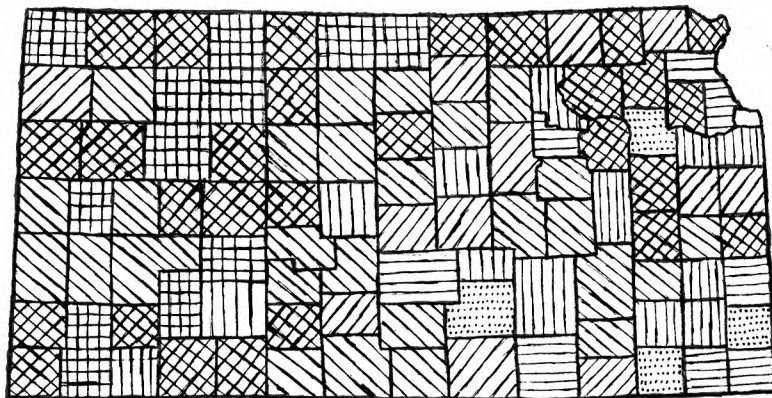












Figure 1. Map of Kansas showing, by counties, the percentages of persons over 21 years of age, gainfully employed, who are engaged in Agriculture.*

Key to map.

0%	to	10%	
10%	to	20%	
20%	to	30%	
30%	to	40%	
40%	to	50%	
50%	to	60%	
60%	to	70%	
70%	to	80%	
80%	to	90%	
90%	to	100%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

From Tables II and III we note that manufacturing and mechanical industries rank next to agriculture in regard to the number of people employed. More detailed information regarding these industries is furnished in Tables V and VI, and in Figure 2. We must point out again the fact that the different sources of information and the slight difference in terms is the cause of the difference in the figures presented. Table V shows the number of persons who are engaged in manufacturing and mechanical industries, while Table VI deals with manufacturing establishments only. Figure 2 deals with manufacturing and mechanical industries, but it differs from Table V in that it includes only persons over twenty one years of age and is based upon figures given for 1926. Table V deals with persons over ten years of age and is based upon figures for 1920. Table VI also gives a greater amount of information such as the values of products, capital invested, salaries and wages, etc.

A comparison of Figures 1 and 2 bring out the interesting facts that in Montgomery, Sedgwick, Shawnee and Wyandotte counties the per cent of people engaged in manufacturing and mechanical industries is greater than the per cent engaged in agriculture.

TABLE V.
NUMBER OF PERSONS IN KANSAS OVER 10 YEARS OF AGE WHO ARE
GAINFULLY EMPLOYED.*

Occupation	Male	Female
Manufacturing & mechanical industries	111,703	9,841
Apprentices to building & hand trades	891	...
Apprentices to dressmakers & milliners	...	52
Apprentices other	590	33
Bakers	1,067	70
Blacksmiths, forgemen, & hammermen	4,497	...
Boiler makers	2,012	...
Brick & stone masons	1,524	...
Builders & building contractors	1,771	1
Cabinet makers	404	1
Carpenters	14,065	...
Compositors, linotypers, & typesetters	1,318	290
Coopers	277	...
Dressmakers & seamstresses (not in factory)	...	3,115
Dyers	1	...
Electricians	2,103	...
Electrotypers, stereotypers, & lithographers	67	1
Engineers, (stationary) cranemen, etc.	4,978	...

* Data from U. S. Census Reports 1920.

TABLE V (Continued)

Engravers	44	4
Filers, grinders, buffers, & polishers (metal)	45	5
Firemen, except locomotive & fire department	1,556	...
Foremen & overseers (manufacturing)	2,033	95
Furnacemen, smeltermen, heaters, pourers, etc.	174	...
Glass blowers	143	...
Jewelers, watchmakers, goldsmiths, & silversmiths	373	6
Laborers, (not otherwise specified)		
Building, general, & not specified laborers	13,123	240
Chemical & allied industries	488	50
Cigar & tobacco factories	3	7
Clay, glass, & stone industries	2,176	9
Clothing industries	19	45
Food industries	6,637	633
Harness & saddle industries	19	1
Helpers in building & hand trades	903	1
Iron & steel industries	2,574	15
Other metal industries	459	19
Lumber & furniture industries	355	24
Paper & pulp mills	138	14
Printing & publishing	69	28
Shoe factories	5	...
Tanneries	26	1

TABLE V (Continued)

Textile industries	73	16
Other industries	2,855	152
Loom fixers	1	...
Machinists, millwrights, & toolmakers	7,202	...
Managers & superintendents (manufacturing)	1,896	70
Manufacturers & officials	1,805	69
Mechanics (not otherwise specified)	5,597	1
Millers (grain, flour, & feed)	802	...
Milliners & millinery dealers	13	896
Molders, founders, & casters (metal)	551	...
Oilers of machinery	287	...
Painters, glaziers, varnishers, enamelers, etc.	3,810	11
Paper hangers	320	6
Pattern & model makers	103	...
Plasterers & cement finishers	999	...
Plumbers & gas & steam fitters	2,208	...
Pressmen & Plate printers (printing)	174	...
Roofers & slaters	32	...
Sawyers	56	...
Semiskilled operatives (not otherwise specified)		
Chemical & allied industries	279	219
Cigar & tobacco factories	112	138
Clay, glass, & stone industries	752	10

TABLE V (Continued)

Clothing industries	237	1,037
Food industries	4,045	1,228
Harness & saddle industries	421	3
Iron & steel industries	3,224	51
Other metal industries	226	34
Lumber & furniture industries	497	38
Paper & pulp mills	41	29
Printing & publishing	283	276
Shoe factories	162	20
Tanneries	7	...
Textile industries	114	178
Other industries	2,028	399
Shoemakers & cobblers (not in factory)	1,192	4
Skilled occupations (not otherwise specified)	316	1
Stonecutters	177	...
Structural iron workers	123	...
Tailors & tailoresses	750	187
Tinsmiths & coppermiths	858	...
Upholsterers	148	8

TABLE VI. MANUFACTURING INDUSTRIES OF KANSAS, ACCORDING TO THE NUMBER OF PERSONS ENGAGED.*

Name of Industry	No. of establishments	Persons Engaged					Capital in thousands	Salaries and Wages in Dollars			Value of Products in Thousands
		Total	Pro-pri-ators	Salaried Offi-cials	Clerks	Wage Earn-ers		Officials	Clerks, etc.	Wage Earners	
All industries	3,474	77,009	3,562	3,520	8,878	61,049	357,534	10,073,649	11,722,004	73,060,019	913,667
Slaughtering and meat packing	28	22,621	19	684	4,113	17,805	96,067	1,726,093	5,519,005	20,862,627	427,663
Cars and general shop construction and repairs- Steam railroads	32	12,033	....	449	388	11,196	16,414	1,178,654	463,957	15,987,475	28,231
Flourmill and gristmill products	385	5,288	341	567	887	3,493	73,137	1,872,000	1,227,501	4,146,056	206,881
Printing and publishing, newspapers etc.	590	3,709	611	205	479	2,414	6,972	445,914	506,638	2,219,400	9,775
Foundry and machine shop products	151	3,547	141	192	279	2,935	11,637	559,246	330,700	3,958,937	15,023
Petroleum refining	29	2,654	2	150	281	2,221	51,629	615,527	399,015	3,065,412	63,786
Bread and other bakery products	452	2,022	544	37	134	1,307	3,074	89,649	193,011	1,731,996	10,100
Automobile repairing	325	1,392	424	33	65	870	1,856	56,503	46,487	1,171,665	3,288
Salt	12	1,331	1	60	198	1,072	5,807	238,071	255,114	1,144,736	6,193
Brick, tile, terracotta and fireclay products	29	1,267	8	60	63	1,136	4,242	163,382	81,310	1,222,475	3,407
Cement	8	1,241	2	34	121	1,084	8,690	110,608	235,520	1,326,976	6,700
Ice, manufactured	137	1,098	113	105	58	822	5,464	200,887	46,364	937,639	3,509
Butter	59	1,049	46	77	186	740	4,099	261,501	211,266	728,286	24,444
Printing and publishing, book and job	143	977	168	58	127	624	2,194	151,184	149,441	595,826	2,926
Confectionery and ice cream	115	845	140	44	77	584	1,921	112,252	136,427	446,203	3,886
Smelting and refining zinc	3	775	....	29	29	717	4,372	83,148	33,821	885,584	6,038
Structural iron work not made in steel works or rolling mills	8	696	9	25	126	536	3,447	132,641	141,189	695,769	4,643
Glass	5	626	....	22	20	584	977	65,977	25,625	1,195,872	2,133
Furniture	20	572	19	25	25	503	961	54,882	30,601	444,142	1,365
Lumber, planing mill products, not including planing mills connected with sawmills	55	556	57	24	39	436	1,160	49,818	41,543	447,772	2,107
Clothing, men's	11	529	4	13	25	487	701	28,687	44,296	305,165	1,743
Poultry killing and dressing not done in slaughtering establishments	20	441	9	24	34	374	1,724	64,470	34,434	306,898	6,657
Cars, steam railroads not incl. operations	5	430	....	17	20	393	1,039	33,473	31,091	478,226	1,257
Paving materials	25	383	35	11	19	318	380	27,695	30,595	320,647	676
Paper and wood pulp	3	350	7	18	34	291	1,452	36,807	35,794	286,433	1,779
Tobacco, cigars	83	341	90	5	7	239	456	6,636	14,057	155,893	771
Saddlery and harness	83	304	89	11	23	181	960	40,103	35,766	217,958	1,490
Copper, tin and sheet iron work	47	287	60	16	17	194	604	40,280	19,120	215,130	949
Druggists' preparations	17	285	9	60	32	184	1,402	173,706	39,406	233,697	3,695
Engines, steam, gas and water	5	254	1	15	52	186	792	34,095	32,502	188,655	1,022
Marble and stone work	58	252	86	4	4	158	802	7,107	42,886	183,557	1,161
Cooperage	10	246	9	13	8	216	490	25,917	11,526	231,953	1,319
Brooms from broom corn	46	245	56	12	28	149	537	33,150	48,634	136,077	720
Mineral and carbonated waters	68	238	89	11	11	127	561	20,151	9,239	99,533	718
Mattresses and spring beds not elsewhere specified	12	236	10	13	17	196	648	24,481	30,070	194,893	1,069
Artificial stone products	77	235	80	7	30	118	376	16,805	35,186	123,894	555
Condensed milk	6	217	6	11	13	187	1,289	53,028	18,776	183,330	2,810
Cars and general shop construction and repairs - electric railroads	11	183	....	8	13	162	293	18,637	6,899	182,147	360
Agricultural implements	14	182	14	16	23	129	1,224	40,800	26,599	117,451	770
Wall plaster and composition flooring	4	161	2	10	18	131	904	31,656	32,702	132,639	545
Automobile bodies and parts	28	145	43	5	7	90	422	7,533	6,246	93,045	416
Shirts	4	143	1	7	17	118	109	15,147	27,673	61,752	387
Patent medicines and compounds	27	122	23	15	43	41	1,090	112,560	64,058	32,798	513
Food preparations not elsewhere specified	8	120	9	14	10	87	243	29,984	9,993	91,096	996
Explosives	4	115	....	30	19	66	1,403	81,599	37,420	88,533	955
Coffee, roasting and grinding	11	83	13	6	6	58	331	9,220	7,106	49,892	1,040
Gas, illuminating and heating	7	79	....	14	13	52	1,403	20,713	12,340	63,529	400
Awnings, tents and sails	9	67	7	5	10	45	219	14,955	11,505	39,632	279
Carpets, rag	14	55	15	....	....	40	27	....	....	31,931	66
Vinegar and cider	7	47	5	7	1	34	428	13,920	500	29,955	220
Surgical appliances	3	44	1	5	15	23	119	8,008	12,166	14,803	143
Signs other than electric	4	32	1	2	4	25	132	3,170	3,352	25,991	84
Optical goods	4	30	2	6	4	18	43	13,181	2,634	14,238	119
Windmills	3	25	3	2	4	16	111	3,280	5,061	17,004	81
Cleansing and polishing preparations	4	23	6	3	9	5	436	6,607	5,899	4,281	49
Carriages and wagons, including repairs	10	21	13	....	....	8	46	....	....	11,134	54
Photo-engraving	5	21	5	1	3	12	20	2,600	2,605	12,486	51
Bookbinding and blank book making	5	11	6	....	....	5	8	....	....	3,125	16
Wirework, not elsewhere specified	6	8	7	....	....	1	17	....	....	644	13
Models and patterns, not including paper patterns	3	3	3	....	....	....	6	....	....	....	6
All other industries	117	5,717	98	223	590	4,806	30,165	805,551	859,333	4,865,126	45,612

* U. S. Census Reports, 1920.

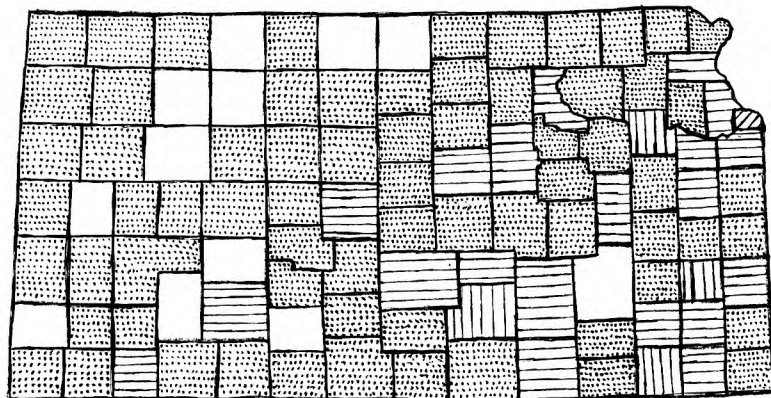












Figure 2. Map of Kansas showing, by counties, the percentages of persons over 21 years of age, gainfully employed, who are engaged in Manufacturing and Mechanical industries.*

Key to map.

0%	to	10%	
10%	to	20%	
20%	to	30%	
30%	to	40%	
40%	to	50%	
50%	to	60%	
60%	to	70%	
70%	to	80%	
80%	to	90%	
90%	to	100%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

Referring again to Tables II and III, we find that the occupation which ranks third in point of number of people employed is indicated by the general term of Trade. Table VII will give much more of an idea what variety of occupations is grouped in this division. Figure 3 is designed to point out the different sections of the state where the greater percentages of people are engaged in trade. Again we must note the differences existing in the figures given in Table VII and Figure 3. Table VII is based upon figures for people over ten years of age while Figure 3 includes only those over twenty one years of age. The data for the former was gathered in 1920 and the data for the latter was gathered in 1926.

In comparing Figures 1 and 3 we note that Sedgwick and Wyandotte counties have a greater per cent of people engaged in trade than are engaged in agriculture.

Figures 2 and 3 show that in no county is trade a much more prominent occupation than manufacturing and mechanical industries.

TABLE VII.
NUMBER OF PERSONS IN KANSAS OVER 10 YEARS OF AGE WHO ARE
GAINFULLY EMPLOYED.*

Occupation	Male	Female
Trade	57,324	10,030
Bankers, brokers, & money lenders	3,782	198
Clerks in stores**	3,521	2,588
Commercial travelers	3,281	63
Decorators, drapers, & window dressers	92	12
Deliverymen	2,185	2
Floorwalkers, foremen, & overseers	383	28
Inspectors, gaugers, & samplers	253	22
Insurance agents and officials	2,004	106
Laborers in coal & lumber yards, etc.	1,965	4
Laborers, porters, & helpers in stores	1,761	152
Newsboys	657	5
Proprietors, officials & managers (n. o. s.)***	1,031	6
Real estate agents & officials	2,940	78
Retail dealers	19,877	951
Salesmen & saleswomen	11,803	5,681
Undertakers	382	19
Wholesale dealers, importers, & exporters	565	4
Other pursuits (semiskilled)	842	111

* Data from U. S. Census Reports 1920

** Many may be the same as those denoted "Salesmen and Saleswomen".

*** Not otherwise specified.

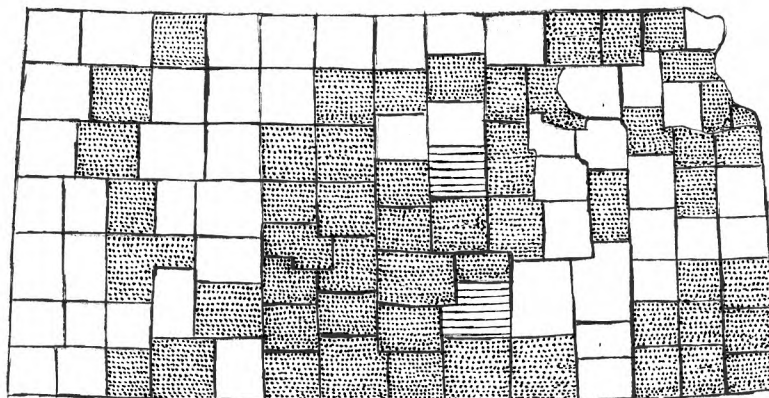












Figure 3. Map of Kansas showing, by counties, the percentages of persons over 21 years of age, gainfully employed, who are engaged in Trade.*

Key to map.

0%	to	10%	
10%	to	20%	
20%	to	30%	
30%	to	40%	
40%	to	50%	
50%	to	60%	
60%	to	70%	
70%	to	80%	
80%	to	90%	
90%	to	100%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

The fourth item in Tables II and III is transportation. Table VIII is designed to give in detail the number of persons engaged in the different phases of this occupation. Figure 4 shows the per cent of persons over twenty one years of age in each county who are thus employed. As heretofore, the same differences must be pointed out between Table VIII and Figure 4. Table VIII includes persons over ten years of age, while Figure 4 includes persons over twenty one years of age. Data for the former was gathered in 1920 and for the latter in 1926.

When Figure 4 is compared with Figure 1 we notice that Wyandotte county is the only county in the state that has a larger per cent of people engaged in transportation than are engaged in agriculture. Figures 2 and 4 indicate that in Sherman county a larger per cent of people are engaged in transportation than are engaged in manufacturing and mechanical industries. Comparison between Figures 3 and 4 bring out the fact that a greater per cent of people are engaged in transportation than are engaged in trade in Greeley, Labette, Miami, and Sherman counties.

TABLE VIII.
NUMBER OF PERSONS IN KANSAS OVER 10 YEARS OF AGE WHO ARE
GAINFULLY EMPLOYED. *

Occupation	Male	Female
Transportation	53,002	4,231
Water transportation	61	...
Road & street transportation (selected occupations):		
Carriage & hack drivers	93	...
Chauffeurs	1,367	3
Draymen, teamsters & expressmen	7,659	4
Foremen of livery & transfer companies	19	...
Garage keepers & amnagers	1,329	5
Hostlers & stable hands	147	...
Laborers, (garage, road, & street)	3,188	6
Livery stable keepers & managers	217	1
Proprietors & managers of transfer companies	464	2
Railroad transportation (selected occupations):		
Baggagemen & freight agents	263	5
Boiler washers & engine hostlers	871	3
Brakemen	1,728	...
Conductors (steam railroads)	1,196	...
Conductors (street railroads)	558	4
Foremen & overseers (steam railroads)	2,217	...
Foremen & overseers (street railroads)	68	...

* Data from U. S. Census Reports 1920.

TABLE VIII. (Continued)

Laborers (steam railroads)	13,448	197
Laborers (street railroads)	283	4
Locomotive engineers	2,191	...
Locomotive firemen	2,008	...
Motormen (steam railroads)	19	...
Motormen (street railroads)	574	...
Officials & superintendents (steam railroads)	667	1
Officials & superintendents (street railroads)	2,271	2
Ticket & station agents	690	48
Express, post, telegraph, & telephone (selected occupations):		
Agents (express companies)	105	1
Express messengers	244	...
Railway mail clerks	386	...
Mail carriers	2,513	50
Telegraph & telephone linemen	813	...
Telegraph messengers	150	13
Telegraph operators	1,558	331
Telephone operators	267	3,519
Other transportation pursuits:		
Foremen & overseers (not otherwise specified)	380	...
Inspectors	976	3
Laborers (not otherwise specified)	625	4
Proprietors, officials, & managers (n.o.s.)	448	12
Other occupations (semiskilled)	908	13

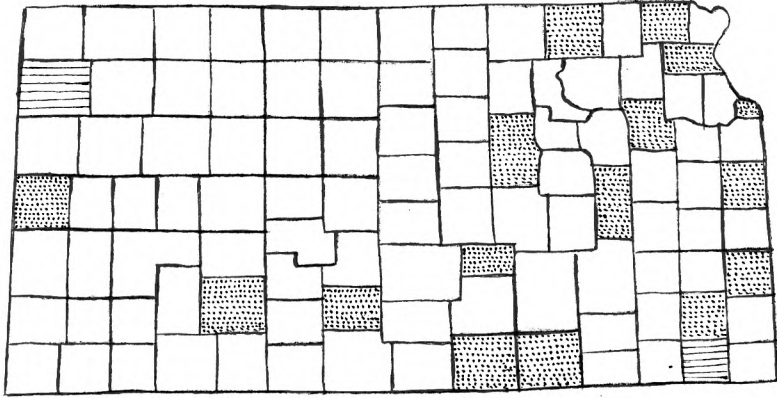












Figure 4. Map of Kansas, showing by counties, the percentages of persons over 21 years of age, gainfully employed, who are engaged in Transportation.*

Key to map.

0%	to	10%	
10%	to	20%	
20%	to	30%	
30%	to	40%	
40%	to	50%	
50%	to	60%	
60%	to	70%	
70%	to	80%	
80%	to	90%	
90%	to	100%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

According to Tables II and III domestic and personal service ranks fifth among the occupations of the state. Table IX shows somewhat in detail how the persons considered in Tables II and III are employed. One interesting fact in Table IX is the great majority of females who are employed in domestic and personal pursuits. Figure 5 is presented to show the percentages of people in each county who are thus engaged. The same differences exist between the data presented in Table IX and Figure 5 as has existed between all previous tables and figures. The information for Table IX was obtained in 1920 and includes people over ten years of age. Figure 5 includes people over twenty one years of age and was obtained from data gathered in 1926.

Figure 5 indicates that in Geary and Wyandotte counties a greater per cent of people are engaged in domestic and personal service than are engaged in agriculture according to Figure 1. Geary county has a greater per cent of people engaged in domestic and personal service than are engaged in manufacturing and mechanical pursuits as indicated in Figures 2 and 5. Geary and Leavenworth counties show a larger per cent of persons employed in domestic and personal pursuits than are employed in trade. Figures 4 and 5 indicate that Douglas, Geary, Leavenworth, Reno, and Sedgwick counties have larger per cents of people engaged in domestic and personal service than are engaged in transportation.

TABLE IX.
NUMBER OF PERSONS IN KANSAS OVER 10 YEARS OF AGE WHO ARE
GAINFULLY EMPLOYED.*

Occupations	Male	Female
Domestic & personal service	15,908	25,129
Barbers, hairdressers, & manicurists	3,311	292
Billiard room, dance hall, skating rink, etc., keepers	431	3
Boarding & lodging house keepers	388	1,883
Bootblacks	163	...
Charwomen & cleaners	149	86
Elevator tenders	216	82
Hotel Keepers & managers	628	372
Housekeepers & stewards	113	3,027
Janitors & sextons	2,450	202
Laborers (domestic & professional service)	513	26
Launderers & laundresses (not in laundry)	163	3,760
Laundry operators	463	1,363
Laundry owners, officials, & managers	182	14
Midwives & nurses (not trained)	535	1,990
Porters (except in stores)	1,022	1
Restaurant, cafe, & lunch room keepers	1,342	395
Servants	2,558	9,492
Waiters	681	2,075
Other pursuits	600	66

* Data from U. S. Census Reports 1920.

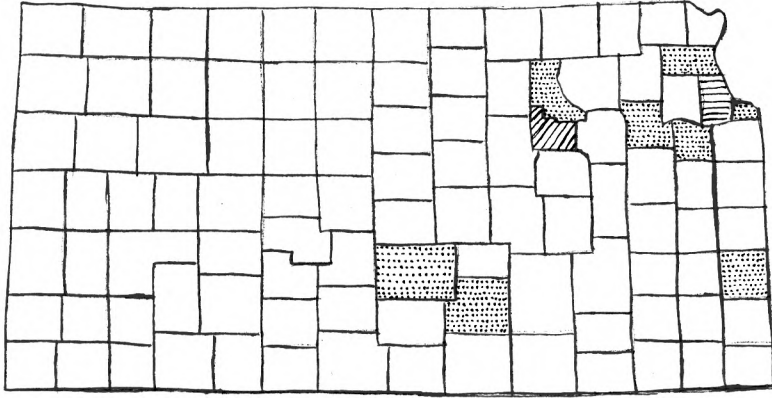












Figure 5. Map of Kansas showing, by counties, the percentages of persons over 21 years of age, gainfully employed, who are engaged in Domestic and Personal Service.*

Key to map.

0%	to	10%	
10%	to	20%	
20%	to	30%	
30%	to	40%	
40%	to	50%	
50%	to	60%	
60%	to	70%	
70%	to	80%	
80%	to	90%	
90%	to	100%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

Tables II and III indicate that the next occupation in rank is professional service. It has been said before that this study is not to include the professions, but it is interesting and important to not in passing the place which such pursuits hold in the life of our state. Six and two tenths per cent of the employed persons over ten years of age in Kansas are engaged in the professions. There is a tendency on the part of some secondary schools to emphasize the importance of this phase of life activity and thus encourage a far greater number of people to aspire to such positions than will ever be able to enter them. Some research has been made in the occupational choices of secondary school students which indicate a desire on the part of a great per cent of students to enter professions. A few of these will be pointed out later.

Clerical occupations rank next in importance according to Tables II and III. Table X is presented to show in more detail the numbers of people engaged in various phases of clerical work. No data was available covering these occupations for the various counties, therefore no figure is presented as has been the case with other occupation.

TABLE X.
NUMBER OF PERSONS IN KANSAS OVER 10 YEARS OF AGE WHO ARE
GAINFULLY EMPLOYED.*

Occupations	Male	Female
Clerical occupations	17,434	15,435
Agents, canvassers, & collectors	2,286	321
Clerks (except clerks in stores)	9,520	3,776
Messengers, bundle, & office boys & girls	933	169
Stenographers & typists	596	5,717

Again referring to Tables II and III we find that the extraction of minerals ranks next in importance. Table XI gives us the details regarding the number of people over ten years of age so employed. Figure 6 is presented to show the percentages of people over twenty one years of age who are engaged in mining in each county of the state. We notice at once the extremely local character of the mining industry. All of the counties which have over ten per cent of their people so engaged are in the southeastern part of the state. Six counties, Butler, Chautauqua, Cherokee, Crawford, Greenwood, and Montgovery, have over ten per cent of their people so employed. In all of these the per cent engaged in mining is greater than the per cent engaged in either transporta-

* Data from U. S. Census Reports 1920.

tion or domestic and personal service. In all except Montgomery the per cent is greater than the per cent engaged in trade. In Cherokee, Crawford, and Greenwood counties the per cent is greater than the per cent engaged in manufacturing and mechanical industries. In Cherokee and Crawford counties it is greater than the per cent engaged in agriculture.

TABLE XI.
NUMBER OF PERSONS IN KANSAS OVER 10 YEARS OF AGE WHO ARE
GAINFULLY EMPLOYED.*

Occupation	Male	Female
Extraction of minerals	20,260	52
Foremen, owners, & inspectors	672	...
Operators, officials, & managers	1,329	6
Coal mine operatives	10,272	5
Copper mine operatives	1	...
Gold & silver mine operatives	5	...
Operatives in other & not specified mines	1,331	1
Quarry operatives	320	1
Oil, gas, & salt well operatives	6,330	39

* Data from U. S. Census Reports 1920.

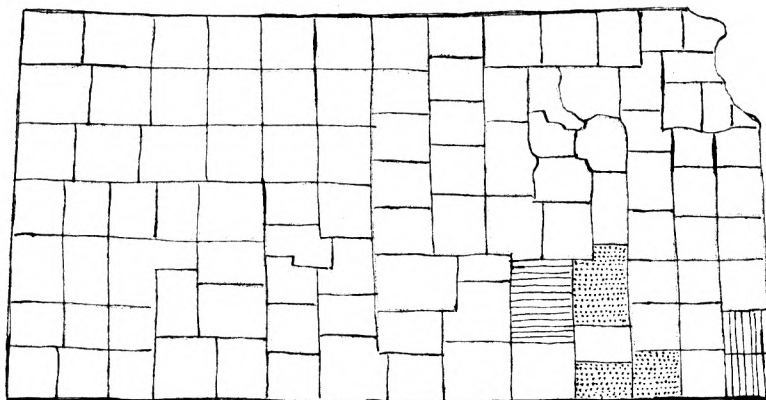












Figure 6. Map of Kansas showing, by counties, the percentages of persons over 21 years of age, gainfully employed, who are engaged in Mining.*

Key to Map.

0%	to	10%	
10%	to	20%	
20%	to	30%	
30%	to	40%	
40%	to	50%	
50%	to	60%	
60%	to	70%	
70%	to	80%	
80%	to	90%	
90%	to	100%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

In addition to Table XI and Figure 6, Table XII, which gives more detailed information regarding the mining industry of the state, is submitted. Table XII shows the more important mineral products and gives many more definite facts regarding each. The data presented in Table XII does not correspond exactly with that presented in Table XI. This is probably due to the fact that in Table XII in some cases the average number of persons employed is given while in other cases the number employed on December 15, 1919 is given. These differences are pointed out in Table XII.

TABLE XII. DETAILED STATISTICS FOR MINING INDUSTRY IN KANSAS.*

45

	PRODUCING ENTERPRISES						NONPRODUCING ENTERPRISES		
	Total	Petro- leum & Natur- al Gas	Coal, Bitumi- nous	Lead & Zinc	Lime- stone	All other	Total	Petro- leum & Natur- al Gas	All other
Capital (in thousands)	\$255,936	\$237,711	\$12,285	\$4,465	\$ 769	\$ 705	\$1,289	\$ 245	\$1,042
Salaries and wages (in thousands)									
Officers	\$ 854	\$ 549	\$ 236	\$ 51	\$ 11	\$ 7	\$ 16	\$	\$ 16
Superintendents and managers	\$ 1,002	\$ 597	\$ 284	\$ 90	\$ 21	\$ 10	\$ 9	\$ 2	\$ 6
Technical employees	\$ 280	\$ 248	\$ 23	\$ 8	\$ 2	....	\$ 3	....	\$ 3
Clerks, etc.	\$ 1,164	\$ 806	\$ 281	\$ 32	\$ 31	\$ 14	\$ 7	\$ 2	\$ 6
Wage earners	\$ 21,949	\$ 9,615	\$ 9,949	\$1,760	\$ 501	\$ 123	\$ 73	\$ 9	\$ 64
Value of products (in thousands)	\$ 90,338	\$ 68,515	\$15,749	\$4,873	\$ 835	\$ 366	\$ ....	....	....
Persons engaged in industry (total)	18,689	8,131	8,622	1,234	563	139	88	20	68
Proprietors and firm members	807	639	111	10	45	2	16	14	2
Salaried officers	286	187	65	27	4	3	4	....	4
Superintendents and managers	412	259	113	27	9	4	4	2	2
Technical employees	151	126	20	4	1	....	1	....	1
Clerks, etc.	897	615	229	25	20	8	6	1	5
Wage earners (average number)	16,136	6,305	8,084	1,141	484	122	57	3	54
Wage earners by occupation									
Above ground (total)	9,205	6,502	1,492	581	507	123	57	7	50
Below ground (total)	8,677	....	7,761	866	....	50	29	....	29
Foremen, shift bosses, etc.									
Above ground	138	....	106	20	10	2	2	....	2
Below ground	127	....	101	24	....	2	3	....	3
Miners, quarrymen, drillmen									
Above ground	439	....	204	....	235	....	....	....	....
Below ground	6,246	....	5,841	389	....	16	4	....	4
Enginemen, hoistmen, electricians, mechanics, etc.									
Above ground	4,299	3,544	522	186	44	3	19	7	12
Below ground	78	....	72	3	....	3	4	....	4
Timbermen, trackmen, etc.									
Above ground	164	....	115	12	35	2	8	....	8
Below ground	1,652	....	1,413	227	....	12	15	....	15
Muckers, loaders, and laborers									
Above ground	3,768	2,958	545	35	183	47	28	....	28
Below ground	574	....	334	223	....	17	3	....	3
Wage earners employed in mills beneficiating plants (above ground)	397	....	....	328	....	69	....	....	....

* U. S. Census Reports, 1920.

The occupation given as the least important in Tables II and III is classed as public service. Table XIII will show more in detail what classes of occupations are included under this head and will also give the number of persons so employed. Since no data is available giving the percentages of people employed in public service in each of the counties no figure showing that distribution can be presented.

TABLE XIII.
NUMBER OF PERSONS IN KANSAS OVER 10 YEARS OF AGE WHO ARE
GAINFULLY EMPLOYED.*

Occupation	Male	Female
Public service (not elsewhere classified)	11,534	708
Firemen (fire department)	471	...
Guards, watchmen, & doorkeepers	1,017	5
Laborers (public service)	1,251	11
Marshalls, sheriffs, detectives, etc.	511	13
Officials & inspectors (city & county)	876	318
Officials & inspectors (state & national)	1,682	347
Policemen	428	1
Soldiers, sailors, & marines	5,181	...
Other pursuits	117	13

* Data from U. S. Census Reports 1920.

A question of importance to be considered at this place is in regard to the number of children of various ages who are gainfully employed in the occupations which have been discussed on the previous pages. All of these are included of course in the figures given in Tables IV, V, VII, VIII, IX, X, XI, and XIII. This does not mean necessarily that these children are all out of school. Many of them are not in school attendance especially among the older groups. It is important to note, however, that over twenty six thousand persons between the ages of ten and seventeen, inclusive, are gainfully employed. This information is presented in Table XIV.

TABLE XIV*

	Both Sexes	Males					Females						
		Total	Years of age					Total	Years of age				
			10- 13	14	15	16	17		10- 13	14	15	16	17
All Occupations	26,124	20,487	1,748	1,499	2,977	6,167	8,096	5,637	160	234	652	1,900	2,691
Agriculture, Forestry and Animal Husbandry	10,618	10,323	1,123	903	1,587	2,879	3,831	295	65	30	47	67	86
Manufacturing and Mechanical Industries	4,305	3,468	60	102	404	1,213	1,689	837	19	32	104	330	352
Extraction of Minerals	859	851	3	16	80	338	414	8	2	1	...	1	4
Transportation	2,212	1,527	24	52	190	555	706	685	9	7	55	248	366
Trade	2,992	2,142	377	220	352	543	650	850	8	31	111	323	377
Public Service (not elsewhere classified)	74	74	1	1	6	22	44	...	...	...	...	...	...
Professional service	407	107	5	11	14	27	50	300	3	5	9	45	238
Domestic and Personal service	2,386	612	62	81	98	168	203	1,774	44	114	268	609	739
Clerical occupations	2,271	1,383	93	113	246	422	509	888	10	14	58	277	529

* Data from U. S. Census Reports 1920.

In summary, the data given in Figures 1, 2, 3, 4, 5, and 6 is presented in Table XV. This table shows the per cent interval for each occupation in each county.*

TABLE XV.

County	Agri- culture	Manufac- turing & Mechan- ical	Trade	Domestic & Personal	Trans- por- tation	Mining
Allen	30-40	30-40	10-20	0-10	0-10	0-10
Anderson	50-60	10-20	0-10	0-10	0-10	0-10
Atchison	20-30	20-30	10-20	10-20	10-20	0-10
Barber	50-60	10-20	10-20	0-10	0-10	0-10
Barton	30-40	20-30	10-20	0-10	0-10	0-10
Bourbon	20-30	20-30	10-20	10-20	10-20	0-10
Brown	40-50	10-20	10-20	10-20	0-10	0-10
Butler	30-40	20-30	0-10	0-10	0-10	20-30
Chase	50-60	10-20	0-10	0-10	0-10	0-10
Chautauqua	40-50	10-20	0-10	0-10	0-10	10-20
Cherokee	20-30	10-20	10-20	0-10	0-10	30-40
Cheyenne	70-80	10-20	0-10	0-10	0-10	0-10
Clark	60-70	10-20	0-10	0-10	0-10	0-10

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

TABLE XV. (Continued)

County	Agri- culture	Manufac- turing & Mechan- ical	Trade	Domestic & Personal	Trans- por- tation	Mining
Clay	50-60	10-20	10-20	0-10	0-10	0-10
Cloud	40-50	10-20	10-20	0-10	0-10	0-10
Coffey	60-70	10-20	0-10	0-10	0-10	0-10
Commanche	50-60	10-20	10-20	0-10	0-10	0-10
Cowley	20-30	20-30	10-20	10-20	0-10	0-10
Crawford	10-20	10-20	10-20	0-10	0-10	30-40
Decatur	60-70	10-20	10-20	0-10	0-10	0-10
Dickinson	40-50	20-30	10-20	10-20	0-10	0-10
Doniphan	60-70	10-20	0-10	0-10	0-10	0-10
Douglas	30-40	20-30	10-20	0-10	10-20	0-10
Edwards	50-60	10-20	10-20	0-10	0-10	0-10
Elk	50-60	10-20	0-10	0-10	0-10	0-10
Ellis	50-60	10-20	10-20	0-10	0-10	0-10
Ellsworth	50-60	10-20	10-20	0-10	0-10	0-10
Finney	50-60	10-20	10-20	0-10	0-10	0-10
Ford	30-40	20-30	10-20	10-20	0-10	0-10
Franklin	40-50	20-30	10-20	0-10	0-10	0-10
Geary	20-30	10-20	0-10	0-10	40-50	0-10
Gove	70-80	0-10	0-10	0-10	0-10	0-10
Graham	70-80	0-10	0-10	0-10	0-10	0-10
Grant	70-80	10-20	0-10	0-10	0-10	0-10

TABLE XV. (Continued)

County	Agri- culture	Manufac- turing & Mechan- ical	Trade	Domestic & Personal	Trans- por- tation	Mining
Gray	70-80	0-10	0-10	0-10	0-10	0-10
Greeley	50-60	10-20	0-10	10-20	0-10	0-10
Greenwood	50-60	0-10	0-10	0-10	0-10	10-20
Hamilton	50-60	10-20	0-10	0-10	0-10	0-10
Harper	50-60	10-20	10-20	0-10	0-10	0-10
Harvey	30-40	20-30	10-20	10-20	0-10	0-10
Haskell	60-70	10-20	0-10	0-10	0-10	0-10
Hodgeman	70-80	0-10	0-10	0-10	0-10	0-10
Jackson	60-70	10-20	0-10	0-10	0-10	0-10
Jefferson	60-70	10-20	0-10	0-10	0-10	0-10
Jewell	70-80	0-10	0-10	0-10	0-10	0-10
Johnson	30-40	20-30	10-20	0-10	0-10	0-10
Kearny	50-60	10-20	0-10	0-10	0-10	0-10
Kingman	50-60	10-20	10-20	0-10	0-10	0-10
Kiowa	60-70	0-10	10-20	0-10	0-10	0-10
Labette	20-30	20-30	10-20	20-30	0-10	0-10
Lane	60-70	10-20	0-10	0-10	0-10	0-10
Leaven- worth	20-30	20-30	10-20	0-10	20-30	0-10
Lincoln	60-70	10-20	0-10	0-10	0-10	0-10
Linn	60-70	10-20	0-10	0-10	0-10	0-10
Logan	60-70	10-20	10-20	0-10	0-10	0-10

TABLE XV. (Continued)

County	Agri- culture	Manufac- turing & Mechan- ical	Trade	Domestic & Personal	Trans- por- tation	Mining
Lyon	30-40	20-30	10-20	10-20	0-10	0-10
Marion	50-60	10-20	10-20	0-10	0-10	0-10
Marshall	40-50	10-20	10-20	10-20	0-10	0-10
McPherson	40-50	10-20	10-20	0-10	0-10	0-10
Mead	60-70	10-20	10-20	0-10	0-10	0-10
Miami	40-50	10-20	0-10	10-20	0-10	0-10
Mitchell	50-60	10-20	10-20	0-10	0-10	0-10
Montgomery	10-20	30-40	10-20	0-10	0-10	10-20
Morris	50-60	10-20	0-10	0-10	0-10	0-10
Morton	60-70	10-20	0-10	0-10	0-10	0-10
Nemaha	60-70	10-20	10-20	0-10	0-10	0-10
Neosho	30-40	20-30	10-20	10-20	0-10	0-10
Ness	60-70	10-20	0-10	0-10	0-10	0-10
Norton	70-80	0-10	0-10	0-10	0-10	0-10
Osage	60-70	10-20	0-10	0-10	0-10	0-10
Osborne	50-60	10-20	10-20	0-10	0-10	0-10
Ottawa	50-60	10-20	0-10	0-10	0-10	0-10
Pawnee	50-60	10-20	10-20	0-10	0-10	0-10
Phillips	60-70	10-20	0-10	0-10	0-10	0-10
Pottawatomie	60-70	10-20	0-10	0-10	0-10	0-10
Pratt	40-50	10-20	10-20	10-20	0-10	0-10

TABLE XV. (Continued)

County	Agri- culture	Manufac- turing & Mechan- ical	Trade	Domestic & Personal	Trans- por- tation	Mining
Rawlins	60-70	10-20	0-10	0-10	0-10	0-10
Reno	20-30	20-30	10-20	0-10	10-20	0-10
Republic	60-70	10-20	0-10	0-10	0-10	0-10
Rice	40-50	10-20	10-20	0-10	0-10	0-10
Riley	30-40	20-30	10-20	0-10	10-20	0-10
Rooks	60-70	10-20	0-10	0-10	0-10	0-10
Rush	60-70	10-20	10-20	0-10	0-10	0-10
Russell	50-60	10-20	10-20	0-10	0-10	0-10
Saline	30-40	20-30	20-30	0-10	0-10	0-10
Scott	50-60	10-20	10-20	0-10	0-10	0-10
Sedgwick	10-20	30-40	20-30	0-10	10-20	0-10
Seward	30-40	20-30	10-20	0-10	0-10	0-10
Shawnee	10-20	30-40	10-20	10-20	10-20	0-10
Sheridan	70-80	0-10	0-10	0-10	0-10	0-10
Sherman	40-50	10-20	0-10	20-30	0-10	0-10
Smith	70-80	0-10	0-10	0-10	0-10	0-10
Stafford	50-60	10-20	10-20	0-10	0-10	0-10
Stanton	60-70	0-10	0-10	0-10	0-10	0-10
Stevens	70-80	10-20	0-10	0-10	0-10	0-10
Sumner	40-50	10-20	10-20	10-20	0-10	0-10
Thomas	50-60	10-20	10-20	0-10	0-10	0-10

TABLE XV. (Continued)

County	Agri- culture	Manufac- turing & Mechan- ical	Trade	Domestic & Personal	Trans- por- tation	Mining
Trego	60-70	10-20	0-10	0-10	0-10	0-10
Wabaunsee	60-70	10-20	0-10	0-10	0-10	0-10
Wallace	60-70	10-20	0-10	0-10	0-10	0-10
Washington	60-70	10-20	0-10	0-10	0-10	0-10
Wichita	70-80	0-10	0-10	0-10	0-10	0-10
Wilson	30-40	20-30	10-20	0-10	0-10	0-10
Woodson	50-60	10-20	0-10	0-10	0-10	0-10
Wyandotte	0-10	40-50	10-20	10-20	10-20	0-10

From the information given in Tables VI and XII the average annual salary of wage earners and clerks in manufacturing and mining was computed and the results are presented in graphic form in Figures 7, 8, 9, and 10. Figure 7 shows the average annual salary paid to wage earners in manufacturing industries. Figure 8 shows the average annual salary paid to wage earners in mining industries. Figure 9 shows the average annual salary paid to clerks in manufacturing industries. Figure 10 shows the average annual salary paid to clerks in mining industries.

Figure 7. AVERAGE ANNUAL SALARIES PAID TO WAGE EARNERS IN INDUSTRY IN KANSAS

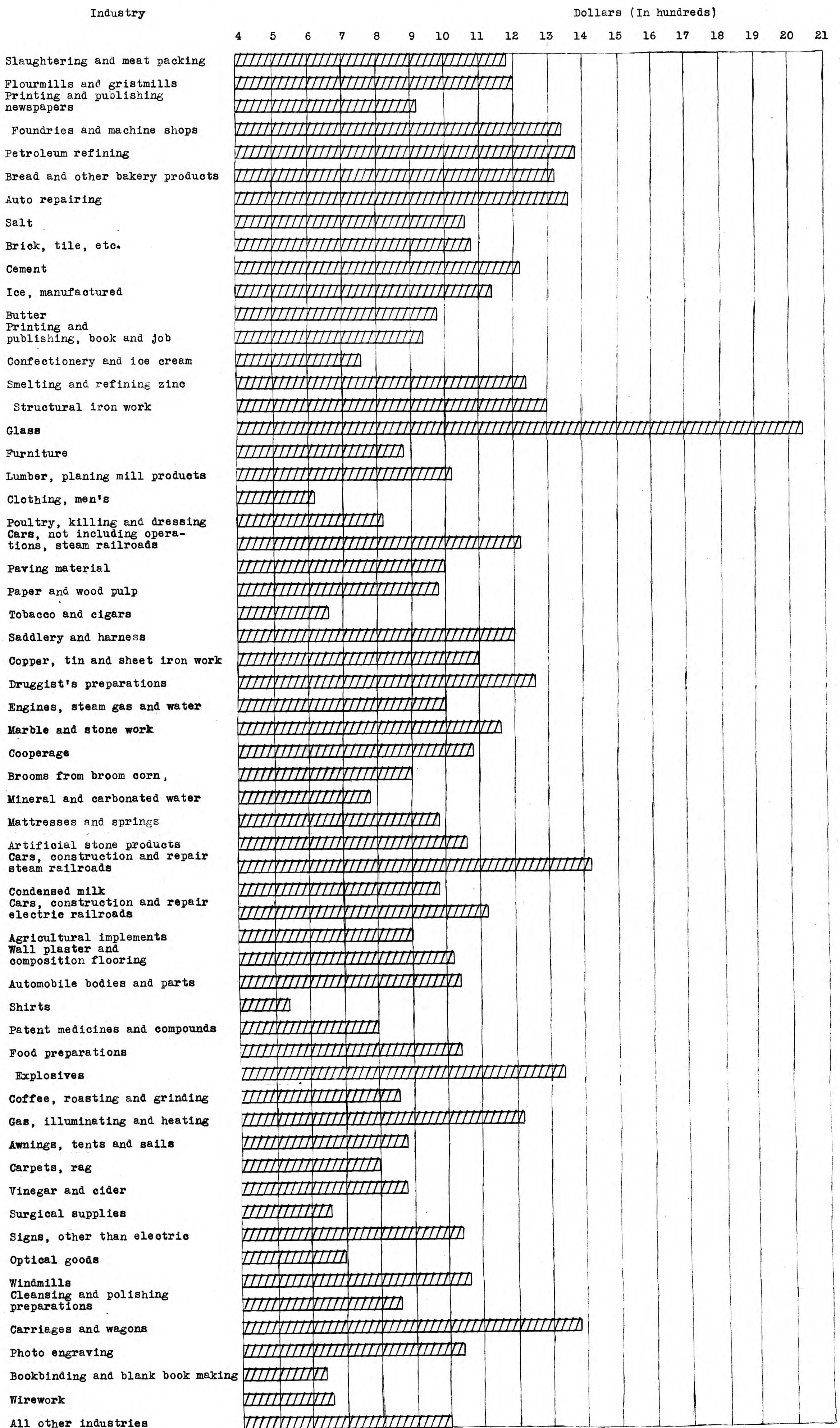


Figure 8. AVERAGE ANNUAL SALARIES PAID TO WAGE EARNERS IN MINING IN KANSAS

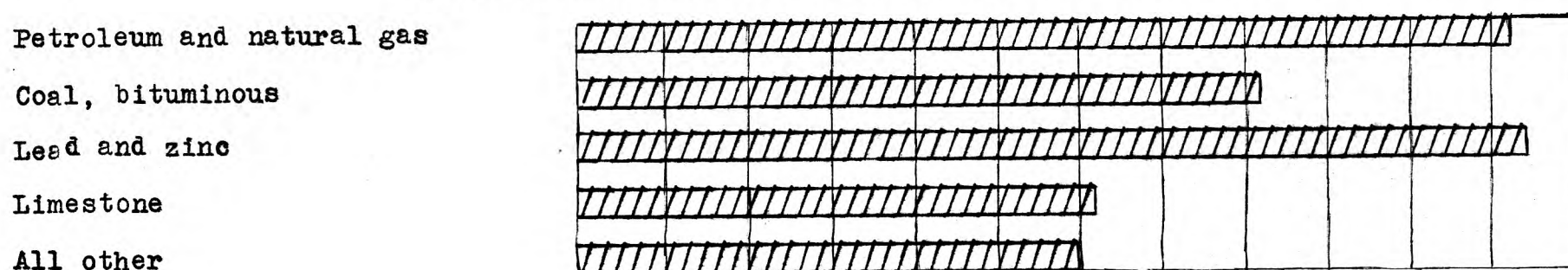


Figure 9. AVERAGE ANNUAL SALARIES PAID TO CLERKS IN INDUSTRY IN KANSAS.

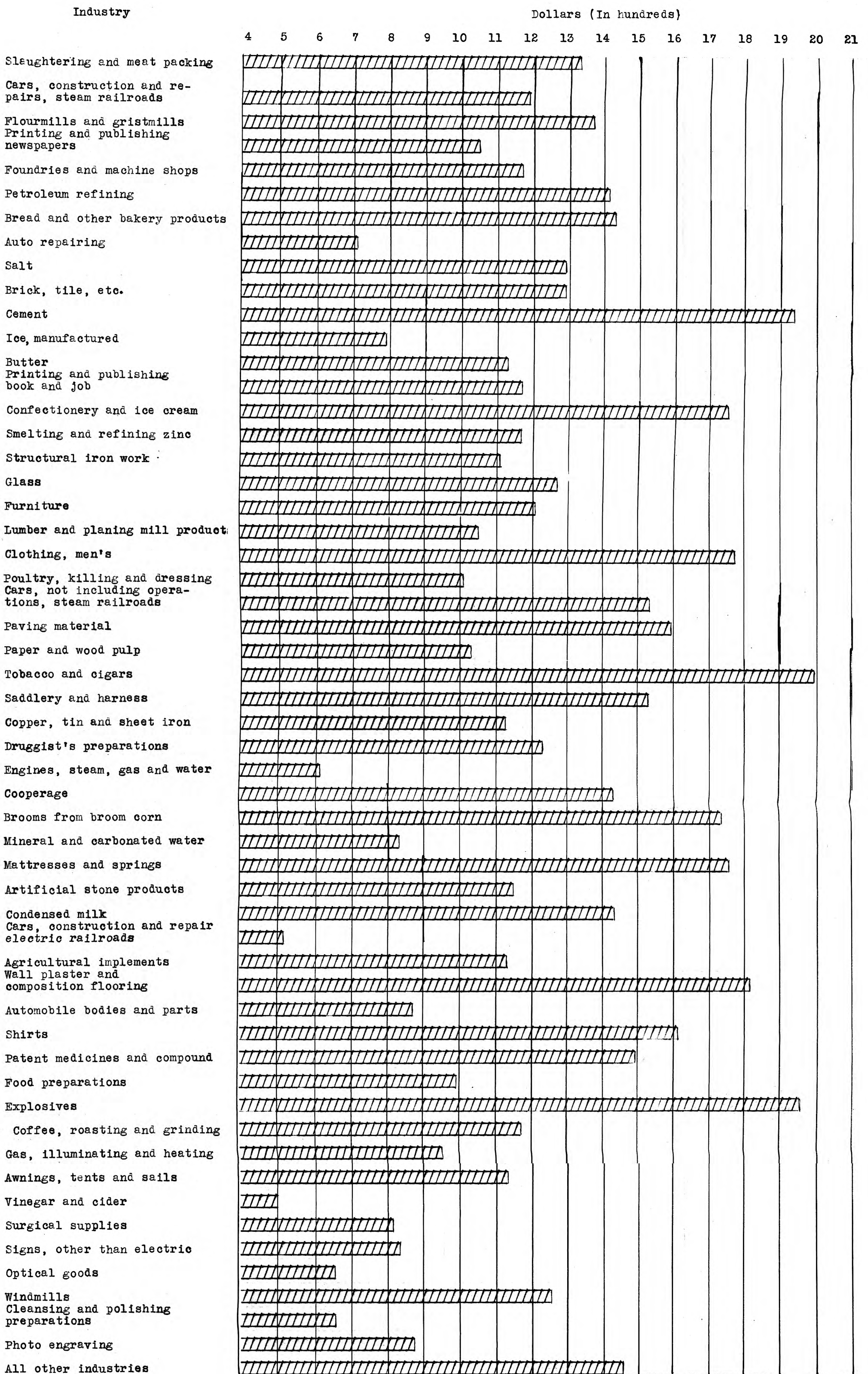


Figure 10. AVERAGE ANNUAL SALARIES PAID TO CLERKS IN MINING IN KANSAS



As has been previously stated Kansas ranks reasonably well with the other states in its power to hold children in school. There is room for improvement, of course, but we need not be greatly ashamed of our record in this matter. Another question must now be considered. How well does each local community compare with other communities within the state in its power to attract and hold its children to school attendance? Figures 11, 12, 13, and 14 are designed to show the per cent of children of certain ages who are in school attendance in each county.

In Figure 11 we note that only one county has less than 85% of children between the ages of 7 and 13 years, inclusive, attending school. Fifty one counties have a percentage above ninety-five. At this age, of course, it is commonly expected that all children will be in school unless prevented by physical disability or some other legitimate cause. Figure 12 shows that only two counties have over 95% of children 14 and 15 years of age in school. The percentage in one county drops to between sixty five and seventy. Figure 13 shows one county with between 75% and 80% of children 16 and 17 years of age attending school, and one county with between 25% and 30% of children the same age in school. Since it is not so common to find persons 18 to 20 years of age, inclusive, in school, the results shown in Figure 14 are very gratifying.

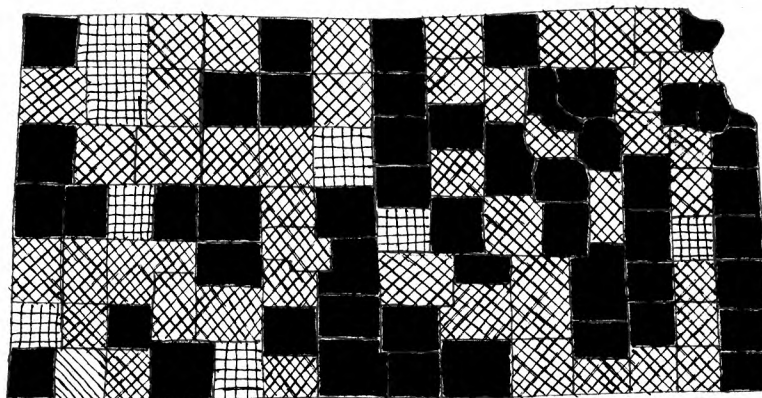




















Figure 11. Map of Kansas showing, by counties, the percentages of children 7 to 13 years of age inclusive who were attending school.*

Key to Map.

10% to 15%		55% to 60%	
15% to 20%		60% to 65%	
20% to 25%		65% to 70%	
25% to 30%		70% to 75%	
30% to 35%		75% to 80%	
35% to 40%		80% to 85%	
40% to 45%		85% to 90%	
45% to 50%		90% to 95%	
50% to 55%		95% to 100%	

* Data from U. S. Census Reports, 1920.

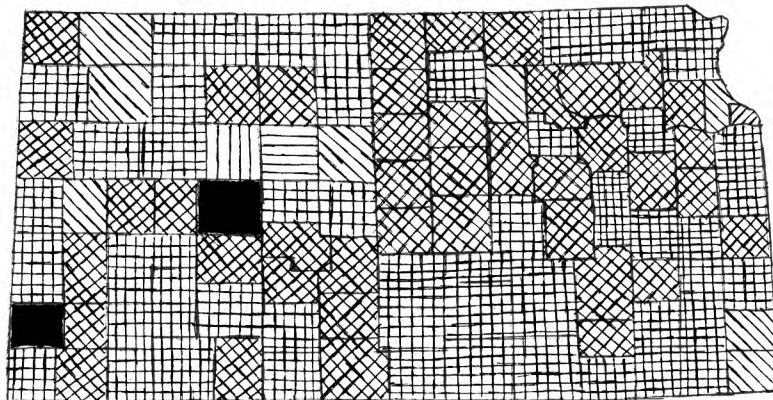




















Figure 12. Map of Kansas showing, by counties, the percentages of children 14 and 15 years of age who were attending school.*

Key to map.

10% to 15%		55% to 60%	
15% to 20%		60% to 65%	
20% to 25%		65% to 70%	
25% to 30%		70% to 75%	
30% to 35%		75% to 80%	
35% to 40%		80% to 85%	
40% to 45%		85% to 90%	
45% to 50%		90% to 95%	
50% to 55%		95% to 100%	

* Data from U. S. Census Reports, 1920.

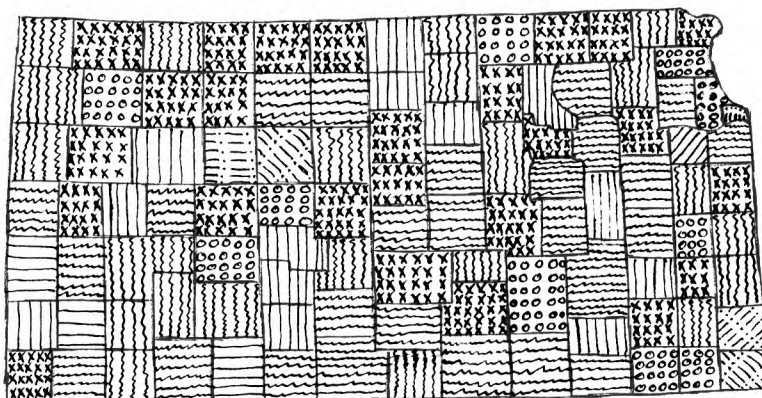


Figure 13. Map of Kansas showing, by counties, the percentages of children 16 and 17 years of age who were attending school.*

Key to map.

10% to 15%		55% to 60%	
15% to 20%		60% to 65%	
20% to 25%		65% to 70%	
25% to 30%		70% to 75%	
30% to 35%		75% to 80%	
35% to 40%		80% to 85%	
40% to 45%		85% to 90%	
45% to 50%		90% to 95%	
50% to 55%		95% to 100%	

* Data from U. S. Census Reports, 1920.

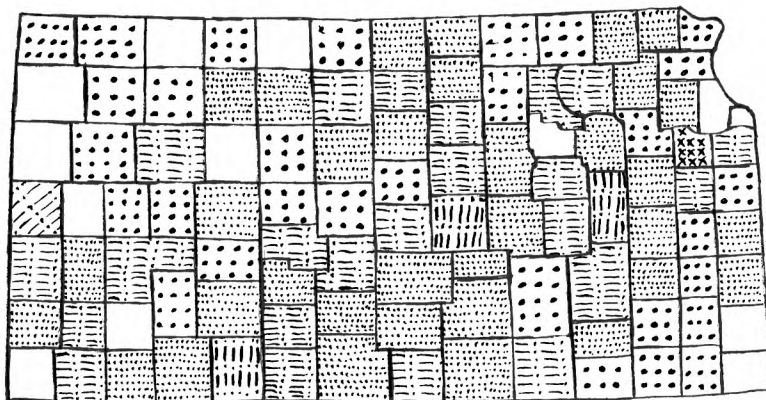


Figure 14. Map of Kansas showing, by counties, the percentages of children 18 to 20 years of age inclusive who were attending school.*

Key to map.

10% to 15%		55% to 60%	
15% to 20%		60% to 65%	
20% to 25%		65% to 70%	
25% to 30%		70% to 75%	
30% to 35%		75% to 80%	
35% to 40%		80% to 85%	
40% to 45%		85% to 90%	
45% to 50%		90% to 95%	
50% to 55%		95% to 100%	

* Data from U. S. Census Reports, 1920.

In order to gain some idea of the degree of correlation existing between the percent of children, fourteen and fifteen years of age and sixteen and seventeen years of age, who are in school in the various counties Table XVI was computed. This correlation is practically $.658 \pm .03733$. Hence, we see that in the counties having the greater tendency to keep a larger portion of fourteen and fifteen year olds in school there is also considerable tendency for a large percentage of sixteen and seventeen year olds to remain in school.

F_y Y F_yY F_yY² Σ¹F_{xy}X Y Σ¹F_{nx}X (Σ¹F_{nx}X)² (Σ¹F_{ny}Y)²

Table XVI. Correlation between 14 and 15 year olds and 16 and 17 year olds in counties of Kansas regarding school attendance.

		16 + 17 years.																					
		25	30	35	40	45	50	55	60	65	70	75	80	F _y	Y	F _y Y	F _y Y ²	Σ ¹ F _{xy} X	Y Σ ¹ F _{nx} X	(Σ ¹ F _{nx} X) ²	(Σ ¹ F _{ny} Y) ²		
14 + 15 years.	100													2	2	4	8	3	6	9	4.5		
	95						0	1	2					2	2	4	8	3	6	9	4.5		
	90						2	2	2	11	11	32	16	16	27	9	9	2	2.5	1	1		
	85						6	6	0	20	0	11	11	0	20	10	0	9	3	0	4	1	0
	80																						
	75																						
	70																						
	65																						

F _x																											
X																											
F _x X																											
F _x X ²																											
Σ ¹ F _{xy} Y																											
X Σ ¹ F _{xy} Y																											
(Σ ¹ F _{xy} Y) ²																											
(Σ ¹ F _{xy} Y) ²																											
F _x																											

Σ¹F_{xy}Y = 32
 Σ¹F_xX = 104
 Σ¹F_yY = 32
 Σ¹F_xX² = 384
 Σ¹F_yY² = 103
 Σ¹F_{xy}XY = 128
 Σ¹(F_{xy}Y)² = 56.14
 CORRECTIONS
 (Σ¹F_xX)(Σ¹F_yY) = 31.69
 (Σ¹F_xX)² = 103
 (Σ¹F_yY)² = 9.752

$a = \Sigma F_{xy}XY - \frac{(\Sigma F_x X)(\Sigma F_y Y)}{N} = 96.31$
 $b = \Sigma F_x X^2 - \frac{(\Sigma F_x X)^2}{N} = 281$
 $c = \Sigma F_y Y^2 - \frac{(\Sigma F_y Y)^2}{N} = 76.284$

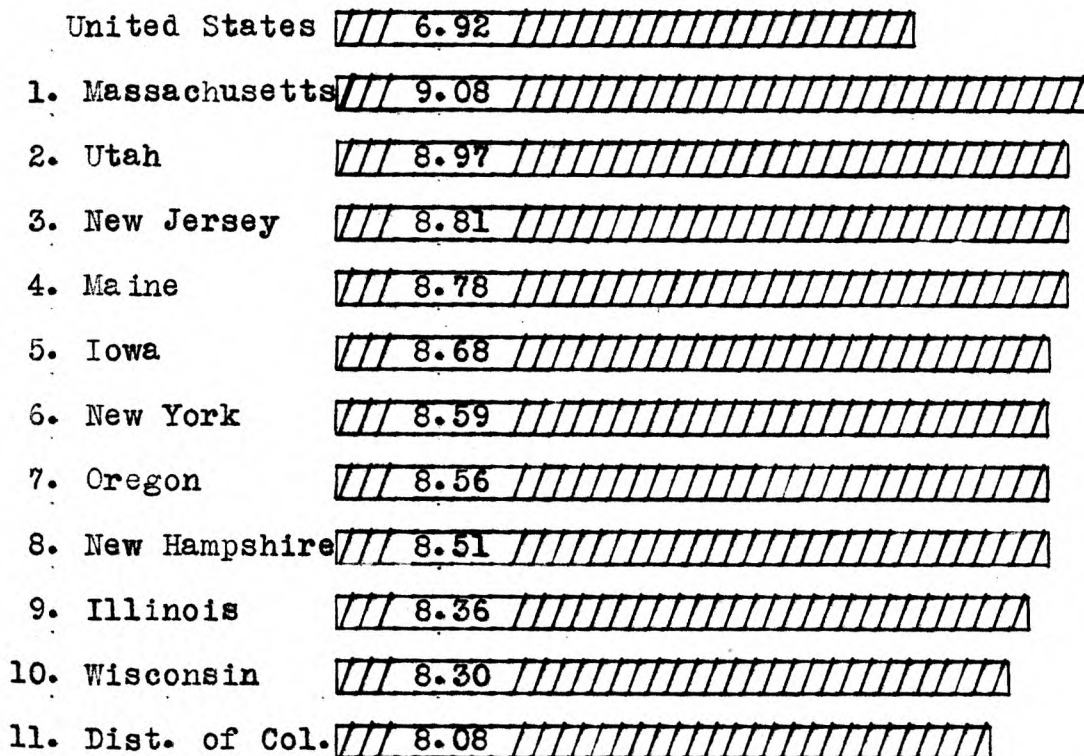
$d = \Sigma \left[\frac{(\Sigma F_{xy}X)^2}{F_y} \right] - \frac{(\Sigma F_x X)^2}{N} = 135.55$
 $e = \Sigma \left[\frac{(\Sigma F_{xy}Y)^2}{F_x} \right] - \frac{(\Sigma F_y Y)^2}{N} = 46.388$

$r_{xy} = \sqrt{\frac{a}{bc}}$
 $\eta_{xy} = \sqrt{\frac{d}{b}}$
 $\eta_{yx} = \sqrt{\frac{e}{c}}$
 $\log b = 2.44871$
 $\log c = 1.88243$
 $\log \text{prod} = 4.33114$
 $\log \sqrt{p} = 2.16557$
 $\log a = 1.98367$
 $\log \sqrt{p} = 2.16557$
 $\log r = 9.81810 - 10$
 $r_{xy} = .6578 \pm .03733$
 $\log d = 2.13209$
 $\log b = 2.44871$
 $\log \frac{d}{b} = 9.68338 - 10$
 $\frac{1}{2} \log \frac{d}{b} = 9.84169 - 10$
 $\log e = 1.66640$
 $\log c = 1.88243$
 $\log \frac{e}{c} = 9.78397 - 10$
 $\frac{1}{2} \log \frac{e}{c} = 9.89198 - 10$
 $\eta_{xy} = .6945 \pm .03403$
 $\eta_{yx} = .7798 \pm .02577$

A study has also been made as to the average number of years which children attend school in the various states. This information is presented in Figure 15. Kansas ranks nineteenth among the states with an average attendance per child of 7.74 years. This average is .29 years above the median and .82 years above the average for the United States as a whole. Kansas may well point with pride to this record but there is no particular reason why there should be eighteen states with a better average attendance per child. One very effective way of holding children in school for a longer period of time is for the school to offer something to them which they feel is meeting a very real need. Good practical vocational training will do much to help us solve this problem. When the children realize that in dropping out of school at an early age they will be robbing themselves of an opportunity to get training which would certainly aid them in becoming vocationally efficient, there will be a much greater desire upon the part of these children to remain in school. Probably no state has done more in the promotion of vocational education than has Massachusetts, and probably no state offers a much greater opportunity for children to enter employment at an early age. With these two apparently opposing factors linked together Massachusetts ranks first with an average school attendance per

child of 9.08 years. Other states which should be pointed out and whose problems and conditions probably approach nearer to those of Kansas are: Iowa with an average attendance of 8.68 years, Illinois with an average of 8.36 years, Wisconsin with an average of 8.30 years, Ohio with an average of 7.87 years, and Michigan with an average of 7.79 years.

Fig. 15.* AVERAGE NUMBER OF YEARS CHILDREN ATTEND SCHOOL.



* Research Bulletin of the National Education Association. Vol. V. No. 4. September 1927.

12. Idaho	8.08
13. Rhode Island	7.96
14. Pennsylvania	7.95
15. Ohio	7.87
16. Washington	7.86
17. Vermont	7.85
18. Michigan	7.79
19. Kansas	7.74
20. Nebraska	7.66
21. North Dakota	7.66
22. Nevada	7.64
23. Missouri	7.58
24. Montana	7.55
25. Minnesota	7.45
26. California	7.42
27. Delaware	7.42
28. Indiana	7.31
29. Wyoming	7.08
30. Maryland	7.00
31. Colorado	6.89
32. Connecticut	6.84
33. New Mexico	6.83
34. South Dakota	6.80
35. Texas	5.74

36. Oklahoma	5.69
37. West Virginia	5.69
38. Tennessee	5.45
39. Virginia	5.37
40. Florida	5.26
41. North Carolina	5.10
42. Louisiana	5.07
43. Arizona	4.94
44. Georgia	4.84
45. Arkansas	4.63
46. Kentucky	4.35
47. South Carolina	4.24
48. Mississippi	4.22
49. Alabama	4.05

Figure 16 shows the average length of the school term for each state in 1925 and the average number of days attended per pupil enrolled. The average length of the school term in Kansas in 1925 was 175 days. This is one day more than the median for all states and five days more than the average for the United States as a whole. The average number of days attended per pupil enrolled for the same year was 146.

The data presented in Figure 16 becomes more significant when the average per cent of attendance per pupil enrolled is computed and the states compared as in Table XVII. This Table shows that Kansas ranks eighteenth with an average per cent of attendance of 83.4. This is 2% higher than the median for all states and is 2.8% above the average for the United States as a whole. Of course, we would like to see our own state rank as near the top of the list as possible, but Table XVII shows a very commendable record for Kansas.

Figure 16.*
 OPPORTUNITY TO ATTEND SCHOOL AND USE MADE OF OPPORTUNITY
 Average length of School Term and Average Number of Days
 Attended Per Pupil Enrolled, 1925.

	Average Number of Days Attended per Pupil Enrolled	Average Number of Days Schools were in Session
United States	137	170
1. New York	164	189
2. New Jersey	160	189
3. Rhode Island	157	186
4. Maryland	150	185
5. Illinois	154	184
6. Massachusetts	153	184
7. Delaware	156	183
8. Connecticut	156	183
9. California	126	182
10. Minnesota	145	181
11. Pennsylvania	151	180
12. Washington	142	179
13. Nebraska	144	179
14. Colorado	135	178
15. Ohio	149	177

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16. Michigan	143	177
17. New Hampshire	147	177
18. Wisconsin	150	177
19. Iowa	148	176
20. Maine	156	176
21. Kansas	146	175
22. Wyoming	139	175
23. Indiana	165	174
24. Nevada	137	174
25. New Mexico	134	174
26. Oregon	152	173
27. Montana	145	172
28. South Dakota	140	172
29. Dist. of Col.	144	172
30. Utah	144	171
31. Missouri	137	169
32. Vermont	142	169
33. Arizona	123	166
34. Idaho	135	165
35. North Dakota	135	165
36. Kentucky	117	164
37. Virginia	121	159
38. Oklahoma	124	154
39. Tennessee	107	153

40. West Virginia	128	152
41. Louisiana	118	151
42. Texas	123	145
43. North Carolina	107	145
44. Georgia	110	143
45. Florida	107	142
46. South Carolina	99	142
47. Mississippi	99	137
48. Arkansas	99	135
49. Alabama	96	132

TABLE XVII.

PER CENT OF SCHOOL ATTENDANCE BASED UPON AVERAGE LENGTH OF
SCHOOL TERM AND AVERAGE NUMBER OF DAYS ATTENDED PER
PUPIL ENROLLED, 1925.

Rank	State	Per cent of attendance
1.	Indiana	94.8
2.	Maine	88.6
3.	Oregon	87.9
4.	New York	86.8
5.5	Texas	84.8
5.5	Wisconsin	84.8
7.	New Jersey	84.7
8.	Rhode Island	84.4

Rank	State	Per cent of attendance
9.	Montana	84.3
11.	Utah	84.2
11.	West Virginia	84.2
11.	Ohio	84.2
13.	Iowa	84.1
14.	Vermont	84.0
15.	Pennsylvania	83.9
16.5	District of Columbia	83.7
16.5	Illinois	83.7
18.	Kansas	83.4
19.5	Connecticut	83.3
19.5	Delaware	83.3
21.	Massachusetts	83.2
22.	New Hampshire	83.1
23.5	Idaho	81.8
23.5	North Dakota	81.8
25.	South Dakota	81.4
26.5	Maryland	81.1
26.5	Missouri	81.1
28.	Michigan	80.8
29.5	Nebraska	80.5
29.5	Oklahoma	80.5

Rank	State	Per cent of attendance
31.	Minnesota	80.1
32.	Wyoming	79.4
33.	Washington	79.3
34.	Nevada	78.7
35.	Louisiana	78.2
36.	New Mexico	77.0
37.	Georgia	76.9
38.	Virginia	76.1
39.	Colorado	75.8
40.	Florida	75.4
41.	Arizona	74.1
42.	North Carolina	73.8
43.	Arkansas	73.3
44.	Alabama	72.7
45.	Mississippi	72.3
46.	Kentucky	71.3
47.	Tennessee	69.9
48.	South Carolina	69.7
49.	California	69.2
	Average for United States	80.6

Kansas may also be compared with the other states in regard to the amount of money invested and spent in education. It is not absolutely certain that the state that spends the most money on education will have the best schools, but it is true that education must be paid for and the willingness of the state to provide funds for it will be a decidedly important factor in the type of education offered in the state. Figure 17 is designed to show graphically the average annual salaries paid to principals, supervisors, and teachers in the various states in 1925. According to this figure the average salary in Kansas at that time was \$1112. This amount is \$140 less than the average for the entire United States. Kansas ranks twenty-fourth in the matter of salaries paid. In all probability the better salaries will attract the better teachers, and if this be the case great numbers of the best teachers are very liable to be attracted away from Kansas as long as this sort of schedule is maintained. This state will probably never be able to pay salaries equal to or better than those paid in some more wealthy states, but until we reach a schedule more nearly equal to that of some of our neighboring states we may expect to lose a certain number of good teachers.

Figure 17.* AVERAGE SALARIES OF TEACHERS, SUPERVISORS, AND PRINCIPALS, BY STATES, 1925.

United States	\$1252
1. New York	1986
2. New Jersey	1884
3. California	1854
4. Massachusetts	1680
5. Connecticut	1606
6. Illinois	1530
7. Arizona	1523
8. Washington	1475
9. Rhode Island	1472
10. Nevada	1451
11. Michigan	1441
12. Pennsylvania	1439
13. Ohio	1420
14. Delaware	1321
15. Maryland	1318
16. Colorado	1296
17. Indiana	1272
18. Minnesota	1251

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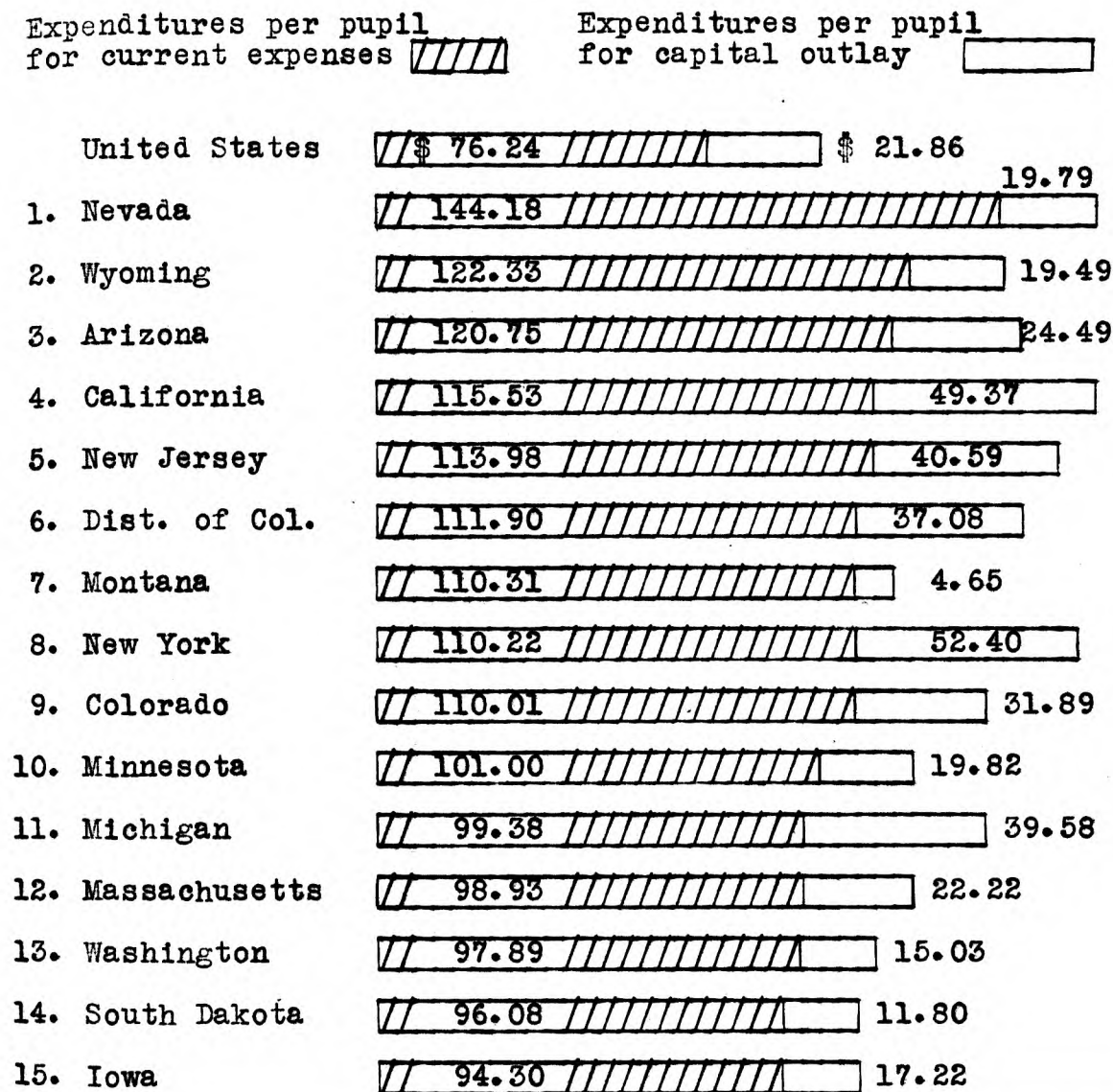
19. Oregon	1251
20. Utah	1217
21. Wisconsin	1213
22. Idaho	1188
23. Missouri	1123
24. Kansas	1112
25. Wyoming	1105
26. Montana	1104
27. Nebraska	1078
28. Iowa	1064
29. New Hampshire	1034
30. Oklahoma	1014
31. New Mexico	1004
32. West Virginia	994
33. South Dakota	888
34. Vermont	878
35. Texas	870
36. Louisiana	856
37. Maine	842
38. North Dakota	822
39. Kentucky	752
40. North Carolina	752
41. Florida	743
42. Georgia	743

43. Virginia	743
44. South Carolina	737
45. Tennessee	683
46. Alabama	658
47. Arkansas	632
48. Mississippi	448

The expenditures per pupil for current expenses and for capital outlay for public elementary and secondary schools in 1924-25 is given in Figure 18. Kansas spent \$91.54 per pupil for current expenses during that year and ranks seventeenth among the states in that respect. This amount is \$15.30 more than the average for the United States. The facts presented in Figure 18 look much better so far as Kansas is concerned than do those presented in Figure 17.

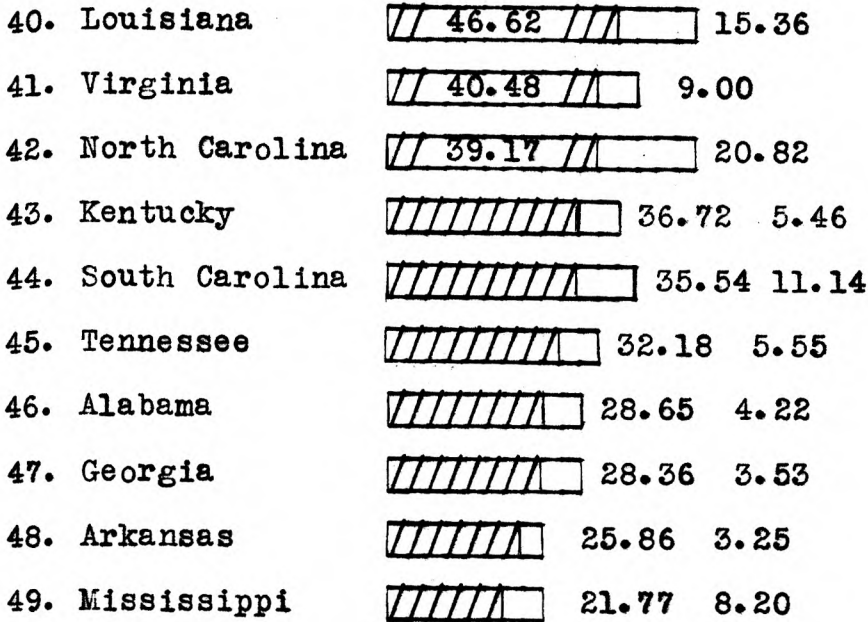
In the matter of expenditures for capital outlay Kansas ranks thirtieth. The amount spent for this purpose in 1924-25 per pupil in attendance was \$12.68. This is \$9.18 less than the average for the United States.

Figure 18.* EXPENDITURES OF PUBLIC ELEMENTARY AND SECONDARY SCHOOLS PER PUPIL IN ATTENDANCE, 1924-25.



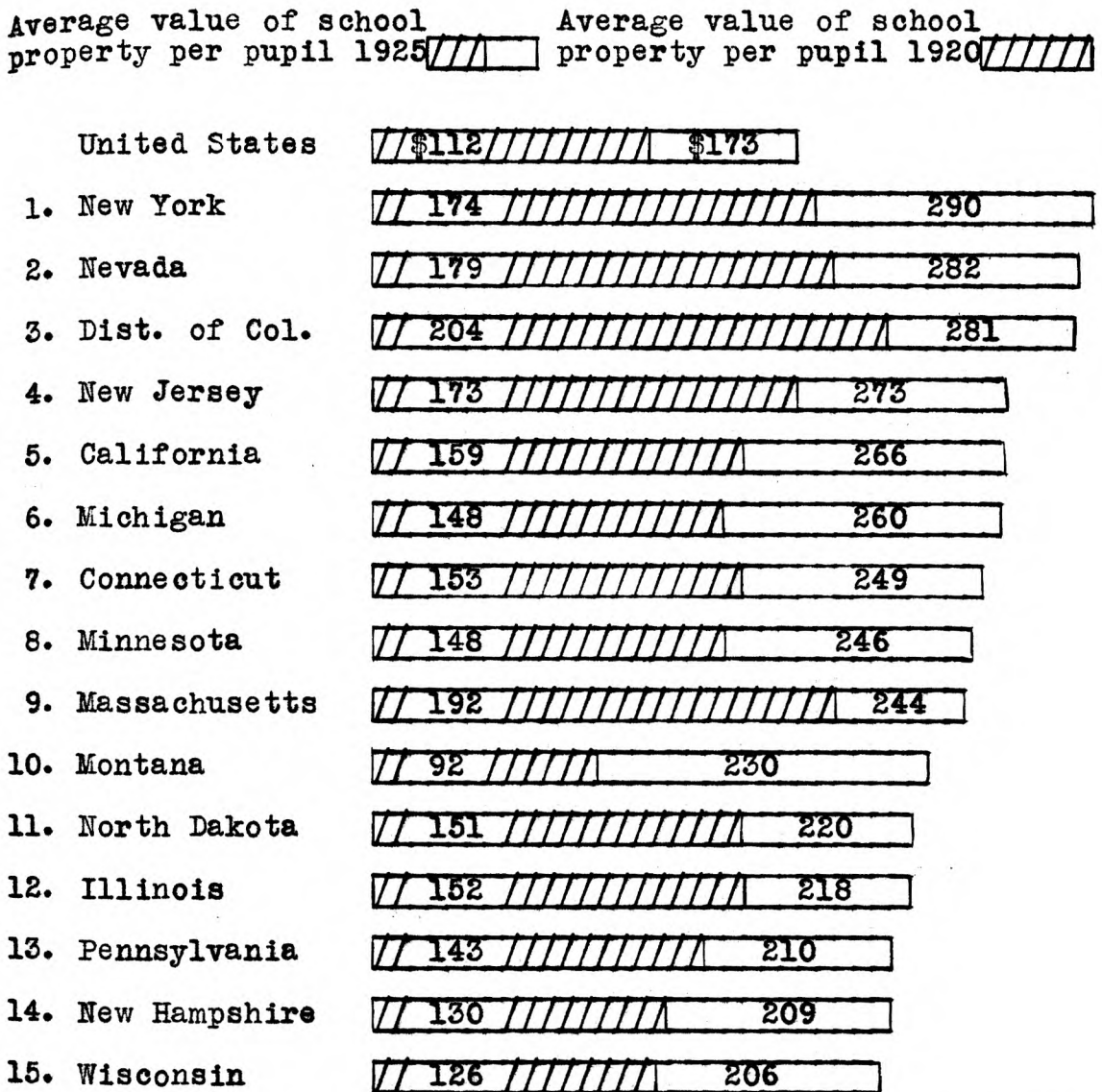
* Research Bulletin of the National Education Association.
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16. Connecticut	92.74	31.92
17. Kansas	91.54	12.68
18. Idaho	91.39	10.17
19. Illinois	90.89	22.28
20. North Dakota	89.48	6.26
21. Nebraska	87.47	13.42
22. New Hampshire	86.32	10.79
23. Oregon	85.48	23.27
24. Ohio	84.73	17.58
25. Pennsylvania	83.39	24.98
26. Delaware	79.96	18.27
27. Indiana	77.82	21.34
28. Vermont	75.96	4.21
29. Wisconsin	73.96	16.53
30. Utah	71.16	10.66
31. Maryland	69.82	27.24
32. New Mexico	69.53	2.61
33. Rhode Island	66.01	15.64
34. Maine	64.04	10.91
35. Texas	61.66	12.73
36. Missouri	60.61	22.83
37. West Virginia	59.10	12.59
38. Oklahoma	52.37	5.27
39. Florida	51.47	17.74



The value of school property per pupil enrolled for each state is given in Figure 19. According to this Figure in 1925 Kansas ranked twenty-fifth with an average value of \$172 per pupil. This is the median for all states and is one dollar less than the average for the United States. In 1920 the average value of school property per pupil enrolled in Kansas was \$114 or two dollars above the average for the entire nation. At that time Kansas ranked twenty-sixth. The increase in value of school property per pupil from 1920 to 1925 has been approximately 51%. Over half of the states have a per cent of increase greater than this.

Figure 19.* PROGRESS TOWARD ADEQUATE SCHOOL PLANTS
1920 to 1925.



* Research Bulletin of the National Education Association.
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40. Louisiana	///61///	105
41. Virginia	//44//	90
42. North Carolina	/35//	87
43. Kentucky	//51///	69
44. Alabama	/33//	66
45. South Carolina	//40//	64
46. Mississippi	//29	59
47. Georgia	/31//	54
48. Arkansas	/35//	51
49. Tennessee	/35//	40

RECOMMENDATIONS FOR VOCATIONAL EDUCATION PROGRAM.

First, let us consider briefly the steps which have already been taken by the state of Kansas toward the promotion of an efficient vocational education program. It has been previously stated that in March 1917 the legislature passed an act accepting the provisions of the Federal Vocational Education Act, thus giving the greatest impetus to vocational education. In 1928 there were ninety-eight approved vocational agriculture schools in the state, fifteen evening classes in agriculture enrolling nine hundred thirty-five students, six day trade classes operated in high schools, seven trade classes in trade schools, three part-time trade classes, sixty-nine evening school trade classes, and

eighty-two evening classes in home economics.*

The efficiency of the vocational agriculture program in Kansas is pointed out by the following statistics:**

Study of the occupational status of farm boys who have had two or more years of vocational agriculture.

- A. Number reported on - 2,759.
- B. Now in high school - 451 or 16%.
- C. Not now in high school - 2,308 or 84%.
- D. Farming - 1,462 or 63% of those not in high school.
- E. Farming with father - 1,006 or 70% of those farming.
- F. Farming in own right - 335 or 23% of those farming.
- G. Status not reported - 121 or 7% of those farming.
- H. Number who are farm owners - 125 or 37% of those farming in own right.
- I. Studied or now studying in Agricultural College - 157 or 7% of those not now in high school. (Not assured that all are taking agriculture.)
- J. Studied or now studying in non-agricultural college - 152 or 6% of those not now in high school.
- K. Occupations allied to agriculture - 110 or 4% of

* Kansas Annual Descriptive Report of the State Board for Vocational Education to the Federal Board for Vocational Education for Year Ending June 30, 1928.

** Ibid.

those not now in high school.

- L. Graduated from high school - 1,446 or 62% of those not now in high school.
- M. Farming, attending Agricultural College, or in occupations allied to agriculture - 1,729 or 74% of those not now in high school.

Study of the occupational status of town boys who have had two or more years of vocational agriculture.

- A. Number reported on - 781.
- B. Now in high school - 150 or 18%.
- C. Not now in high school - 631 or 82%.
- D. Farming - 61 or 9.6% of those not in high school.
- E. Farming with father - 41 or 67% of those farming.
- F. Farming in own right - 18 or 30% of those farming.
- G. Status not reported - 2 or 3% of those farming.
- H. Number who are farm owners - 3 or 5% of those farming in own right.
- I. Studied or now studying in Agricultural College - 45 or 7% of those not now in high school. (Not assured that all are taking agriculture.)
- J. Studied or now studying in non-agricultural college - 79 or 12% of those not now in high school.
- K. Occupations allied to agriculture - 60 or 9% of those not now in high school.

L. Graduated from high school - 439 or 70% of those not now in high school.

M. Farming, attending Agricultural College, or in occupations allied to agriculture - 166 or 26% of those not now in high school.

Thus we see that the vocational agriculture program of the state in general has been very efficient in making farmers. Of course there is a greater tendency for the farm boys to return to the farm than for town boys to become farmers.

As we face the problem of what to offer in our vocational program we should turn for assistance to such data as is presented in Tables II to XIII inclusive. These show us the occupations in which certain numbers of Kansans are engaged and they offer a good guide to the possibilities which are open to the young people who are emerging from our schools. We must recognize, of course, that conditions change and that occupations which were prominent a short time ago may be of practically no importance now. However, the school must be awake to all such situations and plan its vocational program accordingly. It is suggested that such studies be made as frequently as new data is available in order to detect as early as possible new trends in employment. We note in Figures 1 to 6 inclusive and also in Table

XV that certain occupations seem to be quite widely spread over the state while others are extremely local in character. This is another factor which should be watched closely by the school. Schools can not well offer training to young people in occupations which have no place in the local community. Each school should serve its own community first. The vocational department of each school should study the local conditions and needs and build its vocational program to meet these needs.

Further study must be made to determine what is required of efficient workers in certain occupations and how to best train young people in order to give them this required efficiency. We may find that certain special abilities and skills are required for success in certain occupations which it may not be possible to give in training. For example, it would be unwise to advise a color blind person to become a locomotive engineer. This problem can be approached through the avenue of standardized tests. We are inclined to believe "that the future development of vocational and educational - or preferably, life - guidance depends in a great measure upon the development and the use of scientific methods, tests, scales, measures, and standards, and of systematic forms of organization and administration. It should, however, be recognized that the use of tests and testing is only one phase of a complete guidance

system . . . " * This type of testing program should be approached in two ways. Tests should be given to successful individuals who are engaged in certain occupations and the results should be as highly standardized as possible. The same type of tests should be given to individuals who are planning to prepare for these same occupations. The abilities of the latter individual can then be compared with the abilities of the successful worker and a certain degree of prediction made as to the possibility of his success. Several good tests of special abilities have been devised and are now available. Some such plan of administering such tests should be carried out by every school as a part of its guidance program.

The above statements regarding tests of special abilities can also be applied to tests of general intelligence. The results of such tests, however, must never be used as final and conclusive evidence in guidance. The physician does not make a diagnosis of a case by merely taking the patient's temperature. Neither should the guidance advisor use the information gained from tests as the sole basis for guidance.

* Payne, Arthur F. Organization of Vocational Guidance. McGraw-Hill Book Co., Inc. First Edition. 1925. Page 303.

Not many schools in Kansas are large enough to warrant the employment of a vocational guidance counselor or adviser. However, if the school is small it is possible that the work of the counselor can be carried on by the teachers and principals without imposing a burden upon anyone. No attempt will be made here to discuss the proper division of such duties as that will depend upon the other work which these teachers and principals have to do. The duties of the counseling department will be discussed without regard to the persons who perform them.

The personnel of this department will include some one or more people who are trained in the technique of giving tests of all kinds. They should know how to score the tests properly and to interpret the results.

Very complete and up-to-date records should be kept concerning such items as age, class, parentage, health, intelligence quotient, school marks, characteristics, interests, special abilities, opportunities for employment, follow-up and supervision data, etc. In other words, all possible information regarding the individual and his probable future should be gathered, arranged into some usable form, and used in assisting the individual in planning his work for school and life.

Courses of study in vocational information should be

maintained. The counseling department should develop these courses, select textbooks, and supervise the teaching of the vocational courses.

The department must at all times be ready and willing to cooperate with any other legitimate agencies which may be interested in vocational education and guidance. In all respects the department must be in hearty sympathy with the administrative policies of the school. It must be willing to cooperate with such outside agencies as employers' associations, labor unions, Y. M. C. A., Y. W. C. A., Knights of Columbus, Y. M. H. A., Boy Scouts, civic clubs, employment agencies, Parents-Teachers' Associations, etc., in matters of vocational education and guidance.

When the student is ready to leave school the department must assist him in finding employment of a nature for which he has been prepared. This does not mean that the department should assist only those who stay in school until they have completed the course, but it should give what little assistance it can to those who drop out before completion of the course. All possible encouragement must be offered to keep the pupil in school, but in many cases it may be necessary for the pupil to drop out and if this be true he should have some aid in securing a job. This work of the department will be much easier if the factors set

forth in the preceding paragraph are properly carried out.

As has been pointed out before the school must also follow up the individual after he has been placed on the job and offer any necessary assistance to adjustment. This becomes another duty of the vocational department.

The department should conduct studies and surveys regarding certain occupations which may be prominent in the local community. These should include studies similar to those presented in Tables VI and XII and Figures 7, 8, 9, and 10, with the addition of any further information which may be obtainable. Studies should also be made regarding the possibilities of employment in various occupations.

The proper place to begin guidance in the school system will be determined largely by the average length of time which the pupils remain in school. This of course will be a purely local problem, but in general some sort of a guidance program should be instituted in the junior high school. It is well to talk over with the pupils the matter of the selection of a life work. Children begin quite early in life to consider this matter, but their aspirations are quite subject to change. Hence, the interests of children in this matter should not be taken too seriously. It is undoubtedly true "that little attention need be paid to these expressed interests of adolescent youth. It is of much

greater importance that we know exactly the amount and kind of intelligence they possess, the special aptitudes and abilities, their record of achievement in certain school subjects, the relationship of all these to certain possible occupations, and the educational opportunities and requirements for entrance to these occupations. Seldom is there any relationship between the expressed interests of young people, their intelligence level and aptitudes, their social and economic status, the opportunities in the vocations, and the possibilities of getting the education or training necessary to enter those vocations.* Students in high school in Hibbing, Minnesota were asked to answer the same questionnaire in 1916, in 1917, and again in 1918. "In response to the question 'What do you expect to make your life work?' only 18.6 per cent of the boys named the same occupation three times; 9.3 per cent named the same occupation twice; 24.4 per cent of the boys named three different occupations. Vocational advice given to these boys on the basis of their expressed occupational interest would have been well placed in less than one out of five cases.** A similar study was made in Detroit, Michigan. "In examining questionnaires which had been filled out by 581 eleventh-year

* Payne, Arthur F. Organization of Vocational Guidance. McGraw-Hill Book Co., Inc. First Edition. 1925. pp 108-109.

** Ibid. page 109.

and twelfth-year pupils for the local Board of Commerce, Mr. R. R. Cunliffe, Counselor at Central High School, found that 64 per cent of the boys chose five occupations; 76 per cent of the girls chose five; and 83 per cent of boys and girls thought of only ten. Approximately 74 per cent selected occupations in the professional group, although only 5 per cent of the gainful workers in the United States can be employed in that class. About 42 per cent of the girls selected teaching. Only one of the 581 students who filled out the questionnaire indicated any interest in the automotive industry for which this city is well known, and fewer than 1 per cent selected manufacturing, in which over 40 per cent of Detroit's gainful workers are employed. Although dealing with a selected group, Mr. Cunliffe concludes that the student cannot make an adequate selection of his life work unless he knows from what things he can choose. For this reason a considerable amount of time is given to a survey of opportunities open to boys and girls."* Table XVIII presents the information gained in another similar study. It will be noted here that only 6.3 per cent of the people chose to enter agricultural occupations which in 1920 employ

* Edgerton, Alanson H. Vocational Guidance and Counseling. Macmillan Co., 1926. page 86.

ed over 26 per cent of the employed people in the United States; 35.9 per cent chose professional occupations which employ a little over 5 per cent of our employed population; 4.3 per cent chose mechanical trades which employ over 30 per cent of our employed population.

TABLE XVIII.
OCCUPATIONAL CHOICES OF 15,263 SECONDARY SCHOOL PUPILS.*

Occupation Group	Choices of Pupils			By Census of 1920
	Boys	Girls	Total	
Agricultural	15.2	0.3	6.3	26.3
Professional	32.9	40.1	35.9	5.2
Business, clerical	14.1	28.4	22.4	17.7
Mechanical trades	6.4	....	4.3	30.8
Transportation	....	....	....	7.4
Women's work	....	9.5	5.1	....
Fine arts	1.4	4.8	3.3	....
Undecided	20.4	14.1	16.8	....

From the above studies we see that there is a decided trend among young people to desire occupations which are probably quite different from those which they will probably enter. The vocational counselor must never make the choice of occupation for the student, but he should attempt to

* Edgerton, Alanson H. Vocational Guidance and Counseling. Macmillan Co., 1926. page 11.

guide him into the life position for which he seems to be best fitted. Try-out courses will be of considerable aid to the counselor in such cases, as the student can be placed for a short period of time in some try-out course for which he seems to be adapted. It may be that such pupil will thus obtain a desire to enter the occupation for which he is probably best fitted.

By far the most important industry in Kansas for which the schools should offer training is agriculture. According to Figure 1 we note that only one county in the state has less than 10 per cent of its gainfully employed people engaged in this occupation. This is undoubtedly true of Wyandotte county because of the fact that it is the smallest county in area and contains one of the state's largest cities. Four other counties have between 10 and 20 per cent of such persons engaged in agriculture. In many counties this percentage is above seventy. Agriculture is not confined to any particular section of the state, hence it is clear that schools in all parts of the state should offer courses in agriculture. It is desirable, however, that the content of these courses be different in certain localities. Figures 20, 21, 22, 23, 24, 25, and 26 show the extremely local character of some of the more important farm crops in 1926. Wheat and corn are fairly well distributed over the state. A slightly greater proportion of the land was sown

to wheat in the central part of the state and a greater proportion of land in the eastern and northern parts of the state were sown to corn. Figures 22 and 23 indicate that oats and alfalfa hay are almost entirely products of the eastern part of the state. Kafir sown for grain shows some distribution, but has a tendency toward the southern part of the state. Barley and sorghum are confined almost entirely to the western portion of the state. These are only a few of the more important farm crops of the state, but the suggestion contained herein is sufficient for our purpose. Teachers of vocational agriculture should become informed in some such way as to the importance of certain farm crops within the locality in which they are teaching and base their course of study upon the information so gained. The climate and condition of the soil are other factors which must be considered. It is very evident that a course of study in agriculture adapted to the eastern part of the state will not meet the needs of the western farmer and vice versa. Neither is it sufficient to consider alone the acreage sown to certain crops for the value of the crop is an important item. For example, according to the authority upon which the following Figures are based, in 1926 less than ten per cent of the land producing farm crops in Finney county was sown to sugar beets, yet this product was one of the most valuable produced in the county. We believe that

all would agree that a course in farm crops in the schools of Finney county should contain a study of the cultivation of sugar beets.

Teachers of agriculture should also make some similar study of the community which their school is to serve regarding livestock production and other phases of agriculture. The information gained from such study should then be used in the construction of the vocational agriculture curriculum.

Operating under the provisions of the Federal Smith-Hughes Law the state now employs a supervisor of vocational agriculture whose work in this field has been most commendable. But to properly supervise the teaching of agriculture throughout the entire state is a considerable task. Each year more and more schools place vocational agriculture in their curriculum. If this continues as we hope it does the task of the supervisor of vocational agriculture will continue to become heavier. One possible method of meeting this situation is to divide the state into two or more fairly unified agricultural districts and place a supervisor over each district. This supervisor should work under the direction of the state supervisor.

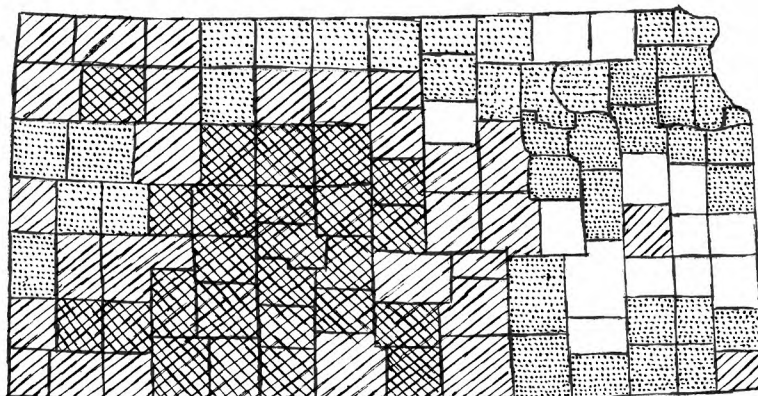






Figure 20. Map of Kansas showing, by counties, the proportion between the total acreage of land producing farm crops and the acreage sown to Winter Wheat in 1926.*

Key to map.

Less than 10%	
From 10% to 33 1/3%	
From 33 1/3% to 66 2/3%	
More than 66 2/3%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

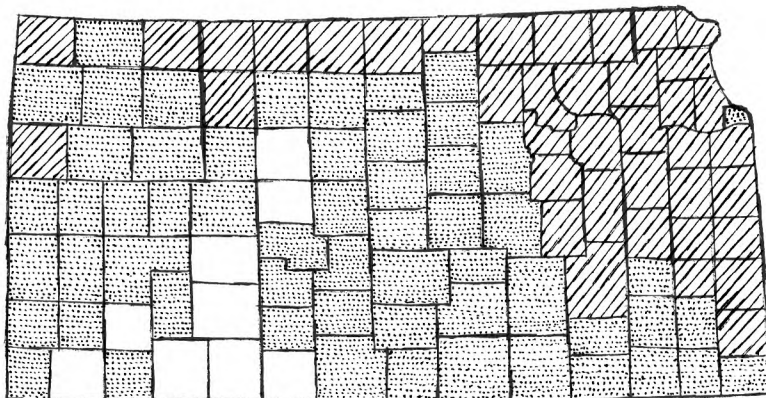






Figure 21. Map of Kansas showing, by counties, the proportion between the total acreage of land producing farm crops and the acreage sown to Corn in 1926.*

Key to map.

Less than 10%	
From 10% to 33 1/3%	
From 33 1/3% to 66 2/3%	
More than 66 2/3%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

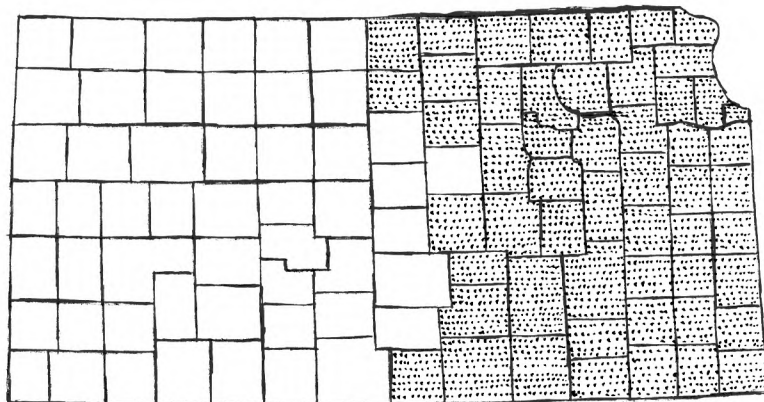






Figure 22. Map of Kansas showing, by counties, the proportion between the total acreage of land producing farm crops and the acreage sown to Oats in 1926.*

Key to Map:

Less than 10%	
From 10% to 33 1/3%	
From 33 1/3 % to 66 2/3%	
More than 66 2/3%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

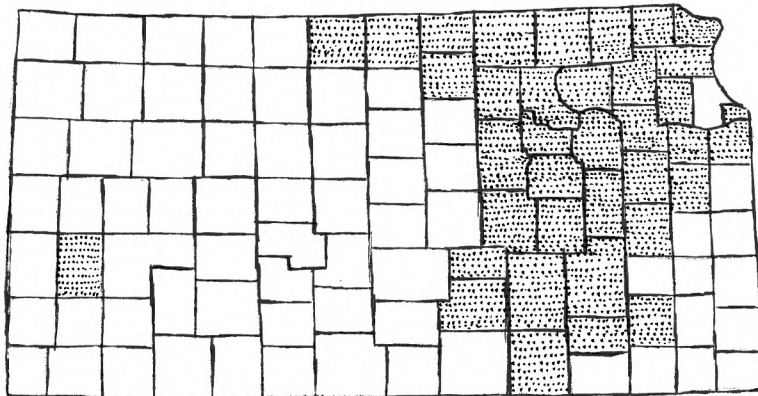






Figure 23. Map of Kansas showing, by counties, the proportion between the total acreage of land producing farm crops and the acreage sown to Alfalfa Hay in 1926.*

Key to Map:

Less than 10%	
From 10% to 33 1/3%	
From 33 1/3% to 66 2/3%	
More than 66 2/3%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

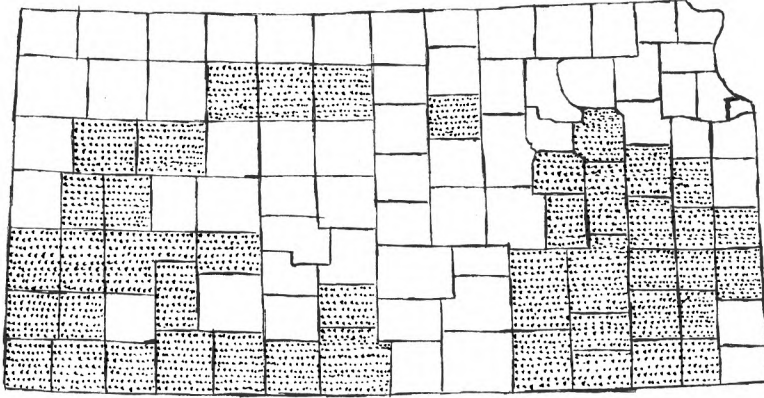






Figure 24. Map of Kansas showing, by counties, the proportion between the total acreage of land producing farm crops and the acreage sown to Kafir in 1926.*

Key to Map:

Less than 10%	
From 10% to 33 1/3%	
From 33 1/3% to 66 2/3%	
More than 66 2/3%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

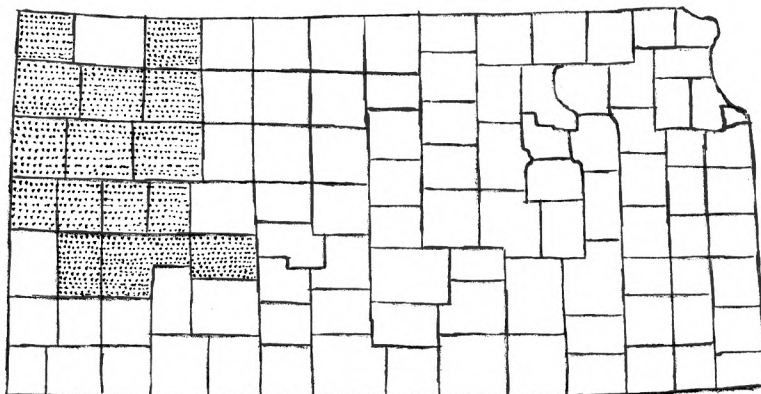






Figure 25. Map of Kansas showing, by counties, the proportion between the total acreage of land producing farm crops and the acreage sown to Barley in 1926.*

Key to Map:

Less than 10%	
From 10% to 33 1/3%	
From 33 1/3% to 66 2/3%	
More than 66 2/3%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

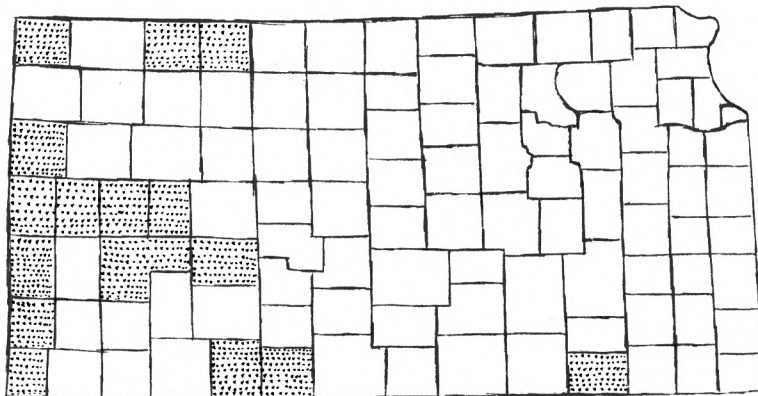






Figure 26. Map of Kansas showing, by counties, the proportion between the total acreage of land producing farm crops and the acreage sown to Sorghum for seed or hay in 1926. *

Key to Map:

Less than 10%	
From 10% to 33 1/3%	
From 33 1/3% to 66 2/3%	
More than 66 2/3%	

* Data from Twenty-fifth Biennial Report of the Kansas State Board of Agriculture, 1925-26.

Figure 2 indicates that persons engaged in manufacturing and mechanical industries are fairly well scattered over the state. There is a tendency, however, for greater numbers to be found in the north eastern and south eastern counties. In these localities studies should be made to determine the type of work performed by the people so engaged. The school should then make all possible attempts to train young workers to meet the needs of these industries. The same might be said of trade as shown in Figure 3.

In Figures 4, 5, and 6 we note at once the extremely local character of such occupations as transportation, domestic and personal service, and mining. In all cases the course of study for vocational education should be based upon surveys made of the community in which the school is located.

So far, nothing definite has been said regarding the teaching of home economics. This occupation is not local in character and schools all over the state are offering courses in home making. The happiness and satisfaction of the great majority of individuals depends largely upon the success of the home. It should be the attempt of the school to offer home making courses of the greatest practical value. This can be done by making studies of the needs for training in the home. The state employs a supervisor of

home economics whose duty it is to supervise all schools within the state which have accepted the provisions of the Smith-Hughes Law. As more and more schools come under this control the work will become too heavy for one person to perform with the greatest efficiency. It would probably be a good plan to follow somewhat the same procedure as is suggested for agriculture, to employ supervisors and place them in more direct charge of the home economics work of the schools in certain sections of the state. They should work under the direction of the state supervisor.

This department has also done much good work in adult home making classes. In 1928 classes for adults were held in twenty communities. One hundred forty-nine units of work were offered with an enrollment of 2,904 women.* Evening vocational home making classes have also been doing a very commendable work among adults. For the six months period ending January 1, 1928, sixty-seven evening classes were held in seventeen cities with a total enrollment of 1,399. For the period ending July 1, 1928, eighty-two such classes were held in eighteen cities with an enrollment of 1,505.**

* Kansas Annual Descriptive Report of the State Board for Vocational Education to the Federal Board for Vocational Education for the Year Ending June 30, 1928.

** Ibid.

Kansas is making rapid strides toward an efficient vocational education program, but we must not think that the time has come to rest on our oars and glide along in the satisfaction of what we have done. We must be constantly awake to new developments and forever striving to make any improvements possible in our school system.

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