

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

George E. Condra Papers

Natural Resources, School of

1-1939

An Outline Of Nebraska's Industries

George E. Condra

Follow this and additional works at: <http://digitalcommons.unl.edu/snrcondra>

 Part of the [Geology Commons](#), [Hydrology Commons](#), [Sedimentology Commons](#), and the [Soil Science Commons](#)

Condra, George E., "An Outline Of Nebraska's Industries" (1939). *George E. Condra Papers*. 2.
<http://digitalcommons.unl.edu/snrcondra/2>

This Article is brought to you for free and open access by the Natural Resources, School of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in George E. Condra Papers by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

AN OUTLINE OF NEBRASKA'S INDUSTRIES

By G. E. CONDRA

BULLETIN 19
CONSERVATION DEPARTMENT
OF THE
CONSERVATION AND SURVEY DIVISION
UNIVERSITY OF NEBRASKA



Reprint from the 1938 Nebraska Blue Book,
with some modifications.

Printed by Authority of the State of Nebraska

Lincoln, Nebraska

January, 1939

AN OUTLINE OF NEBRASKA'S INDUSTRIES

By G. E. CONDRA

BULLETIN 19
CONSERVATION DEPARTMENT
OF THE
CONSERVATION AND SURVEY DIVISION
UNIVERSITY OF NEBRASKA



Reprint from the 1938 Nebraska Blue Book,
with some modifications.

Printed by Authority of the State of Nebraska
Lincoln, Nebraska
January, 1939

THE UNIVERSITY OF NEBRASKA

C. S. BOUCHER, Chancellor

BOARD OF REGENTS

HON. MARION A. SHAW, David City
HON. CHARLES Y. THOMPSON, West Point
HON. ARTHUR C. STOKES, Omaha
HON. ROBERT W. DEVOE, Lincoln
HON. STANLEY D. LONG, Grand Island
HON. FRANK M. JOHNSON, Lexington

CONSERVATION AND SURVEY DIVISION

G. E. CONDRA, Dean and Director

As defined by law, the Conservation and Survey Division of the University includes the following state departments and surveys: Soil, Geological, Water, Biological, Industrial, Conservation, and Information Service. Its major purpose is to study and describe the state's resources and industries for use in development. Reports are published in three series, i.e., Nebraska Soil Survey, Nebraska Geological Survey, and the Conservation Department.

An Outline of Nebraska's Industries

By G. E. CONDRA

Definition. The term "industry" has a very flexible meaning. Its usage is general when reference is made to the industry of a country or of a state and more restricted when employed to designate an occupational group, as agricultural industry or manufacturing industry. But the development of new methods and the direction of activity along special restricted lines has given rise to specific industries. So the term industry is now applied to activity in general, to the work of industrial groups, and to the industries proper.

Sometimes the name of an industry is used rather loosely. For example, the wheat industry includes only the agricultural and marketing processes involved in wheat production and does not include the whole story of what is done with wheat after it is marketed. In other words, what may be loosely called the wheat industry usually is three or more industries represented in the sequence: (1) wheat production, (2) wheat milling, and (3) the processing of the products of the flouring mills. So the wheat industry proper leaves off where the wheat milling industry begins and the latter leaves off in turn where the products of the flouring mills are manufactured into special cereal products, as Shredded Wheat and Cream of Wheat.

Occupational Groups. The United States Census classes the occupational groups and the gainful workers of Nebraska for 1929 as follows:

1. Forestry and fishing.....	158 persons
2. Extraction of minerals.....	570 persons
3. Agriculture	197,199 persons
4. Manufacturing and mechanical industry.....	80,986 persons
5. Transportation and communication.....	41,780 persons
6. Trade	67,305 persons
7. Public service	6,291 persons
8. Professional service	39,664 persons
9. Clerical service	30,320 persons
10. Domestic service	42,735 persons
	<hr/>
	507,008 persons

Groups 1 to 5 inclusive of the preceding list are engaged primarily in the production of materials and things and the conversion of the materials into useful products. This places them under industry proper. Groups 5 and 6 are on the borderline between industry and business and their enterprises are classed as industry, business, or merchandizing activities. Although divisions 7, 8, 9, and 10 are related to both industry and business they stand alone as designated.

Group Relations. The relations between the occupational groups are very close. What affects one group is soon experienced favorably or unfavorably by the others.

The great source of wealth in Nebraska is the soil, and when crops are good and the farm income is high, all go forward; with drouth and low gross agricultural income, recession is quite sure to follow and it is likewise certain that lowering price levels for factory products react through all the groups. Consequently, it is certain that a close relationship obtains throughout the industrial development of Nebraska.

Factors in Industry. Some of the industrial enterprises of the state were short lived; others have been successful, which raises the question: Why failure and why success? The answer to this seems to lie in the fact that the enterprises that were installed without reason were doomed from the start, whereas those that fit naturally into the picture have survived. For example, meat packing, grain milling, butter making, beet sugar manufacture, and many other industries have succeeded in Nebraska because they were needed and conditions are right for their development here.

Among the dominant factors involved in the industrialization of the state are the available raw materials, available skilled labor, favorable transportation facilities, healthful climate, relatively cheap power, and the dependable markets for the production. All told, most of our industries are now well anchored enterprises, but they have experienced very trying circumstances the past seven or eight years.

List of Industries. The principal industries of Nebraska are summarized as follows:

I. Mineral group:

1. Stone industry
2. Clay industry
3. Sand and gravel industry
4. Potash industry (now out)
5. Volcanic ash industry (now nearly out)

} This is the mineral production group.

II. Agricultural group:

1. Grain farming industry
2. Wheat "
3. Corn "
4. Alfalfa hay "
5. Wild hay "
6. Truck gardening "
7. Bean "
8. Small fruit "
9. Apple "
10. Melon "
11. Potato "
12. Sugar beet "
13. Florist "
14. Nursery "
15. Seed "
16. Forest "
17. Irrigation "

} This agricultural production subgroup is known in a general way as plant industry.

- 18. Stock raising "
- 19. Cattle "
- 20. Dairy "
- 21. Poultry "
- 22. Chick "
- 23. Honey production "
- 24. Swine or hog "
- 25. Horse "
- 26. Sheep "
- 27. Stock feeding "
- 28. Fish "
- 29. Fur "
- 30. Fur-farming "

} This agricultural production subgroup is known generally as animal industry.

III. Manufacturing group:

- 1. Cement industry }
- 2. Brick and tile "
- 3. Stone working "
- 4. Pottery "
- 5. Glass-working "
- 6. Petroleum refining "
- 7. Lead refining "
- 8. Chemical "
- 9. Artificial gas "
- 10. Hydro-power "
- 11. Light and power "
- 12. Farm machinery "
- 13. Iron and steel goods "
- 14. Planing mill "
- 15. Furniture "
- 16. Broom and brush "
- 17. Paper-working "
- 18. Tent and awning "
- 19. Leather goods "
- 20. Saddlery and harness "
- 21. Cigars and cigarettes "
- 22. Clothing "
- 23. Shoe "
- 24. Meat packing "
- 25. Poultry dressing "
- 26. Canning "
- 27. Grain milling "
- 28. Cereal products "
- 29. Macaroni "
- 30. Beet sugar "
- 31. Confectionery or candy "
- 32. Bakery "
- 33. Commercial milk "
- 34. Butter "
- 35. Cheese "
- 36. Ice cream "
- 37. Beverage "
- 38. Brewery "
- 39. Stock feed "

} This subgroup uses mineral material products in manufacture.

} This subgroup converts various kinds of material into useful products.

} This subgroup manufactures foods and drinks.

- | | | |
|--|---|---|
| 40. Laundry, cleaning—pressing industry
or business | } | This subgroup builds structures or
reconditions products and structures. |
| 41. Building | | |
| 42. Repair shop | | |
| 43. Plumbing | | |

44. Printing and publishing industries This is a very distinctive group.

IV. Transportation and communication group:

- | | | |
|-------------------------------------|---|---|
| 1. Railway business or industry | } | These groups usually are classed as businesses
rather than industries. |
| 2. Airway " " " | | |
| 3. Waterway " " " | | |
| 4. Gas pipeline " " " | | |
| 5. Telephone and
telegraph " " " | | |
| 6. Radio " " " | | |
| 7. Postal
service " " " | | |

V. Trade or merchandizing group:

1. Retail business or industry
2. Wholesale business or industry .
3. Banking and brokerage business or industry
4. Insurance business
5. Real estate business

Nebraska has more than 75 quite well-defined industries and several business enterprises that are often classified as industries. During normal years our industries employ about 387,970 persons, produce \$500,000,000 or more in value of agricultural and mineral products and through manufacture, repair and reconditioning develop added values of more than \$100,000,000.

Stone, sand, and clay production have considerable importance in the state, but the potash industry which operated during the World War is abandoned and the volcanic ash industry shows little activity. Very little coal and no petroleum or natural gas are produced in Nebraska at this time.

Agricultural Industries. These have been described by state and federal departments, hence they are not reviewed here. However, some may not realize that the florist, nursery, seed, and melon industries are gaining in importance, and that there is considerable income from the fish, fur, fur-farming, and forest industries, which represent phases of agriculture.

Persons wishing information on any particular agricultural industry of the state should write to the College of Agriculture of the University, Lincoln; or the United States Department of Agriculture, Washington, D. C. Those wanting statistical information on agricultural production should write the Division of Agricultural Statistics of the Nebraska Department of Agriculture, Lincoln.

Tables 1, 2, and 3 following show how agricultural production and prices declined from 1932 to 1937 and how this and the lowering price level affected the farm income. The production of corn, wheat, barley, oats, rye, and the sorghums increased in 1938 over 1936 and 1937. The state now has an abundance of feeds, but has relatively few hogs and cattle, and the price for nearly all agricultural products is unusually low.

TABLE 1.—PRODUCTION AND FARM PRICE OF SELECTED NEBRASKA CROPS
(Compiled from the U. S. Dept. of Agriculture Agricultural Statistics and A. E. Anderson Statistician)

Nebraska	Production (Bushels, bags, or tons)				Farm Price		
	Aug. 1928-32	1936	1937	1938	1936	1937	1938
Corn (bushels)...	223,843,000	26,859,000	82,992,000	97,850,000	\$ 1.08	\$.46	\$.37+
Wheat (bushels)...	56,520,000	47,339,000	47,184,000	59,589,000	1.05	1.00	.51±
Oats (bushels)...	68,421,000	19,067,000	35,637,000	56,086,000	.50	.30-.32	.18
Barley (bushels)...	15,386,000	5,860,000	10,642,000	21,972,000	.73	.48	.27
Rye (bushels)...	2,667,000	3,442,000	3,900,000	4,968,000	.82	.65	.31
Sorghums (bushels)...	268,000	832,000	1,748,000	6,570,000	1.06	.70	.60-
Potatoes (bushels)...	9,526,000	4,730,000	6,035,000	6,375,000	1.21	.42+	.50
Beans (dry) edible (bags)	60,000	120,000	220,000	220,000	4.70	3.35	2.50
Tame Hay (tons).....	2,491,000	1,617,000	1,500,000	lower	10.70	7.40	4.30
Wild Hay (tons).....	2,005,000	1,055,000	1,192,000	1,658,000	7.60	6.20	4.10

TABLE 2.—NUMBER AND VALUE OF CATTLE, INCLUDING COWS, HEIFERS, AND CALVES

(Compiled from the U. S. Dept. of Agriculture Agricultural Statistics)

Year	Number	Value	Total Value
1934.....	3,980,000	\$17.50 per head	\$ 69,650,000
1935.....	3,232,000	18.00 per head	58,176,000
1936.....	3,491,000	34.30 per head	119,741,300
1937.....	3,037,000	30.90 per head	96,879,600
1938.....	2,824,000	32.10 per head	93,192,000

TABLE 3.—NEBRASKA'S GROSS FARM INCOME FROM FARM CROPS, LIVE-STOCK, AND BENEFIT PAYMENTS

(Compiled from the U. S. Dept. of Agriculture Agricultural Statistics)

	1934	1935
Farm crops.....	\$ 21,693,000	\$ 54,540,000
Livestock.....	182,454,000	169,360,000
Crop benefit payments.....	21,407,000	22,617,000
Hog benefit payments.....	16,798,000	5,932,000
Total.....	\$242,352,000	\$252,449,000

NEBRASKA'S MANUFACTURES

Nebraska industries turn out many kinds of well-known agricultural products, and a long list of manufactured products, as plows, engines, windmills, tools, furniture, caskets, mattresses, saddles, suit cases, tents, awnings, brooms, brushes, suits, shirts, hats, corsets, collars, shoes, wooden shoes, flour, bread, macaroni, cereal products, sugar, meats, butter, cheese, candy, feeds, pop, coca cola, beer, cigars, chemical products, cement, brick, tile, and electric energy, and are engaged in building and repair work.

Table 4 following is a compilation of data relating to some of the leading products manufactured in Nebraska. It is followed by Table 5, which shows valuable data relating to the manufacturing enterprises for the years 1909, 1919, 1929, and 1935. Of these years, 1919 was in boom days, 1929 represents the normal, and 1935 a year of drouth and depression.

TABLE 4.—REPRESENTATIVE PRODUCTS OF NEBRASKA FOR THE YEAR 1929
(Compiled from the U. S. Census)

	Number of Establish- ments	Number of Officers and Wage Earnings	Wages and Salaries	Cost of Materials and Containers	Value of Production	Added Value
Agricultural implements.....	4	115	\$ 166,122	\$ 261,281	\$ 662,255	\$ 386,507
Animal feeds.....	13	129	174,652	2,213,393	2,725,407	484,476
Awnings, tents, canvas covers.....	8	144	185,432	309,557	638,432	322,393
Bakery products.....	217	2,373	2,898,512	6,914,057	16,382,507	9,145,138
Beverages.....	50	193	249,145	360,797	987,723	588,844
Books and job printing.....	111	1,140	2,122,304	1,722,231	5,481,445	3,695,230
Butter.....	88	1,318	2,253,632	39,206,298	47,873,638	8,251,460
Cigars and cigarettes.....	11	122	83,824	115,723	297,348	179,808
Confectionery.....	11	301	260,006	476,535	1,075,186	580,732
Flour and grain mill products.....	96	974	1,467,870	23,628,345	29,579,918	5,567,093
Foundry and machine shop products.....	39	687	1,194,459	1,701,214	4,473,579	2,722,857
Furniture, including store and other furniture.....	19	481	679,635	1,215,068	2,416,724	1,185,609
Ice cream.....	41	319	493,673	1,584,014	3,516,149	1,835,305
Iron and steel works (structural).....	7	516	830,814	1,375,632	2,867,675	1,472,532
Meat packing (wholesale).....	15	7,175	10,089,381	185,790,683	208,994,805	22,003,533
Medicine compounds.....	19	287	494,925	477,554	1,729,543	1,245,736
Newspapers and periodicals.....	256	2,711	4,836,477	2,618,881	12,995,956	10,240,896
Poultry dressing and packing.....	20	408	397,044	4,197,793	5,261,406	1,028,356
Planting mill products.....	25	435	700,813	967,584	2,070,804	1,072,667
Railway repair shops.....	25	4,686	7,628,345	5,753,281	13,867,644	7,628,245
Saddlery and harness.....	6	120	213,354	903,846	1,715,839	805,241

TABLE 5.—STATISTICAL SUMMARY OF ALL MANUFACTURES OF NEBRASKA BY SELECTED YEARS

(Compiled from the U. S. Census)

Year	Number of Establishments	Number of Wage Earners and Salaried Officials	Wages and Salaries	Cost of Materials and Containers	Value of Products	Added Value
1909.....	2,500	29,444	\$19,439,000	\$148,788,301	\$199,018,579	\$ 47,937,608
1919.....	2,884	46,160	61,538,692	473,636,425	596,042,498	115,268,376
1929.....	1,491	34,752	51,347,419	357,509,696	484,168,409	119,993,699
1935.....	1,154	25,042	30,324,000	192,127,000	255,445,000	63,319,000

Distribution of Manufactures. Tables 6 and 7 following show the distribution of manufacturing by leading counties and cities, except that, Scotts Bluff County and the city of Scottsbluff are not included in the lists, due to lack of census data. However, this county and city rank very high, probably next to Lancaster County and Lincoln in industrial production.

Tables 6 and 7 show the relation that the placement of industries holds to the rank of counties and cities in wages, value of products, etc. For example, the Dempster Mill Manufacturing Company is a factor at Beatrice; the creamery and other industries boost Fremont; various industries raise the rank of Hastings and Grand Island; and above all, the sugar factories, feed mills, meat packing house, etc., if they were listed, would show why Scotts Bluff County and Scottsbluff have high rank.

TABLE 6.—THE LEADING MANUFACTURING COUNTIES OF NEBRASKA, 1929

(Compiled from the U. S. Census)

County	Number of Establishments	Number of Wage Earners	Wages	Cost of Materials and Containers	Value of Products	Added Value
Adams.....	45	618	\$ 735,481	\$ 3,754,602	\$ 6,350,692	\$ 2,459,878
Box Butte.....	9	294	479,626	1,329,129	2,205,335	809,128
Buffalo.....	22	121	161,167	1,105,231	1,725,735	571,359
Cass.....	13	407	599,287	622,737	2,422,113	1,461,852
Dawes.....	13	185	299,390	333,499	809,390	435,325
Dawson.....	19	66	78,555	726,528	1,036,840	291,450
Dodge.....	49	447	486,058	3,795,160	5,557,430	1,677,761
Douglas.....	445	16,339	21,636,998	276,882,987	355,635,684	75,593,417
Gage.....	33	738	906,342	4,706,798	7,399,890	2,574,269
Hall.....	43	589	720,112	4,016,528	6,527,900	2,302,766
Jefferson.....	17	256	303,499	1,456,702	2,230,853	702,467
Lancaster.....	164	3,093	4,185,236	16,427,161	28,829,736	11,850,959
Lincoln.....	18	469	713,080	842,666	2,093,059	1,158,017
Madison.....	34	391	488,532	2,304,990	3,848,356	1,454,335
Nuckolls.....	15	199	260,483	2,156,620	3,428,512	958,692
Platte.....	24	165	194,108	1,242,688	1,836,290	554,519
Red Willow.....	17	265	414,074	395,941	1,074,914	642,187
Richardson.....	19	179	281,797	1,327,877	2,043,594	674,419
Thayer.....	13	234	134,381	570,250	944,215	361,560
York.....	15	86	98,090	199,529	480,748	251,533

TABLE 7.—THE LEADING MANUFACTURING CITIES OF NEBRASKA, 1929
(Compiled from the U. S. Census)

City	Number of Establishments	Number of Wage Earners	Wages	Cost of Materials and Containers	Value of Products	Added Value
Beatrice	24	498	\$ 577,986	\$ 3,958,521	\$ 5,976,092	\$ 1,933,515
Fremont	33	385	438,266	3,606,290	5,173,022	1,488,216
Grand Island	37	522	637,884	3,483,224	5,645,029	1,999,066
Hastings	38	554	656,386	3,695,115	6,048,241	2,238,694
Lincoln	150	1,889	2,301,195	12,778,043	22,912,810	9,639,010
Norfolk	20	170	216,359	1,616,783	2,665,491	1,001,567
North Platte	15	379	576,551	807,096	1,759,914	878,380
Omaha	431	16,108	21,356,639	275,792,637	352,835,338	73,915,103
Scottsbluff *						

* Not covered in the 1930 U. S. Census.

REPRESENTATIVE MANUFACTURING INDUSTRIES

Meat Packing. This, Nebraska's most important manufacturing industry, depends upon the production and supply of cattle, hogs, and sheep. Omaha is a leading stock market and meat packing center. It is supplied by animals brought from Nebraska and other states. Some hogs, cattle, and sheep are slaughtered in Lincoln, Hastings, Grand Island, Gering, and other cities of the state, and some Nebraska-grown animals are slaughtered in Denver, Sioux City, Kansas City, and Chicago.

The Nebraska meat packing houses distribute their products widely in the United States and to some foreign countries. Tables 8 and 9 show the number and kinds of animals slaughtered in Nebraska, and the principal packing house products and their value. These figures do not include the animals slaughtered on farms for local use.

TABLE 8.—NUMBER OF ANIMALS SLAUGHTERED IN NEBRASKA MEAT PACKING ESTABLISHMENTS, 1929
(Compiled from the U. S. Census)

Cattle	843,102
Calves	82,809
Sheep and lambs	1,692,045
Hogs	2,584,899
Total number of animals	5,202,855

TABLE 9.—AMOUNT AND VALUE OF THE PRINCIPAL PRODUCTS OF NEBRASKA'S MEAT PACKING ESTABLISHMENTS, 1929

(Compiled from the U. S. Census)

Fresh beef	443,293,554 lbs.	\$84,822,019
Fresh veal	11,389,252 lbs.	2,145,026
Fresh mutton and lamb	68,685,552 lbs.	16,365,683
Fresh pork	157,894,972 lbs.	25,406,632
Cured pork	187,180,152 lbs.	31,739,531
Cooked ham	3,025,292 lbs.	1,075,702
Sausage, etc.	33,156,107 lbs.	7,798,708
Lard	101,621,598 lbs.	11,912,284
Cattle hides and calf skins	48,736,554 lbs.	8,542,396
Sheep and lamb pelts	1,691,468 lbs.	3,385,791

Besides the above, values are obtained from the hair of hogs and from hearts, livers, hoofs, horns, bones, blood, casings, and tankage materials, etc. of all animals. These so-called by-products are used as edible foods or in several mechanical and chemical industries located in other states.

Poultry Dressing Industry. This industry is largely based on chickens of which 20,000,000 or more are produced per year of which there are 12,000,000 or more birds in the state at a given time. The turn-over is quite high. The poultry industry also has an average production of more than one million dozen eggs per year.

Most of the larger cities of the state have poultry feeding and dressing plants, which seem to operate quite successfully most years. The largest of these establishments are located at Omaha, Falls City, Norfolk, Crete, and Fremont. They handle principally chickens and some ducks, geese, and turkeys.

Dairy Industry. The conditions in Nebraska are favorable for dairying and this industry ranks high in the production of milk, cream, and farm-made butter. According to the United States Census the farm income from the sale of dairy products for 1936 was as follows:

1. Milk retailed by farmers.....	\$5,258,000
2. Wholesale milk	4,554,000
3. Butterfats	16,408,000
4. Farm-made butter.....	326,000
	<hr/>
	\$26,546,000
5. Estimated value of milk, cream and butter used on the farm	7,730,000
6. Value of milk used for stock feed.....	1,350,000
	<hr/>
Total farm value.....	\$35,626,000

Butter Industry. Though centralized in Omaha, butter making is a feature of several cities of the state, as at Lincoln, Fremont, Norfolk, Falls City, Crete, Hastings, McCook, Orleans, North Platte, and Alliance. The main by-products of these factories are buttermilk, cottage cheese, and skimmed milk. The butter industry held up quite well during the drouth period. The production of butter averaged 88,422,000 pounds in 1930-34, about 76,400,000 pounds in 1935 and 72,842,000 pounds in 1936.

Persons wishing information on the dairy product industries should write the Conservation and Survey Division of the University for the recently published bulletins: The Milk Industry of Nebraska (Bulletin 15), The Butter Industry of Nebraska (Bulletin 16), Cheese Production in Nebraska (Bulletin 17) and Ice Cream Production in Nebraska (Bulletin 18).

Grain Milling. Wheat is the main grain milled in Nebraska and corn is second. Milling is done in many widely distributed plants. Table 10 shows the amount (bushels) of grains milled in 1927 and 1929.

TABLE 10.—BUSHELS OF GRAIN MILLED IN NEBRASKA

(Compiled from the U. S. Census)

Kind of grain	Year 1927	Year 1929
Wheat	15,368,697	15,564,585
Corn	1,960,681	2,843,549
Oats	109,078	172,463
Rye	35,133	61,005
Barley	7,816	38,383
Total number of bushels.....	17,481,405	18,679,985

Cereal Products Industry. Several kinds of cereal products are made in Omaha and Lincoln. They are Corn Flakes, Uncle Sam's breakfast food, and other similar products. The manufacture of macaroni at Omaha has become a specialized industry.

Bakery Industry. This industry produces bread, rolls, cakes, crackers, doughnuts, pies, etc. It makes extensive use of Nebraska-made flour and meal, employs 2,300 or more wage earners, and adds more than \$9,000,000 of creative value to the state per year.

Beet Sugar Industry. There are seven large sugar factories in Nebraska located at Grand Island, Minatare, Bayard, Scottsbluff, Gering, Mitchell, and Lyman. They mill more than 1,000,000 tons of beets per year and produce therefrom about 280,000,000 pounds of sugar and the by-products known as molasses and pulp which supply important stock feeds, as do also the beet tops.

The beet sugar industry of Nebraska is described in Dr. Anderson's Bulletin 9 of the Conservation and Survey Division. This report is free upon request.

Stock Feed Industry. Grains, alfalfa, sugar beet molasses, beet pulp, cotton cake, and other materials are being milled into stock feeds at a number of widely distributed towns and cities of the state. The products of these mills are well suited to stock feeding and bridge the gap between stock raising and meat packing.

Brewery Industry. The manufacture of beer has become a Nebraska industry the past few years. The breweries are located at Omaha (3) Columbus (1) and Crete (1).

Canning Industry. Canning factories are located at Nebraska City, Plattsmouth, Fremont, Norfolk, and Scottsbluff. Drouth has affected the canning industry quite unfavorably by cutting off the supply of materials, but the stronger enterprises have survived. The principal materials canned in Nebraska factories are corn, hominy, tomatoes, green beans, pumpkin and squash, spinach, kraut, beets, tomato pulp, succotash, lima beans, pork and beans, apples, and cherries. Considerable canning is done in the homes of the state and in connection with the meat packing and other industries.

Lead Refining Industry. The American Smelting Company has a large successful plant at Omaha for the refining of lead brought from the Rocky Mountain states and from as far as Mexico. This lead from the smelters of other states is refined in the Omaha plants, shipped to ammunition companies east, and certain chemical by-products are formed in connection with the refining processes and are used in Nebraska and elsewhere. The Omaha smelter, so-called, is a chemical refining plant not a smelter as the name would cause one to suppose.

Petroleum Refining Industry. Although no crude oil in commercial quantities is produced in Nebraska, petroleum refineries are located at Scottsbluff and Chadron. These refineries truck their crude oil in from Wyoming.

Cement Industry. There are two large cement plants in the state, located at Superior and Louisville. They quarry limestone, shale, and chalk rock and grind, mix, and burn them to clinkers which are ground as cement. The production of these plants is used in highway construction and the building industries, principally in Nebraska.

Building Industry. Among the activities here are the building or construction of highways, bridges, irrigation and water power projects, river control work, houses, public buildings, and industrial plants. According to the United States Census, 19,753 persons were engaged in the building industry in 1930. Much relief labor is now used in the building industry. Except the projects which are subsidized by the federal government, there is comparatively little building in Nebraska at this time.

Repair Shop Industry. This relates to the maintenance and reconditioning of machinery, autos, motors, and to other products of manufacture and building. It includes the activity of railroad car shops, general repair shops, garages, and other establishments doing this line of work.

Farm Machinery Industry. Many plows, listers, pumps, windmills, and other kinds of farm machinery are made in Omaha, Beatrice, Lincoln, Fremont, Grand Island, Fairbury, Kearney, and other cities of the state.

Iron, steel, and other metal-working industries had 7,552 employees in 1930. Planing mills, other wood-working and furniture manufacture had 1,459 employees in 1930 and the independent hand trades employed 3,920 persons during the same year.

Printing and Publishing Industry. According to the United States Census about 267 establishments and 4,176 persons were engaged in the reportorial, editorial, clerical, administrative, and other kinds of work relating to the printing of newspapers, magazines, and books, and job work in Nebraska in 1930. In 1929, the materials used in these industries cost \$4,341,112; the production had a total value of \$18,477,401; and the added value was \$13,936,126. The printing and publishing industries had no marked recession during the depression and drouth.

INVESTIGATION, PUBLICATION, AND PROMOTION

Some of the investigational activities of the University are closely related to the industrial progress of the state. They have published a number of bulletins on industries. Also, most of the occupational and industrial groups of the state are organized to further their interests, and several of them publish annual reports which contain valuable information. Among these reports are those of the State Manufacturers' Association, State Irrigation Association, State Horticultural Society, State Department of Agriculture, and others. All told, about all that might be expected is being done by the state, University departments, and by organized effort to further the industrial activity within the state.

It should be noted in closing that much progress is being made at this time in chemical research to determine what new products can be made from corn, potatoes, weeds, straw, and other agricultural materials. This should mean the establishment of new manufactures, the creation of new markets for agricultural products and the employment of more labor.