

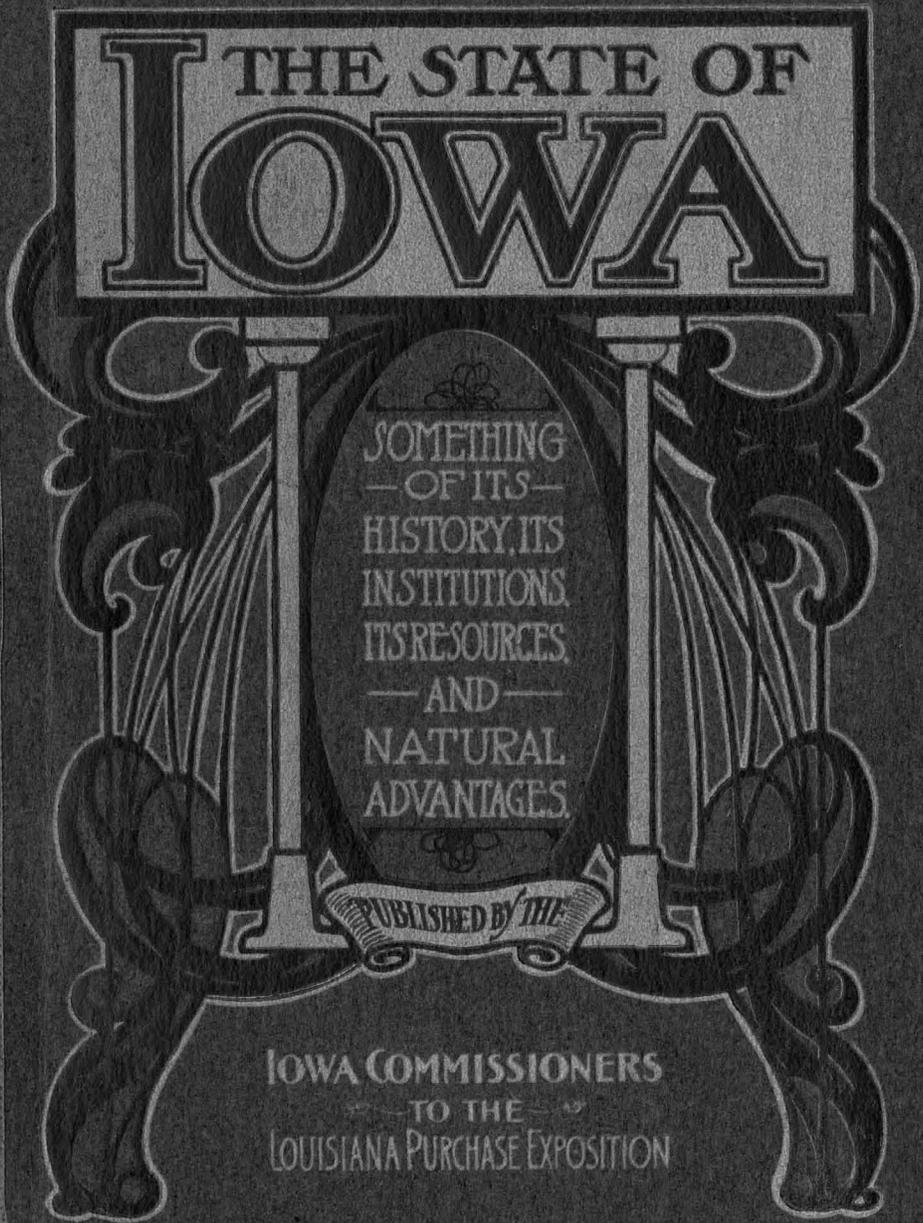
LOUISIANA PURCHASE EXPOSITION - IOWA COMMISSION

STATE OF IOWA.

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Iowa Louisiana Purchase  
Exposition Commission  
State of Iowa

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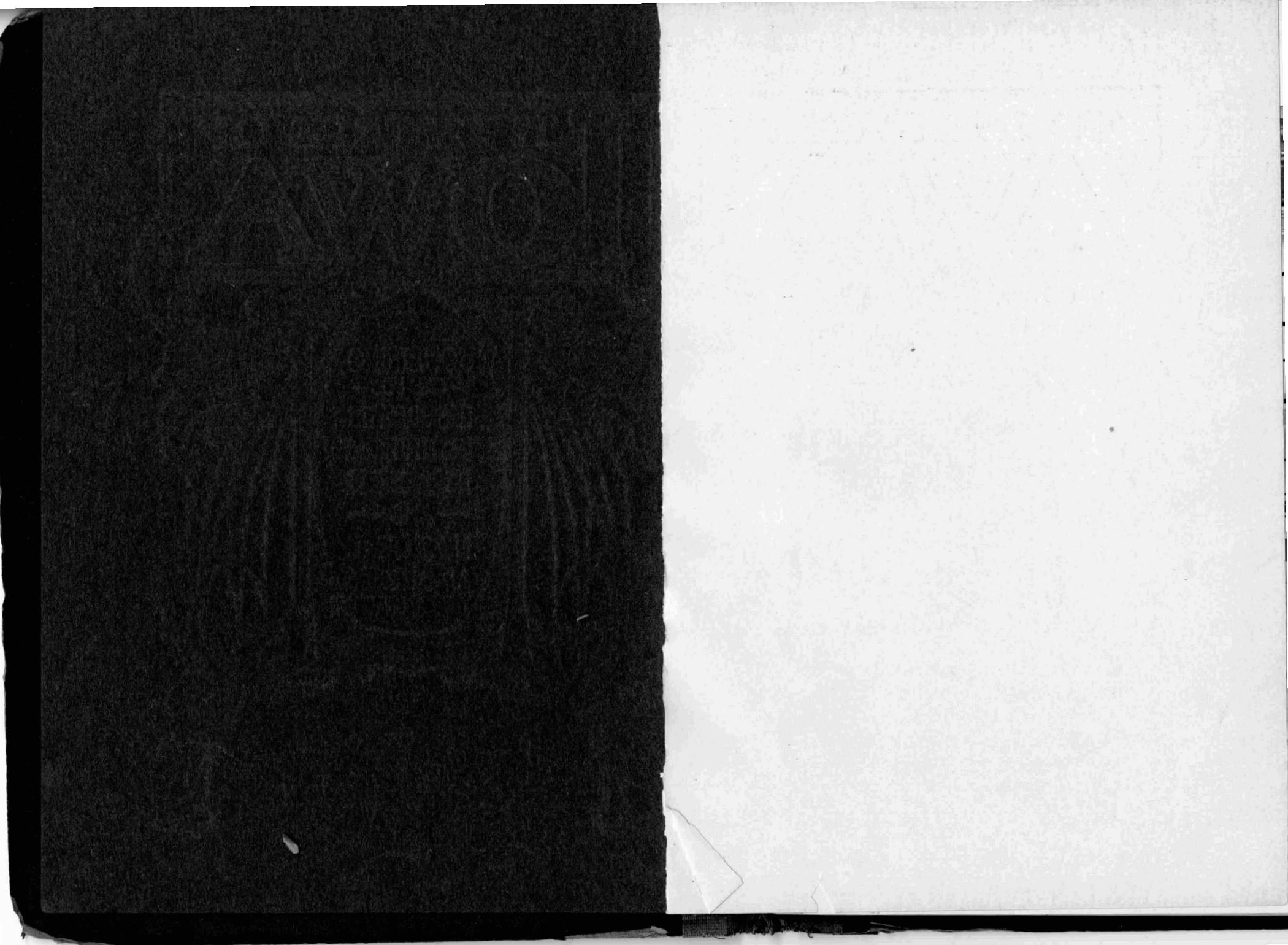
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# THE STATE OF IOWA

SOMETHING  
OF ITS HISTORY,  
ITS INSTITUTIONS  
ITS RESOURCES AND  
NATURAL  
ADVANTAGES.

PUBLISHED BY

IOWA COMMISSIONERS  
TO THE  
LOUISIANA PURCHASE EXPOSITION

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STATE OF IOWA



## PREFACE.



THE Commissioners for the State of Iowa to the Louisiana Purchase Exposition believed it wise to place the facts contained in this booklet in the hands of Commissioners from other States and other Nations to be preserved, it is hoped, as souvenirs of the year and the occasion which brought together at St. Louis the marvelous exhibition of the world's wealth.

The State of Iowa, centrally situated, of all the States of the United States of America is the richest in natural resources, the most beautiful in landscape and the most promising for the abode of a cultured, contented and happy people.

Where else on earth can be found a province or principality, a state or nation with 55,000 square miles of land so rich and of such even and average productivity? And with neighbors so congenial, as the States which bound our borders? With a healthful climate, free from biting northern winds, or blighting southern blasts, there is no place more deserving to be called home.

This booklet is especially dedicated to the promoters of the Louisiana Purchase Exposition, not unmindful, however, of the splendid Iowa citizenship, which has made it possible to present such a record. It has been compiled and printed by the Iowa Publishing Company, of Davenport, Iowa. The Hon. W. C. Hayward, member of the State Senate, is the editor. Both publisher and editor deserve credit and commendation from the reader and especially from the people of Iowa for painstaking labor in the collection and arrangement of data for this record.

*H. H. Kistner Chairman  
Press & Publisher*

## IOWA COMMISSION LOUISIANA PURCHASE EXPOSITION. *St. Louis, 1904.*

On January 6, 1899, Governor Leslie M. Shaw appointed and commissioned the following named gentlemen as a preliminary commission to represent the State of Iowa at a convention of representatives of the states in the "Louisiana Purchase" to be held in the city of St. Louis, Missouri, in the month of January, 1899: Samuel B. Evans, of Wapello county; Charles M. Junkin, of Jefferson county; S. B. Ziegler, of Fayette county; Charles A. Stanton, of Appanoose county; A. B. Funk, of Dickinson county; James C. Milliman, of Harrison county; Edward H. Hunter, of Polk county; Lafayette Young, of Polk county; Edward P. Heizer, of Woodbury county; John L. Waite, of Des Moines county; David Brant, of Clinton county; Charles J. A. Ericson, of Boone county; Wm. E. Fuller, of Fayette county; Samuel M. Leach, of Dallas county; Joseph Wallace, of Hardin county; W. C. Hayward, of Scott county; William H. Dildine, of Woodbury county.

This preliminary commission after thoroughly investigating the merits of the proposed exposition organized by electing J. C. Milliman, of Harrison county, as chairman, and unanimously reported to the Honorable L. M. Shaw, governor of Iowa, January 4, 1902, recommending an appropriation of \$250,000 as a suitable amount with which to make a creditable representation of the resources, products and natural advantages of the state. This commission labored without compensation, their expenses being paid by the membership, and they made their report in the hope that its work might be helpful to the state of Iowa.

The twenty-ninth General Assembly after hearing the report of the preliminary commission appropriated \$125,000 and provided for a commission of thirteen members, two at large and one from each congressional district, to be appointed by the governor, to have full power to devise and execute plans for the exhibit and representation contemplated, and to serve without compensation except their actual expenses incurred while engaged in the work of the commission.

April 29, 1902, Governor A. B. Cummins appointed the permanent commission as follows:

IOWA BUILDING

### IOWA COMMISSION LOUISIANA PURCHASE EXPOSITION ST. LOUIS, 1904.

THE IOWA PUBLISHING CO., DAVENPORT, IA.

**COMMISSIONERS:**

At large:—William Larrabee, Clermont; W. W. Witmer, Des Moines.

First District:—LeRoy A. Palmer, Mt. Pleasant.

Second District:—George M. Curtis, Clinton.

Third District:—W. F. Harriman, Hampton.

Fourth District:—Thomas Updegraff, McGregor.

Fifth District:—J. H. Trewin, Cedar Rapids.

Sixth District:—S. S. Carruthers, Bloomfield.

Seventh District:—S. M. Leach, Adel.

Eighth District:—S. Bailey, Mt. Ayr.

Ninth District:—W. T. Shepherd, Harlan.

Tenth District:—C. J. A. Ericson, Boone.

Eleventh District:—Will C. Whiting, Whiting.

The commissioners permanently organized on October 7, 1902, by electing the following

**OFFICERS:**

William Larrabee, President.

W. F. Harriman, Vice President.

S. M. Leach, Treasurer.

F. R. Conaway, Secretary.

**EXECUTIVE COMMITTEE:**

W. W. Witmer, Chairman; S. M. Leach, LeRoy A. Palmer, J. H. Trewin, George M. Curtis.

Dr. P. L. Prentis was first appointed on this commission from the 8th district, but resigned and Dr. Bailey was appointed in his place.

December 18, 1902, the several commissioners were assigned to the chairmanship of the various departments, as follows:

Live stock, W. F. Harriman.

Agriculture, Will C. Whiting.

Dairy and Apiary, C. J. A. Ericson.

Horticulture, Dr. S. Bailey.

Minerals and Geology, S. S. Carruthers.

Manufacturing and Machinery, S. M. Leach.

Educational, J. H. Trewin.

Fine Arts, LeRoy A. Palmer.

Women's Work, Geo. M. Curtis.

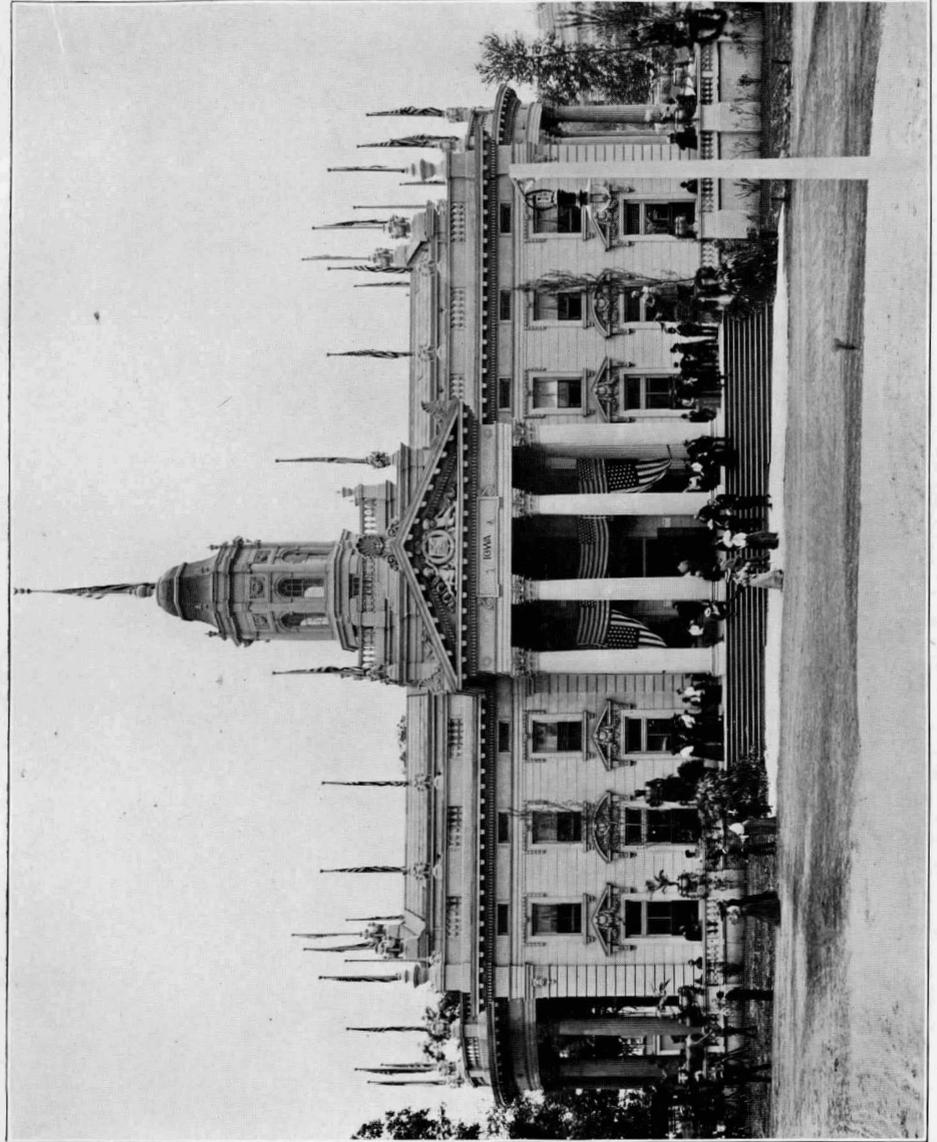
Forestry and Lumber, W. T. Shepherd.

Press and Publicity, W. W. Witmer.

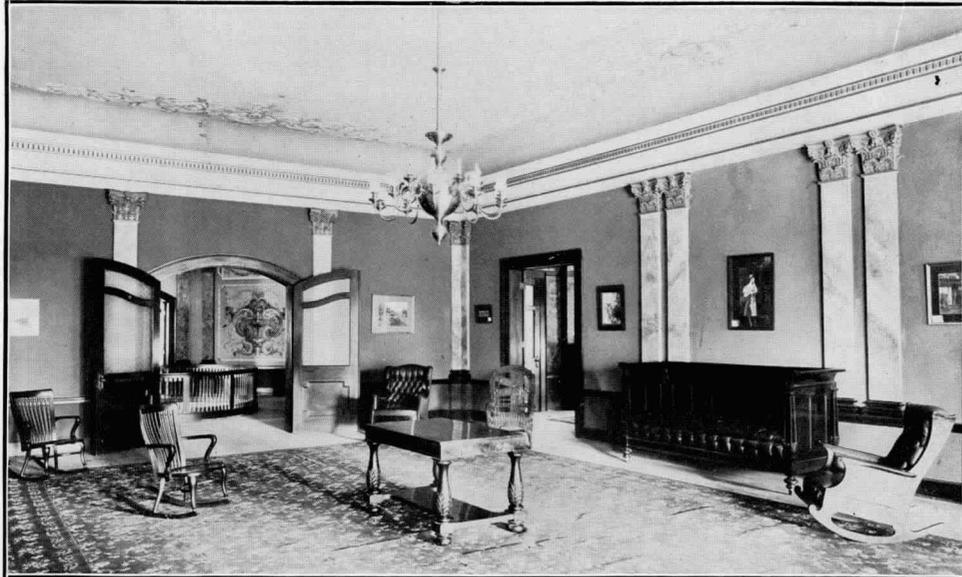
State Institutions, President Wm. Larrabee.

Archaeological, Historical and Statistical

Information, Thomas Updegraff.



IOWA STATE BUILDING—LOUISIANA PURCHASE EXPOSITION



INTERIOR VIEWS IOWA STATE BUILDING—LOUISIANA PURCHASE EXPOSITION.



## The State of Iowa

Descriptive and  
Historical.

**T**HE state of Iowa is washed on its eastern border by the Mississippi river and on its western by the Missouri; on the north it is bounded by the state of Minnesota and on the south by the state of Missouri; it is nearly rectangular in form and contains 55,475 square miles of surface or 35,504,000 acres. Its highest point is in the vicinity of Spirit Lake and its lowest at the mouth of the Des Moines river. The distance between these points is about 300 miles and the difference in altitude 1,200 feet, making an average slope of four feet to the mile. The slope from the northeast corner of the state to the southeast corner is one foot and one inch per mile; from the northwest corner to the southwest corner, two feet per mile; from the northeast corner to Spirit Lake, five feet and five inches per

mile; from the northwest corner to Spirit Lake, five feet per mile. These figures give an idea of the general lay of the land.

While largely a prairie state, its surface is crossed by a net work of streams, most of them fringed with narrow belts or occasional groves of timber that give beauty to the landscape and provide valuable utilities for its people. Its soil is rich and productive, its waters clear and sweet, its air pure and bracing and its climate, though temperate, sufficiently variable to induce health and vigor without reaching the extremes of heat and cold found farther south and farther north. No other equal area of the earth's surface has less waste land. It is an ideal country for diversified farming and for country living. Every farmer has a flowing stream or wells of water or both, and acres of native or artificial grove, or both; he has plow land, meadow land, pasture, orchard, and garden; he raises wheat, oats, corn, barley, vegetables, and fruits; timothy, clover and blue grass; horses, cattle, hogs, sheep and poultry; butter and eggs, milk and honey are his; he lives on the fat of the land and produces it himself. Schools and churches are close at hand, the city or village not far away, rural free mail delivery brings him his daily paper, the telephone gives him communication with the city and with his neighbors and soon the electric trolley line will provide a railroad at his very door.

#### COAL.

An important resource of the state is its vast, almost inexhaustible beds of coal which provide cheap fuel for manufacturing and other purposes, and its manufacturing interests are steadily responding to the situation, and each year growing to be more and more important. The situation is an ideal one for bringing together the farm and the factory: the producers and the consumers of the products of each.

#### TRANSPORTATION.

The state is also well provided with railroad transportation. A network of roads cross its surface in all directions, and at the hundreds of stations grow up thriving towns and villages. The Mississippi river is a growing factor in questions of transportation and the early completion of the Hennepin canal will have its influence also in determining rates on heavy freightage. The interurban electric car line is just beginning to make history in Iowa, and is likely to be of great importance to all interests.

#### PUBLIC SCHOOLS.

Iowa has a splendid system of free schools. School houses are everywhere within easy reach and all children between the ages of five and twenty-one years are given the opportunity to secure an education practically without cost. Facilities for obtaining a higher education than those afforded by the common school are within easy reach at small expense. Nearly every village has its graded school, the larger ones have high schools, and public colleges and universities are at various places within the state. Added to these are numerous private and parochial schools, all well patronized and doing most excellent work.

#### OUT OF DEBT.

The state has no bonded indebtedness and no floating debt, and state taxes as compared with those of other states are remarkably low. For several years the state has had a cash balance in its treasury averaging over a million dollars.

A large percentage of the counties of the state are also out of debt and have money in their treasuries. Municipal affairs in general have been splendidly managed. These facts bear witness to the intelligence, practical common sense and good business ability of the great masses of the people of Iowa.

#### POLITICAL HISTORY.

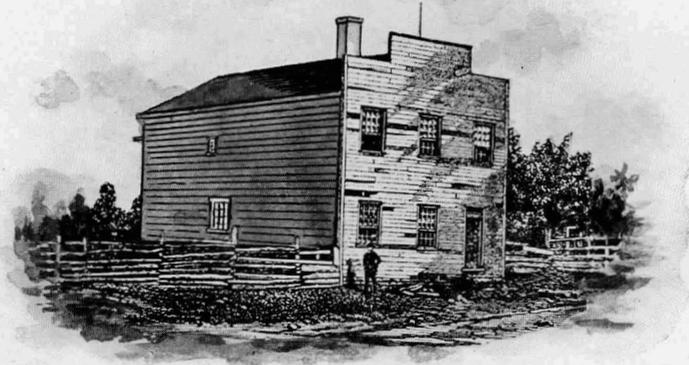
It is not the purpose of this sketch to enter upon a detailed description of events taking place in the early history of this continent leading up to the organization of Iowa as a territory and state. A brief reference will be made only to important events and their dates. Neither is it deemed necessary to refer at great length to all that has transpired at a later date, the purpose being to give a condensed but clear and chronological statement of such facts of historical interest as are deemed of greatest importance, without much filling in of detail.

The first discovery of the Mississippi river, that constitutes the eastern boundary of Iowa, is credited by history to Ferdinand de Soto and his band of explorers who reached it at the mouth of the Washita river in the spring of 1542. In July, 1543, they descended the Mississippi from the point of discovery to the Gulf of Mexico. They did not follow it up stream.

The Upper Mississippi was first reached by Marquette and Joliet with a party composed of themselves and five other French Canadians, who in the course of their travels came down the Wisconsin river until

they reached the Mississippi and then continued on down the latter as far as the mouth of the Illinois river. This was in the summer of 1673.

The first white men to set foot on Iowa soil were undoubtedly Marquette and Joliet and their party, who, on the trip referred to in the preceding paragraph, discovered foot prints and a pathway on the west bank of the Mississippi and went ashore to ascertain whence they led and by whom made. They soon found an Indian village and remained



Capitol at Belmond, Wisconsin, where the First Session of the Legislature convened on October 25, 1836, and adjourned December 9th, while Iowa was a part of Wisconsin territory.

for a friendly visit of six days. The place of landing was near the mouth of the Des Moines river, and the date was June 25, 1673.

The next white voyagers on the Mississippi were LaSalle and Hennepin, the latter following its course north to the Falls of St. Anthony and then returning to join his leader, LaSalle, who with his small party floated on its waters to the sea. This expedition, from start to finish, covered the time from late in 1679 to the spring of 1682.

Spain was the first claimant of territory bordering the southern Mississippi, but failing to make settlements and improvements its title seemed to lapse and France, by re-discovery and occupation, established

territorial rights and ownership. These were adhered to by France until 1762, when, in a secret treaty, she ceded to Spain all her possessions west of the Mississippi from its source to its mouth and west to the Rocky mountains and beyond. This wide extent of territory had been named the province of Louisiana.



Old Zion Church at Burlington, Iowa, where the Territorial Legislature of Wisconsin convened in 1837 and 1838, and where the Territorial Legislature of Iowa held its session in 1838, 1839, 1840.

In March, 1801, Spain ceded back to France all of the province of Louisiana, but did not give up its possession.

In 1804, by authority of France, Spain conveyed the province of Louisiana to the United States, the latter paying for it the sum of fifteen millions of dollars, which went to France. The purchase was made from France by the United States in 1803, but was not fully ratified by Spain until nearly a year later.

It is the one hundredth anniversary of this purchase that is being commemorated by the international exposition at St. Louis.

The Louisiana Purchase covered an area of 875,025 square miles or 560,016,000 acres. It embraced what now constitutes the entire states of Arkansas, Missouri, Iowa, Nebraska, North and South Dakota, parts of Minnesota, Kansas, Colorado, Wyoming, Montana, Louisiana, all of Indian Territory and part of Oklahoma.

In 1804 congress divided the newly acquired province into two parts separated by the thirty-third parallel of north latitude. The part south of this line it named the territory of Orleans and that north the district of Louisiana.

In 1805 the district of Louisiana was organized as a territory of the same name.

In 1812 the territory of Louisiana was re-organized and called the territory of Missouri.

In 1819 the territory of Arkansas was formed including the present state of that name, and country to the westward.

In 1821 Missouri was admitted as a state in its present form.

In 1834 the territory bounded on the east by the Mississippi river and on the south by the state of Missouri, was made part of the territory of Michigan.

On July 4, 1836, the territory of Wisconsin was created, including the present states of Wisconsin, Iowa and Minnesota.

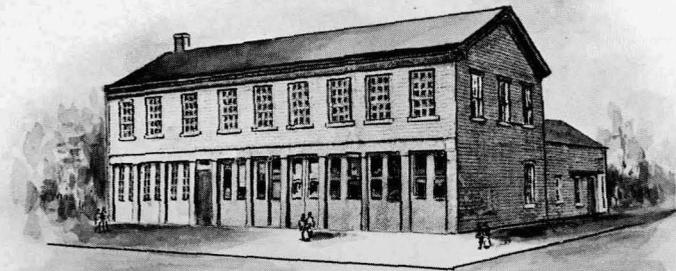
On July 4, 1838, the territory of Iowa was created, including at that time all the present state and reaching north to the British possessions.

In October, 1844, a convention was held at Iowa City to consider the question of statehood, fix upon boundary lines and prepare a constitution. The boundary lines agreed upon took in not only the present state but a considerable of Minnesota.

In 1845 congress passed an act providing for the admission of Iowa as a state, but defined its boundary on the west by a line that would now run north between Ringgold and Taylor counties, and on the north by a line running west from the mouth of Blue Earth or Mankato river, making a long, narrow state.

The boundary lines fixed by congress were not satisfactory to the people of the proposed state and at an election held August 4, 1845, for the adoption or rejection of statehood as proposed, it was rejected by a vote of 7,235 for, to 7,656 against.

On May 4, 1846, another convention met at Iowa City and continued in session for fifteen days, at which the present boundary lines and present constitution, as originally drawn, was agreed to and the same ratified and adopted by a vote of the people on August 3, 1846. The vote this time was 9,492 for and 9,036 against. This was agreed to by congress and on December 28, 1846, Iowa was admitted as the 29th state in the union.



Store room at Iowa City where the Fourth Territorial Legislature of Iowa held its session in 1841.

The act of congress creating Iowa as a separate territory became effective on July 4, 1838. It provided for the appointment of a governor, whose term should be three years, and for a secretary, chief and two associate justices, a U. S. attorney and a marshal who should serve four years. It also provided for a territorial legislature consisting of a council and a house of representatives, the former to consist of thirteen members and the later of twenty-six. The same act divided the state into three judicial districts.

The first territorial governor of Iowa was Robert Lucas, ex-governor of Ohio, who was appointed by President Martin Van Buren in 1838. He was succeeded by John Chambers, appointed in 1841, and he by James Clark, appointed in 1845.

The first delegate in congress was William W. Chapman who served in the 25th and 26th congresses. After him came Augustus C. Dodge who served in the 27th, 28th, and 29th congresses; and then in the 30th, 31st, 32nd and 33d congresses as U. S. senator. Francis Gehon was elected delegate in 1839 but did not serve. In March, 1839, congress passed an act providing that the delegate from Iowa (William W. Chapman) should hold his seat until October, 1840, that the next delegate should only hold his seat until March 4th, following, and after that the term should be two years the same as other members.

The first governor of Iowa after it became a state was Ansel Briggs, of Jackson county, elected in October, 1846. Others in the order of their election and service down to the present time are as follows: Stephen Hempstead, James W. Grimes, Ralph P. Lowe, Samuel J. Kirkwood, William M. Stone, Samuel Merrill, Cyrus C. Carpenter, Samuel J. Kirkwood, Joshua G. Newbold, John H. Gear, Buren R. Sherman, William Larrabee, Horace Boies, Frank D. Jackson, Francis M. Drake, Leslie M. Shaw, Albert B. Cummins

Samuel J. Kirkwood resigned Feb. 1, 1877, to take a seat in the U. S. senate to which he had been elected, and his unexpired term was served out by Lieutenant Governor Joshua G. Newbold, who then became governor for that period.

The first legislative session held in Iowa was that of the territory of Wisconsin held at Burlington, Nov. 10, 1837, to Jan. 20, 1838. The second session was an extra one, also of the Wisconsin territorial legislature, at Burlington, June 1, to June 12, 1838. Iowa territorial legislative sessions were held at Burlington until 1841, when Iowa City became the seat of government. At the session of 1838-9 an act was passed appointing Chauncy Swan, Robert Ralston and John Ronalds, commissioners to select a site within the limits of Johnson county for a state capital, and to lay out a section of land into a town to be called Iowa City and to sell lots and put up necessary public buildings. An appropriation of \$40,000 was made toward a capital building and the commissioners were also authorized to borrow \$20,000 if necessary on unsold lots. Previous to this congress had granted a section of land, to be selected by the territory, and had appropriated \$20,000 in money to aid the territory in putting up buildings, but this was made use of to aid in the construction of a penitentiary at Fort Madison. The commissioners proceeded to carry out instructions and selected the present site of Iowa City, laid out a town and on August 16, 1839, held their first public sale of

lots. This sale realized \$75,000. Another sale was held in October, realizing \$30,000 more. These several amounts, aggregating \$145,000, constituted the funds in hand for a capitol building. A contract was let and



The former capitol at Iowa City, first occupied by the Fifth Territorial Legislature in 1842, but not completed until 1855. Now one of the State University Buildings.

work begun in April, 1840, and in June the foundation was completed. The contractors then threw up their contract and abandoned the work. Commissioner Swan then took it in hand and went ahead with it. Stone

for the first story was obtained within the city limits except those used for the water table which were brought from Cedar county, twenty miles away. In the fall of 1841 the walls were up only to the top of the first story. The legislature met that winter and held its sessions in a temporary building provided by the citizens of Iowa City. During the session John M. Coleman was appointed superintendent of public buildings. In the mean time good building stone had been discovered on the banks of the Iowa river, a few miles above the city, which was quarried and brought down the river on flat boats and work on the building progressed more rapidly.

The legislature first convened in the new capitol building on December 5, 1842, although it was not fully completed, the superintendent estimating that about \$40,000 was needed for that purpose.

At the first session of the legislature, after the admission of Iowa as a state, bills were introduced providing for a more central location for the state capital. One of these was passed, in which commissioners were named to select five sections of land in a central location, plat a town, sell lots, etc. The commissioners proceeded and made selection of land in Jasper county, two sections in what is now Des Moines township and the balance in Fairview township, between Prairie City and Monroe. Here they laid out a town, named it Monroe City and held a public sale of lots. Four hundred and fifteen lots were sold. The terms were one-fourth cash and the balance on time. The first report of the commissioners to the legislature showed cash receipts of \$1,797.43 while their expenses were \$2,206.57. This showing seemed to discourage further proceedings in that line, at that time, and Monroe City was abandoned, and vacated, and lot purchasers refunded their money.

In 1851 bills were introduced in the legislature providing for the removal of the state capital to Pella and to Fort Des Moines, but failed to pass. At the next session another effort was made to remove the capital to Fort Des Moines but did not succeed. But the next effort won, and on January 15, 1855, the governor signed a bill providing for the location of the capital "within two miles of the Raccoon forks of the Des Moines river" and appointing a commission to select the exact spot. The present site was selected in 1856 on land donated the state by citizens of Des Moines.

An association of Des Moines business men erected a building for a temporary state capitol and leased it to the state at a nominal rental and on October 19, 1857, Governor Grimes issued a proclamation declaring Des Moines the capital of Iowa. The removal of books and safes

was made soon after, the safe of the state treasurer's office being hauled on bobsleds by ten yoke of oxen. On January 11, 1858, the legislature convened for the first time in Des Moines.

In 1864 the state purchased the building it was occupying and had been renting.

In 1870 the legislature made its first definite move towards a new state house. An initial sum of \$150,000 was appropriated and a board



The first capitol building at Des Moines, where the Legislature convened January 11, 1858.

of capitol commissioners appointed to take charge of the work. The commission consisted of the following persons: Governor of the state, ex-officio president of the commission; Grenville M. Dodge, of Council Bluffs; James F. Wilson, of Fairfield; James Dawson, of Washington; Simon G. Stein, of Muscatine; James O. Crosby, of Garnavillo; Charles Dudley, of Agency City; John N. Dewey, of Des Moines; Wm. L. Joy, of Sioux City; Alexander R. Fulton, Des Moines, secretary. On November 23, 1871, the corner stone of the new building was laid. In 1872 the general assembly elected a new board of capitol commissioners consisting of the governor of the state, ex-officio, John G. Foote of Des Moines

county, Maturin L. Fisher, of Clayton county, Robert S. Finkbine and Peter A. Dey of Johnson county. General Ed. Wright, of Polk county, was made secretary of the board. Construction of the building was carried on by the commission, under the honest and capable superintendence of Robert S. Finkbine with General Ed. Wright as assistant.

The capitol building is an honor to the state and a credit to its builders. It is solid and substantial in structure and handsome in appearance. The total cost was nearly \$3,000,000 and the work of construction was carried on by means of legislative appropriations, made from time to time, and no state indebtedness incurred. This great work was completed without a whisper of scandal or unfriendly criticism, and stands as a splendid monument to the honor, integrity and ability of its builders and all in any degree associated with them.

#### POPULATION.

An idea of the rapid growth of the state may be had by a glance at a statement of census returns, as follows:

When the territory of Wisconsin was organized in 1836, that part of it comprised within the limits of the present state of Iowa contained a population of 10,531. In 1838, when Iowa was set off as a separate and independent territory the population of that part within its present limits, had increased to 22,589, and so on, as shown by the following table:—

YEAR	POPULATION	YEAR	POPULATION
1836	10,531	1860	674,913
1838	22,589	1870	1,194,020
1840	43,112	1880	1,624,615
1846	97,588	1890	1,911,896
1850	192,214	1900	2,231,853

Increase between 1890 and 1900,—319,957 or 16.7 per cent.

#### AGRICULTURAL STATISTICS.

From U. S. Census Report of 1900.

Total acreage of the state	35,504,000
Total farm acreage	34,574,337
Total number of farms	228,622
Average acreage per farm	151.2+
Total acres improved	29,897,552
Number of farms operated by owners	148,886
Number of farms operated by cash tenants	44,502
Number of farms operated by share tenants	35,234
Value of farms including improvements	\$1,497,554,790
Value of live stock	\$ 278,830,096
Value of products not fed to live stock	\$ 263,388,488
Value of farm implements and machinery	\$ 57,960,660
Total paid out in one year for farm labor	\$ 16,375,670

Farms under 3 acres,	975;	average	1.9 acres,	total	1,838
Farms 3 to 9 "	4,756;	"	6 "	"	28,517
Farms 10 " 19 "	5,917;	"	13.4 "	"	79,572
Farms 20 " 49 "	21,475;	"	35.6 "	"	765,266
Farms 50 " 99 "	49,665;	"	77.1 "	"	3,828,843
Farms 100 " 174 "	79,923;	"	140.1 "	"	11,197,376
Farms 175 " 259 "	38,144;	"	214.7 "	"	8,190,183
Farms 260 " 499 "	24,609;	"	322 "	"	8,171,295
Farms 500 " 999 "	2,818;	"	626 "	"	1,764,029
Farms 1000 and over	340;	"	1,610.1 "	"	547,418
Totals,	228,622		151.2+		34,574,337

#### FARM CROPS.

From the U. S. Census of 1900.

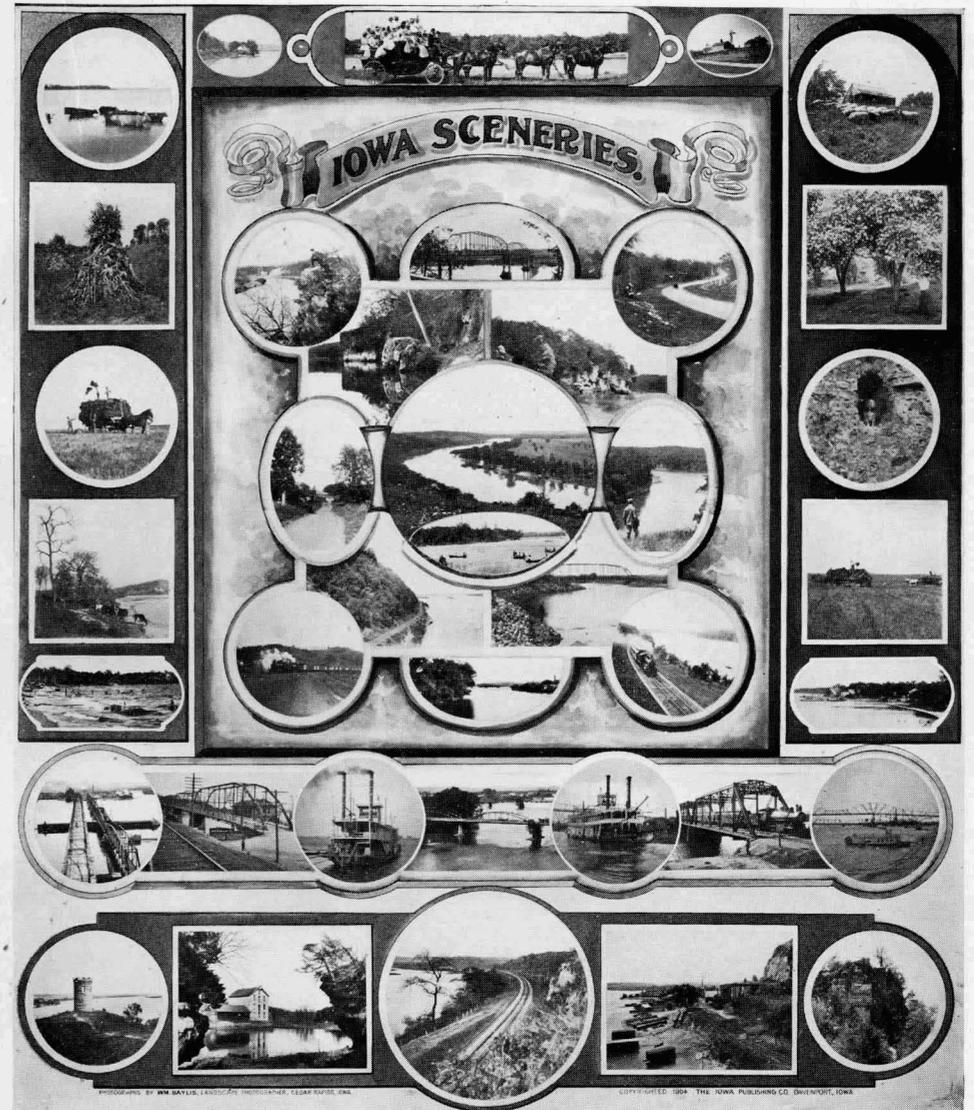
KIND	ACRES	QUANTITY	VALUE
Corn	9,804,076	383,453,190 bushels	\$97,297,707
Wheat	1,689,705	22,769,440 "	11,457,808
Oats	4,695,361	168,364,170 "	33,254,987
Barley	627,851	18,059,060 "	5,342,363
Rye	89,172	1,179,970 "	480,817
Buckwheat	13,834	151,120 "	84,842
Flaxseed	126,453	1,413,380 "	1,380,102
Kaffir corn	66	1,408 "	552
Broom corn	2,220	1,178,130 pounds	50,636
Clover seed		15,114 bushels	69,640
Grass seed		1,276,958 "	1,146,123
Hay and forage	4,644,378	6,851,871 tons	30,042,246
Tobacco	131	127,420 pounds	8,345
Peanuts	7	127 bushels	164
Dry beans	2,427	24,903 "	38,296
Dry peas	1,556	27,606 "	24,473
Potatoes	175,888	17,305,919 "	3,870,746
Sweet potatoes	2,688	224,622 "	128,981
Onions	1,195	292,097 "	177,088
Other vegetables	81,502		3,332,039
Maple sugar		2,320 pounds	280
Maple syrup		2,662 gallons	2,640
Sorghum cane	7,999	10,033 tons	29,125
Sorghum syrup		521,212 gallons	190,695
Orchard fruits	180,076		1,849,767
Small fruits	9,653		878,447
Grapes	5,180	7,403,900 centals	166,360
Flowers and plants	140		320,407
Seeds	71		6,044
Nursery products	2,905		619,092
Nuts			7,603
Forest products			3,265,628
Miscellaneous			28,501
Total	22,164,564		\$195,552,544

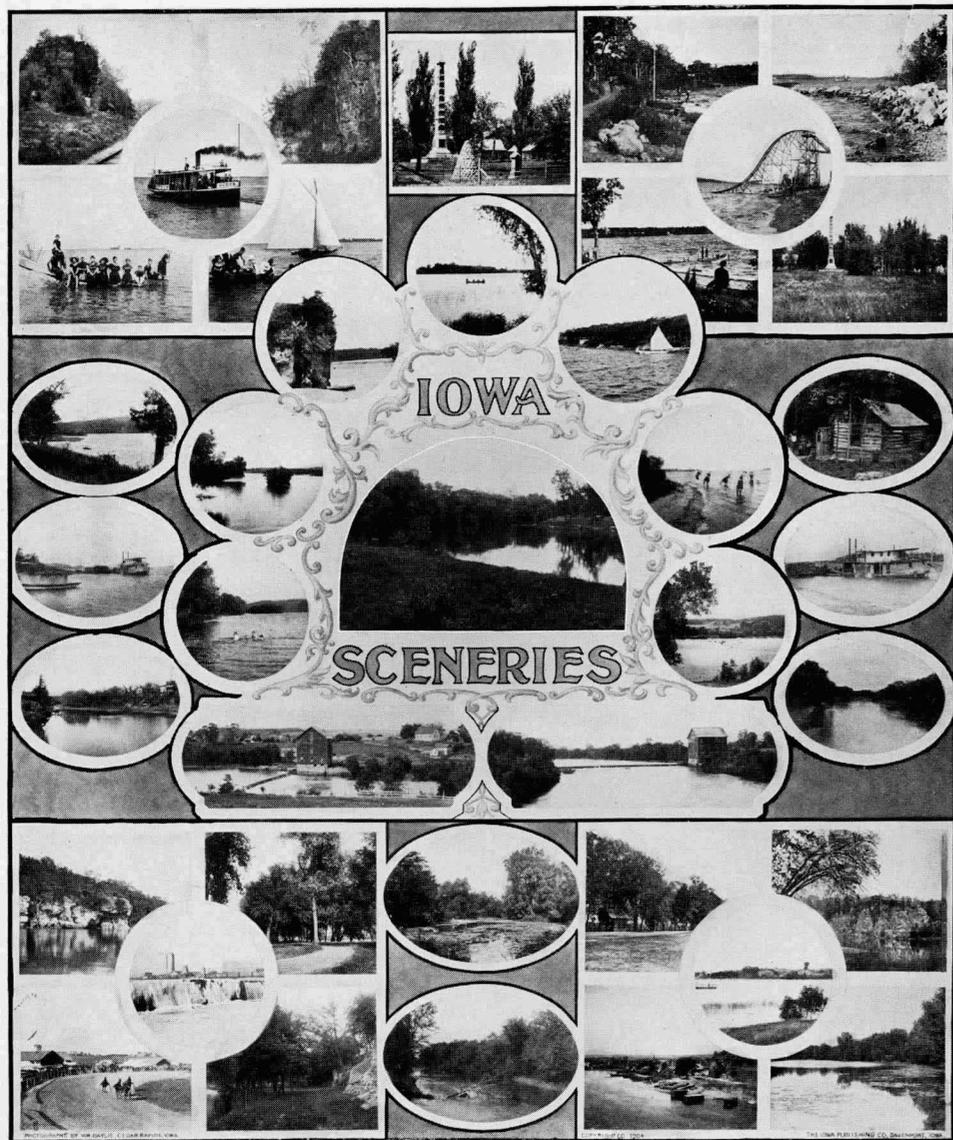
LIVE STOCK.		
Cattle, all ages, on farms	5,367,630	Value.....\$142,518,902
Horses " " " "	1,392,573	" ..... 77,720,577
Mules " " " "	57,579	" ..... 3,737,529
Sheep " " " "	1,056,718	" ..... 3,956,142
Swine " " " "	9,723,791	" ..... 43,764,176
Goats " " " "	41,468	" ..... 146,708
Poultry on farms	20,043,343	" ..... 6,535,464
Bees (swarms) " "	138,811	" ..... 443,923
Unclassified .....		" ..... 6,675
Total value of live stock on farms.....		\$278,830,096

NUMBER		
Cattle, all ages, not on farms.....		79,880
Horses " " " " " .....		154,775
Mules " " " " " .....		5,741
Sheep " " " " " .....		2,857
Swine " " " " " .....		128,138
Goats " " " " " .....		807

#### DAIRY INDUSTRY.

The Iowa cow is a great factor in the prosperity of the state. She furnishes calves that grow into beef, and milk to not only feed the calves but from which cream is separated that makes the best butter in the world. The cows of Iowa number about 1,500,000; they are worth an average of about \$30 each or \$45,000,000. They furnish the cream for 150,000,000 pounds of butter per annum, over half of which is shipped and sold in the markets of the world, and much of the balance is sold at home. And the Iowa cow is not an exhauster of the soil. It is said that in selling a thousand dollars worth of wheat, about \$350 worth of fertility goes with it; that in selling a thousand dollars worth of corn, about \$250 worth of fertility is lost; if the thousand dollars worth of grain be used to fatten beef, pork, mutton and poultry, to be sold, not over \$25 worth of fertility is lost, but if it is fed to the cows, and milk and butter only is sold, not a dollars worth of fertility is lost. The product of the cow is clear money, less cost of care, keeping and preparing for market. There is another thing in favor of the dairy industry, the price of butter is remarkably steady and uniform, from year to year. Prices of beef and pork, and of wheat and corn, may fluctuate widely but the price of good butter remains practically the same, year in and year out. That Iowa is especially adapted to this industry is shown by the statement that one-fourth of all the creamery butter sold in the United States is made in this state and that Iowa produces one-tenth of all the butter made on this continent.





The stability of the butter market is shown by the following statement of the average price per pound per annum of fancy western creamery butter in the New York market, the annual average price being made up from monthly averages for each year given: The year 1895, .2190; 1896, .1882; 1897, .1885; 1898, .1971; 1899, .2065; 1900, .2278; 1901, .2165; 1902, .2416.

### COAL OUTPUT BY COUNTIES FOR 1902.

From Iowa State Geological Report.

COUNTY	No. Mines	Tonnage	Average Price per ton	Value
Adams	13	18,147	\$ 2.32	\$ 42,193
Appanoose	47	771,363	1.66	1,284,253
Boone	11	264,524	1.93	509,624
Dallas	4	18,845	1.99	37,557
Davis	6	3,633	1.68	6,093
Greene	6	11,573	1.33	15,345
Guthrie	2	2,300	2.12	4,875
Jasper	16	235,390	1.43	334,963
Jefferson	5	10,284	1.86	19,146
Keokuk	13	160,403	1.57	251,769
Lucas	3	238,862	1.33	318,993
Mahaska	18	549,245	1.33	732,203
Marion	24	269,724	1.08	290,419
Monroe	10	1,349,722	1.29	1,736,432
Scott	7	10,358	1.92	19,858
Page	5	10,070	2.51	25,277
Polk	20	1,007,860	1.50	1,507,431
Story	1	244	3.00	732
Taylor	3	13,007	2.24	29,186
Van Buren	5	14,816	1.65	24,499
Wapello	16	340,579	1.36	460,056
Warren	8	20,127	1.90	38,288
Wayne	4	64,164	1.71	109,734
Webster	16	140,007	1.83	256,470
Small producers	11	2,016	1.67	3,403
Totals	274	5,527,263	\$ 1.46	\$8,058,799

The above figures include mine run, steam coal, nut and slack. Some mines produce but very little slack and in those cases the average price per ton is higher than where there is considerable slack. In some counties where the mines are small the output is sold locally, in others where the output is large, it is nearly all shipped away.

According to the reports of the United States Geological Survey for 1900, Iowa ranked as the ninth state in coal tonnage produced and sixth in its value.

## MANUFACTURING.

From the U. S. census of 1900.

Number of leading establishments .....	14,819
Capital invested .....	\$102,733,103
Cost of material used .....	101,170,357
Miscellaneous expenses .....	7,988,767
Value of products .....	\$164,617,877
Number of proprietors and firm members .....	16,619
Number of salaried officers, clerks, etc. ....	5,664
Salaries paid to above .....	\$ 4,486,117
Average number of wage earners employed .....	58,553
Amount paid in wages .....	\$ 23,931,630

In addition to above there are reported by the census enumerators, 3,610 small shops and factories where one or more workmen are employed, covering hand trades and products or earnings of less than \$1,500 per annum each.

There are sixteen plants that manufacture food preparations, the value of their annual output being over \$3,600,000.

There are in the state over 900 cheese, butter and condensed milk factories, their annual product amounting in value to nearly \$16,000,000.

## BANKS AND BANKING.

Iowa has 253 national banks, 244 state banks, 375 savings banks, and 557 private banks, making a grand total of 1,429 banking institutions. Their combined capital amounts to over \$51,000,000 and deposits in round numbers to \$265,000,000. There have been comparatively few bank failures in Iowa. Following the panic of 1893, during the years of 1894 and 1895, there was not a bank in Iowa that failed, while in bordering states there were forty-four failures.

The state of Iowa has no bonded indebtedness and not a dollar of floating debt; on the contrary it has, and has had for several years, a cash balance in its treasury of an average of upwards of a million dollars.

## OFFICIAL REGISTER.

Iowa is represented in the congress of the United States by two members of the senate who are elected for terms of six years each at a joint session of the two branches of the Iowa legislature; and by eleven members of the national house of representatives, who are elected by the voters of their respective districts for terms of two years each. U. S. senators are paid salaries of \$6,000 each per annum and members of the house \$5,000.

State officers and state organizations and officials are as follows: Governor, elected by the people, term two years, salary \$5,000 per annum.

Secretary of State, Auditor of State, Treasurer of State, Attorney General, Superintendent of Public Instruction, Clerk of Supreme Court; all elected by the people, terms two years, salaries \$2,200 each per annum.

An Executive Council composed of the Governor, Secretary, Auditor and Treasurer of State; compensation, \$500 each per annum.

Three Railroad Commissioners, elected by the people, terms three years, salaries \$2,200 each per annum.

A Board of Control of three members appointed by the governor for terms of six years and confirmed by the senate, salaries, \$3,000 each per annum. This board has management and control of the following public institutions:

- Iowa Soldiers Home at Marshalltown.
- Iowa Soldiers Orphans Home at Davenport.
- State Hospital for Insane at Mt. Pleasant.
- State Hospital for Insane at Independence.
- State Hospital for Insane at Clarinda.
- State Hospital for Insane at Cherokee.
- College for the Blind at Vinton.
- College for the Deaf at Council Bluffs.
- Institution for Feeble Minded at Glenwood.
- Industrial School for Boys at Eldora.
- Industrial School for Girls at Mitchellville.
- Industrial Reformatory for Females at Anamosa.
- Penitentiary at Anamosa.
- Penitentiary at Fort Madison.

This board is also required to investigate the acts and proceedings of the regents and trustees, and examine the books and records of the—

- State University at Iowa City,
- State Normal School at Cedar Falls.
- State College of Agriculture and Mechanic Arts at Ames.

The board also has supervision of county and private institutions in which insane persons are kept, and of associations and societies receiving friendless children.

State Librarian, elected by library trustees, term six years, salary \$2,000 per annum. The trustees are ex-officio governor of the state, secretary of state, superintendent of public instruction and the six judges of the supreme court.

Curator of State Historical Department, elected by trustees, term six years, salary \$1,600 per annum. Trustees the same as the state library board.

State Printer, elected by the legislature, term two years, paid for actual work.

State Binder, elected by the legislature, term two years, paid for actual work.



State Capitol of Iowa. Twentieth General Assembly convened in it January 16, 1884.

Adjutant General, appointed by the governor, term two years, salary \$2,000 per annum.

Department of Agriculture, rooms in state capitol, Secretary elected by board, salary \$1,500. Assistant, \$900. Board consists of one director from each congressional district. Ex-officio members are the governor, president of the state college of agriculture and mechanic arts, state dairy commissioner and state veterinarian.

Horticultural Society, rooms in state capitol. Board consists of one director from each congressional district with president, vice-president, secretary, treasurer and librarian outside the board.

Pharmacy Commission of three members appointed by the governor, terms three years, compensation \$5 per day for time spent. Secretary elected by the commission, salary \$1,200 per annum.

Bureau of Labor Statistics, Commissioner appointed by the governor, salary \$1,500; Deputy, \$1,000.

Dairy Commissioner, appointed by the governor, salary \$1,500; Deputy, \$1,000; Assistant, \$1,000.

Three Mine Inspectors, appointed by the governor, salaries \$1,500 each.

State Board of Health of nine members appointed by the governor, and two ex-officio members; per diem and expenses. Secretary, elected by the board, salary \$1,200 and also \$300 for acting as secretary and treasurer of the state board of medical examiners, made up from membership of the board of health.

Board of Educational Examiners, two members, one a woman, appointed by the governor for terms of four years each and not eligible for re-appointment. Ex-officio members, the superintendent of public instruction, president of the state university and president of the state normal school.

Board of Examiners of Mine Inspectors, composed of five members appointed by the executive council for terms of two years. Compensation \$5 per day for time engaged in performance of duties.

State Inspectors of Boats, composed of seven members, appointed by the governor. Terms, two years, compensation, fees.

State Board of Veterinary Medical Examiners, composed of three members appointed by the governor, terms three years, compensation \$5 per day.

State Board of Dental Examiners, composed of five members, terms five years, appointed by the governor, compensation \$5 per day.

Superintendent of Weights and Measures, appointed by the governor. Salary \$50 per annum.

Director of Weather Service, appointed by the governor, term two years, salary \$1,500 per annum.

State Fish and Game Warden, appointed by the governor for a term of three years. Salary, \$1,200 per annum.

Board of voting machine commissioners appointed by the governor; three members, term five years, compensation \$150 for each commission-

er for examining each machine, but total received not to exceed \$1,500 and reasonable expenses in any one year. It is not probable that this commission will be a permanent one.

State Veterinary Surgeon, appointed by the governor, compensation \$5 per day.

State Oil Inspectors, fourteen, appointed by the governor. Compensation, fees.

State Geologist, elected by geological board, term indefinite, salary \$800; Assistant, \$1,500.

Secretary of Library Commission, appointed by commission, term indefinite, salary \$1,200; Clerk \$720. Commission of seven members, four appointed by the governor, three ex-officio. Terms of appointees three years. No compensation.

Custodian of Public Buildings, appointed by the governor and confirmed by the senate; salary, \$1,500 per annum. Has charge of state house and grounds and state buildings adjacent thereto.

Other commissions and associations serving without compensation are:—

Iowa Academy of Sciences.

Iowa State Teachers Association.

State Historical Society. Nine curators appointed by the governor, nine more elected by the society.

Department of Iowa Grand Army of the Republic.

Iowa Commission of Louisiana Purchase Exposition to be held at St. Louis. Eleven commissioners appointed by the governor, and a secretary appointed by the commission. This commission, of course, is not permanent. Its labors will end at the close of the exposition or soon after.

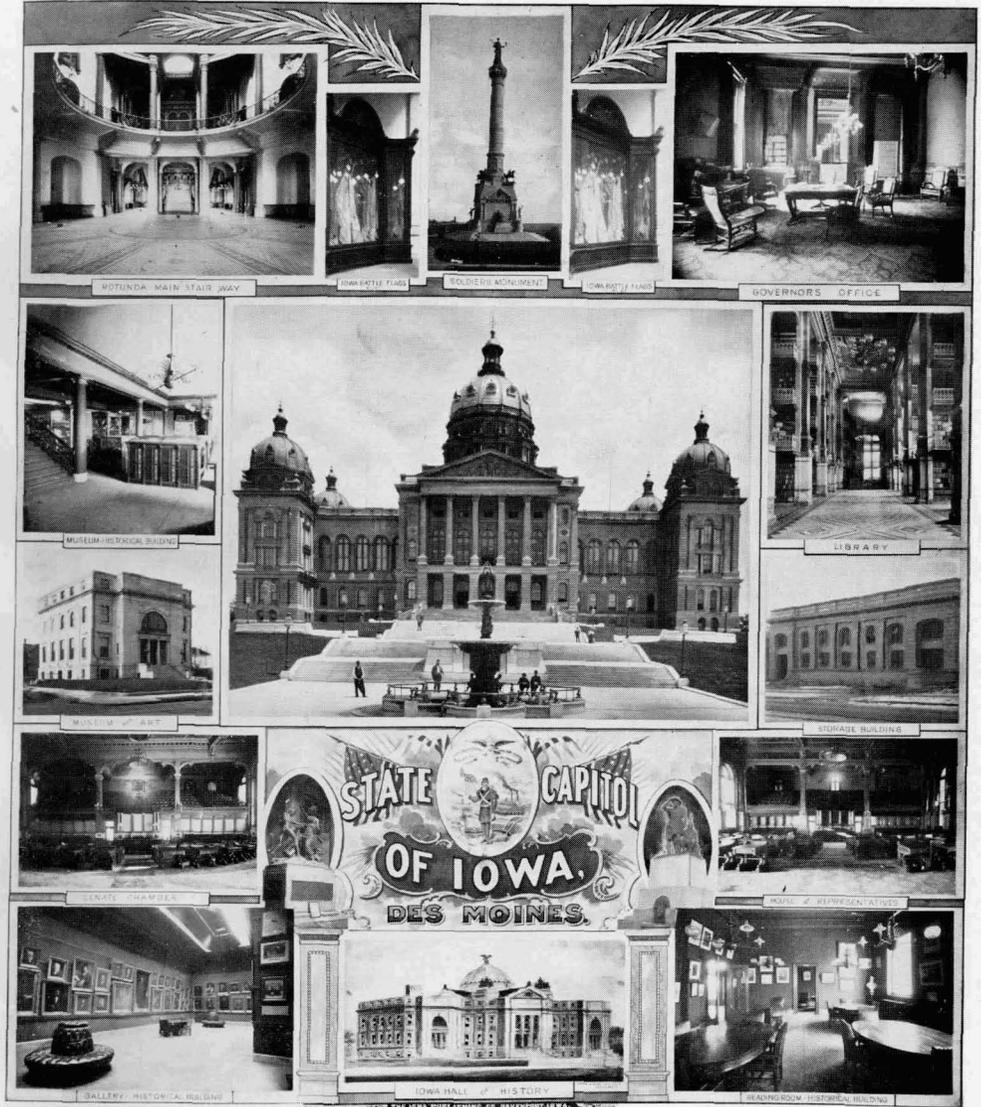
#### LEGISLATIVE DEPARTMENT.

Lieutenant Governor of the state, who is President of the Senate, elected by the people, term two years, salary, \$1,100 for the term.

Senate composed of fifty members elected by the people of their respective senatorial districts for terms of four years each. Compensation, \$550 for each regular bi-ennial session of the legislature.

House of Representatives composed of one hundred members, elected by the voters of their respective legislative districts for terms of two years. Compensation, \$550 for each regular bi-ennial session of the legislature.

Speaker of the House of Representatives, elected from its membership by its members. Compensation, \$1,100 per regular session.





At an extra session of the legislature members receive a per diem equal to the average per diem of members at the preceding session.

The legislature meets once in two years on the second Monday in January and remains in session an average of ninety days. It has no fixed time for adjournment.

JUDICIARY.

The Supreme court of Iowa is composed of six judges, elected by the people for terms of six years. Salaries now \$4,000 per annum; to be \$6,000 when present terms expire. The attorney general and clerk of the supreme court have been previously mentioned in the list of state officers. Sessions of the supreme court are held continuously at the state capital.

The Supreme Court Reporter is an officer elected by the people for a term of two years. Compensation, \$600 for each volume of reports completed. Probably three a year.

The state is divided into twenty districts composed of from one to nine counties each and in which are from one to four district judges. The total number of district judges in the state at present is fifty-three. They are elected by the voters of their respective districts for terms of four years each and receive salaries of \$3,500 per annum.

For each judge there is a court reporter who receives a salary of \$1,200 per annum. Sessions of the district court are held in each county in the state.

Superior courts of one judge each are established at Cedar Rapids, Council Bluffs, Keokuk and Oelwein.

FEDERAL OFFICERS.

The state is divided into two districts, the northern and the southern, in which sessions of the United States district court are held. The officers in each are a U. S. district judge; clerk of circuit court and a deputy; clerk of district court and an assistant; U. S. district attorney and assistant; U. S. marshal, a number of deputies and a messenger.

The two districts of the state are included with others in a number of states and territories which together constitute the jurisdiction of a U. S. circuit court, an associate justice of the U. S. supreme court and three U. S. circuit judges, presiding. None are at present residents of Iowa.

There are seven U. S. commissioners, residing in various parts of the state.

In Iowa at present are sixty-three referees in bankruptcy, well distributed over the state.

The state is divided into two U. S. revenue districts with a collector and a number of deputies in each.

United States pension agency for Iowa and Nebraska, located at Des Moines.

United States land office at Des Moines.

United States weather bureau at Des Moines.

#### COUNTY OFFICERS.

The officers of a county consist of an auditor, treasurer, recorder, sheriff, clerk of the district court, superintendent of schools, surveyor, coroner, county attorney and a board of supervisors, consisting in fifty-nine counties of three members, in thirty-seven counties of five and in three counties of seven. In some counties supervisors are elected by districts, in others by the voters of the entire county.

The salaries of county officials vary with the population of the county. County auditors receive \$1,200 per annum, except that in counties of over 25,000 population the supervisors may allow additional compensation, some getting \$2,500. County treasurers receive fees limited to from \$1,300 to \$1,500 per year and may have an additional allowance in the larger counties. County clerks, \$1,100 to \$2,500. Sheriffs, \$2,000 to \$3,500 out of which they must pay a deputy not to exceed \$1,000, but in no county shall the sheriffs salary be less than \$1,500. County attorneys, \$500 to \$1,500. Recorders, fees up to \$1,200 to \$1,500. Superintendent \$1,250 and any additional amount supervisors may allow. Coroner, fees of office. Supervisors, \$4.00 per day while in session and mileage for attendance at 5 cents per mile; sessions limited to 20 to 50 days; also \$2.50 per day, and no mileage, for committee work.

In most counties the supervisors appoint a county physician to attend the poor at county expense, and in some cases two of them, with compensation fixed by the supervisors.

#### TOWNSHIP OFFICERS.

The officers of a township consist of a township clerk, three trustees, two justices of the peace, two constables, a road supervisor and an assessor.

#### SCHOOL OFFICERS.

School districts are of various dimensions. Some have one school and some a number of them. Some are divided into sub-districts and

some are not. Boards of directors are of from three to seven in membership. All serve without pay. Each school district has a secretary and a treasurer.

#### CITIES, TOWNS AND VILLAGES.

Under the Iowa law municipal corporations are divided into three classes, to-wit: cities of the first class, cities of the second class and towns.

A city of the first class is one that has a population of 15,000 or over.

A city of the second class is one that has a population of 2,000 or over but not exceeding 15,000.

A town is a municipal corporation with a population of less than 2,000.

A village is a platted but unincorporated town site.

The elective officers in a city of the first class are those of mayor, solicitor, treasurer, auditor, city engineer, assessor, and, where there is no superior court, a police judge. Their terms of office are for two years.

The elective officers in a city of the second class are those of mayor, solicitor, treasurer and assessor, elected for two years.

The elective officers in towns are those of mayor, clerk, treasurer and assessor, elected biennially.

Cities and towns are divided into wards, and councilmen are elected as follows: In cities of the first class, two councilmen at large and one from each ward, elected biennially. In cities of the second class two councilmen from each ward, one elected each year to serve for two years. In towns, six councilmen, two to be elected each year to serve for three years.

In cities of the first class the council elects, or appoints, a clerk, city physician, and a street commissioner. In cities of the second class the council appoints a clerk and such other officers as are appointed in cities of the first class if deemed necessary.

In towns the council appoints a street commissioner and such other officers as are deemed necessary.

In each city or town the mayor appoints a marshal who in cities of the first class is ex-officio chief of police, and in cities of the second class or towns he may appoint one or more deputy marshals. In cities and towns the mayor also appoints as many policemen as the council by ordinance may direct.

The law provides that in cities having a population of 25,000 or more the mayor may, and in cities of 35,000 or more, shall, appoint one or more women as police matrons.

#### SPECIAL CHARTER CITIES.

Special charter cities are those organized under and by virtue of special laws passed by the legislature granting to them, individually, the right to organize as cities with certain powers and privileges that may not have been granted in general to other cities. The laws that apply to cities in general throughout the state do not apply to the special charter cities unless specifically so stated in the law itself or later made to apply by specific legislation.

The special charter cities of the state are Davenport, Dubuque, Cedar Rapids, Muscatine and Keokuk.

#### MISCELLANEOUS ITEMS.

Legal rate of interest in Iowa, six per cent.  
Rate allowed by contract, eight per cent.  
Statute of limitations, on open accounts, five years.  
Statute of limitations, on promissory notes, ten years.  
Statute of limitations, on judgments, twenty years.  
Days of grace, abolished.

A voter must be a citizen of the United States, twenty-one years of age, a resident of the state for six months, of the county sixty days and a resident of the voting precinct on the day of election. The Australian ballot law is in effect. Voting machines may be used but have not yet come into use. Registration is required in cities of 3,500 or over. Lunatics, idiots and persons convicted of a felony are not permitted to vote. Women may vote only on questions involving levies of taxes.

Legal holidays are January 1, New Year's Day; February 22, Washington's Birthday; May 30, Memorial Day; July 4, Independence Day; the first Monday in September, Labor Day; Thanksgiving Day, usually designated for some Thursday in November; and Decembbber 25, Christmas.

An extra session of the legislature was held in 1897 for the revision of the code.

A supplement to the revised code was published in 1902. It contains general laws passed by the three general assemblies after the revision of the code; also an index to both code and supplement.

The law provides that a similar supplement shall be published following the session of every third general assembly.

General elections, for the election of state, district, county and township officers, are held on the Tuesday next after the first Monday in November.

City elections, for the election of city officers, are held annually or bi-ennially on the last Monday in March.

School elections, for the election of directors, are held on the second Monday in March of each year.

At all elections the polls open at eight o'clock in the forenoon, except in cities where registration is required, when they open at seven o'clock in the forenoon, and all close at seven o'clock in the evening.

Registration of voters prior to election day is required in all cities of the state having a population of 3,500 or more.

County taxes become due January 1st, but may be paid any time between that date and March 1st. If desired one-half can be paid within the time mentioned and the other half on or before September 1st., but where no part has been paid before April 1st, the whole becomes delinquent from March 1st; and where the first half has been paid in time but the second half is unpaid by October 1st, the latter half becomes delinquent from September 1st. Delinquent taxes draw an interest penalty of one per cent a month from the time they become delinquent until paid, or until the property on which the tax is levied is sold for the tax. Real estate is offered for sale for delinquent taxes on the first Monday in December. To redeem from tax sale requires the payment of the amount sold for together with a direct penalty of eight per cent and eight per cent interest from date of sale; also 25 cents for a redemption certificate. If not redeemed within three years a tax deed may be issued to the purchaser by the county treasurer.

#### DEPARTMENT OF AGRICULTURE.

One of the important state departments, organized within recent years, is the Department of Agriculture. Its object is the promotion of agriculture, horticulture, forestry, animal industry, manufactures and the domestic arts. It is managed by a board called "the state board of agriculture" of which the governor of the state, president of the state college of agriculture and mechanic arts, state dairy commissioner and state veterinarian are ex-officio members. Other members consist of a president, vice-president, secretary, treasurer and one director from each congressional district in the state. These officers and directors are chosen at a convention held at Des Moines on the second Wednesday in December of each year, the membership of which is made up as follows:

The members of the state board of agriculture, the president, secretary or elected delegate from each county or district agricultural society in the state entitled to receive aid from the state, and in counties where there are no societies a delegate appointed by the board of county supervisors; also the president or an accredited representative from the state horticultural society, state dairy association, improved stock breeders association, swine breeders association and each farmers institute legally organized and in existence for at least a year. At this annual convention, in addition to the election of officers and directors, there is a general discussion of subjects in line with the object of the department, making it really a state farmers institute.

The state board of agriculture has charge of the state fair grounds, owned by the state and located at Des Moines, and of the annual fairs and exhibits, and of all branches, bureaus and offices embraced in the department of agriculture. The law makes it the duty of the board also to look after and promote the general interests of agriculture, agricultural education, animal industries, etc., and to investigate subjects relating to the improvement of methods, appliances, machinery, and diversification of crops; also to investigate in regard to contagious diseases among animals, destructive insects, fungus diseases in grains, grasses and plants, adulteration of foods, seeds and products and to report results of all investigations with recommendations of remedial measures for prevention of loss and damage to farming and allied interests.

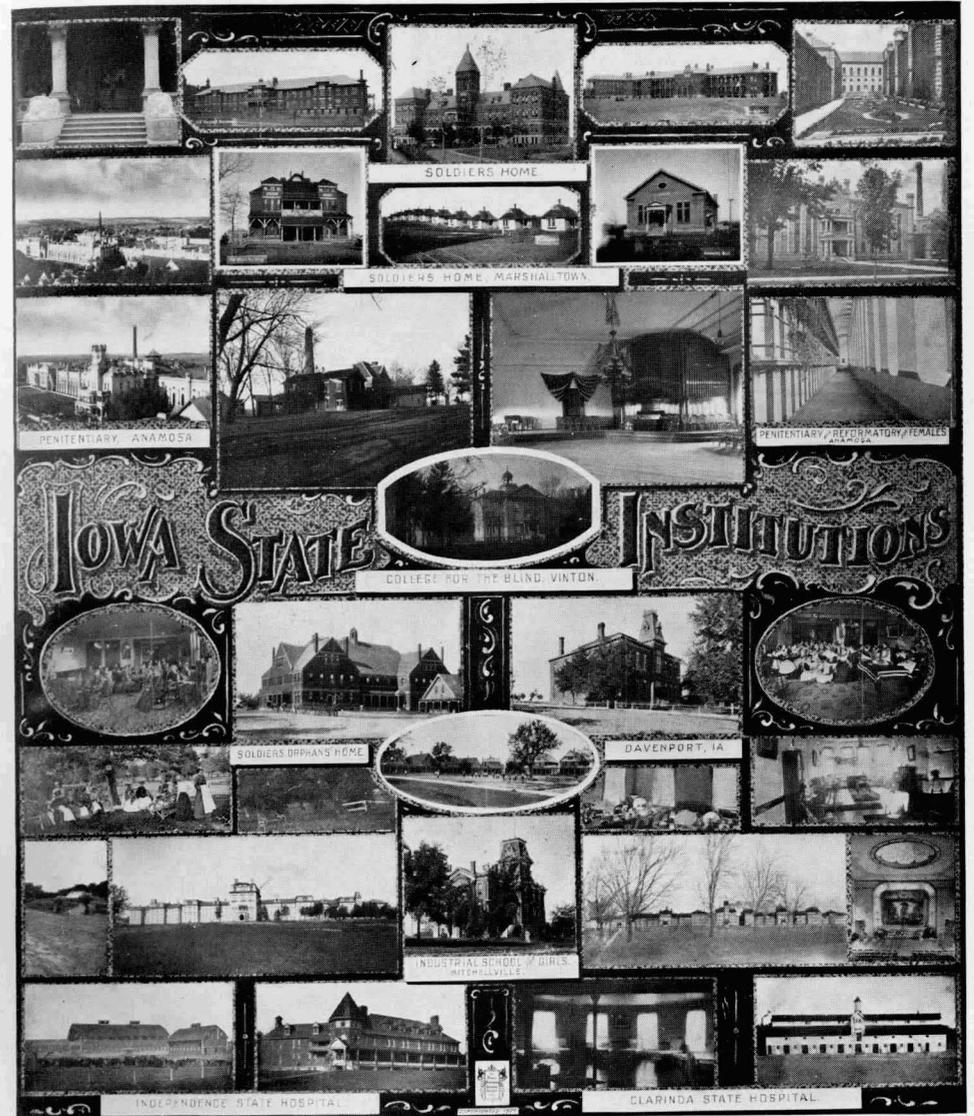
The reports of the board are embodied in an annual year book, published at the expense of the state, and which includes also the annual reports of the state dairy commissioner, dairy association, Iowa agricultural experiment station, state veterinarian, Iowa weather and crop service and improved stock breeders association, and such other matter as the board may direct. This year book is prepared by the secretary of the board who is continuously in service and who is allowed a salary of \$1,500 per annum, paid by the state, and who may have an assistant at \$900 per annum.

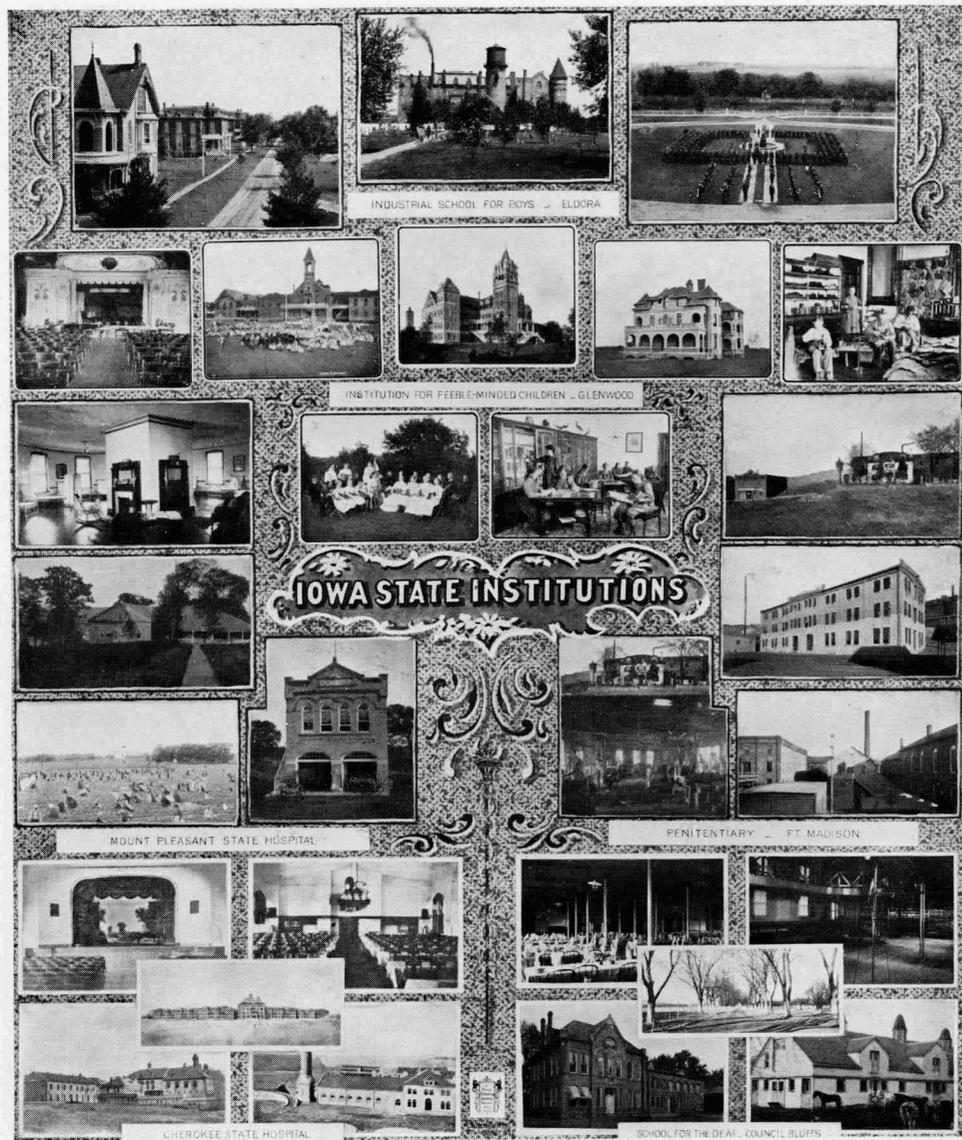
The elective members of the board receive \$4.00 per day and mileage of five cents per mile for attending meetings of the board and for special work pertaining to the state fair.

Two office rooms in the capitol are assigned to and occupied by this department.

#### FARMERS INSTITUTES.

The state encourages the organization of farmers institutes in every county in Iowa by a standing annual appropriation of \$75 for one





institute in each county. The requirements are that forty or more farmers in a county organize an institute with a president, secretary, treasurer and an executive committee of not less than three outside of such officers, and hold a session of not less than two days in each year, which may be adjourned from time to time and place to place within the county. No officer of the institute may receive any compensation. The \$75, or so much of the same as may be needed, is to cover general contingent expenses.

**WEATHER AND CROP SERVICE BUREAU.**

The state has established at its capital a weather and crop service bureau. It co-operates with the national weather bureau in the collection of weather and crop reports and statistics and meteorological data, and in the dissemination of weather forecasts and storm and frost warnings. This bureau is in charge of a director on a salary of \$1,500 per annum. From April 1st to October 1st he edits a weekly weather and crop bulletin, printed by the state printer at the expense of the state, and also issues a monthly weather and crop review. These are distributed free to the number of three thousand copies each, being sent out from the office of the department of agriculture. The director, with the aid of the directors of the agricultural department, establishes volunteer stations at one or more places in each county with observers to send and receive reports. From October to April he gives his time largely to the aid of farmers institutes, arranging dates and securing speakers or lecturers for a chair or circuit of meetings.

**STATE HORTICULTURAL SOCIETY.**

The state horticultural society has for its object the promotion and encouragement of horticulture and arboriculture in the state by the collection and dissemination of practical information in regard to the cultivation of such fruits, flowers and trees as are best adapted to the soil and climate of the different parts of the state. The society has rooms in the capitol at Des Moines which are in charge of the secretary of the society who also acts as librarian. Annual meetings of the society are held the second Tuesday of December in each year. An annual report by the society is edited by the secretary. It contains proceedings of the board, synopsis of discussions, and other matter of interest and importance to all interested in the objects of the society.

**STATE HISTORICAL DEPARTMENT.**

The state historical department of Iowa is something in which the people of Iowa can afford to take great interest and pride. Its impor-

tance will increase as the years go by. Its chief purpose is the collection of everything that pertains to the history of the state and its people. Collections have been made and are being added to continually of early publications, newspapers, pamphlets, works of history, and biography; portraits of men and women prominent in state and territorial affairs; specimens of pottery, stone implements, bones of the mammoth and mastadon discovered within the state. relics of Indian use, workmanship and warfare, and hundreds of items of interest and importance that we have not space to mention.

The state has provided a two story building at the capital in which to house and display the large collection already on hand, and it is estimated that last year it was visited by upwards of 50,000 people. The building in use is a part only of what has been planned for this department. It will be added to in the near future to meet the growing demand for additional room.

This department publishes an illustrated quarterly historical magazine called the Annals of Iowa made up largely of original contributions of biography and historical sketches. It is sent free to every organized library in the state. It also issues biennial reports of historical works and some re-prints.

For the work accomplished in this department, for the splendid foundation laid for its further growth, and for a large part of the valuable collection of historical relics and data, the people of Iowa are indebted to Charles Aldrich, Curator. He has given years of time and effort and much of personal means to this work. The value of his services will never be over estimated.

#### PUBLIC LAND GRANTS.

During its early history the state received from the general government a number of important grants of public lands, under various acts of congress, that may be mentioned briefly as follows:

First, a grant of 500,000 acres for purposes of internal improvement, the proceeds of which were long since converted into the permanent school fund of the state.

Second, the grant of every sixteenth section in each congressional township, which was also long since sold and the proceeds put into the permanent school fund.

Third, the state university grant of lands amounting as finally certified to 45,957.94 acres. These were disposed of to create an endowment fund for the university at Iowa City.

Fourth, the saline land grant; a grant to the use of not to exceed twelve "salt springs" within the state and six sections of land contiguous to each, finally conveyed to the state in fee simple. These lands amounting as certified to 46,101.53 acres, were used in part for the improvement of the Des Moines river and in other ways not made clear in early history, a few thousand acres only finally going to the state university as an addition to its endowment.

Fifth, the Des Moines river grant, amounting to 271,572.24 acres for the purpose of improving the channel of the Des Moines river, constructing locks, etc. Some of these lands were diverted to aid in the construction of a railroad, but a considerable portion went into the river.

Sixth, the swamp land grant, a donation of overflowed and swampy lands to the state. The amount claimed by Iowa under this grant was originally 4,000,000 acres. The amount certified fell far below this, the total amount being 553,293.33 acres.

Seventh, the railroad grant, to aid various lines of railroad. This included alternate sections within a strip six miles each way from the respective roads, and in case lands thus designated had already been conveyed by the government, or were legally held by other claimants, then other lands in lieu could be selected. These lands amounted to 3,063,782.21 acres.

Eighth, the agricultural college grant, amounting to 204,309.30 acres, the proceeds going into an endowment for the college.

There was also granted for state building purposes a section of land selected by the state at Iowa City for the capitol at that place, and five sections located in Jasper county which were afterward added, by the state, to the agricultural college endowment.

There was some overlapping of grants, and a great many legislative acts in reference to these various groups of lands, and some extensive and long drawn out litigation, the detailed history of which would be lengthy and tedious.

#### PERMANENT SCHOOL FUND.

The permanent school fund of the state amounts in round numbers, to \$4,750,000. This money is loaned to the various counties of the state and the counties loan to individuals on notes secured by first mortgages on improved farms at not less than five per cent. per annum.

This fund was accumulated almost entirely from the sale of lands granted the state by the general government. A small amount may have been realized from the proceeds of estates escheated for want of

heirs, the law providing that such shall go into the permanent school fund.

Under act of congress the state became entitled when admitted as a state to 500,000 acres of public lands, and by another act to each sixteenth section of land in every congressional township in the state. These were called school lands and from time to time were sold and the proceeds placed in the permanent school fund.

The interest on the permanent school fund is divided annually among the school districts of the state in proportion to the number of children of school age (between five and twenty-one years) in each district, and is used with school funds raised by taxation in maintaining the public schools.

#### IOWA NATIONAL GUARD.

The Iowa National Guard is recruited by volunteer enlistments and consists of four regiments of infantry, one signal company, and, at the discretion of the commander-in-chief, two batteries of artillery and two troops of cavalry. Original enlistments are for three years; re-enlistments for one, two or three years. They may be called out by the governor to aid in subduing insurrections or riots within the state, or sent to fill requisitions made on the state by the president of the United States for troops for any purpose.

The governor of the state is commander-in-chief. His staff consists of an adjutant-general, quartermaster-general, inspector-general, commissary-general, surgeon-general, judge-advocate-general, general-inspector of small arms practice, chief of engineers, chief signal-officer, military secretary and seven aides. The regimental staff consists of an adjutant, chaplain, and quarter-master, each with rank of captain, a commissary of subsistence and an adjutant with rank of first lieutenant, for each battalion. The non-commissioned staff consists of a regimental sergeant-major and a sergeant-major for each battalion, a quartermaster-sergeant, commissary-sergeant, color-sergeant, ordinance-sergeant and a chief trumpeter. A regimental band consists of chief musician, two principal musicians, drum major and not more than twenty privates under the leadership of the chief musician.

A company of infantry consists of a captain, first lieutenant, second lieutenant, six sergeants, one being first sergeant and one a quartermaster sergeant, six corporals, two cooks, two musicians and not less than 40 nor more than 64 privates and non-commissioned officers.

A signal company consists of a captain, two first lieutenants, two second lieutenants, one first sergeant, eight sergeants, sixteen corporals, two cooks, two musicians and not less than 40 nor more than 64 privates and non-commissioned officers.

A troop of cavalry or a battery of light artillery has each the same officers and non-commissioned officers as an infantry company and one farrier, one blacksmith and one saddler.

The medical department, in addition to the surgeon-general, consists of a deputy surgeon-general with rank of lieutenant-colonel, one surgeon with rank of major and an assistant surgeon for each regiment. Several hospital stewards and privates make up the balance.

When in active service within the state, in time of insurrection or riot or danger of same, they receive pay as follows:—Each field and staff officer four dollars per day, every other commissioned officer, two dollars and fifty cents per day, every non-commissioned officer two dollars, and every other enlisted man one dollar and fifty cents per day; also transportation, subsistence and quarters.

The state allows \$300 to each company and band for armory rent, fuel, lights and other necessary expenses.

The ranks of the Iowa National Guard are filled from among the bright and energetic young men of the state, mostly living in cities and towns, or near them, where enough can be enlisted to make up a company. It is not intended that membership shall interfere seriously with ordinary avocations, except, of course, in time of riot or war.



# THE GEOLOGY and GEOLOGICAL RESOURCES of IOWA

BY PROF. SAMUEL CALVIN, STATE GEOLOGIST.

The geological formations of Iowa embrace a fairly complete series from the pre-Cambrian to the Pleistocene. The only pre-Cambrian rocks native to the state and exposed at the surface are of Algonkian age. These occupy but a small area in the northwest corner. In the adjoining states of Minnesota and South Dakota, however, they are more extensively developed. The pre-Cambrian rocks of Iowa are, in the main, hard vitreous quartzites. While the area in which they appear at the surface is small, they are known to underlie the later sediments everywhere throughout the state, and they reappear at the surface east of Iowa in the Baraboo ranges of Wisconsin. In Wisconsin the formation is called the Baraboo quartzite; it is known as the Sioux quartzite in Iowa.

CAMBRIAN.—Strata belonging to the Cambrian system are seen in the northeast corner of Iowa. In this locality the formation is composed almost wholly of sandstone. It contains a small amount of shale; and there is a band of impure dolomite, 40 feet in thickness, which occurs about 100 feet below the top; but otherwise the whole body of the deposit, through its entire thickness of 1,000 feet, is composed of sandstone varying in texture, color, and the degree to which cementation has taken place. Speaking of it in general it may be said that the formation is coarse and imperfectly consolidated. Ripple marks upon the surface of many of the strata unite with cross-bedding and the generally coarse character of the sediments in proclaiming the Cambrian of this part of the Mississippi Valley a shallow water or beach deposit accumulated on a subsiding sea margin. The formation is sometimes known as the Saint Croix sandstone. The formation has little or no commercial value.

So far as relates to Iowa, it appears in the bluffs of the Mississippi river and its tributaries from New Albin to McGregor. Only the upper part of the Saint Croix sandstone is exposed in this state; the main body of it everywhere lies below the level of the floors of the valleys. At New Albin it rises 400 feet above the water in the river; at Lansing it rises 300 feet; a short distance below McGregor, owing to its southward dip, its upper surface disappears below the level of the stream.

ORDOVICIAN.—The Cambrian sandstones are followed by a body of dolomite; the Oneota limestone. Transitional beds along the plane of contact between the two formations are conspicuous in the bluffs bordering the stream valleys throughout northeastern Iowa. Nowhere in this region does the Saint Croix rise to the summit of the bluffs, and so the upper part of the walls of the valleys presents picturesque crags and towers and mural escarpments due to the presence of the cliff-forming Oneota dolomite. One hundred feet of the Oneota overlies the sandstone at Lansing, and a greater thickness of this formation appears in the rims of the valleys farther south.

In the western part of Allamakee county and the eastern part of Winneshiek the assemblage of strata to which the name Oneota has been applied, is divided into three parts. The basal division, or Oneota proper, is about 150 feet in thickness, and is composed wholly of magnesian limestone or dolomite. In its lower part this division is regularly and evenly bedded, the stone is fine-grained and of light cream color. If its location were more accessible, this portion of the Oneota would afford some of the best quarry stone in the Mississippi valley. The second division embraces from twenty to thirty feet of regularly stratified and very ferruginous sandstone. In some places it is cross-bedded, in some places ripple marked. It shows every evidence of aqueous disposition. It is known as the New Richmond sandstone. Above the New Richmond is another bed of dolomite, eighty feet in thickness, and corresponding to the Shakopee limestone of the Minnesota geologists.

Besides the fine building stone near the base of the Oneota proper, the formation carries lead ores in considerable quantities, while the more dolomitized and massive portions of the formation are unexcelled for lime burning.

Resting upon the Oneota is the Saint Peter sandstone. This is a clean quartz sand without definite stratification, almost as incoherent as when it was originally deposited. It is exposed in all the valleys and over some of the uplands in Northeastern Iowa. It is well developed at the "Pictured Rocks," a short distance below McGregor. Normally it is white, as comminuted fragments of clean, clear quartz ought to be; but in places it is fantastically stained with metallic oxides carried into the porous deposit by descending waters. The thickness ranges from 60 to 100 feet. The cleaner, whiter parts have been used extensively for glass making. The Oneota and Saint Peter, partly on stratigraphic grounds, but more particularly on paleontologic evidence, are referred to the Canadian series.

The Trenton series, which lies next above the Canadian, is represented by two formations, the Galena-Trenton and the Maquoketa. The first of these is largely limestone, but it varies in its lithological characters in different localities. In the northern part of the State the limestone beds are not especially magnesian. In Dubuque county, near the southern margin of the area in which the Galena-Trenton is exposed, the formation is practically free from shale throughout the greater part of its thickness, and the upper 240 feet has been altered to a heavy bedded dolomite. The non-dolomitized portion of the formation has usually been called the Trenton; while the dolomitized phase, so well represented in the bluffs at the city of Dubuque, is known in geological literature as the Galena limestone. No stratigraphic line can be drawn between the Galena and the Trenton, however, for beds which are heavy dolomite in one locality are represented by unaltered limestones in another. The dolomitized Galena is the principal source of lead and zinc ores of this part of the Mississippi Valley. The Galena is also an excellent lime burning rock, and, in its upper part it affords good quarry stone for heavy masonry.

At a number of points in the city of Dubuque and the region adjacent the abrupt change from Galena limestone to Maquoketa shales may be observed. In Dubuque county the Maquoketa formation is almost wholly argillaceous. The lower 60 feet is composed of lean, worthless shale but the rest of the formation, about 140 feet in thickness, is made up of beds which weather into a smooth, plastic clay. The lower division, in fauna and lithological characters, resembles the Utica slate. The upper member carries a fauna identical with that of the Cincinnati shales.





In Fayette, Winneshiek and Howard counties the Maquoketa formation takes on characteristics altogether different from those which it exhibits near Dubuque. It is much less argillaceous, and some of the beds, as at Ft. Atkinson, actually become heavy dolomite suitable for building stone. The plastic clays of the formation have been used for brick and pottery making. The maximum thickness is about 200 feet.

**SILURIAN.**—The Silurian is represented in Iowa by a single series which is generally referred to as the Niagara limestone. The formation has a thickness of more than 300 feet. Certain parts of it are very rich in chert, but, taken as a whole, the Niagara of Iowa is singularly free from shale. Throughout its entire range the calcareous constituent has been altered to dolomite. Notwithstanding the general uniformity of the material composing the formation, the characteristics of the beds vary within quite large limits. Some parts break into shapeless masses of coarse-grained, crystalline dolomite; others are very regularly and evenly bedded and furnish the best of quarry stone. The Niagara limestone occupies a large irregularly shaped area, extending from Clinton and Scott counties, on the Mississippi River, northwestward into Fayette. In western Winneshiek and eastern Howard the Niagara limestones are absent, and the formation next above, which belong to the Devonian, rest directly on beds of Maquoketa age.

**DEVONIAN.**—At Davenport the strata are non-dolomitized limestones of Devonian age. The Devonian area trends northwest-southeast, beginning at Davenport and Muscatine, and extending to the north line of Howard, Mitchell and Worth counties. The formations are largely limestones, but shales are not uncommon. One division, the Lime Creek shales, 90 feet in thickness, is almost wholly an argillaceous deposit furnishing the raw material for some of the most flourishing clay manufacturing enterprises in the State. Toward the north some of the limestone portions of the Devonian become dolomitic.

**CARBONIFEROUS.**—The Carboniferous system is well developed in Iowa. It begins with the Lower Carboniferous series, an assemblage of sandstone, shales and limestones which were laid down under conditions similar to those which prevailed during the Devonian. Limestones predominated, and quite a proportion of them is made up of the remains of crinoids. Before the Lower Carboniferous came to an end, however, the general uplift of northeastern Iowa, which had been in

progress from about the close of the Cambrian, carried the region so high that the sea was completely drained from the surface of the State. Had this condition been permanent, Iowa would have had no coal. The elevation persisted until the surface was deeply carved and trenched by erosion. But subsidence followed, and after Upper Carboniferous conditions had been inaugurated, the sea advanced upon an extensive area which had for a long time been subject to subaerial denudation. Coal was accumulated along the margin of this encroaching Carboniferous sea. The earthly sediments were at first sands and shales; but later, as the waters deepened, southwestern Iowa was covered with shales and limestones. The marginal deposits of shales and sandstones with which the bulk of Iowa coal is associated, constitute the Des Moines stage of the Upper Carboniferous; the shales and limestones of southwestern Iowa, laid down in clearer and deeper waters somewhat remote from shore, make up the Missourian stage. A few thin layers of coal occur in the Missourian. With the close of the Missourian the Paleozoic sea retreated, a second time, from Iowa.

**CRETACEOUS.**—After a lapse of time represented by the Permian, Triassic, Jurassic and Lower Cretaceous, the sea again invaded a part of Iowa. This time it approached from the west and northwest. The sediments laid down during this invasion are of Upper Cretaceous age. The Dakota sandstone, rich in leaves of the late Cretaceous forests, is well developed at Sergeant Bluff and Sioux City. The Cretaceous sea extended eastward almost to the longitude of Des Moines. Before it retired, shales and soft, chalky limestones of the Colorado stage were distributed over the western border of Iowa to a thickness, approximately of 200 feet. It was about the close of the Colorado stage that this last marine invasion of Iowa came to an end.

**THE GLACIAL EPOCH.**—Beneath the drift in some parts of Iowa there are some old and well cemented gravels which have been doubtfully referred to the Lafayette formation. Apart from these gravels, all the known beds younger than the Upper Cretaceous belong to the glacial series. The glacial deposits of Iowa are complex. There are records of at least five distinct invasions of the region by northern glaciers. The sheets of drift left by the successive invasions of ice differ greatly among themselves so far as Iowa is concerned, in the extent of surface covered, in the composition and characteristics of the constituent materials, and in the evidences of age they respectively

present. Named in the order of age, the drift sheets which may be readily discriminated are pre-Kansan, Kansan, Illinoian, Iowan, and Wisconsin. The first, second, fourth, and fifth came into Iowa from the northwest, from the Keewatin center west of Hudson Bay; the third advanced from the northeast, probably coming from the gathering grounds in Labrador. Between the deposits of drift and separating them one from another are remains of forests, beds of peat, definite bands of soil, and zones showing long exposure to the weather. Some of the interglacial intervals were much longer than all postglacial time.

The geological resources of Iowa embrace coal, natural gas, quarry stone, lime-burning rocks, gypsum, materials for the manufacture of Portland cement, clays suitable for a large variety of purposes, together with the ores of lead, zinc and iron. But in addition to these, and as transcending in value all other sources of wealth, are the matchless soils of the state.

The coal is bituminous, excellent for steaming and heating purposes. The coal fields cover nearly one-third of the entire area of the state. The supply is assured for many years to come. The natural gas is small in amount; all productive wells so far as known are limited to the drift and the supply is beyond doubt derived from the ancient forests entombed in the glacial deposits. Quarry stone of marketable quality is obtained from the Canadian, Trenton, Niagara, Middle Devonian, Upper Devonian and Lower Carboniferous series. The most important shipping quarries are in the Gower stage of the Niagara at Stone City and Cedar Valley and in the Kinderhook stage of the Lower Carboniferous east of Marshalltown. The dolomitized formations—the Oneota, Galena and Niagara—furnish lime-burning material of unsurpassed excellence, as the prosperous lime manufacturing enterprises in Allamakee, Dubuque, Jackson, and Cedar counties so well attest. Large bodies of gypsum occurring in Webster county, afford the raw material for a number of stucco mills which give profitable employment to capital and labor on a large scale. Clays of commercial importance and inexhaustible in amount, occur in nearly all the geological formations from the Trenton to the Glacial series. Among the most important clay working plants are those using the Lime Creek shales in Cerro Gordo county, the Kinderhook shales in Des Moines county, the Des Moines shales in Polk, Dallas, and Webster counties, the Missou-

rian shales in Montgomery, and the Cretaceous shales in Woodbury. Brick and tile plants which use clay of Pleistocene age are found in almost every county. Lead and zinc ores are mined successfully in the counties of Allamakee, Clayton, and Dubuque, while iron ore is mined on a commercial scale in Allamakee. The Saint Peter formation, in parts of Allamakee and Clayton counties, is pure, clean quartz sand, ideal material for the manufacture of glass. The following table shows approximately the annual value of mineral production in Iowa, so far as statistics of output are available:

VALUE OF MINERAL PRODUCTION IN IOWA FOR 1901.

Coal .....	\$ 8,052,000
Clay .....	2,774,000
Stone and Lime .....	794,000
Gypsum .....	562,500
Lead and Zinc .....	16,500
Iron Ore .....	5,000
Total value .....	\$12,204,000

The wealth of Iowa lies in the possibilities of her splendid soils. According to the latest report of the Iowa Weather and Crop Service the direct products of the soil for the year 1902 amounted to the enormous total of \$365,411,980. The average Iowa farm is more profitable and more reliable than the average gold mine. The soils of Iowa produce more wealth annually than all the gold mines of the world taken together.



## CLIMATOLOGY OF IOWA.

FROM ANNUAL REPORT OF IOWA WEATHER AND CROP SERVICE.

By JOHN R. SAGE, DIRECTOR.

### CLIMATE THE CHIEF FACTOR.

In crop production the prime factors are fertility of soil and a congenial climate; and climate is the chief factor. There are millions of acres in this country, now comparatively worthless though containing abundant supplies of fertility, the one thing lacking being a favorable climate. Nothing can fully compensate for the lack of ample moisture in the growing season, as only a small part of any arid region may be made productive by irrigation. And prevalent low temperature, or frequent occurrence of frosts in the crop growing season, will render nugatory the most fertile soil and abundant rainfall. The true tests of climatic excellence are found in the tables of mean temperature and precipitation, and the average number of days between killing frosts in the crop season. Iowa has attained its present unrivaled position as an agricultural state by its heritage of vast wealth of soil and its generally favorable climate. There has been nothing near a total failure of the staple farm crops in the worst season experienced since its settlement by civilized people. There have been lean and fat years, but the products of the leanest season would be fatness to the people of less favored regions. This is the result of the fine texture and great depth of soil, whereby it is able to endure the greatest extremes in form of wet or dry seasons.

### GENERAL CLIMATIC FEATURES.

Situated near the geographical center of the United States, too far inland to receive the equalizing thermal effects of winds blowing directly from the oceans, the climate of Iowa is strictly continental in type. This implies a very wide range in temperature, winters of considerable severity, summers of almost tropical heat, and a large percentage of sunshine as compared with insular regions. As there are no

mountain ranges nor considerable differences in the altitude of the several sections, the climate of the state is quite homogeneous, with only such variations of temperature and rainfall as result from latitude and location with reference to the pathway of the cyclones which traverse the continent. Despite its remoteness from the oceans, the seasonal constants of temperature, humidity and precipitation afford a guaranty of ample production in the future as in the past. In fact, it is the best watered and most productive mid-continent region known on earth. Its worst drouths and seasons of floods have never been famine breeders.

Climate is the product of certain elements and properties of the atmosphere, and physical features of the earth's surface. The sun's energy produces in the air and earth the threefold forms of force termed light, heat and electricity, and causes the varied phenomena of evaporation and precipitation. The climate of this section differs from that of other midland regions because of material differences in the topographic features of the western continent. The great mountain ranges that gridiron the western third of the continent, stretching from the Arctic sea to the isthmus and enclosing numerous valleys of the semi-arid or desert type, effectually cutting off the rain-bearing winds that blow inland from the Pacific ocean; as a result the eastern slope of the Rockies receives a scant and irregular supply of rainfall, and the Mississippi valley practically receives no moisture from that source. The western and northwestern winds in this section are cool and dry, while the southerly and easterly winds are warm and moist, affording generally an ample supply of rainfall. If the great mountain ranges had been stretched diagonally across this continent, cutting off this region from the rain-bearing wind currents from the Gulf, this section would be in reality the great American desert, instead of the richest domain of Ceres.

It appears, then, that the essential features of the climate of this region are determined by the size and general topography of the continental area at the westward, the height and location of the mountain ranges, the direction of the prevailing winds, and the general movement of the "highs" and "lows" that cross the valley.

**PRECIPITATION.**

Nearly the entire amount of moisture precipitated over Iowa and contiguous portions of the Mississippi valley comes directly or indi-





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rectly from the Gulf of Mexico. The mechanics of this irrigation process may be understood quite readily. By cyclonic force, or the powerful suction of low area storms of a rotary character, the warm, moist winds from the south are drawn up into the valley, and by dynamic cooling are made to deposit a goodly portion of their burden of moisture. It may be said, therefore, that this valley is watered by cyclones, which in their mechanical action and effect may be termed vast rotary pumps, and condensers of atmospheric vapors. This great central depression, which may be called the "trough of the continent," extending from the Gulf to the Arctic Sea, gives an unobstructed pathway for the warm and moist south winds and the cool waves from the north, which here commingle in the atmospheric eddies, and refresh the earth with copious showers.

The heaviest annual precipitation is deposited in the region near the Gulf, and there the bulk of it comes in the fall, winter and early spring, frequently in excessive downpours. In considerable portions of the Gulf region the mean annual rainfall is double the average in Iowa, and as a result commercial fertilizers are in demand to restore some measure of the loss of fertility caused by the washing and leaching process. This state is more fortunately located, in the region of the golden mean between the extremes of heavy precipitation at the south and east, and general deficiency at the west and northwest. In other words, the people of Iowa suffer less damage from excessive rains than their neighbors at the east and south, and very much less harm from drouth than their neighbors in the western and northwestern part of the interior valley.

At an early day in various historic and scientific publications this state was credited with a mean annual precipitation of 40 to 47 inches. This high average was obtained from insufficient climatic data, collected at a few stations in the extreme east and southeast parts of the state, where the yearly average is somewhat greater than in the west and northwest districts. Since that early period stations have been established in all parts of the state, and from the mass of observations obtained the true mean is found to be 31.40 inches. During the past thirteen years, the voluminous records collected by the Iowa Weather and Crop Service show the state average to have been 31.07 inches.

Prof. Lorin Blodgett's hyetal chart of the continent, published in 1855, placed Iowa in the belt having a range of 25 to 40 inches, the

southeastern counties showing a mean of about 40 inches, the central belt from southwest to northeast, 30 inches, and the northwestern fifth of the state, about 25 inches. The more recent observations do not show so great a difference in the yearly rainfall of these sections. A bulletin issued by the Weather Bureau in 1897 contained a rain chart in which Iowa was placed in the belt having an average of 30 to 40 inches, except an area of a few thousand square miles in the belt ranging from 20 to 30 inches. Rainfall tables show that no single station having a record of more than ten years has an average as high as 40 inches, and no station for a like period has an average below 23 inches per year.

#### RAINFALL IN THE CROP SEASON.

From an agricultural point of view the most important feature of the climate of Iowa is that its maximum of rainfall comes in the crop season, April to September, inclusive. The average winter precipitation is 3.30 inches, or 10 per cent. of the yearly amount; spring, 8.85 inches, 28 per cent; summer, 12.15 inches, 39 per cent; autumn, 7.10 inches, 23 per cent. In the six crop months the average rainfall is 22.48 inches, or 71 per cent of the annual total. And in the four most critical crop months, May 1st to September 1st, the average for the state is 16.29 inches, or 51 per cent. It will be seen from these figures that the bulk of precipitation is distributed through the months when it is needed for irrigation, while in the balance of the year it is relatively dry. This feature of the climate is more in evidence in the western districts than in the balance of the state.

The Missouri valley receives the least amount, but gets a greater percentage in the crop season. In other words, the fall and winter precipitation is much lighter in the west than in the east. So there is in this state a wet and dry season, about as well defined as in some of the tropical countries.

Professor Blodgett, in his American Climatology, referring to this feature in this climate, said: "For the whole period of the warm months the quantity of rain distributed over the Mississippi valley is very great, and there is no great area so far in the interior which presents a similar result. The quantities are absolutely as well as relatively large, and they considerably exceed those of the plains of the Atlantic coast in the same latitude."

#### VARIATION OF RAINFALL.

Meteorological records in all parts of the United States show marked variation in the seasonal rainfall, and a perpetual succession of wet and dry periods, though the general averages are steadily maintained through long periods. There are some faint suggestions of periodicity in the occurrence of wet and dry seasons, but the complex problems relating to the variability of the weather have not been solved. All long-time tables of monthly and annual precipitation show that the distribution is exceedingly erratic, though the totals for the continents and hemispheres may be about the same from year to year. During the past thirteen years the lowest yearly average for this state was 21.91 inches in 1894, and the largest amount was 43.82 inches in 1902. At single stations the range in total rainfall is much greater than for the state at large. It has occurred quite frequently that considerable portions of the state suffered from excessive moisture, while other districts were complaining of drouth.

In 1894 the state average for the four critical crop months (May-August) was only 6.75 inches, or a monthly average of 1.68 inches. In 1902 the total for that period was 27.80 inches, or 6.95 inches per month. And yet portions of the state received about the normal amount of rainfall. Evaporation and precipitation are constants, but we have no means of determining in advance where the vapor will be precipitated, for that is subject to vicissitudes in the ebb and flow of the great atmospheric currents of the continent.

Since the early settlement of this section the records show that quite severe midsummer drouths have occurred at irregular intervals, averaging from one to three in each decade. The normal amount for the four critical months is 16.21 inches. During the past thirteen years this was exceeded seven times, and the average fell below the normal six times. There has been in fact, a greater liability toward excess than deficiency in the crop months, and more real damage to crops in this state has been caused by excess in the season of planting and growth than by the reverse.

In this connection the fact may be noted, especially in seasonal rainfall, that there is a tendency in nature which causes one extreme to be followed by another; and this oscillation from dry to wet, or vice versa, may occur quickly, or it may run through two, three or four years. In the biennial period of 1901-1902 there was a very rapid swing

of the pendulum from excessive heat and drouth to the opposite extreme of cold and wet weather. And in respect to quality and commercial value the soil output of 1901 was much better than that of 1902. Generally, it may be said, the predominant influence in this valley in midsummer is much stronger toward prolongation of wet weather periods than the dry weather type. A considerable portion of the summer rainfall comes in form of local showers, which irrigate narrow belts and short distances; and it not infrequently happens that a portion of a single county may be well watered, while other parts are greatly in need of moisture.

Though subject to very considerable fluctuations in the amount of rainfall in the crop season, there is a measure of compensation in the deep, rich and porous soil of this state, which has produced fairly good crops in the driest or wettest seasons. In the worst season ever experienced in this portion of the great valley there has been no near approach to a famine. The most severe drouth within the past fifty years occurred in 1894, and yet this state produced in that year 256,000,000 bushels of cereals, and sufficient other soil products to swell the total value to over \$121,000,000. The superior quality of Iowa soil was noted by the late Prof. T. S. Parvin, who in a contribution to the American Journal of Science, Vol. XIII, said: "In 1854 occurred the great drouth in this and the western states generally; but owing to the porous nature of our soil the crops with us turned out much better than in the states east of the Mississippi. In 1856 the season was also very dry, the total quantity of rain in the summer months being only 6.78 inches, or 10.20 below the summer mean. The crops were, notwithstanding, more than an average yield, both of corn and small grain; and the three or four dry seasons we have had abundantly prove that the soil and climate of Iowa are unsurpassed on the continent for farming purposes."

#### TEMPERATURE.

On the climatological map published by the United States Weather Bureau, Iowa is situated in the isothermal belt wherein the mean annual temperature ranges from 45 degrees to 50 degrees. The lines inclosing this belt run nearly parallel from the Missouri valley to the Atlantic coast, and embrace a large part of the territory between 41 degrees and 44 degrees north latitude. The mean annual temperature of this state is 47.5 degrees. The highest yearly mean at any station is

51.7 degrees, as shown by records of the Weather Bureau station at Keokuk; the lowest is 43.2 degrees, according to records of voluntary stations at Osage and Cresco. From the south line of the state to the Minnesota boundary the temperature gradient is quite uniform, making due allowance for differences in altitude of stations.

In this part of the Mississippi valley the summers are warmer and the winters colder than on the same parallels near the Atlantic coast. In July the 75 degrees isotherm passes through the southern half of Iowa, dips southeastward below Cincinnati, passing between Baltimore and Philadelphia. The mean maximum of the state for July is 85 degrees, and the midsummer temperature is about as high as that of Virginia and North Carolina. In January the larger part of Iowa is within the isothermal belt 15 degrees to 20 degrees. These lines run northeastward through Wisconsin, northern Michigan, Ontario, northern New York, Vermont, New Hampshire and Maine. The midwinter temperature corresponds to that of the vicinity of Montreal, while the summers are as warm as in Washington, D. C., and Richmond, Va. The winters, however, are shorter than in the same latitude in the Atlantic states. The transition from winter to summer is usually quite rapid, the average increase in temperature in April being more than half a degree daily. The daily mean of April is 17 degrees higher than that of March, and May averages 11 degrees per day higher than April. The season of seeding and planting is 8 to 12 days earlier than in the eastern states. The autumns are usually drier and warmer in Iowa than in the coastal regions on the same parallels. The average duration of summer temperature, the daily means ranging from 65 to 75 degrees, is about four months. The average duration of winter, or the period having a mean below 30 degrees, is about three and a half months.

The highest temperature registered in Iowa by a standard thermometer was 113 degrees at Sigourney in July, 1901. The lowest temperature recorded was 43 degrees below zero, at Cresco, in January, 1888. These records indicate the remarkable range of 156 degrees from minimum to maximum temperature. These extremes of heat and cold are rendered more endurable to man and beast by the prevalent dryness of the air at the time of their occurrence. In the humid air of insular regions such extremes would be intolerable. In this connection it may be stated that both heat and cold are important factors in the

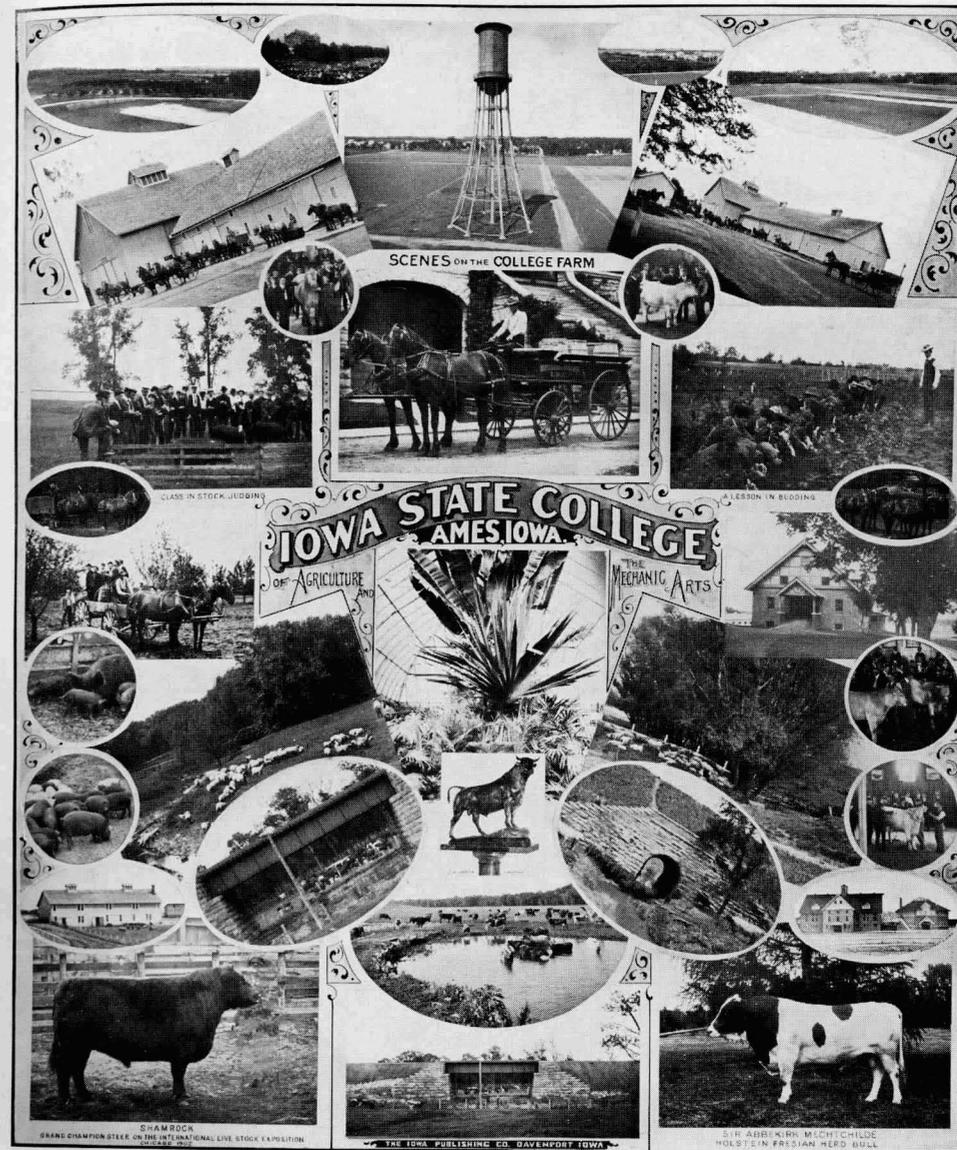
production of the great crops for which this section is noted. The myriad plowshares of the frost penetrate the earth to great depths, pulverizing the clods and preparing the soil to respond to the quickening influence of the gentle rains of spring and the almost tropical heat of summer. This is not an ideal climate for invalids, who need equable temperature, but no country is better adapted to develop hardy, stalwart and brainy people than this valley, where the rigors of winter incite men to a strenuous life. Some adverse conditions seem to be necessary to develop hardiness and vigor in plants, animals and mankind. The best types of all races have been reared about midway between the tropics and the Arctic zones.

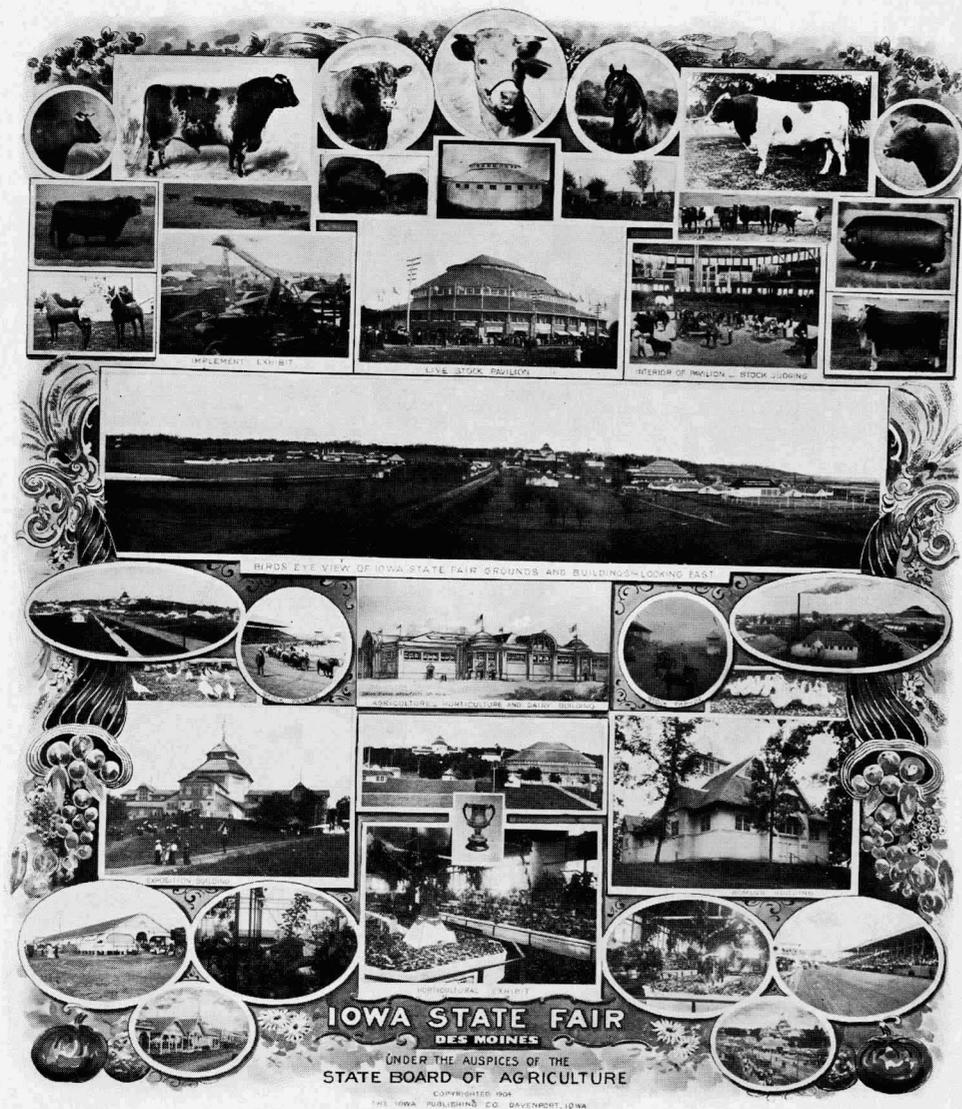
#### LATE AND EARLY KILLING FROSTS.

In common with other portions of this country, this state is subject in the crop growing season to occasional depression of temperature down to the frost line. On the average, however, there is immunity from killing frosts for a period of about 170 days. The records of the United States Weather Bureau stations, covering a period of about thirty years, show that the average date of the latest killing frost in the spring has been April 20th, and the earliest in autumn, October 9th. In every season there have been light frosts at later and earlier dates, causing no appreciable damage to vegetation but extensive injury to staple crops by heavy frost has occurred at very infrequent intervals within the past thirty years. In 1870 Prof. T. S. Parvin wrote as follows: "It has happened but once or twice in the last thirty years that the frost has, over a great extent, seriously injured the corn crop. When the spring is late, the fall is either quite hot or lengthened so as to afford time for the crop to mature." The records covering the period since 1870 confirm this statement.

#### SUNSHINE AND CLOUDINESS.

Iowa enjoys the advantage of a good average amount of sunshine. The mean for the year is 50 to 60 per cent, and this average is maintained in midwinter as well as in midsummer. A distinctive feature of the climate as compared with the eastern states is the large percentage of clear skies in the winter season. The coldest periods in winter are generally cloudless, as a result of the low percentage of humidity during prevalence of north and west winds. For the year the average for the state is as follows: 156 clear, 107 partly cloudy, and 102 cloudy days.





## FORESTRY.

By PROF. L. H. PAMMEL.

The subject of forestry is becoming more and more important for the state, not only because of the depletion of the forests to the north and east, but also because of the increased building operations. In spite of the fact that there has been an enormous increase of building material of other kinds, brick, stone and iron, the per capita consumption of wood has also largely increased. A part of this increase is due to the construction of trolley lines, the use of timber for telegraph and telephone poles, the increased consumption for domestic articles, chairs, tables, etc., as well as the material used for interior finishing.

The state of Iowa is generally classed as a prairie state and correctly so because of the 35,504,640 acres of land in the state only about 3,000,000 acres are covered with timber. Mr. Gannett estimates that the total extent of forest in the state is about 13 per cent of the total area of the state. In spite of the fact, however, that the state is to such a large extent treeless many species are found in the state. Species belonging to the north and species belonging to the south have made their way into the state.

If we take a look at the chief physiographic features of the state from the standpoint of timber production we shall find that the land adjoining the streams such as the Mississippi, the Iowa, Cedar, Wapipinicon, Maquoketa, Turkey, Upper Iowa, Skunk, Des Moines, Raccoon, Chariton, Nishnabotna, Nodaway, Boyer, Big and Little Sioux are covered with timber. The amount of timber skirting these streams depends upon the local physiographic conditions. In the eastern part of the state where such streams as the Maquoketa, Cedar, and Iowa occur, there are larger stretches of timber as these streams approach the Mississippi. When the head waters of such streams as the Des Moines, Raccoon, and Iowa rivers in central and northern Iowa are reached, the timbered areas are much reduced. In eastern Iowa all of the flood plains contain considerable quantities of timber. To a large extent

this timber has been removed. In western Iowa the flood plain of the Missouri river contains comparatively little timber, most of it being found in proximity to the smaller streams that make their way through the alluvial drift. The timbered areas are comparatively narrow in the Missouri flood plain; however, further up, along the streams of the Boyer and Big Sioux the timbered areas are wider. In most of the smaller canyons that are found in the region containing the loess there is considerable development of timber. The same trees are found at altitudes from 100 to 150 feet above the flood plains of the streams, whereas in eastern Iowa these same trees like the Kentucky coffee tree occur in the flood plain streams. In southern Iowa the timber area is larger than in the section of the state affected by the Wisconsin drift. Thus there are considerable areas in the counties of the state bordering on the state of Missouri; the counties of Appanoose, Monroe, Wayne, and Warren have considerable rough land but the timber here is young.

The distribution of timber is to a large extent influenced by climatic conditions. The temperature records show that the total annual precipitation from 1893 to 1898 was 22.83 inches for Sioux City; for Clarinda, 29.26 inches; for Keokuk, 34.16 inches, mean temperature from 1871-1902, 51.9°; in Decorah the precipitation from 1893-1902 was 28.97 inches average. The precipitation for Clermont, 1877-1902, was 29.90 inches. The mean temperature for Fayette, 1890-1902, was 45.5°. The rainfall in Humboldt from 1897-1902 was 28.53 inches average, the mean annual temperature for Humboldt was 47.2°F. At Glenwood the mean annual temperature for 1898-1902 was 51.2°.

The soil is another important feature in connection with the distribution of forest trees. In the alluvial bottoms of the Des Moines and Mississippi where the alluvial deposit is light containing considerable quantities of organic matter and sand, the trees attain their maximum development. This is especially true of some species of trees, true of the cottonwood which reaches a diameter of seven and eight feet in some instances and a height of a hundred feet or more. The cottonwood is native to more than three-fourths of the counties of the state, found from Lyons county south along the Big Sioux and Missouri to the Missouri line, and extending up the smaller tributaries of these streams, and in eastern Iowa likewise along all the streams excepting the head waters of the Iowa and Cedar rivers, but so far as I know

was not native to counties like Emmet, Kossuth, Palo Alto and Dickinson, although now it is widely scattered through cultivation. It is hardy in all sections of the state.

The sycamore also is native. It is perhaps the largest tree in the state with the exception of the cottonwood, which reaches its greatest development along the lower Des Moines and the Skunk, and in southeastern Iowa along the Mississippi. The sycamore is native in central Iowa nearly as far north as Hamilton county, along the lower Cedar, Iowa, Wapsie and Turkey rivers. Along the Des Moines it occurs as far north as Polk and Boone counties. Along with this species we also have large numbers of elms which in many instances are four or five feet in diameter. The black walnut likewise reaches its greatest development in the flood plains of the streams, and is found from the head waters of nearly all the streams in eastern Iowa up to the Minnesota line, and extending along the Missouri up to Woodbury county. The box elder is quite generally distributed throughout the alluvial bottoms, especially the second alluvial bottoms; the soft maple likewise has a wide distribution. It is native over larger territory than any other tree. It occurs from the lake region in Dickinson, Palo Alto and Emmet counties to Lyons county east to Allamakee county, southward to the Missouri line. Always a species of the alluvial bottoms it is now through cultivation widely extended over the prairies.

Now when we consider the uplands a different assemblage of trees occurs. The hard maple, (*ACER NIGRUM*) is common everywhere in the state east of the Missouri slope, that is to say all streams that flow into the Mississippi have scattered groves of considerable size of this species, the Des Moines basin being practically the western distribution of this tree. It reaches its greatest development in the drift area along the Mississippi, Des Moines and Cedar and is also developed to a considerable extent in the driftless area of northeastern Iowa, the species being especially prominent in the shaded hill slopes, where it forms large groves. In some parts of Delaware county there were trees more than four feet in diameter. In central Iowa there were trees more than three and one-half feet in diameter. A black maple of central Iowa cut a few years ago was 160 years old. Its value for fuel and lumber has depleted the original forest to such an extent that it will be another generation before good lumber of this species will be obtained. It succeeds well under cultivation. Of the other trees occurring on the hill-

sides mention may be made of the red elm (*ULMUS FULVA*), which is found practically over the entire state. Large groves occur at the base of the St. Peter's sandstone and the sub-carboniferous sandstone in Marion, Boone and Muscatine counties. The best of this timber too, has long since been removed. The few remaining trees show the effect of the injuries from insects, fungus diseases, and over grazing.

Of the oaks the more important of the species are the red oak which is widely distributed and abundant in eastern Iowa and the southeastern portion of the state. However, the most widely distributed oak in the state is the bur oak. It varies greatly from the tall, stately trees and magnificent forests that occur in southeastern Iowa to the diminutive scrub oak in northeastern Iowa with its gnarly branches found on the borders of the lakes and the loess deposit of western Iowa and is scarcely fit for lumber purposes. There is much of the cosmopolitan character of the species.

There are fine groves of the white oak in eastern and even in central Iowa where there are fine bodies of this species but I know of none west of the Des Moines river basin, although the species is common in Missouri. Prof. B. Shimek gives the number of species of oaks as 17, many are, however, local.

Of the conifers the red cedar is quite widely distributed, however, few of the original trees remain. The largest have been found along the lakes in northern Iowa. North of Sioux City they are developed to a considerable extent along the Big Sioux. In Bremer, Fayette, Clayton, Delaware and in other counties in eastern Iowa the species was formerly common and the wood was used even for posts.

The white pine, though a typical northern species, occurs in this state at several points, the most noted exception to its distribution being the trees found in Hardin county, along Pine Creek, near and on the Iowa river. There were trees here from two to three feet in diameter and 60 to 70 feet high. The sub-carboniferous sandstone made the physical condition of this soil such that they developed into perfect specimens. Again, the distribution of the white pine in Muscatine is somewhat anomalous, being the most southern point where the tree occurs in the state. There were some large trees here originally.

In addition, one other conifer is worthy of mention, namely the balsam fir which occurs in Allamakee and Winneshiek counties. Its occurrence here is quite unusual. A few miles north of Postville on

the Yellow river is a small and thrifty grove of balsam firs. They occur on the springy northern slope associated with (*TAXUS CANADENSIS*), (*BETULA PAPYRIFERA*) and (*RHUS TYPHINA*). This assemblage of plants occurs upon outcrops of the Trenton limestone. Prof. Macbride reports its occurrence in other localities of the vicinity.

It may be of interest in this connection to consider briefly the manufactured wood products of the state of Iowa. In enumerating these, however, it should be stated that much of this lumber is brought into the state from the states of Minnesota and Wisconsin. The value of the lumber industry in the state of Iowa for the year 1850 was \$470,760.

By looking over the counties I find that the products for some of the different counties are as follows: Adair, \$12,060; Boone, \$15,810; Bremer, \$37,528; Butler, \$33,288; Cedar, 37,644; Clark, 21,118; Clay, \$552; Clayton, \$16,942; Dubuque, \$136,011; Davis, \$56,410; Fremont, \$23,411; Jefferson, \$35,807; Johnson, \$86,537; Linn, \$116,820; Monona, \$28,863; Montgomery, \$1,996; Appanoose, \$32,547; Winneshiek, \$110,087.

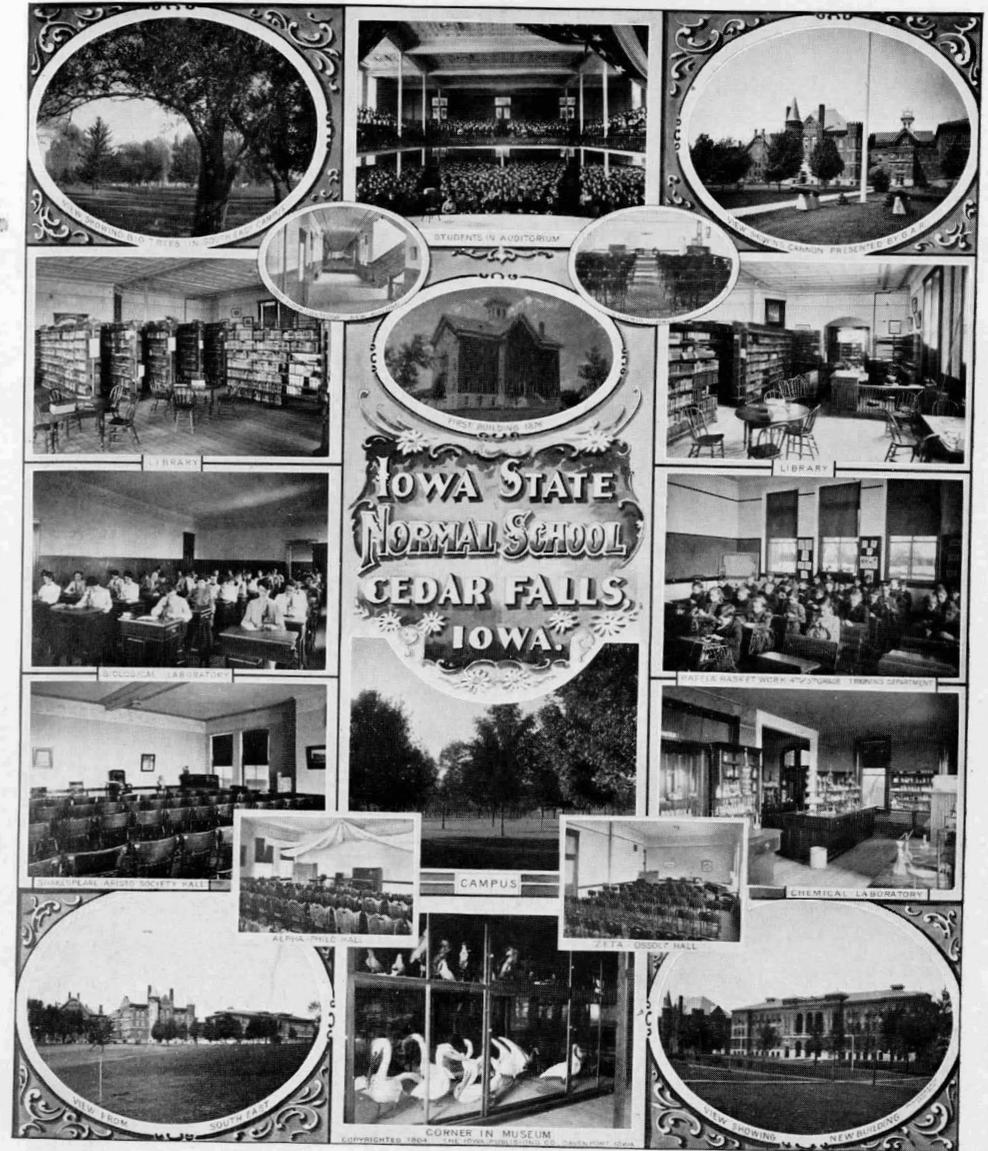
The total value of the forest products in the state outside of those manufactured by the saw mills in the larger cities like Dubuque, Clinton, Muscatine and Davenport, is \$3,266,449.

Aside from the lumber industry the manufacture of boxes is important and one of the largest basket factories in the west is located at Burlington, Iowa.

One of the most important items in connection with the subject of forestry in the state is the question of windbreaks. The windbreak protects the farmer's orchard, and his stock, and nothing has done more to alleviate the sufferings of winter than the numerous windbreak plantings over the prairies of Iowa. The principal species used for the windbreak are the white willow (but it is not to be recommended) and several different kinds of conifers, among these white pine stands foremost in the eastern part of the state. The Austrian pine is valuable not only because of its hardiness but because of the shelter it affords. The bull pine of the Black Hills and the red cedar are all considered valuable for the windbreak.

The cottonwood has been used, as has the soft maple and box elder. Generally, however, it is advisable to use the white pine or Austrian pine planted in groves with some deciduous tree like the soft maple and the green ash. The green ash is one of the most valuable species for northwestern Iowa.

There has been some planting for the farmer's wood lot in many sections of the state and on the place of Judge Whiting cottonwoods that were planted in 1863 measure somewhat more than four feet in diameter. I am told by Mr. Whiting that more than 250,000 feet board measure has been removed around a one hundred and sixty acre farm. Surely a most profitable investment. In the eastern part of the state the soft maple is used much more extensively for the farmer's wood lot than the cottonwood. The elm, catalpa, the black walnut and butternut, larch, Austrian and Scotch pine and maple have been used, and for eastern Iowa these are certainly desirable species, but for northwestern Iowa the green ash is much more valuable. The cottonwood will succeed where it is planted in rows. The nature of the tree is such under natural conditions in the alluvial bottoms, that it will never form solid bodies.



## IOWA LEAD MINES.

The first mention of the discovery of lead in the territory covered by the province of Louisiana is in an account of the expedition of Nicholas Parrott, who in 1689 was sent by De La Barre, Governor of Canada, to cultivate friendly relations with the Indians of the upper Mississippi. A second discovery is narrated in an account of the expedition of LeSuer, a French explorer, to the Blue Earth river, in Minnesota, in 1700. The tract of country in which lead was discovered and mines afterwards developed, embraced an area of some sixty miles in diameter, divided by the Mississippi river, part of it being in what became the state of Illinois, part in Wisconsin and part in Iowa.

In 1788, Julien Dubuque, a French Indian trader, who had previously located at Prairie du Chien, taking with him nine other Frenchmen, made settlement and began the development of the lead mines at the place which afterwards became the site of the city of his name, Dubuque. This territory was then a part of the Spanish province of Louisiana and was occupied by the Fox Indians. Julien Dubuque called together a council of chiefs and braves of this tribe at Prairie du Chien in September, 1788, and obtained from them permission to work the mines. The amount of territory claimed by Dubuque to have been ceded him by the Indians, was about six or seven miles in width, back from the Mississippi, and sixteen miles north and south along the river.

Julien Dubuque cultivated friendly relations with the Indians and acquired no small influence over them. He gathered about him a colony of French and half-breeds, built a furnace for smelting lead, put in a horse-power mill and established a lucrative trade with the Indians, getting his goods in St. Louis in exchange for lead. In October, 1804, he transferred about seven-eighths of the claim he had acquired from the Indians to Auguste Chateau, of St. Louis. This conveyance covered probably twenty thousand acres of land.

Julien Dubuque died at his mines in 1810. He was buried in a stone vault on a high bluff near an Indian village at the mouth of Cat Fish creek. A red cedar cross was erected near by on which was inscribed in French: "Julien Dubuque, Miner of the Mines of Spain. Died 24th of March, 1810, aged 45 years and 6 months."

For the next twenty years but little mining was done. Warring between Indian tribes rendered the locality unpleasant if not dangerous and the French colony became scattered. In the mean time the Sioux Indians had become victors and ruled the territory and they themselves worked the mines in a hap-hazard sort of way. But they guarded the place with great care and for a long time kept the whites entirely away.

In 1830 the Langworthy brothers and a few others associated with them secured permission from the Indians to visit the mines. They found but few traces of the improvements made by Julien Dubuque and his colony. Twenty years' possession by the Indians had nearly obliterated their tracks. Just prior to the arrival of the Langworthy company the Indians all left on some important western expedition and the new party of miners took possession. Other venturesome spirits soon joined them and business was quite brisk at the lead mines.

At this time the territory west of the Mississippi river belonged by treaty to the Sac and Fox Indians, and the United States government in order to preserve peace and properly protect the Indians in their treaty rights, ordered the whites out of the territory. This order was given through Colonel Zachary Taylor, then in command of a detachment of troops at Prairie du Chien. He gave the miners a week's time in which to get ready and leave, and sent a company of soldiers to enforce the order, and the miners were obliged to abandon their homes and labors and cross to the east side of the river. A military force was then stationed at the mines to keep settlers and prospectors away. The Indians then engaged in digging out lead under the protection of the soldiers, until early in 1832 when the Blackhawk war broke out and the soldiers were withdrawn to help fight the Indians on the east side of the river. This war terminated in August, 1832, when Blackhawk surrendered.

Following this came a treaty of peace and a purchase by the government of a strip of territory on the west side of the river extending back about forty miles and thereafter known as the Blackhawk purchase.

At the conclusion of treaty negotiations in the fall of 1832, those who had been driven from the mines by the soldiers in 1830, returned, erected cabins and resumed mining operations.

### GYPSUM.

Extensive deposits of gypsum are found in Iowa, principally near the city of Fort Dodge. Mines are operated there on a large scale.

## BRIEFLETS.

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Iowa has something over 1,300 banks.

Iowa has 1,674 postoffices.

Iowa has extensive lead mines.

Iowa has 14,000 school houses.

Iowa has 9,725 miles of railway.

Iowa has an immense deposit of gypsum.

Telephone lines run everywhere in Iowa.

Iowa has well enforced fish and game laws.

Iowa has 671 incorporated cities and towns.

Iowa has 99 counties.

Iowa has over a million dollars in its state treasury.

Very few farmers in Iowa live ten miles from a railroad.

Tax levies are made upon one-fourth the actual value of property.

Farm loans in Iowa are mostly made at five per cent interest per annum.

County taxes in Iowa may be paid in two, semi-annual installments.

Iowa has 760 creameries, which turn out the best butter in the world.

Iowa has hundreds of quarries where good building stone is obtained.

There are two hundred and fifty public libraries in Iowa. Private ones are not enumerated.

One of the biggest and best crops that Iowa raises is that of men and women.

Iowa has a large number of factories of various kinds.

Iowa has several points on its rivers where immense water powers could be developed.

Iowa has 1,220 telephone companies, with lines running from one to over six thousand miles.

Interurban electric trolley lines are being built, and others projected in various parts of the state.

Iowa has 700 flouring mills, and the value of their annual output aggregates about \$14,000,000.

Iowa has banks of clay in almost every county from which good bricks are made for building purposes, and in many places suitable also for making tile and pottery.

Iowa has good well water, good spring water and good water in its swift flowing streams and in its lakes.

Iowa has a flourishing Horticultural Society with offices in the capitol building at Des Moines.

The total annual output of the coal mines of Iowa is about six millions of tons.

Twenty-three of the 99 counties in Iowa have productive coal mines.

Iowa has sixteen plants that manufacture food preparations, and the value of their annual product is over \$3,600,000.

Iowa has over 900 cheese, butter and condensed milk factories, and the value of their annual product is almost \$16,000,000.

Iowa is an inviting field for the manufacturer. Its people are prosperous and enterprising and liberal buyers of manufactured articles.

The state encourages the organization of farmers' institutes in every county in Iowa by a standing appropriation of \$75 for an institute in each county.

The state of Iowa maintains a Weather and Crop Service Bureau, which publishes weekly and monthly bulletins, distributed free to all parts of the state.

Iowa has 67 daily newspapers, 10 tri-weekly, 55 semi-weekly, 945 weekly, 9 bi-weekly, 61 monthly and 10 bi-monthly and quarterly publications; a total of 1,157.

Scattered around over the 99 counties of Iowa are upwards of 360 brick, tile and pottery plants, and the value of their aggregate annual output is over \$2,250,000.

Iowa has an Agricultural Department with offices in the capitol at Des Moines. This department has charge of the annual state fairs held on the grounds for that purpose owned by the state.

Iowa has a permanent school fund amounting in round numbers to \$4,750,000. This is loaned to the farmers of Iowa at not less than

five per cent per annum and the interest helps support the public schools.

The secretaries of the business men's associations and commercial clubs of the larger cities and towns of Iowa will be glad to give full information as to local resources and advantages whenever requested to do so.

Legal holidays are Jan. 1, New Year's Day; Feb. 22, Washington's birthday; May 30, Memorial Day; July 4, Independence Day; First Monday in September, Labor Day; Thanksgiving Day, in November; Dec. 25, Christmas.

The larger cities of Iowa and many of the smaller ones, have paved streets, electric car lines, gas and electric light plants, water works, fire departments, sewerage systems, public libraries, public parks, fine churches and handsome residences.

Iowa is first of all states in the United States and territories in the value of its farm products, and in the value of domestic animals.

First in the number of its hogs.

First in the number of its horses on farms.

Second in the number of its cattle, Texas being first.

Second in the total combined value of its farm lands, improvements, live stock and farm implements, Illinois being first.

Legal rate of interest in Iowa, six per cent.

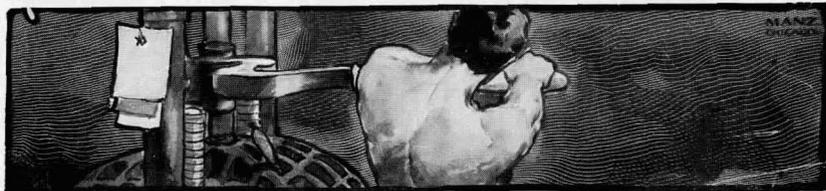
Rate allowed by contract, eight per cent.

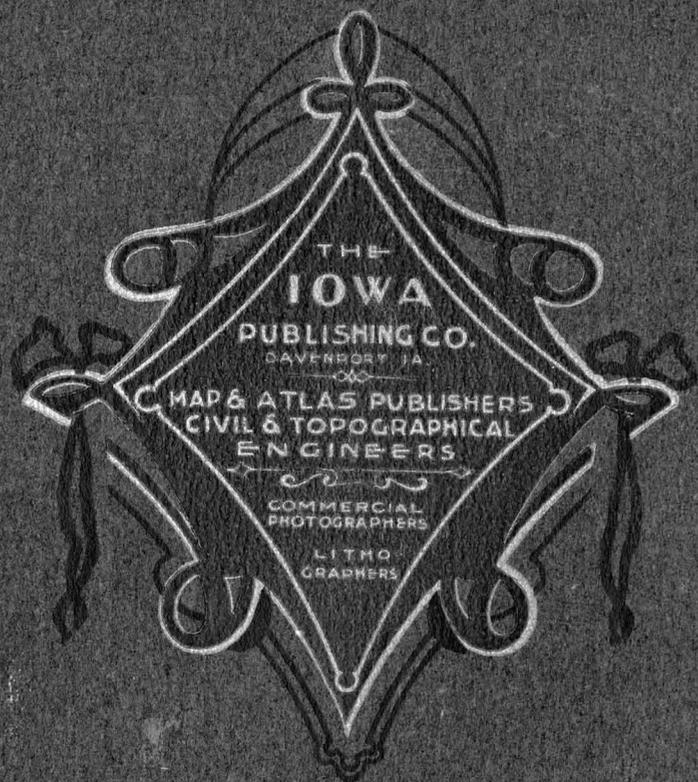
Status of limitations, on open accounts, five years.

Status of limitations, on promissory notes, ten years.

Status of limitations, on judgments, twenty years.

Days of grace, abolished.





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