## CAMPBELL’S

## NEW ATLAS OF

## M <br> I$S$ $S$ OU R I

## WITH DESCRIPTIONS

## Historical, Scientific, and Statistical.

MAPS CONSTRUCTED AND DRAWN ON THE POLYCONIC PROJECTION BY

## R. A. CAMPBELL, C. E.,

From data collected under his personal direction by a Corps of Experienced Surveyors.
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\section*{PREFATORY.}

TTHE Publisher offers no apology for the issue of this Atlas. The field which he occupies is wholly a new one in Missouri, and indeed in any State in the Union, with three or four exceptions. His Descriptive Atlas of Illinois, published in 1869, with revised editions in 1871 and 1872, was the first, possibly the second, State Atlas ever issued in America. That publication met with such marked success in Illinois that he was induced to undertake the arduous labors necessary to the construction of a similar, and as he believes, a superior work for this State; and particularly too when, on submitting his plans to a number of the leading citizens of Missouri, he received the most flattering assurances of their co-operation and patronage.

The large scale of the county maps-six miles to an inch—has been adopted as being the smallest that would enable the publisher clearly to present the various items of information necessarily shown in order to render a work of this character complete. A larger scale would have enhanced the cost of the volume so as to limit its purchase to the few, and thus in a measure have defeated the design of the publisher to make the work an Atlas for the People.

The publisher desires to acknowledge the many obligations that he is under to the able corps of contributors to the letter-press of the Atlas for numerous favors; also to Hon. E. H. Hesse, custodian of the original United States Surveys of Missouri; to the County Surveyors and Circuit Clerks throughout the State for information furnished, and for free access to, and assistance in transcribing from, the plats and records of their respective counties; to the Superintendents and Chief Engineers of the various railroads of the State for like favors, and for numerous other courtesies which only gentlemen in their positions could extend; to Hon. W. L. Nicholson, Topographer of the U. S. Post Office Department at Washington for a file of U. S. Postal Maps and a corrected list of the post offices of the United States, with the exact location of the post offices of Missouri; to Hon. Francis A. Walker, Superintendent of the U. S. Census Bureau, for advance sheets of his forthcoming report, from which the greater portion of the statistics of this volume are compiled; to N. H. Parker, Esq., editor of the Industrial Age, for facts from his excellent treatise entitled "Missouri as it is in 1867 "; to Hon. J. B. Merwin, editor of the American Fournal of Education, and his business associate, Colonel F. A. Seely, for numerous favors and valuable suggestions; and especially does the publisher desire to acknowledge his indebtedness to Hon. Eugene F. Weigel, Secretary of State, and his able and courteous assistant, Captain Chas. Schackel, for invaluable assistance; and last, but not least, should grateful acknowledgments be made to the long lists of gentlemen in all parts of the State, who, by their orders for the work in advance of publication, have already guaranteed the financial success of the enterprise.

The puhlisher will be under obligations to any gentleman in any part of Missouri who will furnish him with reliable information concerning changes occurring in the State, or for the correction of possible errors. All such additions and corrections will be made from time to time, as successive editions of this work are issued.

St. Louis, December, 1872.

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\section*{M I S S O U R I.}

\section*{'TOPOGRAPHY,}

\author{
By Capt. J. P. Cadman, A. M.
}

Boundary and Geographical Position. - The State of Missouri lies between the parallels of \(36^{\circ} 30^{\prime}\) and \(40^{\circ} 30^{\prime}\) north latitude, and between \(12^{\circ} 2^{\prime}\) and \(18^{\circ} 51^{\prime}\) longitude west from Washington. It is bounded on the north by the State of Iowa, from which it is separated for about 30 miles on the north-east by the DesMoines River; on the east by the Mississippi River, that separates it from the States of Illinois, Kentucky and Tennessee ; on the south by the State of Arkansas; and on the weest by the Indian Territory and the States of Kansas and Nebraska. The length of Missouri north and south is about 277 miles; its average breadth is about 244 miles, varying from 200 miles in the north to 312 miles in the south, and a narrow strip between the St. François and Mississippi Rivers extending south from the main body of the State about thirty-five miles into Arkansas.
Area.-The area of Missouri is 67,380 square miles or 43,123,200 acres, being about 2.29 per cent. of the total territory of the United States exclusive of Alaska. It is larger than any State east of, or bordering on, the Mississippi River except Minnesota. In size, Missouri is the eighth State in the Urion, the States that exceed it in area being as follows: Texas, 237,321 square miles; California, 159,000; Nevada, 112,000; Oregon, 95,274; Minnesota, 83,500; Kansas, 85,000; and Nebraska, 76,000. Missouri is nearly equal in area to the three States of Illinois, Massachusetts and Connecticut, whose areas are respectively as follows: 55,405 ; 7,800 ; and 4,674 square miles. Missouri is a third larger than England and is equal in size to the combined areas of Denmark, Holland, Belgium and Switzerland.
Face of the Country. - This State is divided by the Missouri River into two distinct parts, each marked by different physical characteristics. In the southern portion as far west as the Osage River, the surface is rolling and gradually rises into a hilly and somewhat mountainous country forming the Ozark range. West of the Osage river commences an expanse of very high prairie land. In the extreme southeast of the State is an extensive bottom land along the Mississippi River, beginning on the north at Cape Girardeau, and extending south to the Arkansas river. Many swamps are found here that are almost impenetrable, owing to the dense growth of trees, mostly Cypress. The most extensive of these is the Great Swamp, which commmences a few miles south of Cape Girardeau and continues southward to the mouth of the St. François, penetrating far into the State of Arkansas. There are more than one hundred miles of this swamp in Missouri.

The Great Swamp has four natural sub-divisions, which are known locally as follows: the St. François, the St. John's, the James, and the White Water or Little River Swamps. Within this bottom are also many lakes and lagoons; but it likewise contains many islands elevated above the reach of the highest floods. Much of this section of the State has been inundated and uncultivated since the earthquakes of 181I and 1812; but it is probably all capable of being reclaimed, and possesses a very rich soil.

A general idea of the surface of the southern part of the State may be obtained from the elevations of the following places, as compared with St. Louis, which is 372 feet above the sea level :

\section*{Place.}

Feet above St. Louvis.
Base of Pilot Knob, Iron County.................................... 537 Top of Pilot Knob .......................................................................... 537 is Marshfield, Webster County, ( 217 miles southwest of St. Louis) 1090 Granby, Newton County, (extreme southwestern part of the State). 668
Springfield, Greene County............................................ 1080
Fect below St. Louis.
Ohio City, Mississippi County, (just opposite Cairo, Ill., ).... 100

That part of the State lying north of the Missouri river is less broken and hilly than most of the southern portion, and exhibits a desirable medium between a mountainous and level country. There is an excellent diversity of prairie and timber land, well watered by numerous streams whose uniform course is south or southeast, emptying into the Missouri or Mississippi Rivers.

Rivers.-Two of the largest rivers in the United States, if not in the world, give Missouri the benefits of their navigation. The Mississippi River flows along the eastern border of the State for a distance (including its windings) of nearly 500 miles. The Missouri River courses along nearly one-half of the western border of the State separating it from Nebraska and Kansas for a distance of about 250 miles, and then bears off in a direction a little south of east for 436 miles farther, until it reaches its confluence with the Mississippi River. Both of these rivers are navigable by large steamers far beyond the limits of the State.

The principal tributaries which the Missouri river receives within the State are the following: Platte, Chariton and Grand Rivers from the north, and the La Mine, Osage and Gasconade from the south.

The principal tributaries that the Mississippi river receives within the State are: Salt River from the northwest, and Maramec River south of the Missouri river. The St. François and White Rivers drain the southern part of the State and flow into Arkansas.
For more detailed topography and description, see the next article.

\section*{COUNTIES OF MISSOURI.}

\author{
By Capt. J. P. CAdMan, A. M.
}

Adair County-Is situated in the north-northeastern portion of the State, and drained by the Chariton and Salt Rivers and branches.

Kirksvilie, the county seat, population in. 1870, 1,4ヶ1, is pleasantly located on the Northern Division of the St. Louis, Kansas City \& Northern, Railway, 203 miles from St. Louis, and \(I_{1} 5\) miles air line north from Jefferson City, and 104 miles by rail from Hannibal.

The surface of the country is gently undulating, with a good division of prairie and timber land. The soil is very fertile, and well adapted to agriculture. Coal, limestone and sandstone are abundant. The county was first settled in 183 1-2, by Kentuckians.

Andrew County-Is situated in the northwestern portion of the State, separated from Kansas by the Missouri River, and is intersected by the Platte, One Hundred-and-Two, and some minor streams which afford good water power.

Savannah, the county seat, population in 1870, 1,257, has a good location, 5 miles from the Missouri River, on the Maryville Branch of the Kansas Oity, St. Joseph \& Council Bluffs Railroad, 15 miles from St. Joseph, and 85 miles north of Kansas City.

The land is fertile and rolling; more timber than prairie. This county was first settled in 1837.

Atchison County-Is in the extreme northwest corner of the State, bounded on the west by the Missouri River which separates it from Nebraska, and on the north by Iowa.

Rockport, the county seat, population in 1870,490 , is five miles east of Phelps City, which is a station on the Kansas City, St. Joseph \& Council Bluffs Railroad; 65 miles north from St. Joseph, and \(\mathbf{} 35\) miles from Kansas City.

The soil is very fertile, and there is good water power. About one half of the county is level and undulating, and the other half somewhat broken. Two-thirds of the land of the county is prairie interspersed with timber. The county was first settled in 1840.

Audrain County-Is north of the center of the State, and forms part of the divide between the Mississippi and Missouri Rivers.

Mexico, the county seat and principal town, population in 1870, 2,602, was incorporated as a city, February 7, 1857, and is situated on the St. Louis, Kansas City \& Northern Railway, 108 miles from St. Louis, and on the Louisiana branch of the Chicago, Alton \& St. Louis Railway, 5 x miles from Jefferson City.

The area of the county is 680 square miles, or 435,200 acres. The face of the country is a rich undulating prairie, interspersed with timber, which occupies one-fourth of the county. The agricultural staples are wheat, oats, corn, rye, timothy, barley and potatoes, the two first of which are the principal exports. The county was settled principally from the Eastern States and from Germany.

Barry County-Is located in the southwestern corner of the State on the Arkansas State line, and is drained by White River and Flat, Shoal, Indian and Sugar Creeks.

Cassville, the county seat and principal town, population in 1870) 287 , is situated in a fertile valley near the center of the county, 20 miles south of Peirce City, which is a station on the Atlantic \& Pacific Railway, 29I miles from St. Louis.
The face of the country is hilly and generally fertile, interspersed with prairie and timber. Lead, zinc and building material have been found in the county, the first in considerable quantities.

Barton County-Is situated in the west-southwestern portion of the State, bordering on Kansas, and is drained by Spring River, Horse and Muddy Creeks, and their tributaries.
Lamar is the county seat and principal town, population, including township, in 1870) 1,611; was located March 15, 1856, and is situated near the center of the county, 24 miles south of Nevada City, which is a station on the Missouri, Kansas \& Texas Railway, 20 miles east of Fort Scott, and 278 miles from St. Louis.
The county was organized from Jasper county, December 12, 1855. Its area is 600 square miles, or 384,000 acres. The face of the country is generally high table lands, principally prairie, interspersed with extensive groves of timber. The valleys are fertile and well adapted to grain and stock raising. The ridges are gravelly and excellent for fruit culture. Coal is abundant in the county, and it is being worked near the county seat. Limestone and sandstone for building, and clay and sand for brick, are abundant.

Bates County-Is situated near the center of the western boundary of the State, bordering on Kansas, and is drained by the Osage and South Grand Rivers and their tributaries.

Butler, the county seat and principal town, population in 1870, 1,064 , is situated near the center of the county, about 12 miles east of the Kansas line, and 20 miles from Appleton City, a station on the Missouri, Kansas \& Texas Railway, 51 miles northeast from Fort Scott, and 247 miles from St. Louis.

The county was first settled in 1818 by missionaries, sent to the Osage Indians by the American Board of Foreign Missions. Harmony Mission was established August 2nd, 1821, and maintained with good success until 1835 when it was abandoned, the Indians having removed farther west and south. The face of the country is principally high, rich, rolling prairie. The bottom lands along the streams are well timbered. There are a few high limestone and freestone ridges which are well covered with timber, also several thousand acres of swamp land of good quality.

Benton County-Is situated in the west centre of the State and is drained by the Osage River and tributaries.
Warsaw, the county seat, occupies an elevated site on the Osage River; population, including township, in 1870, 1383 ; was first settled in 1835, and is 24 miles southeast from Windsor, Henry County, which is a station on the Missouri, Kansas \& Texas Railway, \(2 I\) miles from Sedalia, and 209 miles from St. Louis. This county was settled in 1834 .

The surface of the country is generally broken, one-fourth being rolling prairie and the remainder rough timber land. The prin-

\section*{COUNTIES OF MISSOIRI.}
cipal exports are wheat, pork, beef, tobacco and mules. Lead is found in considerable quantities.

Bollinger County - Is situated in the southeastern part of the State, and is watered by the Castor and White Water Rivers and their tributaries.
Marble Hill (Dallas), the county seat, was incorporated Dec. 5. 1855; population including township, in \(1870,2,872\); it is a station on the St. Louis. \& Iron Mountain Railway, 134 miles from St. Louis, and about 25 miles west of Cape Girardeau, on the Mississippi River.

The county was settled by North Carolinians in 1800, and organized in 1850 . The face of the country is broken, the land generally fertile and well timbered. The climate is well adapted for fruit. Iron in large, and lead, silver and zinc, in small, quantities have been found. There are also deposits of red clay, yellow ochre and white clay (kaolin). Several mines of the kaolin are in constant operation.

Boone County-Is located near the center of the State, and is drained principally by the Missouri River on its southwestern border, and Cedar Creek, on its eastern boundary.

Columbia, the county seat and principal town, population in 18702,236 , is situated near the center of the county, on a high and beautiful site, and contains the Missouri State University, and several other educational institutions, giving the place the appellation of the "Athens of Missouri." Columbia is on the Columbia branch of the St. Louis, Kansas City \& Northern Railway, 144 miles from St. Louis, via Centralia, and about 25 miles north of Jefferson City.

This county was first settled in \(\mathbf{1 8} \mathbf{1 5}\); it was formed from Howard county. Three-fourths of the county is broken and timber land, but generally it is well adapted for grain, fruit and stock. There are extensive beds of stone coal. Near Columbia is "Connor's Cave," which is said to have been penetrated several miles. Near Rocheport, a town on the Missouri River, population in 1870, 823, are high rocks containing Indian hieroglyphics.

Buchanan County-Is situated in the northwestern part of the State, bordering on Kansas, from which it is separated by the Missouri River. Its interior is drained by the Platte River and its tributaries.

St. Joseph, the county seat and chief city, had a population in 1870 as follows: First ward, 2,251 ; second ward, 3,367; third ward, 3,928 ; fourth ward, 5,217 ; fifth ward, 4,802 ; total, 19,565; of whom 14,339 were native born, 5,226 foreign; and 18,052 white, 1,512 colored, and 6 Indians. It is handsomely located on the east bank of the Missouri River, 545 miles from its mouth, 70 miles above Kansas City, and 310 miles northwest by rail, and 565 miles by water from St. Louis, and 194 miles by rail and 391 miles by river from Jefferson City. St. Joseph is a station on the following railroads: Hannibal \& St. Joseph; St. Louis, Kansas City \& Northern (Lexington Branch) ; the Kansas City, St. Joseph \& Council Bluffs, and Maryville Branch, and the St. Joseph and Denver City. Joseph Robidoux, senior, first visited the present site of St. Joseph in 1799. The place was organized as a village in 1845 . It became the county seat in 1846, and was chartered as a city in
1953. It is an enterprising and growing city with excellent lusiness facilities. It contains elegant private residences, substantial business blocks and a creditable number of institutions of larni:g.
The surface of the country is principally undulating prairie land, with a good growth of timber along the streans. This county is in the "Platte country," which has a wide reputation for the fertility of its soil, which produces all the grains, fruits and grasses of this latitude. This county, at St. Joseph, wa's first settled in \(1 \mathrm{SO}_{3}\).
Butler County-Is located in the southeastern part of the State, its south line being on the eastern portion of the border of Arkansas, and is watered by the Big Black and St. François Rivers.

Poplar Bliffe, the county seat and principal town, population in 1870 , including township, 840 , is situated at the head of navigation on the Big Black River, and is a station on the Arkansas branch of the St. Louis \(\mathbb{N}\) Iron Mountain Railway, 153 miles from St. Iouis.

This county was organized February 27, 1849. The face of the country is level or moderately hilly. Nearly iwo-thirds of the county has been returned as swamp lands, hat most of this can be reclaimed by drains and levees. The south half of the county is frequently ouerflowed, and until drained, of which it is susceptible, it is only fit for cranberry culture. About one-third of the county is free from inundation and is very fertile. This county has iron in considerable quantities, and pine, cypress, and other timber.

Caldwell County--Is located near the center of the northwestern quarter of the State, and is intersected by Shoal Creek, a tributary of Grand River.
Kingston, the county seat, population in 1870, 414, is near the center of the county, 8 miles south from Hamilton, a station on the Hannibal and St. Joseph Railway, 50 miles from St. Joseph, 69 miles from Kansas City, and 249 miles from St. Louis. Kingston was incorporated in \(185 \%\)
Hamilton, population in 1870,975 , is the chief town in the county.

Breckinridge, population in 1870, 515 , and Kidder, population in 1870, 195, are stations on the Hannibal \& St. Joseph Railway.
Mirable, population in 1870, 140, is 6 miles west of Kingston and about is miles south of Kidder.

The face of the country in Caldwell County is rolling and principally prairie. Timber abounds along the water courses. The soil is fertile and good for farming or grazing.

Callaway County-Is situated in the eastern central part of the State, is bounded on the south by the Missouri River, and drained by Cedar and Muddy Creeks.

Fulton, the county seat and chief city, pepulation in 1870, 1,585, is a station on the Louisiana Branch of the Chicago \& Alton Railway 25 miles south of Mexico, Audrain County, 26 miles from Jefferson City and 133 miles from St. Louis zia Mexico. Fulton has a pleasant and healthy situation in a good farming district. It was laid out as a town in 1822, and in 1836 was deemed one of the most flourishing villages in the interior of the State. It was
chartered as a city March 14th, 1859. The Missouri Institution for the Education of the Deaf and Dumb and the State Lunatic Asylum are both located at Fulton. The people of the county contributed \(\$ 12,000\) and 460 acres of land towards establishing the latter institution here. There are a college and two seminaries at Fulton, besides a number of excellent common schools.
This county was first settled by Captain Samuel Boone (nephew of Daniel Boone, of Kentucky) in 1818. It was named after Captain James Callaway, who fell in battle while fighting the Indians. The county was formed from Montgomery County and was organized in 1820: About one-third of the county is prairie and nearly all the remainder timber. Along the river the country is level and fertile, the northern portion of the county is hilly and broken, and extends out upon the ridge that divides between the waters of the Mississippi and the Missouri Rivers.
Bituminous and Cannel coal and excellent marble are found in large quantities, and iron ore, fine limestone, cement and clay exist.

Camden County-Is located in the south central part of the State, and is drained by the Osage, Big and Little Niangua and Grand Auglaize Rivers, the former of which is navigable for small steamboats.

Linn Creek, the county seat, population in 1870 , 132 , is situated near the Osage River, and is 30 miles north from Lebanon, Laclede County, a station on the Atlantic \& Pacific Railway 185 miles from St. Louis, and 56 miles northeast of Springfield.

With the exception of the extreme southeastern corner of the county it is well timbered, with face of the country rolling and some portions broken and almost mountainous. There is but little prairie in the county. The streams and springs afford abundance of water power. There are several interesting caves and subterranean lakes in the county. Lead has been found and worked in paying quantities.

Cape Girardeau County-Is located in the southeastern part of the State, is bounded on the east by the State of Illinois, from which it is separated by the Mississippi River. This county is watered by the White Water River, and Apple and Hubbs Creeks and their tributaries.

Jackson, the county seat, population in 1870, 459, is situated near the center of the county, and was incorporated March 2nd, 1859. It is about 10 miles west of the city of Cape Girardeau on the Mississippi River, and about 15 miles northeast of Dallas (Marble Hill), a station on the St. Louis \& Iron Mountain Railway, 134 miles from St. Louis.

Cape Girardeau, the chief city of the county, occupies a commanding site overlooking the Mississippi River. The population of the city, in 1870, was 3,585 . This place is situated on a solid bed of marble, and for this reason it is known as the "Marble City." Cape Girardeau contains a college, two seminaries, an academy and a convent. It is 16 miles from White Water, a station on the St. Louis \& Iron Mountain Railway, 145 miles from St. Louis.

This county was first settled by the French, in 1794. The county has no prairie and is heavily timbered. There is much excellent timber for boat building purposes. The surface of the country is in the southern portion mostly level, and in the north-
ern portion is moderately uneven. The soil is fertile, producing abundantly of wheat, corn, oats, grasses, tobacco and fruit.

Carroll County-Is located in the northwest center of the State. It is drained by the Missouri River, which forms its southern boundary, and by Grand River, and Turkey and Big Creeks.

Carrollton, the county seat and principal town, population in 1870, 1,832, lies on the Sr. Louis, Kansas City \& Northern Railway, 209 miles from St. Louis, and 66 miles from Kansas City. This place was named in honor of Charles Carroll, of Carrollton, the last survivor of the signers of the Declaration of Independence, and was incorporated March 12, 1849.

DeWitt, (formerly Windsor City,) population in 1870, \(3^{17}\), is a station on the above railway, 17 miles east from the county seat, 192 miles from St. Louis, and 83 miles from Kansas City. It was one of the principal seats of the Mormon war.

Norborne, population in 1870, 148, is a station on the same railway, 219 miles from St. Louis, and 56 miles from Kansas City.

The surface of the country is rolling,-prairie and timber interspersed. Coal and stone for building purposes abound. Lead and iron have been found. The chief exports are wheat, corn and tobacco. There are several earth mounds in the county, varying from 100 to 450 feet in height. From the highest of these, called Bogart's Mound, issues a very peculiar spring, whose water is oily or pitchy, so much so that it is used for lubrication.

Carter County-Is situated in the southeastern part of the State, and is drained principally by the Current River, a rapid and clear stream along whose banks is some of the finest scenery in Missouri, and whose tributaries afford excellent hunting and fishing.
Van Buren, the county seat, population in 1870 , including township, 760, is 22 miles from Mill Spring, Wayne County, a station on the St. Louis and Iron Mountain Railway, 135 miles from St. Louis and 18 north from Poplar Bluff, Butler County. The county was named in honor of one of its earliest citizens, Mr. Zimri Carter, and was organized March ioth, 1859.

The face of the country is quite broken, the valleys are very fertile, with timber abundant. The hillsides are well adapted to the culture of the grape. Iron and copper abound.

Cass County-Is located in the western part of the State, on the eastern border of Kansas, and is drained by South Grand River and Big Creek and their numerous tributaries.

Harrisonville, the county seat, population in 1870, 1,032, is on the Osage Division of the Missouri, Kansas \& Texas Railway, 22 miles from Holden, Johnson County, 72 miles from Kansas City via Holden, and 254 miles from St. Louis. Harrisonville was incorporated March 14 th, 1859.

Pleasant Hill, population in 1870, 2,554, is on Big Creek, is 10 miles northeast of the county seat, and is a station on the Missouri Pacific Railway at its junction with the Lawrence Branch, 248 miles from St. Louis and 34 miles southeast of Kansas City, and \(6 \mathbf{1}\) miles from Lawrence, Kansas.
About three-fourths of the county is prairie, and the remainder good timber. The soil is fertile and well adapted to agricultural purposes. The chief products are corn, wheat, oats and stock. There is a petroleum spring in the county and also several interesting elevations known as "Knobs." This county was formerly
known as "Van Buren," but was changed to its present name February igth, 1849 .

Its area is about 669 square miles or 418,160 acres.
Cedar County-Is located in the southwestern part of the State, and is drained by the Sac River and the Horse, Cedar, and other Creeks.
Stockton, the county seat, population, including township, in 1870) 2,670, is 34 miles east of Nevada City, Vernon County, which is a station on the Missouri, Kansas \& Texas Railway 20 miles east from Fort Scott, 90 miles southwest of Sedalia and 278 miles from St. Louis. Stockton was originally called Lancaster, from which it was changed to Fremont, January 2d, 1847, and to its present name February 8th, 1859.
The county was first settled in 1832. The face of the country is undulating, with prairie and timber about equally divided. Coal is abundant. Most of the streams afford good water power. The soil and climate are adapted to agricultural purposes and especially to fruit growing. Wheat is the principal export. Stock raising is profitable.

Chariton County-Is located in the northern central portion of the State, and is bounded on the south by the Missouri River, and is mostly embraced between the Grand and Chariton Rivers.
Keytesville, the county seat, population in 1870, 529 , has a beautiful location near the center of the county, on the St. Louis, Kansas City \& Northern Railway, 174 miles from St. Louis and roi miles east of Kansas City. It was laid out in 1832, and named after Rev. James Keyte, a Methodist clergyman. Brunswick, the commercial town of the county, population (1870) \(\mathbf{1}, 645\), has a fine location on the Missouri River, just below the mouth of the Grand River. It was laid out in 1838. It is a station on the St. Louis, Kansas City \& Northern Railway, II miles west of the county seat, and 185 miles from St. Louis, 90 miles east of Kansas City, and 38 miles southeast of Chillicothe, Livingston County, with which it is connected by the St. Louis, Council Bluffs \& Omaha Branch of the above railway.
Salisbury, population in 1870, 626, is a station on the St. Louis, Kansas City \& Northern Railway, 7 miles east of the county seat, 167 miles from St. Louis, and 108 miles east of Kansas City. The county was first settled in 1816, was formed from Howard County, and organized in 1821. Its area is \(800^{\circ}\) square miles, or 512,000 acres.
The surface of the country is gently undulating and well timbered. The soil is very fertile and well adapted to agricultural and stock purposes. This is one of the largest tobacco raising counties in Missouri. Tobacco, wheat and corn are the chief exports. Coal is abundant.

Christian County-Is situated in the southwestern part of the State, and is drained by tributaries of the White River.
Ozark, the county seat, population, including township in 1870, 1,276, is on Finley Creek, 15 miles from Springfield, Greene county, which is a station on the Atlantic \& Pacific Railway, 24I miles from St. Louis.
Linden, population in 1870, 81 , lies about 5 miles east of the county seat.

The face of the country is undulating and in some portions broken. It is heavily timbered, with excellent soil in the valleys, adapted to fruit and stock raising. Iron ore in extensive, and lead and copper in small quantities have been found. The Atlantic \& Pacific Railway passes through the northwestern part of the county. The county was formed from Greene county, and was organized March 8, 1859.

Clark County-Is the extreme northeast corner of the State, and is bounded on the east by the Des Moines and Mississippi Rivers, which respectively separate it from Iowa and Illinois. The Wyaconda and Fox Rivers and tributaries furnish its interior drainage.

Waterloo, the county seat, population, including township, in 1870, 1,060, is two miles north of Clark City, which is a station on the Missouri, Iowa \& Nebraska Railway, 14 miles west of Alexandria.
Alexandria, population in 1870, 688, is situated on the Mississippi River, at the mouth of the Des Moines River, 14 miles from the county seat, and is the eastern terminus of the Missouri, Iowa \& Nebraska Railway, and is a station on the Mississippi Valley \& Western Railway, 5 miles south of Keokuk, Iowa, 60 miles north of Hannibal, and 204 miles by river above St. Louis.

St. Francisville, population in 1870, 408, is on the west bank of the Des Moines River, about 12 miles from its mouth.

The face of the country is rolling. There is a good supply of timber, and the soil is fertile and adapted for farming purposes. There is considerable coal in the county. The county was first settled in \(183^{\circ}\).

Clay County-Is in the northwestern part of the State, bounded on the south by the Missouri River. It is also drained by the Fishing River and tributaries.
Liberty, the county seat, population in \(1870,1,700\), is a station on the Cameron Branch of the Hannibal \& St. Joseph Railway, 14 miles northeast of Kansas City, and 266 miles from St. Louis. Liberty affords good educational advantages.

Missouri City, population in 1870, 572, is on the Missouri River and the St. Louis, Kansas City \& Northern Railway, 6 miles east of the county seat, 21 miles east of Kansas City, and 254 miles from St. Louis. This town was a consolidation of Richfield and St. Bernard, and was incorporated March 14, 1859.

Kearney, population in 1870, 396, is a station on the Cameron Branch of the Hannibal \& St. Joseph Railway, 24 miles northeast from Kansas City, 10 miles north from the county seat, and 276 miles from St. Louis.
The surface of the country is somewhat broken. The soil is very fertile and well watered, and there is a good supply of timber interspersed with small prairies. The leading exports are wheat, hemp, rye and oats. Much attention is paid to fruit and stock raising. The first settlements were made in this county in 1822, one year after the admission of the State into the Union.

Clinton County-Is located in the northwestern part of the State, and is drained by tributaries of the Platte, Fishing and Crooked Rivers.

Plattsburg, the county seat, population in 1870, 1,067, is located near the center of the county, on the Lexington \& St. Joseph Branch of the St. Louis, Kansas City and Northern Railway, 29 miles southeast of St. Joseph, and 281 miles from St. Louis, at the junction with the Southwestern Division of the Chicago, Rock Island \& Pacific Railway.
Cameron, population in \(1870,1,428\), is 19 miles from the county seat, and is a station on the Hannibal \& St. Joseph Railway, 35 miles east of St. Joseph, 171 miles west of Hannibal, and 264 miles from St. Louis, and is also on the Cameron Branch of the Hannibal \& St. Joseph Railway, 55 miles from Kansas City, and is also on the Southwestern Division of the Chicago, Rock Island \& Pacific Railway. Lathrop, population in 1870, 523, is a station at the crossing of the Lexington \& St. Joseph Branch of the St. Louis, Kansas City \& Northern Railway, and on the Cameron Branch of the Hannibal \& St. Joseph Railway, 8 miles east from the county seat, 37 miles from St. Joseph, 38 miles from Kansas City, and 269 miles from St. Louis.
The surface of the county is gently undulating, about two-thirds prairie and the remainder timber. The soil is fertile and excellent for agricultural purposes, including fruit and stock raising. Blue and gray lime stone and sandstone are abundant in portions of the county, and there are indications of coal.

Cole County-Is located near the central portion of the State. It is drained by the Missouri and Osage Rivers and Moreau Creek, the first two forming respectively its northern and southeastern boundaries.
Jefferson City is the county seat and capital of the State. Its population in 1870 was, native born, 3,374 ; foreign born, \(\mathbf{I}, 046\); white, 3,704 ; colored, 716; total, 4,420 . The city has a commanding site on the south bank of the Missouri River, 154 miles from its confluence with the Mississippi River, and \(\mathrm{I}_{57}\) miles east from Kansas City, and 125 miles west from St: Louis, with both of which cities it is connected by the Missouri Pacific Railway. It is also just opposite Cedar City, the southwestern terminus of the Louisiana Branch of the Chicago \& Alton Railway. Its latitude is \(38^{\circ} 36^{\prime}\) north, and longitude \(92^{\circ} 8^{\prime}\) west from Greenwich. It is 800 miles nearly due west air line from Washington, D. C.

The county seat was removed to Jefferson City in 1828, having previously been located since 1822 at Marion, 14 miles above Jefferson. The seat of government of the State was removed from St. Louis to St. Charles in 1821, and thence to Jefferson City in 1826. The first State House cost \(\$ 25,000\), and was completed in 1826. The present State House cost \(\$ 350,000\), and was first occupied in the winter of 1840 and 1841. The principal public buildings of the city are the Capitol, the State Penitentiary, the Governor's Mansion, Lincoln Institute and the Court House. The county was first settled in 1816, and was formed from Cooper County, November 16, 1820, and named in honor of Captain Stephen Cole, a bold pioneer.

The soil along the water courses is very fertile. The majority of the county is broken and rolling. The climate is especially adapted to fruit culture, the grape taking the lead. A beautiful limestone called "Cotton Rock," of which the Capitol is constructed, sandstone suitable for building, clays and sands for brick,
stone coal, and many varieties of lumber, are found in abundance. Lead also exists in the county. The area of the county is 410 square miles, or 262,400 acres.

Cooper County-Is situated in the central portion of the State, and is drained by the Missouri River (which forms its northern boundary, ) and the Lamine, Little Saline, and Moniteau Creeks.

Boonville, the county seat and principal town, population in 1870, 3,506, has a fine location on the southern bank of the Missouri River, 232 miles above St. Louis, and is a station on the Boonville Branch of the Missouri Pacific Railway, 25 miles north of Tipton, \(14 \dot{5}\) miles east from Kansas City, and 187 miles west from St. Louis by railroad. The United States Land Office for the State of Missouri is located at Boonville.
The soil of the county is very fertile, and well adapted to cereals and fruit. The surface is about equally diversified with timber and prairie. Wheat, corn, and oats are the chief exports. Grapes are very extensively raised. Coal and iron in large, and lead, zinc, and manganese in small, quantities are found. There are numerous fresh and mineral springs in the county, and some for which medicinal properties are claimed.

The county was first settled by Captain Stephen Cole, Daniel Boone, and others. Its area is 558 square miles, or 357,120 acres.

Crawford County-Is situated southeast of the center of the State, and is drained by the Maramec River and its tributaries.
Steelville, the county seat, population in 1870, 232, is located near the center of the county, 8 miles south of Cuba City, which is a station on the Atlantic \& Pacific Railway, 48 miles air line from Jefferson City, and 9r miles by railroad from St. Louis. Steelville was organized in 1856.
The surface of the country is quite diversified, and the soil of numerous varieties, such as prairie and timber, valley and table land, adapted to all agricultural purposes, including stock and fruit culture. Wheat and corn are the chief exports. Iron and lead are found in great abundance ; copper and coal are also found.

This county was first settled in 1815 by William Harrison and others. It has been called the "mother of counties," from the fact that from time to time a number of counties have been organized from its original territory.

Dade County-Lies in the southwestern part of the State, and is drained by the Sac River, Horse and Cedar Creeks, and other tributaries of the Osage River.

Greenfield, the county seat, population in 1870, 364, is about 35 miles northwest of Springfield, Greene County, which is a station on the Atlantic and Pacific Railway, 24I miles southwest from St. Louis.

The surface of the country is undulating, and in some portions broken. There is more prairie than timber land. The climate is healthy, and the soil is fertile, and well adapted to the purposes of agriculture and stock raising. Coal and iron in large, and lead and copper in small, quantities are found. The county was organized in 1841 .

Dallas County-Is located in the southwestern central part of the State, and is drained by the Niangua River and its numerous and rapid tributaries.

\section*{COUNTIES OF MISSOURI}

Buffalo, the county seat and principal village, population in 1870, 278 , is about 35 miles northeast of Springfield, Greene County, which is a station on the Atlantic \& Pacific Railway, 241 miles southwest from St. Louis. Buffalo is also 25 miles west of Lebanon, Laclede County, which is a station on the same railroad 185 miles southwest from St. Louis.

The surface of the country is diversified, the timber land being rocky and the prairies sligntly undulating. The soil is fertile, specially in the valleys. The ridges are adapted to grape culture. Bryce's Spring, located in the eastern part of the county, is one of the largest in the State, and discharges nearly \(11,000,000\) cubic feet of water per day. Lead ore has been found in the county.

This county was first settled in 1831, and was formed from Polk County.

Daviess County-Is located in the northwestern part of the State, and is intersected by the Grand River, which, with its tributaries, Big, Grindstone, and Muddy Creeks, furnish excellent water power.
Gallatin, the county seat, estimated population in 1872 1,428, is surrounded by a fine farming district, and is a station at the intersection of the St. Louis, Council Bluffs and Omaha Branch of the St. Louis, Kansas City \& Northern Railway with the Southwestern Division of the Chicago, Rock Island \& Pacific Railroad, 56 miles east by rail from St. Joseph, 75 miles northeast of Kansas City, and 249 miles northwest of St. Louis.
The surface is slightly undulating, and equally interspersed with timber and prairie. Soil fertile and well adapted to agriculture.
The county was first settled in 1831, and organized in 1835. Its area is 576 square miles, or 368,640 acres.

De Kalb County-Is located in the northwestern part of the State, and is drained by Grindstone and other Creeks. affluents of the Grand and Platte Rivers.
Maysville, the county seat, population in \(18 \% 0\), including township, 1,359 , is located near the center of the county 10 miles north of Osborn, which is a station on the Hannibal \& St. Joseph Railway 177 miles west from Hannibal, 29 miles east from St. Joseph, and 270 miles from St. Louis.
Stewartsville, estimated population in 1872,1500 , is a station on the same railroad, about 12 miles south of the county seat, 185 miles west of Hannibal, 21 miles east of St. Joseph and, 278 miles from St. Louis.
The surface of the country is undulating and is diversified by prairies and timber lands. Soil fertile and well adapted to agriculture, particularly to hemp and stock raising. Building stone and clay for bricks are abundant.
The county was formed from Clinton County in 1841. Its area is 44 I square miles or 282,240 acres.

Dent County-Is located in the eastern central portion of the State, and is drained by the head waters of the Maramec River and by small affluents of Current River.
Salem, the county seat, population in 1870, 280, is located on high land 26 miles southeast from Rolla, Phelps County, which is a station on the Atlantic \& Pacific Railway II4 miles southwest from St. Louis.

The surface of the country is somewhat broken, the county being centrally located on the Ozark Hills. The soil, both of the
timber lands and prairies, is generally fertile, and adapted to grain and fruit. Numerous Indian mounds of considerable interest exist in the county. Iron is abundant, and copper, in the vicinity of anelevation known as "Copper Hill," has been found.

This county was formed from parts of Shannon and Crawford Counties. It was named in honor of Frederick Dent, an early and respected citizen of Missouri, and was reorganized December 4th, 1855.

Douglas County-Is situated in the south central part of the State, and is drained by Bryant Fork and other tributaries of the White River.
Vera Cruz, the county seat, population in 1870 , including township, 480, is about 35 miles southeast of Marshfield, Webster County, which is a station on the Atlantic \& Pacific Railway 217 miles southeast from St. Louis.

The surface of the country is generally broken and much of the soil sterile and unfit for cultivation, and only valuable for the excellent pine, oak, and other timber, that abounds. The climate and portions of the county are well adapted to the culture of fruit, especially the grape. Cereals and grasses are profitably raised in the valleys. This county was formed from Ozark County, October 29, 1857.
Dunklin County-Is one of the extreme southeastern counties of the State, and is bounded on the south and west by Arkansas. It is watered by the St. François and Little Rivers, and numerous other streams and lakes.
Kennett, the county seat, population in 1870 , including township, 747, was laid out in 1845, and is 35 miles air line distance southwest from New Madrid, New Madrid County, on the Mississippi River, and is 45 miles southeast air line from Poplar Bluff, which is a station on the St. Louis \& Iron Mountain Railway, 153 miles from St. Louis.

This county, with several adjoining, was severely injured by earthquakes in 1811-1812, and since then much of the land has been subject to inundations. These "swamp lands" are being reclaimed by drainage, and eventually will be very valuable for agricultural purposes, as the soil is extremely fertile. This county was first settled in 1829. It was named in honor of Daniel Dunklin, formerly Governor of the State.

Franklin County-Is located in the eastern portion of the State, and is drained by the Missouri River, its northern boundary, and the Maramec and Bourbeuse Rivers and numerous other rapid streams.
Union, the county seat, population in 1870, including township, \(\mathbf{2 , 8 5 5}\), was first settled in 1829, and is ro miles southeast of Washington, which is a landing on the Missouri River, and a station on the Missouri Pacific Railway, 71 miles east of Jefferson City; and 54 miles west of St. Louis. Washington had a population in 1870 , including township, of 5,614 . The Atlantic \& Pacific Railway passes through the southeastern part of the county, and unites with the Missouri Pacific Railway at Pacific City (Franklin).

The surface of the country is quite broken, particularly in the southeastern part of the county. The soil in the valleys is fertile and adapted to fruits and vegetables. Lead in very large quantities, and copper and iron are found in the county. The streams
and springs afford water power. The first court was held in this county January 1, 1819. The county seat was formerly at New Port, and was moved to Union about the year 1830. The area of the county is 874 square miles, or 559,360 acres.

Gasconade County-Is located in the eastern central portion of the State, on the south bank of the Missouri River, by which and the Gasconade River and numerous small streams it is drained.

Hermann, the county seat, population in 1870, 1,335, has a fine location on the south bank of the Missouri River, and is a station on the Pacific Railroad, 44 miles east of Jefferson City, and 81 miles west from St. Louis. Hermann was first settled in 1837 by the "Germania Settlement Society" of Philadelphia.

The surface of the country is generally hilly and broken. The valleys and prairies are fertile, the latter small and dry. The water power is excellent. Grape culture is the principal industry, and is very extensively pursued, especially in the vicinity of Hermann. Stock and cereals are profitably raised. Along the Gasconade River there are a number of large and interesting caves that contain saltpeter deposits in profitable quantities. Some of these caves originally contained a few Indian relics, and in their neighborhood are the ruins of an Aboriginal village, which was laid out with uncommon regularity. This county was first settled by Isaac Perkins and others, and was formed from Franklin County in 1820. Its area is 540 square miles, or 345,600 acres.

Gentry County-Is situated in the northwestern part of the State, and is separated from the Iowa State line on the north by the new county of Worth. It is drained by the Grand River and its tributaries.
Albany, formerly Athens, the county seat, population in 1870, \(60 \%\), is located about a mile from Grand River, and is 45 miles northeast air line from St. Joseph, and i7 miles northwest from Pattonsburg, Daviess County, which is a station on the St. Louis, Council Bluffs \& Omaha Branch of the St. Louis, Kansas City \& Northern Railway, 265 miles northwest from St. Louis.
Gentryville, population in 1870, 255 , is finely located on the Grand River, in good farming country. It is 9 miles south of the county seat, and 14 miles from Pattonsburg.
The surface of the country is undulating, diversified with prairie and good timber. The soil is very fertile and well adapted to agricultural purposes, including the raising of fruit and vegetables. There are deposits of building stone and coal. The county was first settled in 1840, by persons from Clay and Ray Counties.

Greene County-Is situated in the southwestern part of the State, and is drained in its southern portion by White River and its affluents, and in the northern portion by the tributaries of the Osage River.
Springfield, the county seat, population in 1870, 5,555, was incorporated as a city, December 13, 1855, is pleasantly located in a fine farming country, and contains a number of neat and substantial public buildings. It is a station on the Atlantic \& Pacific Railway, 241 miles southwest from St. Louis, and 115 miles air line southwest from Jefferson City. The United States Government land office that was formerly located at Springfield is now at Booneville, Cooper County. At the beginning of
the late Rebellion, Springfield was the scene of several important military movements.
The surface of the country is undulating, and in some portions very hilly and broken. The Ozark Hills extend through the county. The prairies are large and quite fertile, and timber suffcient for common uses. Fruits, including the grape, do well. The chief exports are wheat, live stock and apples. This county was first settled by John P. Campbell and others. The first newspaper was issued in 1839, and called the Ozark Standard.

Grundy County-Is located in the northern part of the State, and is well watered by the tributaries of the Grand River.
Trenton, the county seat, population in 1870, 920 , was incorporated February 27 th, 1857 , and is pleasantly located on Grand River. It is a station on the Southwestern Division of the Chicago, Rock Island \& Pacific Railway 102 miles northeast of Leavenworth City, Kansas, 82 miles northeast from St. Joseph, 100 miles northeast from Kansas City, and 275 miles northwest from St. Louis via Gallatin, Daviess County.
The surface of the country is undulating, and chiefly prairie land interspersed with timber along the streams. The soil is fertile and adapted to agricultural purposes.

Harrison County-Is situated in the northwestern part of the State on the southern border of Iowa, and is drained by Thompson's Fork, Big and Sampson's Creeks, and others tributaries of Grand River.
Bethany, the county seat, population in 1870 , including township, 2,460 , is located in a fertile country, and is 15 miles northeast from Pattonsburg, Daviess County, which is a station on the St. Louis, Council Bluffs \& Omaha Branch of the St. Louis, Kansas City \& Northern Railway 265 miles northwest from St. Louis, 72 miles by rail, east of St. Joseph, and 91 miles, by rail, northeast from Kansas City. Bethany was first settled by Tennesseans in 1845 .
The surface of the country is chiefly prairie, but in some portions broken, with much timber along the streams, which afford good water power. The soil is generally fertile, and adapted to agricultural purposes including stock growing. Climate healthy.
The county contains 754 square miles or 482,560 acres.
Henry County-Is situated in the western part of the State, and is drained by Big Creek, Crooked Fork, and numerous other affluents of the Osage River.
Clinton, the county seat, population in 1870, 640, is near Grand River, and is a station on the Missouri, Kansas \& Texas Railway 40 miles southwest from Sedalia, 70 miles northeast of Fort Scott, and 228 miles by rail from St. Louis, and 103 miles from Jefferson City.
Windsor, population in 1870, (unofficial,) 500, is a station on the same railroad, 19 miles northeast of the county seat, and 209 miles from St. Louis.
The surface of the country is undulating and two-thirds prairie, with the remainder mainly heavy timber land. The soil is very fertile and adapted to all the purposes of agriculture. The chief products are corn and wheat. The county possesses good water power, and large quantities of coal and considerable building and
lime stone. The county was first settled in 1831. Its name was changed from Rives to Henry in 184x. Its area is 765 square miles, or 489,600 acres.

Hickory County-Is located near the center of the southwestern part of the State, and is drained by the Pomme de Terre River and other affluents of the Osage River.

Hermitage, the county seat, population in 1870 , including township, \(\mathbf{1}, \mathbf{2 4 5}\), has a pleasant site near the center of the county. It was first settled in 1843. It is 55 miles air line north from Springfield, Greene County, and 36 miles air line southeast of Clinton, Henry County, the former a station on the Atlantic \& Pacific Railway, 241 miles southwest from St. Louis, and the latter a station on the Missouri, Kansas \& Texas Railway, 228 miles by rail from St. Louis:

The face of the country is undulating and sometimes broken, with prairie and timber land in equal amounts. The soil is generally fertile and adapted to agriculture. There are also lead and iron, and unimproved water power.

Holt County-Is located near the extreme northwestern part of the State, on the eastern borders of Nebraska and Kansas, from which it is separated by the Missouri River, which, together with the Big and Little Tarkeo, Mill, Kenzie and Davis Creeks, and Nodaway River, forms its principal drainage.

Oregon, the county seat, population in 1870,824 , is pleasantly located in the southern part of the county, two and a half miles east of Forest City, and was first settled in 1845, and incorporated as a city November 5, 1857.

Forest City, population in 1870, 676, is on the east bank of the Missouri River, and is a station on the Kansas City, St. Joseph \& Council Bluffs Railway, 29 miles northwest of St. Joseph, 99 miles northwest of Kansas City, and 335 miles west of St. Louis.

The surface of the country is undulating, prairie and timber land about equal. The soil is very fertile, especially in the Missouri bottom, where it is also very deep. The county is well adapted to agricultural purposes, including fruit and stock raising. It also possesses good water power and some coal. This county is one of the six that composed the "Platte Purchase." It was first settled in 1835, by Joseph Kenzie, James Miller and others, from Tennessee, Virginia and Indiana, and was named in honor of Dr. Holt, an early citizen.

Howard County-Is located in the north central part of the State, on the left bank of the Missouri River, which washes its western and southern borders. Its interior is drained by the Bonne Femme, Salt and Moniteau Creeis and their tributaries.

Fayette, the county seat, population in 1870,815 , has an elevated site and pleasant location, and possesses a refined and intelligent class of citizens. It became the county seat in 1821, and was incorporated December 7,1855. It is 12 miles southeast from Glasgow, 22 miles southwest from Renick, Randolph County, and 12 miles north of Booneville, Cooper County. Renick, Randolph County, is a station on the St. Louis, Kansas City \& Northern Railway, 140 miles northwest from St. Louis.

Glasgow, population in 1870, 1,795, was incorporated February 27, 1845, and is located on the Missouri River, 12 miles north-
west of the county seat, \(26+\) miles by water from St. Louis, 20 miles from Jeffers on City, and 24 miles southwest from Moberly, Randolph County, which is a station on the St. Louis, Kansas City \& Northern Railway, 146 miles northwest from St. Louis, and 129 miles cast of Kansas City.
The face of the country is undulating, with some portions quite broken. Hurricane Hills are beautiful and picturesque. Timber is abundant. There are but four prairies in the county. The soil of the county, which is very fertile, and the climate, are well adapted to all agricultural purposes. Tobacco is very extensively raised and employs a large amount of capital. Cereals and fruit also yield abundantly. There are a number of Saline Springs in the county, the largest of which is Boon's Lick, at which Colonel Nathan Boone and David Boone, son of Colonel Daniel Boone of Kentucky, made salt from 1806 until 1810, since which, at remote intervals, the lick has been worked by other parties. Coal, limestone grit and sandstone for building purposes are abundant in the county, and lead has also been found.

The county was first settled by Colonel Benjamin Cooper, Daniel Boone and others in rSo7, and was named in honor of General Benjamin Howard, then Governor of Missouri. The early pioneers suffered greatly from the assaults of the Indians, and were compelled to erect stockades and forts and to go constantly armed. The county was organized under a territorial act in the winter of 1815-16, and from it, Cooper in 1818, and Chariton, Boone and Ray in 1820, were formed. More votes were polled in Howard County in 1823 than in any other county in Missouri, not excepting St. Louis. Its area is 432 square miles or 276,480 acres.

Howell County-Is situated in the southern part of the State on the northern border of Arkansas, and is principally drained by Spring River and its tributaries.
West Plains, the county seat, population in 1870 , 130 , is located near the center of the county, 70 miles, air line, southeast of Marshfield, Webster County, and 85 miles, air line, south of Rolla, Phelps County, both of which are stations on the Atlantic \& Pacific Railway, the former 217 miles and the latter 114 miles sou thwest from St. Louis.
The surface of the country is broken and hilly, and some portions high table land, and adapted to fruit and grape culture. The valleys are generally fertile. The scenery around King's Mount, a high central point from which streams run in every direction, is wild and picturesque. The water courses are clear and rapid, and shaded by heavy forests of pine.
The county was formed from Oregon County in 1857, and contains 650 square miles or 416,000 acres. Spring River was explored and named by Captain John Shaw in 1809.

Iron County-Is located in the southeastern part of the State, and is drained by a number of creeks, affluents of the Black and St. François Rivers.

Ironton, the county seat, population in 1870,573 , is pleasantly situated on the eastern slope of Shepherd Mountain, and extends into the valley at its base. It is a station on the Arkansas Branch of the St. Louis \& Iron Mountain Railway, 89 miles south of

St. Louis, and \(1_{3}\) miles south of Bismarck Junction. Ironton is \(55^{\circ}\) feet higher than St. Louis, and bears the reputation of being one of the healthiest places in the State. It was incorporated as a city February I, 1859.

Pilot Knob, population in 1870, 581, is in a valley, at the foot of a mountain of the same name, one of the Ozark range. It is a station on the above railroad, one mile north of the county seat, and 88 miles south of St. Louis. Previous to the completion of the railroad, the citizens of Pilot Knob were nearly all connected with the iron works, but since then many others of various callings have become residents.
Arcadia, population in 1870, 250, has a pleasant location at the foot of a beautiful range of hills to the south of "Arcadia Valley." It is a station on the St. Louis \& Iron Mountain Railway, one mile south of the county seat, and 90 miles south of St. Louis. It was laid out in 1849 . In 1846 Arcadia High School was established. Arcadia is a place of resort for visitors in the summer season.
The surface of the country is principally broken and mountainous, and generally heavily timbered. Shepherd, Arcadia and Bogy Mountains, and Pilot Knob, wonderful formations containing immense deposits of iron ore, are in this county. This is emphatically the Iron county of the Union, and probably possesses more iron ore, of purer qualities, than any other equal area on the globe. Pilot Knob is 58 I feet high, and I, II 8 feet above the level of the Mississippi River at St. Louis, and covers an area of 360 acres. Its ore yields about 65 per centum. Shepherd Mountain is 660 feet high, is nearly two miles long by one mile in width, and covers an area of 800 acres. Its ores are mainly a mixture of magnetic and specular oxides, the polarity of the former frequently causing it to be called "load stone." Kaolin, a clay from which "ironstone china" is manufactured, and marble and granite in immense quantities are also found in this, county. Lead, nickel, platinum and gold, the first only in any considerable quantities, are claimed to have been also discovered in the county. This county was first settled early in the present century, and was organized February 17, 1857.

Jackson County-Is located in the west-northwest portion of the State, on the eastern border of Kansas, and the southern bank of the Missouri River, which, together with the Big Blue, Little Blue, and Big Sniabar and their numerous tributaries, furnishes its drainage.

Indefendence, the county seat, had a population in 1870 , in the 1st ward, of 1,363 ; 2 d ward, 901,3 d ward, 920 ; total, 3,184; of whom 2,824 were native born, 360 foreign; and 2553 were white, and 63 I colored. The city has a fine site upon high rolling land. It extends to the Missouri River, and is surrounded with an excellent farming country, densely populated and well tilled. It is 10 miles east of Kansas City, 147 miles west of Jefferson City, and 272 miles from St. Louis, with all of which cities it is connected by the Missouri Pacific Railway. Independence affords excellent educational advantages, and contains a number of large and substantial public buildings. The first railroad in the State was built at a cost of \(\$ 30,000\), to connect this place with the Missouri River, a distance of \(21 / 2\) miles from the public square.

In 1831, some Mormons under "Prophet Joe Smith " attempted to build a temple near Independence, but were driven off by the indignant citizens. Independence was laid out as a village in 1824, but was an important trading point long years before. It was incorporated March 7, 1849; and received a new charter extending its limits February 23, 1853.

Kansas City is the second city of Missouri, and the largest and most important commercial point west of St. Louis. Its population in 1870 was: 1st ward, 11,549; 2d ward, 11,096; 3 d ward, 4,027 ; 4th ward, 5,588 ; total, 32,260 ; of whom \(24,58 \mathbf{1}\) were native born, 7,679 foreign ; and 28,484 white, 3,770 colored, and 6 Indians. Of the native population, 12,035 (including 8, 194 born in Missouri) were born in former slaveholding States, and 12,546 in northern States. Of the foreign population, 824 were born in British America, 44 in Austria (proper), 21 in Belgium, 1,884 in Germany, 26 in Holland, III in France, 2,869 in Ireland, 927 in Great Britain, 70 in Hungary, 648 in Norway and Sweden, 160 in Switzerland, and 63 in other European countries. It is situated upon broken ground on the south bank of the Missouri River, near the Kansas State line, and just below the mouth of the "Kaw" or Kansas River, from which it derived its name. It is 39 miles by river and 27 by rail below Leavenworth, Kansas, 70 south by rail from St. Joseph, 157 west by rail and 282 by river from Jefferson City, 275 by rail and 456 by river from St. Louis, and io miles west of Independence, the county seat. Latitude \(39^{\circ} 12^{\prime}\) north, and longitude \(94^{\circ} \quad 16^{\prime}\) west. Kansas City has an extensive wholesale trade, and as a railroad center is a station on the Pacific Railroad of Missouri, though properly the western terminus of the Pacific of Missouri and the eastern terminus of the Missouri River Railway; on the Kansas Pacific Railway, whose eastern terminus is Wyandotte; is the northern terminus of the Fort Scott \& Gulf Railway; the northeastern terminus of the Kansas City \& Santa Fe Division of the Leavenworth, Lawrence \& Galveston Railway ; the southern terminus of the Kansas City, St. Joseph \& Council Bluffs Railway, the southwestern terminus of the Kansas City Branch of the Hannibal \& St. Joseph Railway; and the western terminus of the Western Division of the St. Louis, Kansas City \& Northern Railway. The last three railroads form a junction at Harlem, one mile above and on the opposite side of the river, and their trains cross over the Hannibal \& St. Joseph Railway Company's magnificent new railroad bridge, which is also used for vehicles and foot passengers. The city contains a large number of handsome residences, extensive business blocks and substantial public buildings. The "Chamber of Commerce" was incorporated November 9, 1857. Kansas City was regularly laid out in 1846, and was incorporated February 22, 1853.

Westport, in 1870, contained the following population: ist ward, 333 ; 2 d ward, 346 ; 3 d ward, 238 , \(4^{\text {th }}\) ward, 178 ; total, 1,095 ; of whom 924 were native born, 171 foreign, and 1,006 white, and 89 colored. This city lies 4 miles south of Kansas City and 10 miles southwest from Independence, the county seat, and has a pleasant and healthy location, with neat and substantial buildings. It was incorporated February 12, 1857.

The surface of the country in Jackson County is undulating, with a desirable division of prairie and timber land, and is extensively
underlaid with lime stone rock suitable for building purposes. The soil, which is exceedingly fertile, and the climate, are well adapted to all agricultural purposes. This county was first settled by Kentuckians, and was formed from Lafayette (then Lillard) County in 1827.

Jasper County-Is situated in the southwestern part of the State on the eastern border of Kansas, and is drained by Spring River, Center Creek and Dry Wood Fork and their tributaries.

Carthage, the county seat, population in 1870, including township, 3,964 , is beautifully located on Spring River. It is 21 miles north of Neosho, Newton County, which is a station on the Atlantic \& Pacific Railway 314 miles southwest from St. Louis. Carthage was laid out in 1842. It was greatly injured during the late rebellion, but is now a flourishing village.
The surface of the country is gently rolling, with one-third timber land and the remainder prairie. The soil of the prairies and bottom lands is exceedingly fertile, and well adapted to all agricultural purposes. Stock raising is profitably followed. The principal exports are wheat, wool and pork. There is excellent unimproved water power. Lead and coal are found, the former in large quantities and of excellent quality.
This county was first settled about \(\mathbf{1 8 3 4}\), and is mainly filled up by a good class of farmers from Illinois, Iowa, Ohio and other northern States, with but few foreigners. Its area is 637 square miles or 407,680 acres.

Jefferson County-Is situated in the east central part of the State on the western border of Illinois, from which it is separated by the Mississippi River, which, together with the Maramec and Big Rivers, Platin, Sandy and Joaquim Creeks, affords its principal drainage.
Hillsborough, the county seat, population in 1870, including township, \(\mathbf{1}, 789\), was first settled in 1828, and is located on the high land between the Mississippi and Big Rivers 6 miles north of De Soto, and \(4 \frac{1}{2}\) miles northwest from Victoria, stations on the St. Louis \& Iron Mountain Railway, respectively 43 and 40 miles southwest from St. Louis.

The southern and western portions of the county are generally hilly and sterile, but the northern and eastern portions are undulating and fertile, and adapted to agriculture, especially to fruits, including peaches and grapes. The leading staples are corn, wheat and cattle. Immense quantities of lead ore, and extensive deposits of iron ore, and white sand for glass, exist in the county. Its area is 654 square miles or 418,560 acres.

Johnson County-Is located in the western part of the State, separated on the north from the Missouri River by Lafayette County, and is drained by Black Water and Clear Fork Creeks and their tributaries.
Warrensburg, the county seat, population in \(1870,2,945\), is pleasantly located in a fine farming district. It is a station on the Pacific Railroad of Missouri, 64 miles southeast of Kansas City, 93 miles west from Jefferson City, and 218 miles from St. Louis. This city affords good educational advantages. It was incorporated November 23 d , 1855.

Holden, population in \(1870,1,576\), is a thriving place on the Pacific Railroad of Missouri, and the present eastern terminus of the Osage Division of the Missouri, Kansas \& Texas Railway. It is 14 miles west from the county seat, 54 miles easi of Paola, Kansas, 50 miles southeast of Kansas City, and 232 miles west from St. Louis.

Knob Noster, population in 1870, 914 , derives its name from a prominent isolated mound near it. It is 10 miles east of the county seat, 74 miles southeast of Kansas City, and 208 miles west from St. Louis.
The surface of the country is largely fertile prairie, level and slightly undulating, with excellent timber along the streams. Immense beds of coal, some plumbago, and several varieties of limestone exist.

Knox County-Is located in the northeastern part of the State, is separated from the Mississippi River on the east by Lewis County, and from the Iowa State line by Scotland County. It is drained by North, Middle and South Fabius Rivers and tributaries.
Edina, the county seat, population in 1870, 807, was incorporated February 16th, 1857, and lies near the center of the county on South Fabius River, 54 miles northwest, air line, from Hannibal, Marion County, and 22 miles east of Kirksville, Adair County, which is a station on the St. Louis, Kansas City \& Northern Railway, 203 miles northwest from St. Louis.
Newark, population in 1870,354, is situated is miles southeast of the county seat, and 44 miles northwest from Hannibal. It was first located in 1835, and a post office established in 1841.
The face of the country is undulating, with a desirable division of prairie and timber land, and is well adapted for agricultural purposes. It contains 504 square miles or 322,560 acres.

Laclede County-Is situated in the south central part of the State, and is drained by tributaries of the Gasconade and Osage Rivers.

Lebanon, the county seat, population in 1870, 1,090, has a fine location upon a table land surrounded by an excellent farming country. It is a station on the Atlantic \& Pacific Railway 56 miles northeast of Springfield, Greene County, and 185 miles southwest of St. Louis.

The county lies upon the high table lands of the Ozark range, and has a great variety of surface, from level prairie to rugged hills. The soil of the uplands is adapted for fruit, including grapes, and of the bottom lands for cereals. Good water power and abundance of timber, and iron and lead in paying quantities, are inducements to the immigrant.

This county was formed from Pulaski County, February 28th, 1849, and was named in honor of Pierre Laclede Liguest, the founder of St. Louis.

Lafayette County (formerly Lillard)-Lies upon the south bank of the Missouri River, in the western part of the State. Its interior is drained by Big Sniabar, Big Toba, Davis and other Creeks.

Lexington, the county seat, population in 1870, 4,373, has a high, beautiful and healthy site upon the river, and is a station on the Lexington Branch of the Pacific Railroad, 55 miles northwest from Sedalia, 86 by river from Kansas City, and 243 miles from St.

Louis by railroad, and 370 by river. Lexington was incorporated as a city March 8th, 1845.

Waverly, population in 1870, 887, is on the Missouri River, about 20 miles below the county seat.

The surface of the country is generally level or undulating, with some portions broken. There are fine large prairies, and timber along the streams. The soil is fertile and well adapted to the purposes of the farmer or stock grower. Coal, limestone and sandstone are abundant.

Lawrence County-Is located in the southwestern part of the State, and is drained by Spring River, and Turnback, Sac, Honey, Clear and Stahl's Creeks.
Mount Vernon, the county seat, population in 1870, 558 , was laid out in 1845, and incorporated as a city November 4th, 1847. It has an elevated site near the center of the county. It is 12 miles north of Verona, (population in 1870, 240,) a station on the Atlantic \& Pacific Railway 278 miles southwest of St. Louis. Mt. Vernon is also \(3^{2}\) miles west of Springfield, Greene County, on the same railroad, 24 I miles from St. Louis.
Pi=rce, population in 1870,432 , is 15 miles southwest of the county seat on the same railroad, 291 miles from St. Louis.
The surface of the country is undulating, and in some portions broken, with timber land and prairie well diversified. The soil is very fertile, especially in the valleys, and adapted for all agricultural purposes, including stock growing and fruit culture. Lead, iron and copper ores have been discovered.
The county was formed from Dade and Barry Counties in 1845, and its organization was celebrated July 4th, 1845, by a "Bran Dance."

Lewis County-Is situated in the northeastern part of the Siate, on the western border of Illinois, from which it is separated by the Mississippi River, which, together with the Wyaconda, North, South, and Middle Fabius Rivers, that afford good mill sites, furnishes the drainage.

Monticello, the county seat, population in 1870, 301, lies near the center of the county, on the North Fabius River, and is ir miles west from Canton and 12 miles northwest from LaGrange.
Canton, population in \(1870,2,363\), is on the west bank of the Mississippi River, 184 miles by water northwest from St. Louis, II east from the county seat, and 41 north by rail from Hannibal, and is a station on the Mississippi Valley \& Western Railroad. Canton was first settled in 1827. It offers good educational facilities.

LaGrange, population in \(\mathbf{1 8} 70,1,576\), is on the west bank of the Mississippi River, 12 miles southeast of the county seat, 176 miles . by river from St. Louis, and is on the same railroad as, and 6 miles south of Canton. It offers good educational facilities.

The surface of the country is generally undulating, one-half timber land and one-half prairie, the former mainly along the streams. The soil is deep and very fertile, and adapted to all the purposes of agriculture. Coal and limestone are found in several localities. This county was first settled in 1824.

Lincoln County-Is situated in the eastern part of the State, on the western border of Illinois, from which it is separated by the Mississippi River, and its interior is watered by the Cuivre (or

Copper) River and its lengthy branches, and by several small creeks.
Troy, the county seat, population in 1870,703 , is in the south central part of the county, 2 miles north of Cuivre River, 14 miles west from the Mississippi River, 15 miles northeast of Warrenton, Warren county, which is a station on the St. Louis, Kansas City \& Northern Railway, 58 miles from St. Louis. Troy is in the center of a well settled and fine farming district. It was located in 1816 , and occupies the former site of Wood's Fort.

The surface of the country is undulating and broken in the uplands, and level on the bottom lands, with a diversity of prairie and timber. In very high water some of the bottom lands overflow. The soil is generally exceedingly fertile. The county was first settled by Kentuckians and Virginians, in the early part of this century, and was organized from St. Charles County in 1818. Its settlement was retarded in an early day by Spanish grants of land. In 1812 Forts Stout, Wood, Cape-au-Gris and Howard, were erected as defenses against the Indians, and near the last mentioned a battle was fought with some of Black Hawk's warriors.

Linn County-Is situated in the northwestern portion of the State, and is well watered by upwards of a dozen streams, running from north to south, affluents of the Grand River, the largest ones being Locust, West Fork, Turkey and Yellow Creeks.
Linneus, the county seat, population in 1870, including township, 2,398 , is pleasantly located in the midst of a fine farming district. It is a station on the Burlington \& Southwestern Railway, 9 miles north of its junction with the Hannibal \& St. Joseph Railroad at Laclede. Linneus was first settled in 1856, and incorporated March 2, 1859.
Brookfield, population in 1870, 402, is a station on the Hannibal \& St. Joseph Railroad, 102 miles east of St. Joseph, and 203 miles northwest from St. Louis.

The surface of the country is mainly undulating prairie interspersed with woodland. The soil is very fertile, and produces all kinds of grains, grasses and fruit. The chief exports are corn, wheat and tobacco. There are immense beds of coal, good water power and building stone. The county was first settled in 1832.

Livingston County-Is situated in the northwestern part of the State, and is well watered by Grand River and tributaries.

Chillicothe, the county seat and chief city, population in 1870, 3,978, is one of the principal places on the Hannibal \& St. Joseph Railway. It has an advantageous and beautiful location, and an enterprising business community, and affords good educational facilities. It is 38 miles northwest from Brunswick, (junction) on the St. Louis, Council Bluffis \& Omaha Branch of the St. Louis, Kansas City \& Northern Railway, 223 miles northwest from St. Louis, 130 miles west from Hannibal, 76 miles east from St. Joseph, and 95 miles northeast from Kansas City. Chillicothe was first settled in 1837 by John Graves and others.

Utica, population in 1870,722 , is 5 miles west of Chillicothe, on the Hannibal \& St. Joseph Railroad; has a fine site near Grand River at the "head of navigation."

The surface of the country is generally level, two-thirds prairie and the remainder timber land. The soil is very fertile and excellent for agriculture. Principal exports, wheat, corn and oats.

Coal has been found in several localities. The county was named in honor of Edward Livingston, Secretary of State under President Jackson.

Macon County-Is situated in the northeastern part of the State, about equi-distant from the Missouri and Mississippi Rivers and Iowa. It is well drained, principally by the Chariton River and its tributaries.
Macon City, the county seat and principal city, is a thriving business point, pleasantly located at the crossing of the St. Louis, Kansas City \& Northern Railway with the Hannibal \& St. Joseph Railway, 169 miles northwest from St. Louis, 70 miles west from Hannibal, 136 miles east from St. Joseph, and 155 miles northeast from Kansas City. Its population in 1870 was as follows: ist ward, 1,136 ; 2 d ward, 1,077 ; 3 d ward, 1,465 : total, 3,678 ; of whom 3,238 were native bo:n, 440 foreign; 2,758 white, and 920 colored. Macon City and Hudson, previously two distinct places, were united under the name of the former November 28, 1859. The citizens are enterprising and intelligent, and the city affords good educational facilities.
Bevier, population in 1870, 833, an energetic point on the Hannibal \& St. Joseph Railway, is located 5 miles west from the county seat.
La Plata, population in 1870,546 , is a station on the St. Louis, Kansas City \& Northern Railway, 20 miles north of the county seat, and 189 miles from St. Louis.
The surface of the country is generally undulating, in some portions broken. There are a number of peculiar formations, some of them about 200 feet high, known as "Knobs," several of which have contours so regular that they resemble works of art rather than of nature. There is a variety of soil which is very fertile and well adapted to all the purposes of agriculture, including fruit and stock raising. The chief exports are tobacco, wheat and corn. Lead ore, sulphate of iron and hydraulic limestones have been found. Bituminous coal exists in immense quantities. This county was first settled in 1832 by James Cawhon, Thomas Williams and others.

Madison County-Is situated in the southeastern part of the State, and is drained by tributaries of the St. François and Castor Rivers.
Fredekicktown, the county seat, population in 1870 , including township, 1,325 , is pleasantly located in a fine farming district, on the St. Louis and Iron Mountain, IO5 miles south from St. Louis, and 9I miles northwest from Belmont, Mississippi County.
The surface of the country is very uneven and much of it what may be termed "mountainous." The soil is thin and sterile, except in the valleys, where it is quite productive. This county contains a greąt variety of minerals, and some of them, lead, copper and iron, in immense quantities. Much of the nickel used by the United States Government in coinage is from mines in this county. Some of these lead mines were worked as early as 1765 or 1770 by Indians and Spaniards, while this section of the country was under Spanish rule. Gold, silver, cobalt, platinum, and manganese are known to exist. Considerable trouble has been experienced in this county on account of the uncertainty of titles on a few private claims. The first settlements were made at Mine La Motte in

1722 or 1723 . The county was organized from the counties of Ste. Genevieve and Cape Girardeau In 1818.

Maries County-Is located in the south central portion of the State, and is drained principally by Gasconade River and Maries Creek and tributaries.
Vienna, the county seat, estimated population in 1870,200 , has a pleasant location near the center of the county, 15 miles north of Jerome, Phelps County, which is a station on the Atlantic \& Pacific Railway, I28 miles from St. Louis. Vienna is also 30 miles southeast from Jefferson City.
The surface of the country is generally broken timber lana. There are a few prairies in the county, and some good soil in the valleys. Stock growing and fruit culture, including the grape, can be profitably prosecuted. Deposits of lead, iron and copper ores exist in the county. The county was first settled about 1830, and was formed from Pulaski and Qsage Counties, March 2d, 1855.

Marion County-Is situated in the northeastern part of the State, on the western border of Illinois, from which it is separated by the Mississippi River. Its interior is well watered by the North and South Fabius and North Rivers, and numerous other streams.
Palmyra, the county seat, population in \(\mathbf{1 8 7 0}, 2,615\), is located east of the center of the county, on a commanding elevation, and contains a number of beautiful residences and fine public buildings; has an intelligent community, and affords excellent educational advantages. It is a station on the Hannibal and St. Joseph Railway at the junction of a branch with the main line, and is is miles northwest from Hannibal, and 15 miles southwest from Quincy, Illinois. It was incorporated as a city, November 23, 1855.
Hannibal, the principal commercial city of northeastern Missouri, has a favorable location on the west bank of the Mississippi River. Its population in 1870 was as follows: 1st ward, 1,836 ; 2d ward, 2,160 ; 3d ward, 1,969 ; 4th ward, 2,320 ; 5 th ward, 1,840; total, 10,125; of whom 8,493 were native born, 1,632 foreign ; and 8,508 white, 1,616 colored, and I Indian. This city is the eastern terminus of the Hannibal \& St. Joseph Railway, the eastern terminus of Hannibal \& Central Missouri Railway, and by bridge across the Mississippi River, the western terminus of the Toledo, Wabash \& Western Railway, and is 206 miles east from St. Joseph, 15 miles southeast of the county seat, and by river, 20 miles south of Quincy, Ill., and 144 miles northwest from St. Louis. It is in latitude \(39^{\circ} 58^{\prime} \mathrm{N}\). and longitude \(90^{\circ} 58^{\prime} \mathrm{W}\)., and 87 miles air line northeast from Jefferson City. Hannibal contains numerous elegant residences, fine public buildings and business blocks, an enterprising and industrious community, and furnishes good educational advantages.
The surface of the country in Marion County is about two-thirds undulating prairie, with timber land desirably interspersed. The soil, which is generally underlaid by silicious marl, and is very fertile, and the climate, are well adapted to agricultural purposes. Wheat, beef, and pork are the chief exports. Coal is found, and fire clay, clay and sand for brick, limestones and freestones are abundant.

McDonald County-Is the extreme southwest corner of the State, bordering on Arkansas and the Indian Territory. It is
drained by Elk River, and Buffalo, Patterson's, Indian, North Sugar and other Creeks, which are rapid streams affording excellent water power.

Pineville, the county seat, population in 1870, including township, 1,057 , is on Elk River, 6 miles northeast of Rutledge the former county seat, and 19 miles south of Neosho, Newton County, which is a station on the Atlantic \& Pacific Railway \(3^{14}\) miles southwest from St. Louis.

The surface of the country is broken, and about four-fifths timber land. The uplands are generally sterile and unproductive for some crops, but good for fruit. The valleys are fertile and well adapted to agriculture. The chief staples are corn, wheat, oats and potatoes. A good trade is done here with the Cherokee and other Indians. Merchandise is flat-boated down the Elk River into Arkansas.
This county was first settled in 1830 by Augustus J. Friend, P. Williams, R. Lauderdale and others.

Mercer County-Lies on the southern border of Iowa, about midway between the States of Illinois and Nebraska, and is drained by Weldon River, and Crooked Fork of Grand River, Medicine and Muddy Creeks, running from north to south.

Princeton, the county seat, population in 1870, 389, was incorporated March 4th, 1855, and is located near the center of the county, on the Southwestern Division of the Chicago, Rock Island \& Pacific Railway, 127 miles northeast of Leavenworth, 107 miles northeast of St. Joseph, 126 miles northeast from Kansas City, and 300 miles northwest from St. Louis via Gallatin.
The surface of the country is level and undulating, with about an equal division of prairie and timber land. The soil is generally very fertile and well adapted to agriculture. Coal and iron ore have been discovered, and copper is reported. Excellent timber and building stone abound.

This county was first settled in 1837 .
Miller County-Is situated in the south central part of the State, and is intersected by the Osage River, which is navigable four to six months each year. Tavern and Auglaize Creeks furnish good mill sites.
TuScumbia, the county seat, population in 1870,125 , is on the left bank of Osage River, \(3^{\circ}\) miles from Jefferson City. Tuscumbia is also 28 miles northwest from Hancock, Pulaski County, a station on the Atlantic \& Pacific Railway, 144 miles southwest from St. Louis. Settlements were first established in Tuscumbia in 1833, and a post office in 1837.

The surface of the country is generally broken timber land. The soil is sterile except along the valleys, where it is very fertile. The soil and climate are well adapted to the culture of fruit, and stock. The leading staples are wheat, corn and oats.

This county was first settled in 1830, and named in honor of John Miller, former Governor of Missouri.
Mississippi County-Is situated in the southeastern part of the State, bordering on Illinois and Kentucky, from which it is separated by the Mississippi River. It is also watered by a number of lakes and lagoons.

Charleston, the county seat, population in 1870, 635, was incorporated February 21, 1857, and is situated on Matthew's

Prairie, surrounded by a good farming district. It is a station on the St. Louis \& Iron Mountain Railroad, 179 miles southeast of St. Louis, and 17 miles northwest from Belmont, which is the southern terminus of the above railroad lying on the Misisssippi River opposite Columbus, Kentucky. The Cairo \& Fulton Railroad connects Charleston with Bird's Point, opposite Cairo, Illinois.
The surface of the country, excepting a few hundred Indian mounds, is level, and portions of it subject to overflow, which is successfully prevented by a levee nearly 30 miles in length. The entire county can be drained at a trifling expense. The soil is exceedingly fertile and adapted for most purposes of agriculture, especially for the raising of fruit and vegetables. Timber and clay for brick are abundant. The county was first settled at least as early as \(\mathbf{1 8 0 0}\).

Moniteau County-Is probably the most central county in the State. Its northwestern boundary is the Missouri River, which, with the Moniteau and Moreau Creeks and tributaries, forms its drainage.

California, the county seat, population in 1870 , including township, 3,492, is a station on the Missouri Pacific Railway, 25 miles west from Jefferson City, 150 miles from St. Louis, and 132 east from Kansas City. It offers good educational advantages.
Tipton, population in 1870, including township, 2,242 , is 12 miles west from the county seat, and is the junction of the Booneville Branch of the same railroad, 25 miles south from Booneville.
The surface of the county is generally hilly and broken, interspersed with low alluvial bottoms and high prairie lands. The soil is very fertile, especially in the valleys. The chief products are tobacco, wheat, corn and grapes. The county contains bituminous and cannel coal, and timber in large quantities, and also considerable lead ore, limestone, building stone, millstones, and clays for brick.

Monroe County-Is situated in the east-northeastern part of the State, and is drained by Salt River and tributaries, which furnish excellent water power.

Paris, the county seat, population in 1870, 895, is on the Middle Fork of Salt River near the center of the county. It is a station on the Hannibal \& Central Missouri Railway, 45 miles southwest from Hannibal, 26 miles east from Moberly, and 172 miles northwest from St. Louis via Moberly. Paris was laid out in 1824, and incorporated as a city November 19, 1855. It offers good educational facilities.
Monroe City, population in 1870,353 , is a station on the above road, and also on the Hannibal \& St. Joseph Railroad, and is 22 miles northeast of the county seat.

The surface of the county is undulating and two-thirds timber land. The prairies are small but very fertile, and well settled. The soil is adapted to all purposes of the farmer and stock grower. The chief exports are cattle, hogs, tobacco and mules in the order as named. Considerable coal and abundance of limestone, freestone and good clay for stoneware and brick-making exist. The county was first settled in 1820-21, and was formed from Ralls County in 1830 and organized in 1831. On Sweet Lick Creek is an old Indian battle-field, thickly covered with the bones of the combatants, who were Sac, Fox and Sioux Indians.

Montgomery County-Is situated in the eastern part of the State, its extreme southern border swept by the Missouri River, which, with the Loutre River, Oak and Hickory Creeks, and the affluents of the Cuivre River, forms its principal drainage.

Danville, the county seat, population in 1870 , including township, 2,254, has a pleasant site on Loutre Prairie and was incorporated March 2, 1855. It is 5 miles west from New Florence, which is a station on the St. Louis, Kansas City \& Northern Railway, 77 miles west from St. Louis, and 198 miles east of Kansas City.

The surface of the country is, in the northern portion, level prairie ; in the southern part, broken timber land. The soil is generally fertile and adapted to all the purposes of agriculture. The county possesses bituminous coal in abundance, considerable cannel coal and good building stone, clay for brick, and indications of lead. This county was organized from St. Charles, in 1818. Several hard battles were fought here in early days, between the Indians and the pioneers.

Morgan County-Is situated in the central part of the State, and is drained by Osage River and its tributaries, Gravois Creek and head waters of La Mine River.
Versailles, the county seat, estimated population 500 , is located on a beautiful prairie in a fine farming district, 15 miles south of Tipton, Moniteau County, which is a station on the Missouri Pacific Railway, 162 miles west from St. Louis, 37 miles from Jefferson City, and \(\mathbf{1} 20\) miles east of Kansas City.

The surface of the country is undulating, with prairie and timber land about equal. The soil is very fertile and well adapted to agriculture, including grape raising. Bituminous coal, in large quantities, cannel coal, lead ore, limestone and freestone are found. This county was first settled about 1819-20.

New Madrid County-Is situated near the extreme southeastern part of the State, on the western border of Kentucky and Tennessee, from which it is separated by the Mississippi River. It is watered by Little River and numerous other sluggish streams and lakes.

New Madrid, the county seat, population in 1870, 634, is a pleasant village on the Mississippi River, 275 miles southeast by water from St. Louis, and 54 miles below Belmont, Mississippi County, which is the termination of the St. Louis \& Iron Mountain Railroad, 196 miles from St. Louis. New Madrid is also \(3^{2}\) miles south from Morley, Scott County, a station on the above railroad 163 miles from St. Louis. At the beginning of the late war of the rebellion, New Madrid acquired quite a celebrity.
The surface of the country is level, and some portions heavily timbered. A considerable section of the country is subject to overflow, but is being drained, and all of it will, it is believed, ultimately be reclaimed and rendered suitable for purposes of agriculture. The soil is exceedingly fertile. The chief staples and exports are corn, stock and cotton. Settlements were made in this county by the Spanish, as early as 1780 .
Newton County-Is situated near the extreme southwestern part of the State, on the eastern border of the Indian Territory and Kansas, and is drained principally by Indian and Shoal Creeks.
Neosho, the county seat, population in 1870,875 , has a pleasant location on Hickory Creek, and is a station on the Atlantic \&

Pacific Railway, 73 miles southwest from Springfield, and 314 miles from St. Louis. "Neosho" is an Indian name signifying "clear cold water." This place was first settled in 1840, and incorporated February 27th, 1855 .

The surface of the country is undulating, with prairie and timber land about equal. The soil is diversified and very fertile, and well adapted to agriculture, including grape raising. Lead in vast quantities, and sulphuret of zinc exist in the county. The first settlements were made in 1829.

Nodaway County-Is located near the extreme northwestern part of the State, on the southern border of Iowa, and is drained by the Platte, One-Hundred-and-Two, and Nodaway Rivers, which afford excellent water power.

Maryville, the county seat, population in 1870, 1,682, is located near the center of the county, on the Maryville Branch of the Kansas City, St. Joseph \& Council Bluffs Railway, 45 miles north of St. Joseph, II5 miles north of Kansas City, and 344 miles by rail zria St. Joseph from St. Louis.

The surface of the country is gently undulating, mainly prairie, with a good supply of timber land. Like all the "Platte country " the soil is very fertile. The chief products are corn, stock, wheat and oats. Sandstone for building and limestone exist, and coal is reported. The county was first settled in 1841.

Oregon County-Is located in the southern part of the State, on the northern border of Arkansas, and is drained by Eleven Point and Spring Rivers and tributaries.

Alton, the county seat, population in 1870, 76, is situated near the center of the county, and is 55 miles northwest from Pocahontas, a river station in the State of Arkansas, and is about 60 miles west from Poplar Bluffs, Butler County, a station on the Arkansas Branch of the St. Louis \& Iron Mountain Railway, 153 miles from St. Louis.
The surface of the country is undulating and broken, mainly timber land, (much of it pine) and not more than one-fifth of the county is suitable for cultivation. The soil and chmate are well adapted for fruit-growing and stock-raising. Lead and copper are found here.

Osage County-Is situated near the center of the State and is drained by the Missouri River (its northern boundary), the Osage River (its western boundary), the Gasconade River, Maries and other Creeks.

Linn, the county seat, population in 1870, including township, 2,438 , is located near the centre of the county, 15 miles south of Chamois, which is a station on the Pacific Railroad of Missouri, 25 miles east from Jefferson City, and 100 miles west from St. Louis:

The surface of the country is generally rolling, and along the streams broken. Timber is abundant. The soil in the valleys is very fertile and adapted to agriculture. The chief products are corn, wheat and oats. Fruits, including the grape, do well. Iron, copper, lead, limestone, sandstone, quartz, etc., are found here. The first settlements were made by Eastern people and Germans.

Ozark County -Is situated in the southern part of the State, on the northern border of Arkansas, and is drained by forks of the White River, flowing south into Arkansas.

Gainsville, the county seat, population in 1870 including township, \(53^{2}\), is located near the center of the county, about 70 miles southeast from Springfield, Greene County, which is a station on the Atlantic \& Pacific Railway, 241 miles southwest from St. Louis.

The general surface of the country is hilly and mountainous, covered with timber. Yellow pine here acquires great size. The chief products are corn, wheat, tobacco and stock. There is excellent water power, and minerals are reported.

Pemiscot County-Is the extreme southeast conunty of the State, and touches the Arkansas line on the south, and is washed by the Mississippi River on the east, by which it is separated from Tennessee. The county is watered by Little River and numerous lakes and sluggish streams. Most of the annual overflow of these streams is being successfully prevented by the erection of an extensive levee.
Gayoso, the county seat, population in \(\mathbf{1 8 7 0}\), including township, 463, is located near the Mississippi River, 310 miles by water south of St. Louis, 35 miles below New Madrid, and 67 miles south from Morley, Scott County, a station on the St. Louis \& Iron Mountain Railway, 163 miles from St. Louis.
The surface of the country is level and generally heavily timbered. The soil is alluvial and very fertile, and the climate as healthy as any section similarly located. This county was nearly depopulated by the earthquakes of \(1811 \mathbf{1 2}\), which depressed the surface of the land, causing the formation of several of the lakes. Iron ore exists. This county was first settled in 1700 by Spaniards, and afterwards by Americans in 1800.

Perry County-Is situated in the southeastern part of the State, bordering on Illinois, from which it is separated by the Mississippi River, which, together with Apple, Saline and other Creeks, forms its drainage.
Perryville, the county seat, population in 1870 , 501 , is situated near the center of the county, 12 miles southeast from St. Mary's, Ste. Genevieve County, which is a landing on the Mississippi River, 77 miles below St. Louis. Perryville is also about 30 miles northeast of Fredericktown, Madison County, a station on the St. Louis \& Iron Mountain Railway, 105 miles from St. Louis.

The surface of the country is broken and undulating and well timbered. The soil is adapted to most agricultural purposes. Tobacco and fruit yield well. The chief exports are wheat, corn and barley. The county was first settled by Kentuckians in 1800.

Pettis County-Is situated in the west central part of the State, and is drained by Flat and Muddy Creeks, and other head streams of La Mine River.
Georgetown, the county seat, estimated population in 1870 , 519, is pleasantly located on the Lexington Branch of the Pacific Railroad of Missouri, 4 miles north of Sedalia. Georgetown was first settled in 1821, and became the county seat in 1836 .
Sedalia, the principal business point in the county, population in \(1870,4,560\), is advantageously located near the center of the county, and is a station on the Pacific Railroad of Missouri and the southeastern terminus of the Lexington Branch of this road, and also a station on the Sedalia Division of the Missouri, Kansas \&

Texas Railway. Sedalia is 55 miles southeast from Lexington, La Fayette County, 110 northeast from Fort Scott, Kansas, 94 east from Kansas City, 63 miles west from Jefferson City, and 188 miles west from St. Louis.

The surface of the country is gently undulating, prairie with timber along the streams. The soil is generally very fertile, and well adapted to agriculture, including the growing of tobacco, grapes and stock. The county offers excellent educational advantages, and contains good mill sites, and large deposits of coal, iron and lead. It also possesses several large clear springs of fresh water and some of salt. The county was first settled in 1818.

Phelps County-Is situated in the southeast central part of the State, and is drained by the Gasconade and Maramec Rivers and their affluents.

Rolla, the county seat, population in \(\mathbf{1 8 7 0}, \mathbf{1}, 354\), has a pleasant and healthy location on the Atlantic \& Pacific Railway, II 4 miles southwest from St. Louis, and 200 miles northeast from Neosho, Newton County, and 48 miles, air line, from Jefferson City. The State School of Mines (a branch of the State University,) was established at Rolla in 1871, and is now in successful operation.
The surface of the country is undulating, and along the streams considerably broken, mostly prairie interspersed with timber. The soil is generally fertile, and adapted to the purposes of agriculture, including the growing of grapes and stock. The leading staples are wheat, corn and oats. The county possesses excellent water power, deposits of lead and immense quantities of iron. Iron mining was first commenced in 1826.
This county was formed from Crawford and organized November 13th, 1857.
Pike County-Is situated in the northeastern part of the State, on the western border of Illinois, from which it is separated by the Mississippi River, and its interior is drained by Salt and Cuivre Rivers and their tributaries.
Bowling Green, the county seat, population in 1870, 599, is located near the center of the county, and is a station on the Louisiana branch of the Chicago, Alton \& St. Louis Railway, 40 miles northeast from Mexico, 207 miles east from Kansas City and 148 miles northwest from St. Louis, via Mexico. Bowling Green was first settled in 1819.

Louisiana, the principal city in the county, population in 1870, rst ward, 769 ; 2d ward, 1,\(000 ; 3\) d ward, \(920 ; 4\) th ward, 950 , total 3,639 ; of whom \({ }^{-} 3,333\) were native born and 306 foreign; and 2,964 white and 675 colored, is pleasantly situated on the Mississippi River, and is the eastern terminus of the above mentioned branch, 10 miles northeast of the county seat, 50 miles from Mexico, 114 miles northwest from St. Louis by river. Louisiana was incorporated March 1, \(1855^{\circ}\)

Clarksville, population in 1870, 1,152, is situated on the Mississippi River, 16 miles east of the county seat, 12 miles below Louisiana. It is located on the site of an old Indian stockade, erected in 1812. It was incorporated as a city February 24, 1853.

The surface of the country is undulating, and along the river sometimes quite broken. About one-third of the county is prairie, the remainder timber land. The soil is very fertile and well adapted to all purposes of agriculture. This is one of the oldest counties in the State, and settled early in this century.

\section*{COUNTIES OF MISSOURI}

Platte County-Is situated in the western part of the State, on the eastern border of Kansas, from which it is separated by the Missouri River. Its interior is intersected and well watered by the Platte River and Brush, Rush and Bee Creeks and their numerous tributaries.

Platte City, the county seat, population in 1870, 599, has a fine location on the left bank of the Platte River, about 40 miles from its mouth, and is a station on the Southwestern Division of the Chicago, Rock Island \& Pacific Railway, 6 miles from Beverly, II miles from Leavenworth City, 45 miles south from St. Joseph, 37 miles northwest from Kansas City, and 312 miles west from St. Louis. It was laid out in 1839 and incorporated February 3, 1853
Weston, population in \(1870,1,614\), has a pleasant location on the east bank of the Missouri River, and is on the Kansas City, St. Joseph \& Council Bluffs Railway, 9 miles west from the county seat. It was laid out in 1837 .

The surface of the country is undulating, timber land interspersed with prairies. The soil is generaHy exceedingly fertile and well adapted to agriculture. The principal products are corn, wheat and hemp. This is one of the leading agricultural counties in the State ; it contains an enterprising community, and offers excellent educational advantages.

Polk County-Is situated in the southwestern central portion of the State, and is drained by the Little Sac and Pomme de Terre Rivers and other tributaries of the Osage River.

Bolivar, the county seat, population in 1870, 635, is pleasantly located near the center of the county, 30 miles north of Springfield, which is a station on the Atlantic \& Pacific Railway 241 miles from St. Louis. Bolivar is 120 miles southeast air line from Kansas City, and 95 miles southwest from Jefferson City.

The surface of the country is generally undulating, and along the streams very rugged and broken. About two-fifths of the county is prairie, the remainder timber land with trees of rather inferior quality. The soil in the bottoms is very fertile, and well adapted to agriculture. Corn, tobacco and stock are chief products. There are large deposits of lime and of stone for building. The county was first settled in 1810 by Tennesseans, and was organized in 1834, and named in honor of President James K. Polk.

Pulaski County-Is situated in the south central portion of the State, and is drained by the Gasconade and Big Piney Rivers, and the Robidoux and other Creeks, which furnish good water power.

Waynesville, the county seat, population in 1870, including township, 849, is situated on the Robidoux Creek, near the center of the county, and Ir miles south from Crocker, which is a station on the Atlantic \& Pacific Railway 150 miles southwest from St. Louis.

The surface of the country is generally broken and uneven, and heavily timbered. The soil is very fertile in the valleys and portions of the uplands. The principal products are corn and wheat, and the chief exports are wheat and stock. Iron in several varieties, lead and building materials are abundant, and saltpeter has been found in several of the caves. The county was first settled about 1832 .

Putnam County-Is situated in the northern part of the State, on the southern border of Iowa, and is drained by Locust and Blackbird Creeks and other south-flowing affluents of the Grand and Chariton Rivers.
Unionville, the county seat, population in 1870,462 , is located on Blackbird Creek near the center of the county, 25 miles west from Glenwood, which is a station on the St. Louis, Kansas City \& Northern Railway, at its junction with the Missouri, Iowa \& Nebraska Railroad, 227 miles northwest from St. Louis, and 58 miles north of Macon City.

The surface of the country is undulating, with prairie and timber interspersed, the latter more abundant in the eastern part of the county. The soil is fertile and well adapted to agriculture. Corn and stock are the chief products. This county was formed from Linn and Adair Counties in 1845

Ralls County-Is situated in the northeastern part of the State, on the western border of Illinois, from which it is separated by the Mississippi River. Its interior is intersected and drained by Salt River and Lick and Spencer Creeks, upon each of which are several good mill sites.
New London, the county seat, population in 1870, 410, was settled in 1820, and is situated in the northeastern part of the county, 9 miles south of Hannibal, and 22 miles northwest from Louisiana, Pike County, which is on the Mississippi River, 114 miles above St. Louis, and on the Louisiana Branch of the Chicago \& Alton Railway, ror miles northeast from Jefferson City
The surface of the country is undulating and broken, nearly onehalf prairie, the remainder timber land. The soil is very fertile and well adapted to agriculture. Stock, wheat and corn are the chief exports. There are several saline springs in the county, some of which have been worked. The county was first settled previous to 1800, and was organized from Pike County in 1820.

Randolph County-Is situated north of the center of the State, and is drained by affluents of the Chariton and Salt Rivers.

Huntsville, the county seat, estimated population in 1870, \(\mathbf{1 , 2 0 0}\), is located near the center of the county, on the St. Louis, Kansas City \& Northern Railway, 153 miles northwest from St. Louis, and 122 miles east of Kansas City.

Moberly, population in 1870, 1,514, is located 7 miles east of the county sear, and is a station on the St. Louis, Kansas City \& Northern Railway, at the junction with its Northern Branch and on the Hannibal \& Central Missouri Railway, and is 146 miles northwest from St. Louis, 71 miles from Hannibal, and 129 miles east from Kansas City.

The surface of the country is level or undulating, about one-fifth prairie, with timber abundant and convenient. The soil is fertile and well adapted to agriculture. Stock-growing is extensively followed. Coal, limestone, clay for brick, and building materials are abundant. The county was first settled in \(\mathbf{1 8 2 0}\), principally by Kentuckians and North Carolinians, and was organized in 1829. This county in early days suffered from the attacks of Indians, and several brave companies of rangers were formed to resist the foe.
- Ray County-Is situated in the western part of the State, on the north bank of the Mississippi River: Its interior is principally drained by Crooked and Fishing Rivers and their branches.
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Richmond, the county seat, population in 1870, 1,218 , is pleasantly located, 7 miles from the Missouri River, on high, undulating land, in an excellent district, and is a station on the Lexington \& St. Joseph Branch of the St. Louis, Kansas City \& Northern Railway, 68 miles southeast from St. Joseph, 45 miles northeast from Kansas City, 126 miles from Jefferson City, and 251 miles from St. Louis.

Camden, population in 1870,357 , is a shipping point on the Missouri River, 7 miles south of the county seat, and 388 miles by river above, and 239 miles by rail, from St. Louis. It is a station on the St. Louis, Kansas City \& Northern Railway, 36 miles east of Kansas City: It was first settled in $1833^{\circ}$
This county has a desirable division of prairie and timber land. The soil, especially of the bottom lands along the Missouri, is very fertile and well adapted to agriculture, including stock-growing. The chief exports are wheat, hemp and tobacco. Saline and fresh water springs are numerous, and coal and excellent limestone are abundant. The county was first settled in 1816, and was named in honor of John Ray, a member of the State Constitutional Convention. The county seat was originally Old Bluffton, and removed on Richmond in 1828.

Reynolds County-Is situated in the southeastern part of the State, and is drained by the Big Black River and its tributaries, which furnish excellent water power.

Centerville, the county seat, population in 1870, 32, was first settled in 1847, and is 16 miles west from Annapolis, Iron County, which is a station on the St. Louis \& Iron Mountain Railroad, Io9 miles from St. Louis.

The surface of the county is rough and broken and heavily timbered, and in some portions the scenery is very fine. The soil in detached portions of the county is fertile, but not much attention is yet paid to farming. Iron in large quantities and considerable lead, limestone, clay and granite, are found in the county. This county was named in honor of Thomas Reynolds, former Governor of the State.

Ripley County-Is located in the southeastern part of the State, on the northern border of Arkansas, and is drained by the Current River and its tributaries, and those of the Big Black River, some of which afford excellent mill sites.

Doniphan, the county seat, population in 1870 , 146, is located on Current River, 25 miles southwest from Poplar Bluffs, which is a station on the St. Louis and Iron Mountain Railway, 153 miles south from St. Louis.

The surface of the country is undulating, and in some portions broken. The uplands are timbered with pine and cedar of great size. The bluffs on the Current River are adapted to grape and fruit culture. The soil in the valleys is quite fertile. Corn, wheat and oats are the chief products, and stock is the principal export. There is an abundance of iron and lead, and indications of copper, -rich mineral deposits awaiting development. The county was first settled in 18 I 9 by Lemuel Kittrell.

St. Charles County-Is situated in the eastern part of the State, occupying a narrow neck of land between the Mississippi and Missouri Rivers, and opposite the mouth of the Illinois River. Its
interior is drained by the Peruque, Dardenne, and Femme Osage Creeks, which afford good water power.

St. Charles, the county seat, population in $1870,5,570$, has an elevated and commanding site on the left bank of the Missouri River, 25 miles from its mouth. It is a station on the St. Louis, Kansas City \& Northern Railway, 22 miles northwest by rail, and 45 miles by river, from St. Louis. The fine bridge at this point was the first one built across the Missouri River, and cost nearly $\$ 2,000,000$. The city contains elegant residences, substantial business blocks, and an intelligent and enterprising community. The seat of government of the State was removed from St. Louis to St. Charles in 1821, where it remained until 1826, when it was removed farther west to Jefferson City, its present location. The first settlements in this county-indeed in Northern Missouriwere made at St. Charles, then known as "Village des Côtes," in 1762 , two years before St. Louis was founded by Laclede.

The surface of the country is alternately rolling, hilly and level, with some prairie and plenty of timber. The long point or tongue of land for twenty miles above the mouth of the Missouri, varying from two to ten miles in width, is entirely alluvial, and the soil exceedingly fertile, while that upon the uplands is of good quality and well adapted to agriculture. Wheat, corn and tobacco are the chief exports. Large deposits of limestone, sandstone, clay and bituminous coal exist here. There is some very fine scenery in the county, particularly from the high lands including the "Mamelles."

This county originally embraced all the country in the State lying between the Mississippi and Missouri Rivers, stretching indefinitely to the north and west. The frequent formation of new counties from it has reduced it to its present area. Nearly all the events in the early history of this State were connected with this county, particularly Indian wars, battles, massacres, etc. Several forts were erected in the county, and it was here that Black Hawk commenced his first war against the whites.

St. Clair County-Is situated in the west-southwest part of the State, and is intersected and drained by the Osage River and its tributaries, some of which afford excellent water power.

Osceola, the county seat, population in 1870, 331, is located on the right bank of the Osage River, a little northeast of the center of the county, 22 miles southeast from Appleton City, which is a station on the Sedalia Division of the Missouri, Kansas \& Texas Railway, 59 miles southwest from Sedalia, 153 miles via Sedalia from Kansas City, and 247 miles from St. Louis.

The surface of the country is undulating, about one-third timber land and the remainder prairie, the former mainly in the southern, and the latter in the northern part of the county. The soil is generally very fertile, and well adapted to agriculture, including stockgrowing. Iron and coal have been found, and the latter, it is believed, exists in large quantities.

St. Francois County-Is situated in the east-southeastern part of the State, and is drained by Big River, Terre Beau, Flat Creek and some small sources of the St. François River, several of which furnish good water power.

Farmington, the county seat, population in 1870, 393, is located southeast of the center of the county, 3 miles northeast of De Lassus, which is a station on the St. Louis \& Iron Mountain Rail-
way, 87 miles south from St. Louis, and 109 miles northwest from Belmont.

Iron Mountain, population in 1870, 2,018, is located in the southwestern part of the county, 14 miles southwest of the county seat, and is a station on the Arkansas Branch of the St. Louis \& Iron Mountain Railway, 5 miles south from Bismark (junction), and 8r miles from St. Louis. This place is situated at the southwest base of the celebrated formation known as Iron Mouniain, from which it derives its name. This mountain is 228 feet high, and its base covers an area of 500 acres. It is composed almost exclusively of iron in its purest form, and has been estimated to contain 1,655,280,000 cubic feet, or $230,187,375$ tons of ore. There are also extensive deposits of lead in the county, and copper, cobalt and nickel exist.

The surface of the country is broken and hilly, about one-tenth being bottom land, and nearly four-fifths arable. There are fine farms in the valleys, and the farmer finds a good market at his very door.

Ste. Genevieve County-Is situated in the east-southeastern part of the State, on the western border of Illinois, from which it is separated by the Mississippi River. Its interior is drained by the Rivière aux Vases and Isle au Bois, Saline and Establishment Creeks.

Ste. Genevieve, the county seat, population in 1870, 1,521, is situated in the northeastern part of the county, on the right bank of the Mississippi River, 65 miles below St. Louis, and 144 miles above Cairo, Ill. It is 35 miles southeast from Pevely, Jefferson County, which is a station on the St. Louis \& Iron Mountain Railway, 28 miles from St. Louis. Ste. Genevieve is the oldest town in Missouri, it being first settled about 1755. In 1810 it contained twenty large stores, "from which the people of St. Louis laid in their stocks." It then required four months to go to Philadel. phia and return, bringing goods via Pittsburg, Pa., and the Ohio River.
The surface of the country is hilly and broken. except the extensive tracts of bottom lands along the Mississippi River, which are well timbered, and very fertile. The soil on the uplands is good, and well adapted to cereals, but especially to grape culture.

The county has great mineral wealth, there being large quantities of copper, lead, iron, salt, zinc, sand, etc., also extensive quarries of excellent marble.
St. Louis County-Is situated in the eastern part of the State, occupying a point of land formed by the confluence of the Missouri with the Mississippi River, the former constituting its northern and the latter its eastern boundary. The interior of the county is drained by the Maramec River and River Des Peres, and by Bonhomme and Gravois Creeks. The surface of the countryis undulating, and the soil fertile and under excellent cultivation.

ST. Louis, the county seat, is a port of entry and the fourth city in the Union. It is situated on the right bank of the Mississippi River, 20 miles below the mouth of the Missouri, 208 miles above the mouth of the Ohio, 805 miles below the Falls of St. Anthony, Minnesota, 1,278 miles above New Orleans, 125 miles by rail east from Jefferson City, the State Capital, and 811 miles air line west from Washington. Latitude $3^{8^{\circ}} 37^{\prime} 28^{\prime \prime} \mathrm{N}$., longitude $90^{\circ}{ }_{15} 5^{\prime} 16^{\prime \prime}$ W. The city has a high and commanding site, being principally
upon two plateaus of limestone formation, the upper one rising gradually about 60 and the lower one more abruptly about 20 feet above the floods of the Mississippi. The length of the city, by the course of the river, is about $1+$ miles, extending $8 \frac{1}{2}$ miles back, but the thickly settled portion is about 10 to 12 square miles.

The city is regularly laid out, the streets generally being 60 feet wide, and the greater number of them crossing each other at right angles. The buildings, both public and private, are, as a whole, remarkably well built, and are generally of the most substantial character, being of stone, marble and brick, and hence no sweeping conflagration, such as befell the city of Chicago in 1871, could ever devastate St. Louis. No city of its size in the United States contairs more elegant public buildings, and among the more prominent ones we enumerate the following: The 'Missouri State Institution for the Education of the Blind, St. Louis County Insane Asylum, St. Louis County Jail, Court House, United States Custom House and Post Office, United States Arsenal, United States Marine Hospital, O'Fallon Polytechnic Institute, the Mercantile Library, Washington and St. Louis Universities, and the Convent of the Sacred Heart. The city has a very large number of other public and private asylums and hospitals. It also contains a complete list of colleges, academies, seminaries, convents, and public and private schools, and most of them of the highest order. The church edifices are very numerous, and many of them costly and truly magnificent. Street railways traverse the city in all directions, and are placed at convenient distances for the accommodation of the citizens.

The population of the city of St. Louis, by the United States census of 1870, was as follows: Ist ward, including Carondelet, 33,708; 2d ward, 21,855 ; 3 d ward, 23,878 ; $4^{\text {th }}$ ward, 3 1, 493 ; 5 th ward, 29,774 ; 6 th ward, 29,192 ; 7th ward, 18,508 ; 8th ward, $26,710,9$ th ward, 22,922 ; roth ward, 20,623 ; IIth ward, 32,580 ; 12th ward, 19,621 ; total, 310,864 ; of whom 198,615 were native born, and 112,249 foreign; and 288,73j white, 22,088 colored, and 38 Indians and I Chinese. Of the native population, $156,33^{1}$ (including 134,22r born in Missouri, and 5,716 in Kentucky) were born in former slaveholding States; and 41,603 (including 9,288 born in New York, and 4,995 in New England) in northern States. Of the foreign population, 27 were born in Australia, 751 in Austria (proper), 254 in Belgium, 2,008 in British America, 178 in Denmark, 2,788 in France, 59,040 in Germany, 5,367 in England, $\mathbf{3}^{2,239}$ in Ireland, 1,202 in Scotland, 147 in Wales, 643 in Holland, 786 in Italy, 300 in Poland, 86 in Russia, 343 in Sweden and Norway, 2,902 in Switzerland, and 276 in other European countries.

As a railroad center, St. Louis is the northern terminus of the St. Louis \& Iron Mountain, the northeastern terminus of the Atlantic \& Pacific, the eastern terminus of the Pacific of Missouri, and the southeastern terminus of the St. Louis, Kansas City \& Northern (formerly North Missouri) Railroads. By steamboat transfer (until the railroad bridge across the river at this point is completed), the southern terminus of the Rockford, Rock Island \& St. Louis, the southwestern terminus of the Chicago \& Alton (and Jacksonville Branch,) and the Toledo, Wabash \& Western Railroads; also the western terminus of the Indianapolis \& St. Louis; Vandalia, Terre Haute \& Indianapolis, and the Ohio \&

Mississippi Railroads; and the northwestern terminus of the St. Louis \& Southeastern, and the St. Louis, Alton \& Terre Haute, (Belleville \& Southern Illinois Division) and the Illinois \& St. Louis Railroads.

When the magnificent tubular steel bridge across the Mississippi at this point is completed in 1873, all these railroads will be enabled to make a running connection, so as to center in a single Union Depot, thus transferring passengere under one roof. The first stone in this bridge was laid February 28th, 1868 , since which time the work has steadily progressed, under the management of its originator and able Chief Engineer, Capt. James B. Eads. The bridge consists of three arches, the middle one being $552 \frac{1}{2}$ feet span, and the eastern and western each 537 左/4 feet span, making 1,627 feet over the river. 'The western approach measures $\mathbf{r}, 100$ feet, and the eastern 3,500 feet, showing the total length of the bridge and approaches to be 6,227 feet or one mile and nearly a sixth. The total cost is estimated at between seven and eight millions of dollars.

The present site of St. Louis was chosen by Pierre Liguest Laclede, February 15th, 1764 , and the city was named by him in honor of Louis XV of France. On the IIth of August, 1768, a company of Spanish troops took possession of St. Louis in the name of the King of Spain. The city remained under Spanish government from that time, until its transfer to the United States, March 26th, 1804. For many years it was only a trading post for fur traders. Carondelet, formerly called Vide Poche, was first settled in 1767 . The first brick house in St. Louis was erected in 1813. The first steamboat arrived there in 1817, and the first brick pavement was laid in 1821. The first newspaper was commenced in July, 1808, by Joseph Charless, and received the name of Missouri Gazette, the germ of the present Missouri Republican. The first churches were erected by the Baptists and Roman Catholics in 1818, and by the Methodists and the Episcopalians in 1820. The first English school was opened in St. Louis in 1808, and the first school board formed in 1817. John Jacob Astor established a branch fur house in this city in 1819. St. Louis was incorporated as a town November 9th, 1809, and as a city December 9th, 1822, at which latter date it contained a population of about 5,000. Lafayette visited the city in April, 1825. In 1826 the United States Arsenal was authorized by Congress, but was not completed for several years afterwards. The Mercantile Library Association was formed in 1846, and the Chamber of Commerce in $\mathbf{1 8 3 7}$. In April 1849 a great conflagration occurred, destroying over $\$ 3,000,000$ worth of property. The first street cars were started July 4th, 1859, and the streets were first lighted by gas in 184\%.

For information on the Public Schools of St. Louis, the reader is referred to page 8r.

Saline County-Is situated in the northwestern central portion of the State, and is bounded on the northwest, northeast and east by the Missouri River, for a distance of about 90 miles. Its interior is principally drained by Salt Fork and Black Fork, tributaries of the Lamine River.

Marshall, the county seat, population in 1870, including township, 3,701 , has a fine location, was laid out in 1838, and named in honor of Chief Justice Marshall. It is 15 miles south of Miami, a landing on the Missouri River, 314 miles above St.

Louis. Marshall is also 15 miles northeast from Brownsville, which is a station on the Lexington Branch of the Missouri Pacific Railroad, 21 miles from Sedalia.

The surface of the country is undulating and about two thirds prairie. The deficiency of timber is compensated by extensive beds of cannel and bituminous coal. Limestone, sandstone and lead ore and numerous saline springs exist in the county. The soil is very fertile, especially on the bottoms and upland prairie. Hemp, tobacco and corn are chief products. The county was first settled in 1816 by persons from Virginia, Kentucky and Tennessee.

Schuyler County-Is situated in the northern part of the State, on the southern border of Iowa, and is drained by the Chariton River and affluents, and by those of Fabius and Salt Rivers. Several of these streams furnish good water power.

LaNCASTER, the county seat, population in 1870, 427 , is situated in the northern part of the county, on the Missouri, Iowa \& Nebraska Railway, 65 miles west from Alexandria, and 2 miles from Glenwoor, and 230 miles from St. Louis. It affords good educational facilities.

The surface of the country is generally undulating, and about one-third of it is broken-two-thirds being prairie and the remainder timber land. The soil is fertile and well adapted to agriculture. A rich bed of coal is believed to underlie the county. The county was first settled in 1836 by David Floyd, Judge Samuel Eason and others.

Scotland County-Is situated near the extreme northeastern part of the State, on the southern border of Iowa, and is drained by forks and tributaries of the Wyaconda and Fabius Rivers.
Memphis, the county seat, population in 1870, 1,007, is located near the center of the county on the North Fabius River, was first settled in 1838, and is a station on the Missouri, Iowa \& Nebraska Railway, 40 miles northwest from Alexandria.

The surface of the country is generally undulating and principally prairie. The soil is very fertile and well adapted to agriculture. The chief products are wheat, corn and stock.

Scott County-Is located near the extreme southeastern part of the State, on the western border of Illinois, from which it is separated by the Mississippi River. Its interior is watered by Little River and a number of lakes.

Commerce, the county seat, population in 1870 , including township, 1,267, was incorporated January 15, 1857, and is located on the west bank of the Mississippi River, 166 miles below St. Louis, 43 miles above Cairo, and 15 miles northeast of Morley, which is a station on the St. Louis \& Iron Mountain Railway, 163 miles from St. Louis.

The surface of the country is broken and uneven in the northern and western part of the county, and level and swampy in the southern portion. The soil of the uplands is somewhat sterile, but that of the bottoms, prairies and valleys, is exceedingly fertile and, where susceptible of cultivation, yields bountifully of cereals, grasses, and vegetables. Some of the ridges contain deposits of limestone.

The county was organized in 1822 from New Madrid, and named in honor of General Winfield Scotr. Benton was formerly the county seat of this county.

Shannon Connty-Is situated in the south-southeastern part of the State, and is drained by Current River and numerous tributaries, many of which are rapid streams, affording excellent water power.

Eminence, the county seat, estimated population in 1870, 10\%, is situated near the center of the county on Current River, and is in a good farming district, 35 miles west from Piermont, Wayne County, which is a station on the Arkansas Branch of the St. Louis \& Iron Mountain Railway, 51 miles south from Bismarck (junction) and 127 from St. Louis.
The surface of the country is generally broken and well timbered. The soil in the va!leys is generally fertile, and most of the land of the county is adapted to the culture of cereals, grasses and fruit. There are extensive beds of hematite iron ore, lead ore and copper, and it is reported that some gold has been discovered.

Shelby County-Is situated in the northeastern part of the State, and is drained by the Salt, South Fabius and North Rivers.
Shelbyville, the county seat, population in 1870, 530, was incorporated in 1866, and is pleasantly located in a fine farming district, 8 miles north from Shelbina.
Shelbina, population in $1870, \mathrm{~J}, 145$, is a station on the Hannibal \& St. Joseph Railway, 47 miles west from Hannibal, 159 east from St. Joseph, 178 miles northeast from Kansas City, and via Macon City, 192 miles northwest from St. Louis.
The surface of the country is undulating, prairie and timber land about equally divided. About one-tenth of the county is bottom land, and probably three-fourths arable upland. The soil is generally fertile and well adapted to agriculture, including grape-raising. Coal and building stone are abundant. The county was formed from Marion in 1836. The county seat was for a time at Oakdale:

Stoddard County-Is situated near the extreme southeastern part of the State, and is watered principally by the St. François, Little, and Castor Rivers.
Bloomfield, the county seat, population in 1870, 379, is situated near the center of the county, about 30 miles southwest from Allenville, Cape Girardeau County, which is a station on the St. Louis \& Iron Mountain Railway, 148 miles from St: Louis, Bloomfield is also about 40 miles west from Charleston, Mississippi County, which is a station on the same railroad, 179 miles from St. Louis. It is also about 30 miles northeast from Poplar Bluff, Butler County, which is a station on the Arkansas Branch of the same road, 153 miles from St. Louis.
The surface of the county is generally level, and since the earthquakes of 18II-12 much of it has been low and swampy. Much of this land however has been reclaimed, and most of it, it is believed, will ultimately be suitable for cultivation. The soil is very fertile and produces bountifully. Except where cultivated, the land is heavily timbered. Bog iron ore is abundant in the swamps. Castor River affords good water power.

Stone County-Is situated in the southwestern part of the State, on the northern border of Arkansas, and is drained by James Fork and other tributaries of White River, many of which furnish good water power.

Galena, population in 1870,27 , is located on the James Fork, 18 miles southeast from Logan, Lawrence County, which is a station on the Atlantic \& Pacific Railway, 266 miles southwest from St. Louis. It is the county seat.
The surface of the country is generally broken and hilly, and about three-fourths timber land, the pine of large size. The soil of the bottoms and of much of the uplands is fertile and adapted to agriculture. Lead and iron exist in the county.

Sullivan County-Is situated in the northern part of the State, and separated from Iowa by Putnam County. It is drained by tributaries of the Grand and Chariton Rivers, some of which afford water power. Its streams run almost due south.
Milan, the county seat, population in 1870, 319, is located near the center of the county, 30 miles northeast from Trenton, Grundy County, and 30 miles west from Kirksville, Adair County, the former a station on the Southwestern Branch of the Chicago, Rock Island \& Pacific Railway, 82 miles northeast from St. Joseph, and ror from Kansas City, the latter a station on the St. Louis, Kansas City \& Northern Railway 203 miles from St. Louis,
The surface of the country is generally rolling, with two-thirds prairie and the remainder timber land. The soil is fertile, particularly along the bottoms, and adapted to agriculture. Stockgrowing is profitably carried on. Deposits of coal are reported as existing in the county.

Taney County-Is located in the southwestern part of the State, on the northern border of Arkansas, and is intersected by White River and tributaries, some of which afford good water power.
Forsyth, the county seat, population in 1870,87 , is situated near the center of the county, on the left bank of White River, 40 miles southeast from Springfield, which is a station on the Atlantic \& Pacific Railway 24I miles from St. Louis.
The surface of the country is quite hilly and broken, about onefourth being good farming land. There are heavy forests of tim-ber-the pine of large size. The land is best adapted for stock and fruit. Extensive deposits of lead, iron, copper and zinc exist in the county. The first settlements were made in 1816.

Texas County-Is situated in the southern portion of the State, and is drained by head waters of the Current and Gasconade Rivers.
Houston, the county seat, population in 1870, including township, 866 , is located near the center of the county, 50 miles south from Rolla, Phelps County, which is a station on the Atlantic \& Pacific Railway, 114 miles from St. Louis.

The surface of the country is generally very broken and hilly, as the Ozark Range extends through the county. There are immense forests of timber, mainly yellow pine, some trees of which are the largest in the State. The soil along the streams is fertile, but the county is better adapted for lumbering, stock and fruit-growing and mining than for agriculture. Iron and lead ores, clay and lime, and sandstone for building purposes, are abundant.

The county was first settled in 1820 by Patton, Boone, Truesdale, Baldridge and others.

Vernon County-Is situated in the southwestern part of the State, on the eastern border of Kansas, and is drained by Little

Osage River, Big Dry Wood, Little Dry Wood and other tributaries of the Osage River.

Nevada, the county seat, population in 1870, including township, 2,603 , is situated near the center of the county, and is a station on the Sedalia Division of the Missouri, Kansas \& Texas Railway, 20 miles east of Fort Scott, 90 miles southwest from Sedalia, and 278 miles from St. Louis.

The face of the country is rolling and undulating, with about five-sixths prairie and the remainder timber land, the latter mainly along the streams. There are a number of irregular conical mounds in the county. The soil is fertile, and well adapted to agriculture. The principal exports are stock, wheat and lumber. There are deposits of coal in large quantities, and iron ore, lead, potter's clay, marble, hydraulic cement rock, grindstone grit and coal oil.
There are ruins of earthworks and furnaces in this county, which Nathan H. Parker, Esq., in his excellent work, entitled "Missouri As It Is in 1867," for reasons therein given, considers were the winter quarters of De Soto in 1541-42.

This county was formed from Bates and Cass Counties, February 17th, 1851.

Warren County-Is situated in the eastern central part of the State, and is bounded on the south by the Missouri River, which together with the Big, Massie's, Smith's, Charette and Bear Creeks, furnishes its drainage.
Warrenton, the county seat, population in 1870,588 , is located a little northeast of the center of the county, on the St. Louis, Kansas City \& Northern Railway, 217 miles east from Kansas City, and 58 miles northwest from St. Louis.
The surface of the country is undulating in the northern part of the county, and somewhat broken in the southern, except the bottom lands along the Missouri River, which are very fertile and heavily timbered. In the northern part of the county there is considerable prairie land, very fertile and well adapted to agriculture. The chief exports are wheat, oats and corn; stock and fruit are also extensively raised.

The county was first settled in 1801 or 1802 , by Flanders Calaway, David Bryan and others. This county shared with St. Charles County (from which it was formed) in all the adventures and sufferings of the early Indian warfare.
Colonel Daniel Boone and wife died in St. Charles County and were buried near Marthasville, Warren County, where their tombs are still preserved. Their remains were subsequently removed to Frankfort, Ky.

Washington County-Is situated in the southeastern part of the State, and is drained by tributaries of the Maramec River.

Potosi, the county seat, population in 1870,897 , is situated east of the center of the county, surrounded by a beautiful group of hills, in a pleasant and healthy location. Except Ste. Genevieve, this is the oldest village in the State. It is a station on the Potosi Branch of the St. Louis \& Iron Mountain Railway, 4 miles west from Mineral Point (junction,) and 65 miles from St. Louis.
The surface of the country is generally broken and interspersed with ridges, hills and knobs, some of which are from 200 to 300 feet high. Timber is very abundant, including yellow pine. The soil on the uplands is adapted for fruit culture, and that of the
valleys is fertile, suitable for the general purposes of agriculture. The great wealth of this county is in its minerals, of which there are immense deposits, particularly of lead, copper and zinc, and considerable iron and sulphate of barytes. Some of the lead mines have been worked almost constantly for more than a century, (the first lead mining in Missouri, ) and yet the supply seems inexhaustible. Explorations were made in this county by Crozat under his patent from the King in 1717 . The first permanent settlements were made in 1721 or 1722 by miners, and the first regular mining shaft was sunk by Moses Austin and sons, from Virginia, in 1798.

Wayne County-Is situated in the southeastern part of the State, and is drained by St. François and Black Rivers and their tributaries, some of which afford good water power.

Greenville, the county seat, estimated population in 1870, 113 , is located on the east bank of the St. François River, in a good agricultural district, 16 miles east of Mill Spring, which is a station on the Arkansas Branch of the St. Louis \& Iron Mountain Railway, 59 miles south from Bismarck (junction), and I 35 miles from St. Louis.
The surface of the country is generally broken, and is mainly heavy timber land. The soil in the valleys is fertile and well adapted to agriculture. The uplands are best suited for fruit. The chief exports are stock and wheat. There are large deposits of iron, copper and lead in the county, and also a ridge called Copper Mountain. The county was first settled in 1801 .

Webster County-Is situated in the southwestern part of the State, and is drained by the head waters of the Gasconade and Osage Rivers flowing north, and those of the White River flowing south.

Marshfield, the county seat, population in 1870, 809, is pleasantly located near the center of the county, on the Atlantic \& Pacific Railway, 24 miles northeast from Springfield, 217 southwest from St. Louis, and 150 miles air line southeast from Kansas City.

The surface of the country is principally rough, broken timber land. The Ozark hills extend through the center of the county, which is thus rendered more suitable for stock and fruit-raising than for the growing of cereals: The soil in the valleys and on some of the uplands is fertile and adapted to agriculture. Lead and iron are found in the county. This county was formed from Wright and Greene Counties.

Worth County-Is situated near the extreme northwestern part of the State, on the southern border of Iowa, and is drained and intersected by East, Middle and West Forks of Grand River.

Grant City, the county seat, estimated population in 1870, 600 , is situated in the center of the county near Middle Fork of Grand River, 30 miles northeast from Maryville, Nodaway County, and 35 miles northwest from Pattonsburg, Daviess County, the former a station on the Maryville Branch of the Kansas City, St. Joseph \& Council Bluffs Railway, 45 miles north of St. Joseph, and II5 northwest from Kansas City, the latter (Pattonsburg) a station on the St. Louis, Council Bluffs \& Omaha Branch of the St. Louis, Kansas City \& Northern Railway, 265 miles from St. Louis.

The face of the country is undulating, and interspersed with prairie and timber. The soil is generally fertile, and well adapted for the purposes of agriculture, particularly for stock and fruit.

Wright County-Is situated in the south central part of the State, and is drained by Gasconade River and its tributaries, some of which furnish good water power.

Hartville, the county seat, estimated population in 1870,300, is situated on a fork of the Gasconade River, near the center of
the county, 25 miles southeast of Marshfield, Webster County, which is a station on the Atlantic \& Pacific Railway, 217 miles from St. Louis.
The surface of the country varies from undulating to hilly and broken. The Ozark Hills extend through the southern part of the county, and they and the bluffs along the Gasconade present much wild and picturesque scenery. The soil in the valleys and small portions of the uplands is fertile and bears well. The uplands are mainly adapted for grapes and other fruit. The county contains lead, iron and copper. It was first settled in 1838.

## R A ILROADS.

For location of the Depots, etc., of these Roads in St. Louis, see "Railroads," in our List of Subscribers as given in this Volume.

The first Convention to consider the importance and feasibility of building railroads in the State, was held on the 20th of April, 1835, at the Court. House in St. Louis, attended by sixty-four delegates from eleven of the most populous counties in the State. The Convention, after mature deliberation, recommended the construction of one road to the Bellevue Valley, tria Iron Mountain and Pilot Knob, and another to Fayette, Howard County. The officers of the first railroad convention have nearly all long since been called to their final reward, yet the hopes they entertained have been already realized and more extended projects executed-based on their initiatory labors, and there are now, ( 1872, ) nearly 3,000 miles of railways in operation in the State.
Name of Corporation.
Length in Miles.
*Atlantic \& Pacific.
Burlington \& Southwestern, (from the Iowa State Iine to 33
Burlington \& Southwestern, (from the Iowa State Line to
Laclede, Linn County,)................................. 65
*Chicago \& Alton, Louisiana Branch..................................
*Chicago, Rock Island \& Pacific, Southwestern Branch ... I 39
Hannibal \& Central Missouri (Hannibal to Moberly).......... ir
Hannibal \& St. Joseph ............................................... 206
Cameron \& Kansas City Branch ........................ 53
Palmyra \& Quincy Branch .................................. 15-274
*Kansas City, St. Joseph \& Council Bluffs...................... 148

Memphis, Carthage \& Nort (Sedalia Division)
Osage Division, (Holden west)......................... 35-141
Missouri, Iowa \& Nebraska, (Alexandria to Griffin)............. . 67
*Pacific Railroad of Missouri, (St. Louis to Kansas City).. 282
Booneville Branch............................................... 25 Lexington Branch. 55
Lawrence Branch ........ ...................................... 18
Kirkwood \& Carondelet Branch......................... 14-393
Quincy, Missouri \& Pacific, (from W. Quincy to Kirksville,
Adair County,)........................................ 70.
St. Louis \& Iron Mountain ........................................... 196
Arkansas Branch, (Bismark to Arkansas State Line) 101
Potosi Branch .
4-301
*St. Louis, Kansas City \& Northern ......................... 275
Northern Division, (Moberly to Iowa State Line).. 88
Lexington \& St. Joseph Branch ........................... 76
St. Louis, Council Bluffs \& Omaha Branch, (Bruns-
wick to Pattonsburg).................................... 80
Columbia Branch.................................................22-54
Total
$.2,783$
*Length in miles of this railroad in Missouri only.

## PROJECTED RAILROADS.

The following are some of the principal railroads among the many that are now being projected and constructed in the State :
Mississippi \& Missouri, from Glasgow, Howard County, northeast to Keokuk, Iowa, passing through Chariton, Macon, Shelby, Knox, Lewis and Clark counties.

St. Louis \& Keokuk, from Dardennes, St. Charles County, northwest to Keokuk, Iowa, passing through St. Charles, Lincoln, Pike, Ralls, Marion, Lewis and Clark Counties.

St. Louis, Kansas City \& Northern-St. Louis, Council Bluffs \& Omaha Branch, from its present terminus, Pattonsburg, Daviess County, northwest to the Iowa State Line, passing through Daviess, Harrison, Gentry, Worth and Nodaway Counties.

Missouri, Kansas \& Texas, Sedalia Division, from Sedalia, Pettis County, northeast to Moberly, Randolph County, passing through the intervening counties of Cooper and Howard.

Laclede \& Fort Scott, (from Lebanon, Laclede County, west to Fort Scott, Kansas, passing through Laclede, Dallas, Polk, Cedar and Vernon Counties.)

St. Louis, Salem \& Little Rock, from Cuba, Crawford County, south to the Arkansas State Line, passing through Crawford, Dent, Texas and Howell Counties.

Cairo, Arkansas \& Texas, former name Cairo \& Fulton, from Bird's Point, Mississippi County, southwest to the Arkansas State Line, passing through Mississippi, Scott, New Madrid, Stoddard and Butler Counties.
Burlington \& Southwestern, from its present terminus at La clede, Linn County, southwest through Chariton, Carroll and Ray Counties to Lexington, and from Lexington to Kansas City, through Lafayette and Jackson Counties. Also from Lexington, south through Lafayette, Cass, Bates, Vernon, Barton and Jasper Counties. This Company are also surveying a route from Unionville to St. Joseph, through Putnam, Mercer, Harrison, Davies s, DeKalb and Buchanan Counties.

# HISTORY. 

By N. H. PARKER, Author of "Missouri as It Is in 1867."

It is now about two centuries since a small band of Europeans and Canadians, from Quebec, led by Fathers Marquette and Joliet, reached the Mississippi River, at the mouth of the Wisconsin in 1673, and descended it to the mouth of the Arkansas. In 1668, La Salle navigated the Mississippi to the mouth, and in 1680 he sent Hennepin and Dugay to explore the Upper Mississippi, and in 1682 the Mississippi and Missouri Rivers were originally named.
On the 6th of March, 1683, La Salle took formal possession of the country he had partially explored, and named it "Louisiana." In 1705 the Missouri River was explored to the mouth of the Kansas River by the French, and the discoveries reported to their government. On the 14th of September, 1712 , Louisiana was granted by Louis XIV. to Crozart, who resigned the country to the Crown, August 22d, 1717, when it was transferred to "The Company of the West." In 1719 , Renault arrived from France with 200 skilled assayers, miners and artisans, in search of precious metals in Missouri and Illinois. On the 24th of January, 1731 , "The Company of the West" surrendered their charter to the King of France. At the conclusion of the Paris Treaty, November 3d, 1762 , Louisiana was ceded to Spain by France, and the Mississippi was made the line between the possessions of France and England. On the $15^{\text {th }}$ of February, 1764 , Pierre Laclede Liguest founded St. Louis, and his Lieutenant, Colonel August Chouteau, commenced the erection of buildings for the shelter of his workmen, using timber cut on the present site of the Merchant's Exchange. Early in March, 1764, Pierre Laclede Liguest having received a grant of land therefor, laid out the plan of the future town, and named it St. Louis, in honor of Louls XV., King of France. In April, r764, M. d'Abbadie, the Commandant General of Louisiana, received orders from his sovereign to proclaim to the people the surrender of all the French possessions west of the Mississippi to Spain. The people of St. Louis, when they received the news of the transfer (some months after it had been made) were highly exasperated, and declared they would not be separated from their mother country. M. D'AbBADIE, overwhelmed by the orders he had received, and aware of his inability to satisfy his people, died of grief. The state of the public feeling was so hostile to Spanish authority, that the transfer was not carried fully into execution until August 1 fth, 1768. About seven years after the transfer, Dun Alexander O'Reilly, who had been appointed Commandant General of Louisiana, arrived at New Orleans with about three thousand men to enforce his authority. Early in 1770, Lieutenant Governor Piernas, acting under O'Reilly, arrived in St. Louis, and received possession of the country from M. St. Ange de Bellerive, who had resigned Fort Chartres to Capt. Sterling, an English officer, and removed the garrison of forty soldiers to the new St. Louis Colony in 1765.
The United States authority in Missouri dates, nominally, from the treaty of 1803, actually from the 1oth day of March, 1804,
when Major Amos Stoddard, assumed the duties of Governor of Upper Louisiana, with all the authority of a Spanish commandant. On the 26th of March, 1804, Congress divided the province of Louisiana into two parts, by the thirty-third parallel of latitude, and placed the northern district under the domination of Indiana, then including Illinois. On the $3^{d}$ of March, 1805 , Congress changed the name of the District of Louisiana to the "Territory of Louisiana," appointing General James Wilkinson Governor of the Territory, whose administration commenced May 6, I806. He had associated with him, in the performance of his legislative duties, Hon. John B. C. Lucas and Return J. Meigs, Jr., Judge Joseph Browne, Secretary. The seven acts passed by them each bore the individual signatures of the parties named-the last act dated July 9 th, 1806 .

The purchase of Louisiana from France by the United States for fifteen millions of dollars had now become known through Europe and America, and was received as an important movement, and naturally attracted the eyes of the enterprising to the wide field spread before them. The fame of "Upper Louisiana," its productions and attractions and temperate climate, soon brought to St. Louis, as the most accessible point from which to explore its vast regions, great numbers of travelers, traders and adventurers, and among the latter class the celebrated Aaron Burr, who tendered his services to Governor Wilkinson, to whom he very indiscreetely unmasked his designs. Governor Wiluinson was ordered by President Jefferson to leave the Territory and keep strict watch over the movements of the ex-Vice President, Aaron Burr. The duties of the Governor then devolved on the Secretary, Hon. Joseph Browne.

On the 7 th of May, 1807, Hon. Frederick Bates was appointed Secretary, and acting with him was Hon. Отно Schrader, who had taken the place of Judge R. J. Meigs, Jr., resigned. Captain Merriweather Lewis and Lieutenant William Clarke, had started on the 14th of May, 1804, on an exploring expedition by the Missouri and Columbia Rivers to the Pacific Ocean. Messrs. Lewis and Clarke had returned from their exploring expedition, and taken up their residence in St. Louis, before the result of Governor Wilkinson investigations fully developed the designs of Aaron Burr. The country was filled with the fame of the explorers, and the appointment of Captain Merriweather Lewis as Governor, by the President early in 1807 , was hailed with universal approbation.

Governor Lewis died in the autumn of 1809, and President Madison appointed Benjamin Howard Governor, to fill the vacancy. Captain William Clarke, (of the exploring expedition) succeeded Benjamin Howard as Governor of the Territory. The name of Louisiana Territory was changed to that of "Missouri," which was then advanced to the second grade of government by an Act of Congress, approved June 4, 1812. The first Council consisted of nine members, and the House of thirteen.

## the earthquake of i8it.

This remarkable convulsion of nature, that seemed to shake the whole Mississippi Valley, occurred on the night of the irth of December, I8II, the central point, where it was most severe, being near the site of New Madrid. The citizens of the town were
aroused from their slumbers by a series of severe shocks that filled every living creature with consternation and horror. Vast chasms opened, from whence issued columns of water, steam, sand and coal, then closed, and the earth rocked to and fro, while flashes of electricity gleamed through the troubled clouds, rendering the darkness of night more terrific. Parties who were at New Madrid at the time, state that the whole land was moved and swayed like waves of the ocean, and that the largest oaks bent to the ground like reeds. The heaving of the earth had piled up an alluvial barrier in the channel of the Mississippi River below, that golled back a volume of its waters, and aflood was following in the desolating track of the earthquake. Every species of river craft-barks, keel-boats, etc., were swiftly swept to and fro; and as the river broke away the obstructions the rushing waters swept down the new made cascade with fearful rapidity. The shocks continued at intervals for several months, lessening in violence, but leaving lasting traces of their ruinous effects, such as stagnant lakes and ponds, where whole farms and sections had sunk several feet. Congress subsequently partially remunerated the sufferers by this appalling phenomenon, in grants of public lands, embracing some of the most valuable tracts in the State.

On the rst of October, 1816, Governor Howard, by proclamation reorganized the "districts," as heretofore called, into ceunties, viz: St. Charles, St. Lolfis, Ste. Genevieve, Cape Girardeau and New Madrid. The State was admitted to the Union in 1821, under the much discussed Missouri Compromise.

A history of the war in Missouri would be but a leaf in the history of the national struggle, and will not be expected in a work of this character. A brief notice, however, of the actions of the State in 186I, will not be out of place

Missouri was so deeply involved in the troubles in Kansas that the subject of the conflict between the North and the South was developed in this State almost at the very beginning of the movement. In alluding to this subject, and as expressing what he believed to be the true policy of the State, Governor R. M. Stewart, in his valedictory on the 3 d of January, 1861, said: "Our people would feel more sympathy with the movement had it not originated amongst those who, like ourselves, have suffered severe losses and constant annoyance from the interference and depredations of outsiders. Missouri will hold to the Union so long as it is worth the effort to preserve it. She cannot be frightened by the past unfriendly legislation of the North, or dragooned into secession by the restrictive legislation of the extreme South.'

Governor Jackson, his successor, in his inaugural, on the day following, insisted that Missouri must stand by the other slaveholding States, whatever course they might pursue. But the people were in favor of remaining in the Union so long as there was a hope of maintaining the guarantees of the Constitution. A convention was called to assemble at the Capital, February 28, 186r. The election of Union men as delegates, by a large majority, showed clearly that the public sentiment had unquestionably settled in hostility to secession, and in favor of a continuance of Mis souri within the Union. The Convention met, but failed to trans,act any business, and adjourned after a short and stormy session, to
meet at St. Louis March 4th. Here, by a vote of sixtr-three ayes to fifty-threee nays, after organization, the Convention consented to hear from Mr. Geenn, a Commissioner from the State of Georgia, who submitted the articles of secession adopted by his State, and earnestly urged Missouri to join the Southern Confederacy. A large number of citizens were present, in the lobby, who made demonstrations of displeasure and dissatisfaction, which the Chairman found it impossible to suppress. On the next day, a Committee from the Convention waited on Mr. Glenn, stating that
"Missouri emphatically declined to share the honors of secession." The Convention, on March 19 th, passed unanimously a resolution declaring that there was no cause for Missouri to dissolve her connection with the Union. Afterwards, the following resolution was adopted-yeas 86 , nays 6 . "That the Convention cherish an earnest desire to prevent civil war, and that this would be prometed by the withdrawal of the Federal troops from those forts where there is danger of collision, and that the Convention recommend this policy." After appointing seven delegates to the proposed Border State Convention, this body adjourned

In the Legislature, a resolution was passed, sixty-two to fortytwo, declaring it inexpedient for that body to take any steps for a National Convention to propose any amendments to the Constitution, thus dissenting from the recommendation of the State Convention. The Governor, in a message in April, declaring his policy to be in favor of peace, urged the President of the Convention not to convene that body for the consideration of a secession ordinance, and expressed himself in favor of retaining the present status of the State, leaving it to time and circumstances as they might arise to determine the best course for Missouri to pursue.

While the Military Bill was pending, the news of the surrender of Camp Jackson was announced in the Legislature,-a panic ensued, and the Military Bill was passed at once, creating a fund for arming and equipping the militia-appropriating all the money in the Treasury, as well as that to be received from the assessments for I $860-6 \pm$ and the proceeds of the moneys levied for other purposes, except a sufficiency to carry on the State Government and support its penal and benevolent institutions. The Governor was author ized to purchase arms and munitions of war. Every able-bodied man was made subject to military duty, and required by oath to obey only the Governor, who was made Commander-in-Chief.

The results of the war-the abolition of slavery, and the inauguration of increased prosperity to the whole country-are equally enjoyed by the participants on either side; and the officers and soldiers of both armies now work side by side, for the permanent peace and prosperity of the country and its institutions. Whatever of strife, antagonism or bitterness that may still exist between the citizens of the North and the South, is mainly agitated by those who were not actively engaged in either army.

As an incident of the war worthy of record, exhibiting the Christian sympathy, humanity and philanthropy of the people of Missouri, was the "Mississippi Valley Sanitary Fair," inaugurated and conducted so successfully that $\$ 625,000$ were realized for the benefit of the Sanitary Commission.

## Governors, and Members of Congress

FROM THE ADMISSION OF THE STATE UNTIL 1873.

Compiled from the Official Records, by Capt. CHARLES SCHACKEL, Chief Clerk in the office of the Secretary of State.


## EDUCATION.

## By HON. JOHN MONTEITH,

State Superintendent Missouri Public Schools.

The design of the present article is to give an outline of the educational means employed in the State of Missouri. The subject naturally divides itself into two parts: I. The Public School system. II. Particular institutions.
I. The Public system may be treated with respect to-

1. The main feature of its organization ;
2. The Officers of the system ;
3. The Public School fund.

## I.-THE MAIN FEATURES OF THE ORGANIZATION.

The various territorial divisions over which official responsibility extends, are the State, the county, and the township.
The State is divided into one hundred and fourteen counties; each county is divided into townships of six miles square, or fractional townships.
The organization of the school system recognizes the congressional township as the topographical and organic unit. The township is the school district. The township is further sub-divided into two or more sub-districts, each of which is supposed to contain a single school, unless the existence of more than fifteen colored children requires a special school for their benefit.

The township division into sub-districts is in some instances modified by the establishment of

## CENTRAL GRADED SCHOOLS,

in which case the sub-district schools are either consolidated, or are supplemented by a school with higher grades.

Another modification is effected by

## CITY AND TOWN organizations,

where one or more sub-districts, usually embraced in a populous village, join together and vote themselves into a special school district with special privileges, as provided by the law authorizing this change.
Most of our village, town and city graded schools are organized in this way. In some cases the school system of towns and cities is organized under special charters granted by the General Assembly, as e. g. the schools of St. Louis and St. Joseph.
There is nothing peculiar in the character or arrangement of either the town or country schools in the State. The power to establish and maintain them resides in the voting population within the school boundaries already described. By the organic law the State is committed to a comprehensive and impartial free school system. The Constitution says: "The General Assembly shall establish and maintain free schools for the gratuitous instruction of all persons in this State between the ages of five and twenty-one years." In regard to compulsory attendance the Constitution provides as follows: "The General Assembly shall have power to require by law that every child of sufficient mental and physical
ability shall attend the public schools during the period between the ages of five and eighteen years, for a time equivalent to sixteen months, unless educated by other means." The Constitution further provides that after the first day of January, 1876, every person who was not a qualified voter prior to that time, shall, in addition to the other qualifications required, be able to read and write in order to become a qualified voter.

Colored schools form a supplement to the school system as now arranged.

The law provides for the separate education of this class, by requiring the sub-district boards to establish a colored school when the number of colored children of school age within their jurisdiction exceeds fifteen. In case the children are scattered so as not to reach this number except by gathering the children from more than one sub-district, then it is the duty of the township board to act in the premises. In case the proper local authorities fail or refuse to do their duty in this respect, the State Superintendent has authority to levy a tax and otherwise to act in the place of the local boards.

The number of school sub-districts reported in 1871, is 7,048 for the whole State.
The entire school population upon which the apportionment of school moneys was based, March 31, 1872, is 667,557 . Of this number 37,173 are colored.

## II.-THE OFFICERS OF THE SYSTEM.

The officers of the Public School system of Missouri, corresponding to the topographical divisions already stated, are the State Superintendent of Public Schools, the County Superintendent, the Township Board, City and Town School Board, the Sub-District Board and the Teacher.

The supervision of the State is devolved upon the State Board of Education, composed of the State Superintendent of Public Schools, the Secretary of State, and the Attorney General.

The Executive Officer of this Board is the
STATE SUPERINTENDENT OF PUBLIC SCHOOLS,
who is elected by the people, at the general election, for a term of four years.

Through this officer are introduced such advanced measures, methods, and educational ideas as conspire to unify, and promote the growth and efficiency of the whole system.
His further duties are:
To render decisions affecting the local application of the school law;

To keep a record of all the school funds, and annually to distribute to the counties the income of the State school funds;

To supervise the work of County Superintendents;
To encourage and aid teacher's institutes, to deliver lectures, distribute educational information and visit schools, and to grant certificates of high qualifications;

To make an annual report to the General Assembly of the condition and necessities of the schools.

He is materially aided in all this labor by the Assistant Superintendent, who is appointed by the State Superintendent and confirmed by the Governor.

## THE COUNTY SUPERINTENDENT,

is elected by the people of his county for a term of two years. Under the direction of the State Superintendent, he supervises the school interests of the county in which he is elected.

He examines all teachers employed in the public schools of the county; visits the schools, holds institutes twice in each year, delivers lectures, gathers the annual reports of the township clerks, and makes an annual report to the State Superintendent.

His work is merely supplemented by the Clerk of the County Court in one particular, viz: the financial condition of school interests of the county.

THE TOWNSHIP BOARD,
is composed of the clerks of the several sub-district boards in a congressional township or fractional township. It is a body corporate, and its officers are a President and a Clerk, who also acts as Treasurer, and gives a bond for this purpose. The duties of the Township Board are-

To fix and alter sub-district boundaries;
To hold the property of the sub-districts as their trustees;
To prescribe rules and regulations and text books for the guidance of the schools under their care.

The Clerk of this Board is required to make an annual examination of the school population of his township, together with a list of taxable property, by sub-districts, and report the same to the County Clerk. He also receives and disburses all school moneys belonging to the various sub-districts in his township, except such as have failed to keep a three months' scnool during the year for which the distribution is made.

It is his duty to examine twice in each year the records of School Directors, and to deliver once in each year a report of the condition of the schools with which he is connected, to the County Superintendent.

## LOCAL DIRECTORS.

Each sub-district elects in April of each year at a meeting of the qualified voters of the sub-district, a board of three directors who hold their office for one year or until their successors are elected. These directors elect one of their number clerk, who becomes, ex-officio, a member of the township board.

It is the duty of the local directors to have immediate care of the school and schoal-house;

To employ teachers;
To keep an abstract of teacher's registers;
To enumerate the children in the sub-district ;
To erect a school house when necessary, returning an estimate therefor not exceeding two per cent. of the taxable property of the sub-district ;
To make and return to the Township Clerk an annual estimate for the current expenses of the school not exceeding one per cent. of the taxable property of the sub-district;

To report annually to the Township Clerk.
TEACHERS
are required to hold a certificate from the State Superintendent, or from the County Superintendent of the county in which they are engaged.

The State certificate is given only upon personal written examination of the applicant in the common branches, together with the higher branches and natural sciences, and entitles the holder to teach in any public school in the State.

The certificates given by County Superintendents are of two grades as to the qualifications they represent, and of two grades in respect to the length of time they cover.

The second grade certificate requires a knowledge of the common school branches, and runs either six months or one year. The first grade certificate, in addition to a knowledge of the common branches, requires proficiency in the higher branches, and may run for eighteen months or two years.

The legal school day in this State is six hours. The school month consists of four weeks of five days each, and the financial school year begins with the third Saturday in April.

## III.-PUBLIC SCHOOL FUNDS.

The means for the support of the public schools are derived from permanent State funds, from permanent county and township investments, and from direct taxation.

The Public Schonl Fund of the State has accumulated from the proceeds of the sale of public lands granted by the United States to this State, and from stocks, bonds, and other moneys transferred from time to time to the school endowment. The investment of these contributions has been made by the State Board of Education in bonds of the United States, the income of which; together with twenty-five per cent. of the State revenue, constitutes a yearly emolument, which is distributed to the schools by counties, upon the enumeration of the school children.

The school fund of the counties arises chiefly from the sale of "swamp and over-flowed lands" donated by the General Government to the State, amounting originally to $4,300,000$ acres, and patented to the counties for school purposes.

The sum realized from the sale of these lands and saved from waste, is something over four millions of dollars. This money has been. invested in real estate securities by the County Courts, and yields a yearly income, which is apportioned by the Clerk of the County Court with the other school moneys.

The township school fund has its source in a grant of land for school purposes by the General Government, amounting to about $\mathbf{i}, 200,000$ acres of land, consisting of section sixteen in each congressional township. The larger portion of these lands has been sold, and the proceeds have been invested by the County Courts, in trust, for the townships to which they belong. The annual income of the township fund is appropriated to the various townships according to their respective proprietary claims.

The support accruing from these funds is supplemented by direct taxation. In the spring of each year the local directors make an estimate covering the amount that will be needed to maintain their school during the year ensuing, including past indebtedness, and this estimate is forwarded, with a list of the taxable property, through the Township Clerk to the County Clerk, who extends the assessment upon the tax-books.

The maximum limit of taxation allowed is one per cent. Taxes are gathered and placed in the county treasury by the County Collector.

## EDUCATION.

SCHOOL STATISTICS.
The following statistics are taken from the Report of 1871 :


No. of sub-districts reported........................................ 7,048
No. of schools reported in 1871-white.... ............ 6,730


Teachers reported in 1871-white........................ 8,761
colored. .................. 55
8,816
Average monthly salary paid teachers.............................. $\$ 35.00$
Total teachers' wages paid........................... $\$ 887,019$
Building and other expenses......................862,030


School tax collected, $1870 .$. $\qquad$ School moneys received, 1871............................... 1,687,573

## PARTICULAR INSTITUTIONS

Foremost among the educational institutions of the State, not under the government of the Common School I.aw, stands the

## state university,

Situated at Columbia, in Boone County. It was established by an Act of the Legislature in 1839, upon an endowment previously made by Congress, in the form of two townships of land known as the "Seminary Lands." This endowment had grown by accumulation to the value of $\$ 100,000$, when the institution was founded.

The citizens of Booneville contributed the generous sum of $\$ 117,500$ as a bonus for the location of the University at Columbia. The first President was J. H. Lathrop, LL. D., elected in 1840. The present incumbent is Daniel Read, LL. D., elected in 1866. The supervision of the University is vested in a Board of twentytwo Curators, two from each Congressional District (under the old apportionment), four from the County of Boone, and seven from the State Board of Agriculture. They are appointed by the Governor and confirmed by the Senate. The duty of appointing the President, Professors and Tutors, devolves upon the Curators.

The University embraces at present, in its group of schools, besides the regular academic course, a Preparatory School, an Agricultural College, a College of Normal instruction, a School of Mines, and a Law School. All these Colleges are located at Columbia, except the School of Mines, which is established at Rolla, in Phelps County. The advantages of the University are extended to women on equal terms with men. All resident youth in the State, upon the payment of an entrance fee of ten dollars, are entitled to the benefits of the University, except in the strictly professional schools.

The following constitute the University Faculty and Instructors:
Daniel Read, L. L. D., President, Professor of Mental, Moral, and Political Philosophy. Joseph G. Norwoou, M. D., Professor of Natural Science and Natural Philosophy. Josfep Fickin, A. M., Professor of Mathematics, Mechanical Philosophy and Astronomy. E. L. Ripley, A. M., Principal of College of Normal Instruction. Edward H. Twininci, A. M., Professor of Latin Language and Literature. John M. Leonard, Ph. D., Professor of Greek Language and Literature. George C. Swarlow, A. M., M. D , Professor of Agriculture, Geology and Botany. Paul Schweitzer, Ph. D., Professor of Analytical and Applied Chemistry. James K. Hosmer, A. M., Professor of English Language and Literature. Hon. Philemon Bliss, Professor of Law. Hon. Boyle Gordon, Professor of Law. Major J. Wilson McMurray, U. S. A., Professor of Military Science and Tactics, and Civil Engineering. Hon. Samuel Treat, U. S. District Court, Lecturer on Admiralty and Maritime Law. Hon. Arnoid Krekel, U. S. District Court, Lecturer on the Jurisdiction of the Federal Courts. Mrs. C. A. Ripley and Miss L. Wylie, B. S., Assistants in Department of Normal and Preparatory Instruction. Chas. V. Riley, State Entomologist, Lecturer on Entomology. Professor George C. Swallow, Secretary of the Faculty. Professor J. G. Norworjd, Librarian.

NORMAL SCHOOLS.
Besides the College of Instruction in Teaching connected with the University, the State has established three schools for the training of teachers for our common schools. Two of these schools are created by a special Act of the Legislature dividing the State into two districts for this purpose, with the privilege of competitive bids for their location. These institutions have already been established according to law, and located respectively at Kirksville, Adair County, and Warrensburg, Johnson County. They are controlled by a Board of seven Regents, consisting of the State Board of Education and two gentlemen from each of the two Normal Districts, appointed by the Governor for a term of four years. The State has made an appropriation for the annual current expenses of the schools, amounting to $\$ 5,000$ each.

The other school for the training of teachers is the Lincoln Institute, located at Jefferson City, and attended exclusively by colored students. For the support of this school, the State appropriates an annuity of $\$ 5,000$.

The following are the Normal Regents :
First District-E. B. Neely, St. Joseph: W. G. Ferguson, Louisiana.

Second District-A. E. Zuendt, Jefferson City. J. R. Milner, Springfield.
State Board and Executive Committce-J. Monteıth, Superintendent Public Instruction. E. F. Weicel, Secretary of State. A. J. Baker, Attorney-General.

Officers of the Board-E. B. Neely, President. E. F. Weigel, Secretary. H. C. Fike (Warrensburg), Treasurer.

## the kirisville school,

Previously started as a private enterprise by Professor Baldwin, was adopted as a State Normal School January 2, 18j7. Kirksville is a thriving village of about 2,000 inhabitants, situated on the St. Louis, Kansas City \& Northern Railway, thirty miles north of Macon City. An elegant and imposing building has been erected for this School, at a cost to Adair County and the State of about

## EDUCATION.

$\$ 125,000$. Built in the Franco-Norman style, the edifice is one hundred and eighty feet in length, with a maximum width of ninety feet. It is two stories in height, and has a commodious basement and Mansard roof. Arranged with a large assembly room, twelve recitation rooms, separate apartments for library, apparatus, reception, music, and wardrobe, this building can accommodate seven hundred pupils. The grounds embrace fifteen acres, and are in every way adapted for a State Normal School. The present number of students of both sexes is upward of three hundred.
The following constitute the Faculty :
J. Baldwin, Principal, Science and Art of Teaching, and Mental and Moral Science. W. P. Nason, English Language and Literature. J. M. Greenwood, Mathematics, Natural Philosophy and Astronomy. S. M. Pickler, Elocution, Logic, Book-keeping and Mathematics. Miss Hattie Comings, Preceptress, Natural Science and Drawing. J. T. Smith, Chemistry, Geology, History. Miss Helen M. Halliburton, Geography, Language, Drawing. Miss Kate F. Rowland, Principal of Model School. Miss Mollie M. Bowen, Painting and German. Miss Mary F. Woodworth, Instrumental and Vocal Music.

Non-Resident Lecturers-Professor James Johonnot, Warrensburg. Philosophy of Education. Professor G. C. Swallow, Columbia, Agriculture. Judge B. G. Barrow, Macon City, Commercial Law and Politiçal Economy.
Assistant Teachers-Normal Students.

THE WARRENRBURG SCHOOL,
Was finally located and established August 10, 1872, although it has been in operation temporarily since April 27, 1871. With the settled location, and the reorganization of the Faculty, the School sets out upon a most promising and prosperous career

The building to be occupied in January 1873, is in the LombardVenetian style, one hundred and sixty feet long by eighty feet in width, four stories high, with basement and Mansard roof. This structure will cost about $\$ 200,000$. Its general arrangement is like that of the Kirksville building.

The following constitute the Faculty;
James Johonnot, Principal and Instructor in Principles and Methods of Teaching. L. H. Cheney, Vice-Principal and Instructor in History and Philosophy. Hermann Krusi, Instructor in Mathematics. Lucy J. Maltby, Instructor in Language and Literature. Emma Dickerman, Instructor in Natural Science and Graphics (including Penmanship and Drawing).
The sphere and object of these Schools is set forth in the following words, taken from the prospectus of the South Missouri, or Warrensburg School :
"The great object of all Normal instruction is to give teachers a training that will make them intelligent and successsul in their professional work. It includes a knowledge of the branches taught, of the methods of teaching, and of the principles which
underlie methods. In the organization and administration of the Warrensburg School, these objects will be kept constantly in view, and every other consideration will be subordinated to their accomplishment. Pupils not prepared in the branches of science will first receive thorough and systematic instruction, for the purpose of giving them a broad basis of culture, which will enlarge their mental capacity, and will be of use in their future work. Instruction in each of the branches of science will be accompanied by the presentation and discussion of methods of teaching, so that students graduating from any study, will know the facts concerning it, the order in which they are arranged, the manner of presenting the subject, and the reasons why one method of presentation is better than another.
"The principles of teaching will form the basis of the strictly professional course. In this course the laws of psychology will be objectively developed, and then applied to instruction. General methods, in harmony with these laws, will be devised, so that all systems of teaching may be founded upon intelligence. Special attention will be given to the natural order in the development of the mental faculties, to the methods of instruction best adapted to this order, and to the arrangement of the branches of instruction in conformity to the laws of mental growth. Intelligence, in regard to these particulars, will be considered of vital importance as tending, in the highest degree, to utilize mental effort, and to diminish waste.
" The course of study will be ample for the double purpose of arousing and training the faculties of the mind, and of affording that knowledge which is of the greatest practical use. As the school has a specific object, and is limited by this object, no attempt will be made to rival the University in the extent and variety of the instruction given."

THE LINCOLN INSTITUTE,
Originated, as a school for the education of colored people, with the Sixty-second Regiment United States Colored Infantry, while in Texas, January 1866. The regiment contributed $\$ 5,000$ to the object. The Sixty-fifth Regiment subsequently increased this amount by the sum of $\$ 1,379$.
The Board of Trustees was organized June 25th, 1866, and the School was opened on the $17^{\text {th }}$ of September following. Although under the immediate management of a special Board of Trustees, the appropriation made by the State places the School under the general supervision of the State Board of Education. The Bill constituting the Lincoln Institute a State Normal School for the training of colored teachers, was approved February 14th, 1870. The building for the accommodation of the School was occupied in June 1871. It is a neat, substantial brick structure, sixty by seventy feet, three stories high, with basement.

The number of students in attendance is upward of one hundred. The following constitute the Board of Instructors:
M. Henry Smith, A. M., Principal. Miss Alice M. Gordon, First Assistant. Miss Matilda Blackmar, Assistant.

## PublicSchoolSysteminSt．Louis．

By W．T．HARRIS， Superintendent St．Louis Public Schools．

Not less rapid than the growth of the city has been the system of Public Education．Indeed for some time past there has been a decided gain in the percentage of the population attending school． This increase may be seen by comparison of the present status with that of thirty years ago．The statistics of public and private schools，and of the population at the close of each decade，com－ mencing with 1831，is as follows：

| Years． | Population． | Enrolled in Public Schools． | Estimated Enrollment in Private Schools． | $\begin{gathered} \text { Per cent. } \\ \text { of entire } \\ \text { Population } \\ \text { in Schools. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| 1841 | 20，826 | 350 | 700 | 5 |
| 1851 | 83，439 | 2，427 | 2，300 | 6 |
| 1861 | 163，783 | 13，380 | 7，800 | 13 |
| 1871 | 325，000 | 31，087 | 17，500 | 15 |

Facilities of education are of three kinds：1st．The Public School System；2d．The Parochial Schools and Colleges；3d．The Schools and Colleges founded by private enterprise．In each direc－ tion the development has been very rapid during the past five years．The Public School System has provided for its annual increase by the erection of three or more buildings，each accommodating 700 pupils．These buildings are supplied with all the modern improvements，and are neat and tasteful in their con－ struction．Different religious organizations have been veryactive from the beginning in providing means of education．Several very fine structures have been erected during the present year （1871－72）by the Catholic Church，exclusively for schools purposes．

The matter of education has received the most careful attention of late years on the part of all classes of society，and the conviction is general that material prosperity is indissolubly connected with the fostering of intelligence by the establishment of free schools．
As far back as 1812 ，Congress passed an act setting apart certain vacant lands in the Territory of Missouri，situated in or adjoining

St．Louis，St．Charles，and other settlements，for the support of schools in those＂towns and villages．＂Other acts amendatory and supplementary to this were passed in 1824 and 1831．Out of these grants a large school fund has accumulated for St．Louis； amounting to upward of $\$ 2,000,000$ ．Adding to this the value of property in use for school purposes，we have a total of $\$ 3,500,000$ permanent investment for the city schools，which are under the management of the corporate body known as the＂Board of President and Directors of Public Schools in St．Louis．＂This Board has not only the sole and exclusive control of the public schools and the school fund，but it possesses also the power of levy－ ing and collecting a city tax not exceeding one－half of one per cent．With these ample means at its disposal，it has built up a magnificent system of schools，furnishing free education to the youth of the city in all the branches required，from the lowest primary grades up to the finished education for the men of busi－ ness．In all they number over fifty schools，including a central High School，four Branch High Schools，one Normal School for the training of female teachers，six schools for colored children，and forty－three district schools．In most of the schools German is taught by competent teachers，so that pupils of German parentage may attend the public schools without the danger of losing the knowledge of their native tongue while they acquire the English．
A flourishing Public School Library，containing upward of twenty－eight thousand volumes，is a novel feature in the system， but is a great practical success．Not merely the how to study is to be taught in this School System；but the what to study．The result proves that pupils become attached to the Library during their con－ nection with the schools，and in after life they continue their mem－ bership in it，and thus make their education perpetual．

A system of Evening Schools commences operations in the month of October，and holds a session of four months，four eve－ nings each week．In connection with this is the O＇Fallon Poly－ technic Institute，in which are taught the elementary studies of a Polytechnic education．These schools are free to all engaged in useful employments during the day．Over 4，000 youth and adults of both sexes availed themselves of the privileges of these schools during the winter of $1871-2$ ．Those who were regular in attendance were awarded free memberships in the Public School Library．

The following is a Table of Historical Statistics exhibiting the development of the St．Louis Schools for the past fifteen years：

|  |  |  |  |  |  |  |  |  |  |  | Avelage Cost per Scholar． |  |  |  |  |  |  | EXPENDITURES． |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year． | 高 | 㡙 | $\stackrel{\text { İ }}{\substack{\text { B }}}$ |  |  |  |  |  |  |  | 高 | $\begin{array}{\|l\|l} \text { 总 } \\ \text { 喜 } \\ \hline \end{array}$ | $\begin{aligned} & \text { 志 } \\ & \text { R } \end{aligned}$ |  |  |  |  |  |  |  |  |
|  |  |  |  | $\begin{array}{r} 5,814 \\ 6,253 \\ 7,5756 \\ 8,716 \\ 3,64 \\ 5,688 \\ 8,229 \\ 9,871 \\ 10,454 \\ 11,641 \\ 13,972 \\ 15,282 \\ 18,08 \\ 19,884 \\ 22,0 x 0 \end{array}$ |  | $\begin{aligned} & 92 \\ & 92 \\ & 98 \\ & 92 \\ & 93 \\ & 98 \\ & 9 x \\ & 90 \\ & 90 \\ & 93 \\ & 93 \\ & 93 \\ & 92 \\ & 93 \\ & 93 \end{aligned}$ | $\begin{aligned} & 55 \\ & 56 \\ & 56 \\ & 58 \\ & 58 \\ & 58 \\ & 57 \\ & 58 \\ & 68 \\ & 66 \\ & 64 \\ & 67 \\ & 67 \\ & 67 \end{aligned}$ | $\begin{aligned} & 47 \\ & 45 \\ & 45 \\ & 45 \\ & 48 \\ & \hline 48 \\ & \hline 8 \\ & 48 \\ & 48 \\ & 47 \\ & 47 \\ & 46 \\ & 48 \\ & 48 \\ & \hline 6 \\ & \hline 6 \end{aligned}$ |  |  |  |  |  | 23 <br> 23 <br> 23 <br> 22 <br> 22 <br> 21 <br> 28 <br> 28 <br> 28 <br> 28 <br> 26 <br> 27 <br> 27 <br> 38 <br> 34 <br> 49 <br> 49 | $\begin{gathered} 10 \\ 3 \\ 2 \\ 2 \\ 2 \\ 1 \\ \cdots \\ \cdots \\ 1 \\ 5 \\ 5 \\ 10 \\ \hline 15 \\ 10 \\ 7 \\ \hline \end{gathered}$ |  |  |  |  |  |  |

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## AGRICULTURE.

## By Hon. J. F. WIELANDY,

Secretary of the Missouri State Board of Agriculture.

According to the theory of geologists, the physiography of Missouri is of volcanic formation, and bears the appearance of an eruptive upheaval from the great sedimentary basin of the Mississippi Valley, the whole area of the country being intersected by a vast and complex net-work of large rivers, smaller streams and their tributaries; with ridges and chains of hills projecting here and there above the general surface level.

The channels worn by these various streams and rivers, constitute one of the most important features in the physical structure of the State, presenting as they do, vast alluvial deposits of almost inexhaustible fertility, adapted to the growth of corn and nearly every other species of crop suited to our latitude, without necessitating the appliance of manures and other fertilizers. Besides the broader and deeper valleys, found wherever watercourses occur, the configuration of the country, especially in the Center and Southeast, is hilly and broken, and not seldom intersected by ravines and precipitous gorges, which add to the picturesque effect of the landscape, but render a considerable proportion of the land unfit for cultivation. But by a wonderful compensation of Providence, the more sterile and barren sections abound in the valuable and useful ores and minerals that have gained for Missouri, a prominent place among the nations and regions of the earth famous for their metalliferous wealth.

Our State contains all, or nearly all the elemental classes of soils known to agricultural writers. Argillaceous, calcareous and siliceous soils, arenaceous and alluvial loams, are represented by turns in the different geological formations of the State, often blended with each other in such minute gradations as to make it a task of some difficulty to classify them without precedent analysis. All these soils are characterized by an abundance of live spring water, and a spontaneous growth of natural grasses and forest trees.

For the purposes of agricultural definition, Missouri may practically be subdivided into two principal and distinct regions: the first embracing the timbered, and the second the prairie districts of the State. A transverse line drawn from Northeast to Southwest will serve to show that the area lying west of the line consists principally of prairie, while the portion east of the line consists mainly of timber. For a general definition, this imaginary line of separation will answer sufficiently, although numerous exceptions occur, the timbered sections being frequently found interspersed with scattering prairies of greater or less extent, while lines of forest trees invariably skirt the streams that flow through the prairies.

Timber. - The preservation of forests is a question of vital importance to the people of our State. The prospective scarcity and high price of timber that must inevitably result from the thoughtless waste and destruction of our forests, now so universally practiced, demand the attention of intelligent and patriotic men. It is safe to estimate that nearly one-half of the full-grown timber of Missouri has been destroyed within the last thirty years. When it is remembered that wood is an article of constant daily consumption. positively indispensable to nearly every use and appliance of
modern civilization ; that railroads require millions of ties annually for purposes of construction as well as reparation, while immense quantities of the most valuable trees are wasted yearly to keep up the ruinous and inefficient system of fencing now in force in most of Western States; when we reflect further that this wholesale destruction is likely to increase from year to year in the future, we may well be appalled at the impending total annihilation of so important and essential an element of national prosperity. This subject certainly affords a wide scope for preventive and protective legislation.
No description is adequate to portray the beauty and magnificent grandeur of our native forests, in those few favored spots yet untouched by the leveling axe of the ever-advancing pioneer. In the rich warm soils of the river bottoms, especially in the Southeastern part of the State, walnut trees no feet high and 22 feet in circumference, oak trees 125 feet high and 20 feet in circumference, and sycamores 130 feet high and 12 feet in diameter, are recorded from actual measurement. From the lofty boughs of these tall monarchs of the forest, the wild grape, the trumpet flower, the scarlet-flowered tecoma radicans, the ampelopsis quinquefolia, and many other winding shrubs hang down in graceful festoons, while antlered deer browse among their shady recesses, and nimble squirrels skip from branch to branch in search of acorns and nuts.
In many places within the State, various species of wood adapted to the mechanic arts are still found growing in great abundance. Ash, walnut, birch, cherry, populus Canadensis or cotton wood, cedar, cypress, several varieties of oak, hickory and maple, mulberry, beech, chesnut, elm, locust, coffee tree, catalpa, tulip tree, and many other useful trees and shrubs, grow on the uplands as well as in the valleys. Vast groves of yellow pine cover several counties in the South and Southeast, a portion of these pine lands being still held by Government and subject to entry.

Prairies.-The undulating and fertile prairies extending over the greater part of Western Missouri, produce luxuriant crops of natural grasses equaling the cultivated varieties in nutritious properties. In spring and early summer, these beautiful prairies, studded over with multitudes of flowers of variegated shapes and gaudy hues, disclose a view of enchanting loveliness to one who beholds the scene for the first time. The predominant colors seem to be various shades of yellow; but unlike the wild flowers of Europe, the native species of our prairies seldom exhale much fragrance. The surface of prairies in Missouri does not exhibit the dreary and level uniformity that characterizes certain of our neighboring 'States; on the contrary, the aspect of the landscape is rolling, and undulated with successive lines of wavy ridges and irregularly-shaped mounds. Now and then a meandering stream skirted with an irregular growth of forest trees, diversifies the scenery and adds to its picturesque effect. Numerous herds of cattle and horses dot the prairies on every side, and roam at will among the young and luscious herbage that mats the earth with a thick grassy carpet. Their sleek coats, and shapely, well rounded forms, bear witness to the nutritious qualities of the prairie grasses, which are considered by the settlers as hardly inferior to blue grass for pastures, or to timothy and clover for hay. In some of the Southern counties, especially in the great overflowed swamp region of the Southeast, cane-brakes cover extensive stretches of land. The cane is an evergreen species of reed, and its dense foliage affords shelter and food for stock, as well as numerous wild animals during the entire year.

With the exception of some uncultivable spots of unimportant extent and size, the vast area of arenaceous loamy soil comprised within the limits of the prairie regions of Missouri is tillable, and susceptible of profitable culture.

Game, Birds, and Animals. - In times past, the various wild animals known to the American fauna abounded in the forests and prairies, and even at present deer, wild turkeys, pheasants or ruffed grouse, partridges, wild pigeons and squirrels, are found in considerable numbers in some parts of the State. Formerly, great flocks of prairie hens, or pinnated grouse, inhabited the prairies, while countless multitudes of wild ducks, geese, swans, snipe, plovers, and other water fowl, hovered over the lakes and swamps that border the sinuous channels of the principal rivers; but they are fast waning in numbers. Although reduced by reckless pursuit, many varieties of fish esteemed for their economical and culinary value, inhabit the streams. The black bass (Grystes fasciatus), the buffalo perch (Haploidonotus grunniens), several species of "cat fishes or Silurids, of pickerels, of Percids or perches, and other kinds of smaller size and less importance for food, still abound in some rivers.

No legal enactment exists in Missouri for the protection of game and fissh, and these animals appear doomed to speedy extermination and ultimate extinction.

Crop Statistics.-According to the census of $\mathbf{1 8 7 0}$, the number of acres in cultivation in Missouri was $9,130,615$; the number of farms, 149,065 , with an estimated cash value of $\$ 392,908,047$; and the value of farming implements and machinery, $\$ 15,596,426$.

The following synoptic table, taken from the report of the Statistician of the Department of Agriculture, shows the product of the principal crops grown in Missouri. The statistical estimates herein contained are mainly based upon the census returns of 1870:

| PRODUCE. | Amount of of $18 \%$ | $\begin{array}{\|l\|l\|} \hline \\ \text { Average } \\ \text { yeld crer } \end{array}$ | No of Acres each crop. | $\begin{aligned} & \text { Value per } \\ & \text { bush } \\ & \text { ton orpor } \end{aligned}$ | $\begin{gathered} \text { Total } \\ \text { Valuation. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Indian Corn..bush. | 24,990,000 | 31.4 | 3,025,159 | 44 | 41,795,600 |
| Wheat,........do | 6,750,000 | 13 | 519,230 | 91 | 6,142,500 |
| Rye, ...........do | 299,000 | 15.6 | 19,166 | 68 | 203,320 |
| Oats, ... .. .....do | 5,525,000 | 25 | 221,000 | 37 | 2,044,250 |
| Barley,...... . .do | 285,000 | 26.4 | 10,795 | 84 | 239,400 |
| Buckwheat, ...do | 84,000 | 23.6 | 3.559 | 67 | 56,280 |
| Potatoes......do | 2,200,000 | 103 | 21,359 | 56 | 1,232,000 |
| Tobacco,.. pounds | 19,610,000 | 750 | 26,146 | 09.3 | 1,823,730 |
| Hay, ......... tons | 532,000 | 1.29 | 412,403 | 1282 | 6,820,240 |
| Total |  |  | 4,258,817 |  | 60,357,320 |

The estimated total number and total value of each kind of live stock, and the average price in February 1871, were as follows:

| animals. | Number. | Average Price. | Value. |
| :---: | :---: | :---: | :---: |
| Horses. | 483,000 | \$63.6r | \$30,723,630 |
| Mules. | 83,400 | 83.43 | 6,958,062 |
| Milch Cows.. | 371,200 | 31.92 | 11,848,704 |
| Oxen and other Cattle.. | 731,100 | 24.46 | 17,882,706 |
| Sheep. | 1,578,200 | 1.61 | 2,540,902 |
| Hogs....................... | 2,200,000 | 4.34 | 9,548,000 |
| Total. | , |  | 879,502,004 |

Corn-Maize or Indian Corn-Zea Mays, L., Is the noblestlooking of our cereal grasses. It is considered to be a native of South America, to have been cultivated in Mexico and Peru from time immemorial, and to have been introduced in Europe about the beginning of the sixteenth century. It is at present grown in almost every part of the universe possessing a summer temperature sufficiently elevated to insure its maturation. Of the cultivated cerealia, indeed, it is that which, next to rice, furnishes food for the greater number of the human race; and it may be held to be the most valuable gift of the new world to the old.
The Zea Curagua, or Valparaiso corn, another botanical species with distinct grain-spikes and inflorescence, is not cultivated in the United States.
Like other plants which have been long in cultivation in various countries, there are numerous sub-species of the maize which generally cross readily. The varieties seemingly best adapted to the fertile soils and warm, semi-tropical summers of Central and Southern Missouri belong to the Dent, or Gourd-seed species. In the counties bordering on the Iowa line the flint varieties, distinguished by a hard, glassy grain, and a tendency to stool or tiller, are often planted on account of their greater aptitude for early maturity.

As the agricultural reports show, corn far exceeds in value the aggregate of all the other staples grown within our State. A deficiency in the corn crop influences the price of beef, pork, butter, and, indirectly, the price of all other breadstuffs. While most sensitive to meteorological influences, it is yet one of the surest of crops, and a total failure of this staple is almost beyond the range of possibility. No crop is so easily saved, or so little liable to damage in the hands of the farmer.
The semi-tropical temperature of our summers, points to Indian Corn as the great staple of the Valley of the Mississippi. A good, arable soil, adapted to the growth of wheat, tobacco and potatoes, like most of the arenaceous and clay-loams that overlay the surface of our prairies and hill-sides, scarcely ever fails to produce an average crep of maize in ordinary seasons. But in order to admire the majestic proportions attained by this noble plant in fertile soils and a congenial climate, it must be viewed as it grows in the deep porous alluvium of the bottoms of our Western rivers, with its millions of stalks waving their feathery plumage and pendent tassels, in the gleaming, glittering radiance of a July sun. The labor of a few months sends up great shoots twelve to fifteen feet in height, while the roots expand to a distance of a score of yards, and the seed ripens more than a thousand-fold.

According to the reports of the Department of Agriculture, the average production of corn in Missouri is about 31.5 bushels per acre. Although not accurate, these figures are probably sufficiently correct for the purpose of practical comparison, and furnish an eloquent argument in favor of better agriculture. To produce the large crops they can and ought to be made to yield, our lands need deeper plowing, more thorough cultivation, and the appliance of fertilizers and manures wherever it is practicable.

In the great corn districts of our State, this grain is usually fed to neat stock in the open field, cut up with the fodder, or simply husked as it comes from the crib. Pigs are turned in to pick up the waste, and nothing done, except to select a dry, sheltered situation, where the animals can have free access to water. To Eastern
farmers this may look like a primitive or even a wasteful practice, but it saves labor, as well as a great outlay of capital, and has thus far proved more remunerative to Western stock-growers than stallfattening. The superior quality of Missouri beef and pork is easily traced to this mode of feeding, which affords to animals the pure air and exercise they lack when pent up in close stalls.

Wheat-Triticum, $L$. Of what country wheat is a native is totally unknown; it has been supposed indigenous to Asia and Africa, and probably it is more likely to belong to these parts of the world than any other, but all that can be advanced on this subject is conjecture.

While second on the list among the productions of our State in point of value, wheat stands confessedly at the head in importance as an article of human food; it deserves this distinction as being the origin of our daily bread,-the source from which the chief aliment of millions is derived. The flour made from it contains more gluten, and is more nutritious than that derived from corn, rye, or any other of the cultivated cereals. Although sometimes unremunerative like other crops and branches of business, and subject to smut, rust and other diseases, as well as to perils from insects, wheat, from its simple and easy culture, and its ready sale in the market, must be profitable as a leading crop, as long as people prefer wheat bread to any other.

Except in a few of the northernmost counties, spring wheat is but little grown in the State, and its culture is not extending perceptibly. Spring wheat, in our climate, is apt to suffer from the effects of hot weather and midsummer drouth, as well as from rust, causing a shrinking and shriveling of the grain while in the milk, and often superinducing a total failure of the crop. Owing to the snowless winters on our wide, bare plains, and to the loose, arenaceous nature of the soil, wheat is easily winter-killed in the prairies, and seems better suited to the loess and clay-loams found on the ridges extending over the central and southern portions of the State. There is probably no soil in the United States that is better adapted te the cultivation of this cereal, or superior to the white oak ridges that adjoin the Mississippi and Missouri bluffs in St. Charles county, for the production of the best quality of winter wheat. By pursuing a regular and rational system of rotation, breaking up the soil to a greater depth, and by bringing the drill into general requisition, the average yield of our wheat fields can be greatly increased. The drill not only saves seed, but deposits the grain equally and uniformly at any depth wanted, protecting the roots from disintegration by alternate frosts and snows, instead of laying them bare, - a consideration of importance on light sandy lands and thin cold clays, which tend to throw out the plants.

The principal diseases incident to wheat are smut and rust. Smut, a fungoid distemper by which the grain and even part of the husk is converted into a black, soot-like powder, can be prevented by steeping the grain before sowing, in a weak solution of sulphate of iron, or green vitriol. This remedy has been employed for many years with unvarying success in various parts of Europe. Rust is a much more destructive disease than smut, and as it is probably occasioned by a peculiar state of the atmosphere during the periods of flowering and ripening, it is likely to baffle all attempts at prevention. A selection of early ripening varieties, and, when
the ravages of the Hessian fly are not feared, early seeding in autumn, lessen the tendency of wheat to rust, especially in dry, cool seasons, when this disease usually does but little damage.

Oats-Avena Sativa, L. The oat is a very useful grain for horse food, and is grown in all parts of Missouri, though more peculiarly adapted to latitudes north of this State. Its native country is unknown, unless the wild oat of Europe be considered the parent species, which is highly probable. Of all the gramineous plants this is the easiest of culture, growing in any soil that admits of plowing and harrowing. The most tenacious clays, and barren gravels and sands, where no other cerealia would succeed, will produce a crop of oats if plowed at a proper season, and the seed judiciously sown and covered; but on account of a propensity to blow down and lodge, oats are not adapted to very rich land. The mode of sowing oats is almost universally broadcast, although the drill could be used to advantage in most instances. Northern oats are superior to our own in yield and quality, and a frequent importation of seed from the North, as well as autumn preparation of the soil, and early sowing in spring, will be found beneficial. In our dry, warm climate, the grain seldom becomes plump, and is apt to be thick-husked and unproductive in meal. Commercially, the oat crop is not one of much importance, its principal use being to follow corn and precede wheat in a rotation of crops.
Rye-Secale cereale, L. Is but seldom grown in Missouri except for spring pasture, for which purpose it is admirably adapted. It makes an excellent bread, preferred by many to wheat bread, and is more common than wheat in many parts of the continent of Europe, being a more certain crop, and one which requires less culture and manure. It is subject to a peculiar disease called ergot, probably due to a fungus, which although not absolutely confined to rye, is very seldom found on any other graminaceous plant. Ergot finds a place in the materia medica.

Barley-Hordeum, L. . This grain has been cultivated from earliest antiquity, and was much in use among the Romans, both as food for soldiers and for horses. Barley is exacting in the selection of soil, and requires a sheltered location, with a rich, moderately light loam, finely pulverized. It does not succeed on soft, sandy soils, nor on strong clays. Winter barley, the only species grown to any extent in Missouri, is a tender grain, easily hurt in any of the stages of its growth, and subject to frequent winter-killing; and while the crop is sometimes a profitable one to grow, the difficulty and even danger attendant on the harvesting and threshing of this grain, all unite to detract from its popularity. The berry of barley produced in our latitude is not as plump or bright in color as that grown further North or in Europe, and the latter is now preferred by brewers;

Tobacco-Nicotiana, L. The variety of tobacco almost everywhere cultivated in America, is the $N$. Tabacum, an annual, and a native of Mexico or the West Indies. It belongs to the genus Solanacea, a family of plants comprehending the potato, tomato, datura stramonium or thorn apple, and several other well known esculents and weeds, some of which are deadly poisons.
The report of the Statistician of the Department of Agriculture for the year 1870 demonstrates the fact that Missouri, with an
aggregate production of $21,100,000^{\circ}$ pounds, occupies the sixth rank among the tobacco-growing States of the Union, and that only five States, viz: Kentucky, Virginia, Tennessee, North Carolina and Ohio, produce this valuable commercial staple in larger quantities than we do. From the figures above quoted it appears that although civil war has exerted a depressing influence upon tobacco culture, and although it shows a comparative decline during the last ten years, it still forms one of our most important agricultural interests. Missouri tobacco enjoys a high.reputation for excellence, and it admits of no doubt that our State includes within its borders the finest tobacco region in the Union, and that it is susceptible of producing a quality of tobacco equal, if not superior, to any other grown for home consumption or exportation. The counties of Franklin, Chariton, Pike, and Callaway, generally carry off the prizes at the yearly Fairs held in St. Louis, and the merchants who compose the St. Louis Tobacco Association, under whose auspices these annual exhibitions are held, are doing much by their intelligent liberality to promote tobacco culture in Missouri.

Hemp-Cannabis Sativa, L. About thirty years ago, hemp began to receive extensive attention in Missouri, and soon became a leading crop in Saline, Lafayette, and other river counties west of the Center of the State. The maximum crop was attained shortly previous to the war, when the annual yield amounted to nearly 92,000 bales or 17,000 tons. But the revolution in the system of labor resulting from the aboiition of slavery, induced many planters to neglect hemp, and ultimately to abandon its cultivation altogether. It is but little grown at present in any part of the State.

Flax-Linum Usitatissimum, Lo, an oil and textile plant of considerable value and importance, has never received the attention its merits. It was formerly, and is probably yet cultivated to some extent in Clark and other counties in the Northeast, and in some of the interior river counties of the State, but the amount of seed raised has never been sufficient to supply the requirements of our large oil mills, while the straw has been almost wholly neglected and destroyed. The different plants of the natural iamily to which flax belongs, are generally remarkable for the tenacity of their fibre, the elegance of their forms, the beauty of their red, white and blue flowers, and the emollient and demulcent properties of their oleaginous seeds. All of this family are beautiful plants.

The Castor Bean-Ricinus Communis, L. Castor oil, like every other merchantable commodity of limited consumption, is subject to frequent fluctuations in the market, which have a tendency to discourage the producer. The plant is sensitive to frost, and its culture as a field crop has been hitherto mainly confined to New Madrid, Mississippi, and a few surrounding counties in the south-eastern part of the State. Owing to the low prices prevailing lately, it is questionable whether the cultivation of this oleiferous plant has not received a check for years to come. The oil is now used to a limited extent in machinery and manufactures, and the discovery of new applications to the mechanic arts may increase the demand and stimulate production. When uninjured by insects or frost, and with falr market prices, it is a profitable crop to grow, averaging not unfrequently from fifteen to twenty-five bushels per acre.

Cotton-Gossyprium. This textile plant was named by Pliny from the Arabic, and appears to be indigenous to both hemispheres. Columbus found cotton growing wild in Hispaniola, and Herodotus, the earliest historian who makes a mention of it, describes it as a wool-bearing tree in India, "which has for its fruit fleeces more delicate and beautiful than wool." Cotton belongs to the family of the Malvacece or Mallows, and the only two species cultivated in the United States are, G. Herbaccum, common or upland cotton, and G. Barbadense, the celebrated Sea Island cotton.
It is an axiom of agronomy that, in every branch of agricultural production, the profits must be made to depend on general and local conditions of climate and soil. Missouri being situated chiefly north of the isothermal cotton belt of the United States, our mean summer temperature is too low, and our growing seasons except in a few districts bordering on Arkansas, are too short to make cotton culture profitable as a general crop. But if Missouri lacks the semi tropical climate essential to the existence of this "child of the sun," our commercial metropolis, thanks to the energy and enterprise of the merchants of St. Louis, is rapidly gaining a position among the important cotton marts of the country. The receipts of cotton in that city during the year 1871 amounted to 41,572 bales, against 11,372 bales in 1870. This unexpected and most gratifying result is due, in a great measure, to the commendable perseverance and liberality of the President and Directors of the St. Louis Agricultural and Mechanical Association. At the Fair of 1871, the greatest agricultural and industrial exhibition of its kind held as yet in the United States, premiums amounting in the aggregate to the large sum of ten thousand dollars were offered by the Association for cotton alone, and the consequence was a spirited competition from nearly all the Southern States. The collective number of entries reached 516 bales, of which 71 were from Southern Missouri, the latter comprising some very fine samples of short staple. The highest prize for Missouri cotton was awarded to Dunklin County. The principal cotton-growing counties of Missouri, according to the Ninth Census, are, Stoddard, with 487 bales; Scott with I64, and Pemiscot with 136 bales; while some thirty counties produce quantities ranging from one to ninety bales. These facts show quite satisfactorily that, while Missouri cannot hope to rank among the leading Cotton States of the Union, and while this great king of textile plants must, in a measure, ever remain more or less exotic to our latitude,-its cultivation can be made sufficiently remunerative to augment perceptibly with progressing years.
Hay and Pastures. Missouri is well adapted to the growth of the grasses, and many different varieties are disseminated over every part of the State. Native species, perhaps co-existent with the earliest races of aborigines, spring up on the hills, on the plains, and in the valleys by the water courses; fulfilling an important function in the vegetable economy of nature. During the past ten years, the total amount of the hay crop has largely increased, although it is doubtful if the average production has advanced. The medial estimate does not, in all likelihood, exceed one ton per acre; whilst with proper care, much larger crops could be obtained. Timothy-Phleum pratense, is the best known, most highly esteemed, and most extensively cultivated among our forage grasses ; it makes a somewhat coarse, but valuable and nutritious
hay. Orchard Grass, Red Top, Millet, and Hungarian Grass are all cultivated to some extent. Red Clover is much less cultivated than it should be; its general introduction, if it ever takes place, will be one of the greatest improvements in the agriculture of our State. Good pasturage abounds everywhere. On the farm of the Hon. J. W. Harris, near Rocheport in Boone county, which has recently received the prize offered by the State Board of Agriculture for the best stock-farm in the State, and in many adjoining localities, Blue Grass fields are found equaling in luxuriance the famous pasture grounds of Kentucky. The White Clover-T. repens, often claims a place in blue grass pastures.

The manufacture of Butter and Cheese is increasing rapidly. At the St. Louis Fair of $\mathbf{1 8 7 2}$, a premium was awarded for an immense cheese weighing one thousand pounds, manufactured in Worth County. The last Census computes-perhaps somewhat at random -the annual production of butter in Missouri at $14,455,825$ pounds, and the production of cheese at 204,090 pounds.

The Potato-Solanum Tuberosum, L. This valuable esculent is ascertained to be a native of South America, and was first brought to Europe by colonists sent out by Sir Walter Raleigh, when they returned from Virginia to England in 1 g86. As a healthy and nourishing article of human food, potatoes are inferior to no other edible plant grown, and their great productivity renders them of invaluable use to many desely populated countries. It admits of demonstration that an acre of potatoes will feed double the number that can be fed from an acre of wheat and corn. The varieties of the potato are innumerable, and old sorts formerly esteemed in our markets, are constantly making way for newer kinds. The varieties of potato preferred at present are the Early Rose, for spring planting, and the Peach-blow, as a late keeping sort for winter use. Although potatoes raised in the latitude of Missouri are less farinaceous than when grown under a cooler and more northern climate, their quality is good and their taste agreeable. The crop succeeds very well in Missouri, and an abundance is grown for home consumption and even for exportation South. The potato rot or murrain, a disease due to the presence of a fungus called Peronospera infestans by scientists, which has been more than ever prevalent and destructive in Europe this year (1872) has never affected the crop to a perceptible extent in Missouri. The Doryphora decem-lineata, or Colorado potato-bug, a new and most noxious insect, has for two or three years past threatened the destruction of this favorite esculent; but what with the increase of its natural enemies, and the improved methods of warring against it, that have been made known through our State Entomological Reports, this insect is no longer dreaded as it formerly was.

The Sweet Potato-Ipomoca batatas, belongs to the Morningglory family, and is an adventive plant which owes its origin to the East Indies. It was uised in England as a delicacy long before the introduction of the common potato, and its culture has been carried on in Europe for several centuries. The sweet potato succeeds best in a sandy loam of moderate fertility, and is one of the most reliable and profitable of our crops. It is grown in our State mainly for home use.

Miscellaneous Crops and Products-Wool.-The total production of all grades of this staple in 1870, was $3,649,390$ pounds against 2,069,778 in 1860. The soil and climate of Missouri are peculiarly well adapted to the rearing of sheep, and with adequate and stringent protective enactments against predatory animals of the canine tribe, sheep-growing, as a branch of agronomic industry, can be made highly profitable. Honey.-The culture of the honey-bee is remunerative, especially in localities lying in convenient proximity to vineyards and orchards of the choicer fruits, where these insects are enabled to collect an abundant supply of food-from the blossoms in spring, and from the sweetest and ripest peaches and grapes in summer and autumn. The annual production of honey is estimated at $1,156,444$ pounds, and that of wax at 35,248 pounds. Sorghum or Chinese Sugar Cane.-This sacchariferous species of Millet attracted some attention, and its culture increased materially when the supply of Southern molasses was cut off during our late internecine troubles. It is still raised in considerable quantities for local consumption in several counties. The annual production increased from 776,101 gallons in 1860, to 1,730, 171 gallons in 1870. Broom Corn, another variety of millet closely related to the former, is occasionally grown for the minufacture of broom;. Bi:ckioheat, Wiite Beans, Peas, Hops and a few other culmiferous and leguminous vegetables which sometimes come within the designation of field-crops, are occasionally grown successfully in limited quantities, but they are not of sufficient consequence to receive more than a passing mention in this article. Garden Vegetables are an important article both of food and commerce. Peas, beans, turnips, onions, tomatoes, cabbage, and many other economic plants suited to our soils and climate, are found in our markets at all seasons. The value of the produce of market-gardens is stated by the United States Census to be $\$ 406,655$, a sum which is inaccurate and scarcely equal to the annual consumption of the single city of St. Louis.

Orchard Productrs.-Fruits of every kind and variety usual to the temperate zone, flourish under our parallel of latitude, and display their delicate luxuries upon our tables in great profusion. The golden apple, the juicy pear, the downy-cheeked peach, attract by their beauty and delicious taste, and afford a healthful and important article of consumption and domestic economy. If properly managed, the cultivation of a fruitful orchard is one of the most remunerative, as well as delightful occupations of the whole range of agriculture. The soil of Missouri is favorable to the Apple, and it attains its highest perfection on our numerous bluffs and ridges of moderate elevation. The fruit matures during a long succession of months, and is found in our markets in abundance and at reasonable prices nearly all the year round. Apple orchards of greater or lesser size are met with in every part of the State, and the products are shipped East and West in considerable quantities in autumn and winter.

The Pear. In the cultivation of this fruit, a deep, well drained, moderately fertile soil, is indispensable to success. Our pears, while not so showy or highly colored as the varieties grown in California, surpass them in juiginess and delicate flavor. The most serious impediment to profitable pear culture is the fatal scourge known to pomologists as the Frozen Sap, or fire blight ; it prevails with more or less intensity throughout every State situated
east of the Rocky Mountains, and often devastates the thriftiest plantations in the course of a single season. It is not definitely ascertained whether the fungoid forms of vegetation which accompany apple and pear blight are prevenient or consequent to the disordered condition of the sap and cellulose tissues of the trees affected; and as this disease probably owes its origin to inappreciable atmospheric influences incident to our climatc, and peculiar to North America, it is likely to baffle all remedial treatments. Root-pruning, and absence of culture, have been advocated and practiced as preventive remedies with varying success.

The Peach is often chary of its delightful favors in the Northern division of the State, but under the milder and more genial clime of the South and Center, peaches of the most excellent quality are produced in plenty. The choicer budded varieties yield paying crops about three years out of five. The consumption of peaches is confined mainly to home use and the St. Louis market.

Cherries of the acid Morrello type, abound in great plenty and bear constant crops; Duke, Bigarreau and other varieties of the sweet cherry, are not entirely hardy, and are grown only in a limited way. Plums, Apricots and Nectarines succeed perfectly, but their culture is neglected on account of the repeated and annually recurring destruction of the unripe fruit by several insects belonging to the family of Curculionida.

Small Fruits. Various kinds of cultiwated berries come in at a time during summer when the supply of apples is exhausted, and last successively until peaches and grapes begin to ripen, supplying the eye and the palate with a variety of fragrant and delicious dainties; while their pleasantly acidulated juices exert a wholesome influence upon the human system at the approach of warm weather. During the last ten years, great progress has been made in small fruit culture, and a much wider area is now devoted to their cultivation than formerly. The dissemination of information by the Agricultural and Horticultural Press, is in a great measure the cause of our advancement upon this subject. With good soil, careful preparation of the land, clean culture, and, when practicable, the application of mulching, Strawberries, Gooseberries, Currants, Raspberries and Blackberries, yield satisfactory returns for the capital and labor invested. From the statistical tables of the United States Census, it appears that the value of orchard products has increased more than three-fold in Missouri during the last ten years, and now reaches the important sum of $\$ 2,617,463$ annually.

The Grape.-The knowledge of this noblest of fruits, and its use by man, are lost in the maze of ages. It was cultivated by the Jews, the Phoenicians, the Greeks, the Romans, and various other ancient nations of the Old World long before the Christian era.

The vine-grape seems to have invited the attention of the settlers soon after the colonization of America. As early as the year 1620, attempts were made by a London company to plant a vineyard in Virginia. In 1683, William Penn planted vines near Philadelphia but failed of success. During the latter half of the 18th century, the French settlers in Illinois were in the habit of shipping to New Orleans on flatboats, considerable quantities of wine made from the native wild grapes growing in profusion in the American Bottom, opposite the present site of St. Louis. In 180r, Swiss immigrants
founded a colony which they named Vevay, in the present county of Switzerland, Indiana, some forty miles below Cincinnati, on the Ohio River, with the purpose of prosecuting the culture of the grape on an extensive scale, but seem to have met with such discouraging want of success, that they ultimately abandoned the project altogether. Hitherto experiments in grape culture had been confined to the varieties of the Vitis vinifera, the cultivated winegrape of Europe, which is now generally believed to be too tender to withstand the meteorologic changes of heat and cold, humidity and dryness, inherent to the climate of the Grand Eastern Division of Continental North America. But the recent discoveries of our State Entomologist, relative to the Philloxera Vastatrix, -an insect which is insidiously sapping the roots of our vines, and is particularly partial to the vinifera,-indicate that our failure with this species in Missouri is not due to vicissitudes of climate alone, and lead us to hope that, with proper treatment, we may yet successfully grow it. The first decided impulse given to this branch of economic industry, was the introduction by John Adlum, of Georgetown, District of Columbia, of the Catawba, a native variety which was for many years the standard wine grape of the country, but is now being discarded in some sections, on account of its unreliability and tendency to disease. Since the discovery of the adaptation of ameliorated varieties of the Vitis labrusca, Vitis astivalis, and other native wild grapes of our forests for grape culture, a great number of new kinds have been originated from seedlings or otherwise, and are now grown extensively. On the sunny hill-sides of Missouri, the grape finds a congenial home, and millions of wild wines abound everywhere in the forests, often trailing their graceful coils in mazy tangles on the ground, or climbing to the summit of the highest trees. The superior adaptability of the peculiar arenaceous deposit of magnesian or Permian formation on the river bluffs, called Loess, to the culture of the grape, is well known to vineyardists. Following the first prosperous attempts at wine manufacture at Herman in 1846, and impelled by their success, viticulture has increased with wonderful rapidity over all parts of the State, until, to-day, thousands of hills are crowned with the graceful foliage and pendent, purplecolored clusters of this beautiful shrub, and hundreds of tons are produced, where one pound grew thirty years ago. Great quantities of grapes are consumed in the fresh state, but the chief product of vineyards must ever be wine, and we cannot but express the hope that the time may soon come, when the generous vintages of our Concords, Cynthianas and Rulanders, equaling in quality and surpassing in purity the Medocs of France, the light Hocks of Germany, or the Xeres of Spain, will universally supplant the use, or rather abuse, of alcoholic beverages, and will adorn the sideboard and the dessert-table of every home in Missouri.

The insufficiency of the estimates sent forth to the world by the United States Census, cannot be better exemplified than by noting its computation of the wine production of Missouri. The statistical tables of this publication estimate the aggregate number of gallons grown in Missouri in 1870 at 326,173 , while the single county of Gasconade, nearly or quite reached this amount alone, and the total production of the State, according to the assertions of the writers best informed on the subject, did not fall much short of 1,000,000 gallons, representing a value of at least $\$ 700,000$.

## Religious Denominations.

BAPTIST.<br>By Rev. A. H. Burlingham, D. D.<br>Pastor Second Baptist Church, St. Louis, Missouri.

The first Baptist Church organized in what is now the State of Missouri, was founded near the present site of Jackson, Cape Girardeau county, in 1806, under the labors of Rev. D. Green.
The growth of the denomination has been marked. It has gone steadily on in its increase until now it marshalls a great host, and it is still rapidly enlarging in numbers and advancing in intelligence and general thrift.
The Annual of the Baptist General Association of Missouri, for 187r, gives the following statistics:

Number of District Associations (into which the General Association is divided) .
Number of Baptist Churches in Missouri.......................................... 1,266 " Ordained Ministers "6 ................................. 846 " Church Members " ................................75,922
It is thought to be a fair estimate that two-thirds of these churches have houses of worship with an aggregate value of $\$ 1,120,000$. There are Baptist houses of worship in every county (except Stone) in the State, and Baptist ministers in every county with perhaps one exception; though several counties have but two or three churches and ministers each.

Rev. S. W. Marston, D. D., Missionary Secretary of the Missouri Baptist Sunday School Convention, in his Report for 1871, gives the following summary:

$$
\begin{aligned}
& \text { Number of Baptist Sunday Schools in the State....................... } 806 \\
& \text { " " " School Teachers. } \\
& \text { Scholars... }
\end{aligned}
$$

The Bible and Publication Society, with headquarters in Philadelphia, has a branch house, under the management of Rev. G. J. Johnson, D. D., in successful operation in St. Louis.

The Baptist periodicals of the State are the Central Baptist, published in St. Louis by Messrs. Luther and Teasdale and edited by Rev. J. H. Luther D. D., and Ford's Repository, of St. Louis, edited and published by Rev. S. H. Ford, LL. D.

The Baptist seats of learning in Missouri are: William Jewell College at Liberty-President, Rev. Thos. Rambaut, LL. D.Students, 150 ;

Stephens' College at Columbia-(for young ladies)-President, Rev. E. S. Dulin, D.D. LL. D.-Students, I54;
Mount Pleasant College at Huntsville, (for ladies and gentle-men)-President J. W. Terrill, A. M.-Students, 180 ;

Baptist Female College at Lexington-President, Rev. D. H. SELPH, D.D.-Students, IIO;
Liberty Female College, Liberty-President, Rev. A. Machett. -Students, 78 ;
LaGrange College at LaGrange, (for ladies and gentlemen) President, Rev. J. F. Coor, LL D.-Students, 185 ;
Bethel College at Palmyra, (for ladies and gentlemen)-President, Rev. S. A. Taft, D.D.-Students, 80 ;

Baptist College at Louisiana-President, Rev. J. T. Williams 1. M. -Students, 75 ;

St. Louis Seminary, (for young ladies) at Jenning's StationPresident, B. F. Blewett, LL. D.

## CONGREGATIONALIST.

## By Rev. T. M. Post, D.D.,

Pastor First Trinitarian Congregational Church of St. Louis.

The First Trinitarian Congregational Church of the city of St. Louis was organized in $18 \mathbf{j}_{2}$, with seventy-seven members, and under the pastorate of T. M. Post, was at that time, and until the war-with the exception of the Church at Hannibal, formed in 1859-the only church of its order in the State of Missouri, and with the exception of the Circular Church in Charleston, South Carolina, the only one in the slaves States. Its first house of worship was on Sixth street near Franklin avenue. It is now located on the corner of Tenth and Locust streets.

There are now in the State of Missouri, a State Association, five District Associations, sixty-four churches, with sixty-nine ordained ministers, 2,736 members and 4,348 Sabbath scholars. These churches are scattered sparsely, yet extensively through the State, and though still young, and for the most part feeble, are generally in rapid and prosperous growth.

## EPISCOPAL.

## By Rt. Rev. C. F. Robertson, D.D.,

 Bishop of the Diocese of Mo.The first service of the Protestant Episcopal Church in Missouri, was held October 24, and Christ Church, St. Louis, was organized as a parish November 1, 1819. The Rev. John Ward, previously of Lexington, Kentucky, was the first minister. Six persons united in the first service.

The following are the statistics of the denomination:
Present number of communicants, 3,706; of ministers, 49; church buildings, 48. Sunday Schools-schools, 55; scholars, 3,470 ; teachers, 444. The denomination controls 4 schools, with 200 scholars, and 13 teachers. There are church buildings in 29 counties; ministers resident in 22; and churches organized in 43. The Diocese of Missouri is conterminous with the State of Missouri.

ISRAELITE.<br>By Rev. Dr. S. H. Sonneschein,<br>Rabbi of Temple of the Gates of Truth.

There is scarcely one county in the State of Missouri, where not at least a dozen of Jewish families are settled. Jefferson City, Sedalia, Springfield, Rolla, Washington, Macon City, Louisiana, Hannibal and different other places have wealthy, influential, Jewish citizens, but too few in numbers to form independent religious communities. Only in St. Louis, St. Joseph and Kansas City have they established Congregations, Sabbath Schools, houses of worship and institutions of charity.
The oldest Hebrew congregation in Missouri, was organized in 1838, in St. Louis. The following summary gives an approximate statement of the congregations in Missouri :

In St. Louis - Number of congregations, 4; number of members, 370 ; number of ministers, 4 ; number of houses of worship, 3 ; value of property. $\$ 225,000$; number of Sabbath Schools, 3 ; number of teachers, 6 ; number of scholars, 265.
In Kansas City-Number of congregations, 2 ; number of members, 80 ; number of ministers, 2 ; number of houses of worship, 2 ; number of Sabbath Schools, 2; number of teachers, 2; number of scholars, 75 .

In St. Joseph - Number of congregations, I; number of members, 45 ; number of ministers, 1 ; number of houses of worship, I; number of Sabbath Schools, I; number of teachers, I; number of scholars, 50 .
Total number of congregations, 7; number of members, 495 ; number of ministers, 7 ; number of houses of worship, 6 ; number of Sabbath Schools, 6; number of teachers, 9 ; number of scholars, 390.

## EVANGELICAL LUTHERAN.

By Rev. C. F. W. Walther, President of Concordia College, St. Louis.

The first Lutheran Church organized in the State of Missouri was founded in St. Louis in 1839.
The following are the statistics of the denomination for the year 1872:
Number of ordained ministers in Missouri, 54; Lutheran churches, 70 ; congregations, 73, parochial schools, III. $^{2}$

The Lutheran educational institutions of the State are: Concordia Seminary in St. Louis-Theological Students, 175 ;
High School in St. Louis-Scholars, 40.
The charitable institutions are :
Lutheran Hospital and Asylum in St. Louis ;
Lutheran Orphan Home in St. Louis County.
At St. Louis are also located the Lutheran Central Bible Society and the Lutheran Book Concern of the German Evangelical Lutheran Synod of Missouri, Ohio and other States.
The following are the Lutheran periodicals of the State, published in St. Louis: Der Litheraner (semi-monthly), Die Abendschule (semi-monthly), Lehre und Wehre (monthly), Evangel. Luth. Schulblatt (monthly).

## GERMAN EVANGELICAL.

By Rev. Ernest Roos,
Pastor of St. Peter's German Evangelical Church, St. Louis.

The Evangelical Synod of the West presents the following statistics for Missouri : Number of churches, 40; communing members, 7,000 ; clergymen, 40 ; Sunday Schools, 40 ; teachers, 400 ; Sunday School children, 4,200; parochial schools, 32 ; scholars, 3,300 ; value of church property, $\$ 440,000$.; of school property, $\$ 160,000$; total church and school property, $\$ 500,000$. The Friedensbote is the name of a newspaper published under the patronage of this denomination in Missouri. Evangelical Missouri College is the theological seat of learning of this Synod, and is located in Warren County, Missouri.

## METHODIST.

By B. Stinson, Esq.,
Assistant Editor "Central Christian Advocate."
The Methodist Episcopal Church in Missouri dates from an early period in the history of the State. Indeed, several societies were formed before it became a State, and these were a part of the old Illinois Conference, which, at one time, included large portions of the Northwest and Indiana and Missouri.
When the secession of 1844-45 took place, and what is now called the Methodist Episcopal Church South was formed, the societies in Missouri were broken up, with few exceptions, and the members either joined the Methodist Episcopal Church South or remained unable to effect a reorganization until the year 1848 , when the Missouri Conference resumed its sessions. These were held annually until the Great Rebellion broke out, when preachers and members were driven from nearly all the stations and circuits, and the membership was reduced to almost a nominal figure, so that reports could not indicate the facts. There were probably less than 3,000 in actual fellowship in 1861 and 1862.

In May, 1862, the General Conference added Arkansas the Missouri Conference, and it bore the name of "The Missouri and Arkansas Conference," until the year 1868, when the Conference was divided - the societies north of the Missouri River retaining the old name of the Missouri Conference. The societies south of the river in Missouri, and those in Arkansas were formed into an annual Conference under the name of "The Saint Louis Conference."

In May, 1872, the General Conference again divided the Saint Louis Conference - the societies in Missouri south of the river retaining the name of the Saint Louis Conference, and those in Arkansas being set off as the Arkansas Conference.

The statistics exhibit a remarkable increase during the past decade. The number of members in the Missouri Conference in 187 . and 1871, was 13,244; of probationers, 3,580; and of local preachers, 193. The church property is valued at $\$ 270,260$, including 99 churches, value $\$ 257,610$, and 21 parsonages, valued at $\$ 12,650$. The number of Sunday Schools was 220 ; of officers and teachers, 1,780 ; of scholars, 10,854 ; and of volumes in library, 18, 170 .

The Saint Louis Conference, not including Arkansas, reports for 1871-72, 12,218 members, 2,459 probationers, and 213 lecal preachers. Its church property is valued at $\$ 451,116$ - having 89 churches, value $\$ 416,266$; and 30 parsonages, value $\$ 34,850$; Sunday Schools, 126 ; officers and teachers, 1,045 ; scholars, 7,032 ; volumes in library, 9,443-giving a total for the State of Missouri as follows: Members, 25,462; probationers, 6,039; local preachers, 406; value of church property, $\$ 721,376$-including 188 churches valued at $\$ 673,876$, and 5 I parsonages valued at $\$ 47,500$; number of Sunday Schools, 346 ; officers and teachers in Sunday Schools, 2,825 , scholars in Sunday Schools, 17,886 ; volumes in Sunday School libraries, 27,613.

There are several schools and colleges in the State under the patronage of the Church, the principal of which are, Lewis College, at Glasgow ; Johnson College, at Macon City; and Carleton Institute, in Southeast Missouri. These are flourishing institutions.

The Western Book Depository is doing a large business in Saint Louis-Hitchcock \& Walden, agents. These gentlemen also publish for the Church, the Central Christian Advocate, a weekly journal of church news. The editor is appointed by the General Conference, which meets quadrennially, and which will meet in Saint Louis in 1876. The present editor is Benj. St. James Fry, DD. ; B. Stinson, assistant.

## M. E. CHURCH SOUTH.

By Rev. Wm. M. Leftwich, D.D., Presiding Elder, St. Louis District M. E. Church South.

The Rev. John Travis was the first Methodist minister who was regularly appointed to what is now the State of Missouri. He received his appointment from Bishop Asbury at the session of the Western Annual Conference which was held in Green County, Tennessee, September 15, 1806.

The first Methodist society was organized near Florissant, in St. Louis County, by Rev. John Clark, in 1803. In 1820, Rev. Jesse Walker came to St. Louis, preached for a time in a carpenter shop, and, in Jan. 1821, organized the first society in the city. Soon followed Beauchamp, Monroe and others, who traversed the new State in every direction, keeping pace with the new settlements, and laying broad and deep the foundations of the Church in the hearts and homes of the early pioneers. The growth of the Church has been steady and uninterrupted - except during the late war until her creed and Christian life have been incorporated into the social, intellectual and moral phases of society in every part of the State. The Church has ministers and an organization in every county in the State ; but the statistics do not give the number and value of the churches and other property.

The General Minutes of 187 I , furnish the following general statistics:
Annual Conferences, 3; Presiding Elder's districts, 20 ; travel. ing preachers, 230 ; local preachers, 341 ; making the whole number of ministers 571 . Members, 44,352.

The statistics for $\mathbf{1 8 7 2}$, now in the hands of the publishers, show a large increase in ministers, members, churches and Sunday schools; but the writer has no access to the unpublished minutes.

- In 8850 the Church established a book and publishing concern in St. Louis, and began the publication of the St. Louis Christian Adrocate. This paper was a power for good in the State, under the editorial management of Rev. Dr. McAnally, until it was suppressed by military authority in April, 1862, and after its publication was resumed in $1865^{\text {. }}$. In 1869 the Southwestern Book and Publishing Company was organized, to which was transferrerd the book and publishing interests of the Church in the State. This house, located in St. Louis, is now issuing the following periodicals: Southern Review, a quarterly, edited by Rev. A. T. Bledsoe, LL. D. ; the St. Louis Christian Advocate, edited by Rev. D. R. McAnally, D.D., and the Children's Advocate, a semi-monthly Sunday School paper edited by Rev. Wm. M. Leftwich.

The literary institutions of the denomination are as follows: Central College, located at Fayette, Howard County, was founded in 1852, and is in a highly prosperous cordition. Rev. J. C. Wills, President.
St. Charles College, St. Charles, Mo., founded in 1835, the oldest chartered college west of the Mississippi. J. J. Ротts, President.
Howard Female College, Fayette. Conducted by Mrs. Dr. Smith, Mrs. Fuller and Miss Cooper.
Arcadia College, Arcadia. Rev. J. C. Berryman, President. Central Female College, Lexington. Rev. Dr. Sullivan, President.
Pritchett Institute, Glasgow. Rev. Carr W. Pritchett, President.

Belleview Collegiate Institute, Caledonia. Prof. S. J. McKinney, Principal.
Shelby High School, Shelbyville. Rev. J. W. Atkisson, Principal.

Macon High School, Bloomington.
Springfield Female Institute, Springfield. Rev. C. D. Jones, D. D., President.

Monticello High School, Monticello. Rev. M. McIlhany, Principal.
Kansas City Female College, Kansas City. Rev. A. G. Stacy, Principal.
Charleston High School, Charleston, and several smaller institutions in different parts of the State, and of different grades and degrees of usefulness.

## PRESBYTERIAN.

By Rev. S. J. Niccolle, D.D.,
Pastor Second Presbyterian Church, St. Louis, and Moderator of the General Assembly of the United States.

The Synod of Missouri is conterminous with the limits of the State and is in connection with the General Assembly of the Presbyterian Church, in the United States of America. It was first organized by order of the General Assembly, in October, A. D., 1832. It has several times in its history been divided, and other large and flourishing Synods have been formed out of it. It is now divided into six Presbyteries, and the following is the report of their present condition, as given to the General Assembly, A. D., 1872:

Osage Presbytery contains: ministers, 29 ; churches, 37 ; members, 1,600; and contributed in 1871, \$32,979.

Ozark Presbytery contains: ministers, 10 ; churches, 29 ; members, 554 : and contributed in 1875, $\$ 9,519$.
Palmyra Presbytery contains: ministers, 22; churches, 43; members, 1,446; and contributed in 1871, \$22,267.
Platte Presbytery contains: ministers, 18 ; churches, 41 ; members, 1,363, and contributed in 1871, \$29,906.

Potosi Presbytery contains: ministers, 5 ; churches, 13 ; members, 494 ; and contributed in 1871, $\$ 3,299$.
St. Louis Presbytery contains: ministers, 43; churches, 39 ; members, 3 ,012; and contributed in 1871, \$112,726.
Total for the Synod: ministers, 127; churches, 202; members, 8,469; with contributions for 1871, \$210,696.

## Cumberland Presbyterian.

By Rev. J. E. Sharp,
Pastor Cumberland Presbyterian Church, Kansas City, Mo.
The following are the statistics of this denomiation for the State of Missouri: Number of Synods, 3; Presbyteries, 13; ordained ministers, 149 ; licensed ministers, 46 ; candidates preparing for the ministry, 45 ; pastors, 24 ; ministers supplying congregations, 101; ministers without charge of congregations, 39 ; congregations, 331 ; members, 16,185; persons in Sunday Schools, 9,056.
There are the following institutions of learning under the control of this denomination in Missouri : 4 academies and high schools; and McGee College at College Mound, Macon County, Rev. J. B. Mitchell, D.D., President. Females, 86 ; males, 187. Total matriculations, 273. Candidates preparing for the ministry, 29 ; professors and teachers, 11 .
The periodicals of the State are, the Cumberland Presbyterian (weekly), published in Saint Louis, Rev. J. R. Brown, D.D., editor, and McGee College Record (semi-annually), published at College Mound, Macon County.

The General Assembly has a Board of Missions, of which Rev. J. H. Houx, of Warrensburg, Missouri, is President, and Rev. J. B. Logan, of Saint Louis, is Corresponding Secretary and General Superintendent.

## Old School Presbyterian. <br> By Rev. R. P. Farris, D. D., <br> Editor of the "Old School Presbyterian,"

The first Presbyterian sermon in Saint Louis, after the cession of the territory to the United States, was preached November 6, 1814, by Rev. Daniel Smith, of Bennington, Vermont, who, in company with Rev. S. J. Mills, of Carringford, Connecticut, was sent hither by the Bible and Missionary Society of New England and Philadelphia. The first baptism by a Presbyterian minister in Saint Louis, after the cession of the country to the United States, was administered Sunday, March 3, 1816, by Rev. Gideon Blackburn, of Nashville, Tennessee. The late Mrs. Mortimer Kennett was one of the children then baptized. The Lord's Supper was administered by Rev. T. Flint, for the first time in Saint Louis to members of this denomination, Sunday July 21, 1816, after the country was ceded to the United States. The first Presbyterian Church west of the Mississippi River, was organized Saturday, August 3, 1816, as the Bellevue Church, at Caledonia, Washington County, Missouri, with 27 members. Bonhomme Church, Saint Louis County, was organized October 4, 1816. First Presbyterian Church, Saint Louis, was organized November 23, 1817. Saint Charles Presbyterian Church was organized August 30, 1818.

The Old School Presbyterian Synod of Missouri consists, in 1872, of 6 Presbyteries, 90 ministers, 130 churches, 8,000 communicants, 600 Suniday School teachers, 6,000 Sunday School scholars.
Westminster College, at Fulton, under the patronage of this denomination, has 6 professors, 100 students, and $\$ 100,000$, endowment.

The Old School Presbyterian (weekly) is published in Saint Louis by Charles B. Cox. Its editor is Robert P. Farris.

ROMAN CATHOLIC.<br>By Rev. Wm. Walsh,<br>Pastor St. Bridget Church, St. Louis, Mo.

The Archives of the Archdiocese of St. Louis, kept by the Chancellor, Very Rev. H. Muhlsiepen, place the date of the building of the first Catholic church in the city of St. Louis in the year 1770. The first pastor of the church was Rev. Mr. Gibault, a native of France, St. Louis being then a Fruch village of some five hundred inhabitants, all of whom professed the Catholic faith. The territory then, north of what is now the State of Louisiana, and when subject to France, was called the "District of Louisiana," or "Upper Louisiana," and was attended by priests of the Diocese of New Orleans. Bishop Dubourc; of New Orleans, had then charge of Upper and Lower Louisiana, and more than once visited St. Louis. But such was the growth of St. Louis that it was erected into an Episcopal See in the year 1826, when it had a population of about ten thousand souls. Rt. Rev. Joseph Rosati was the first Bishop of St. Louis. There are now, in 1872, two Catholic Sees in the State of Missouri; the Archdiocese of St. Louis, and the Diocese of St. Joseph. Most Rev. Peter Richard Kenrick, consecrated in 1841 coadjutor to Bishop Rosati, and now assisted by Rt. Rev. Patrick Juhn Ryan, his coarljutor, consecrated in April 1872, governs the Archdiocese of St. Louis. Rt. Rev. John Hogan, consecrated in September, 1868, governs the Diocese of St. Joseph.
From the Catholic Almanac of 1872, published by Sadlier, of New York, collated and revised by Catholic clergymen appointerd by the Catholic Bishops of the United States, the following brief summary is taken, which will show the prosperous condition of the Catholic Church in this State
The Archdiocese of St. Louis contains: Churches, 157 ; in course of erection, 14; chapels and stations, 30; priests, 186 ; priests ordained since January, $\mathbf{1 8 7 2}, \mathbf{1 5}$; clerical students, 48 ; since received, 20 ; literary institutions for young men, including I university, 2 colleges, and 1 academy, 4; religious orders of men, 6 ; female academies and convents, 9 ; hospitals, 3 ; orphan asylums, 4; number of orphans, 900 ; benevolent and charitable institutions, 4 ; religious orders of women, 12 ; Catholic population, about 200,000.
Besides the above religious and Fiterary institutions, there are about one hundred Catholic parish sthools attached to the churches of the Archdiocese, and in which not less than 25,000 clivildren of both seaes receive their education. These schools are under the direction of the Catholic clergy, whose congregations build and support them without any aid from the Common School Fund. The teachers are generally religious, and receive but small salaries. There are Sunday Schools in all the churches, attended by the children of the parish schools, and all others who desire religious instruction.
The Diocese of St. Joseph contains: Churches, 25 ; missions and chapels, 30 ; priests, 20 ; colleges, academies and parish schools, 30 ; Catholic population, abhout 20,000.

These figures give the following summary for the State of Missouri: Churches, 182; in course of erection, 14; chapels, missions
and stations, 60 ; priests, 206 ; priests ordained since January, 1872, 15 ; clerical students, 68 ; literary institutions, including universities, colleges, academies and parish schools, 134; female academies and convents, 9 ; religious orders of men, 6 ; hospitals, 3 ; orphan asylums, 4 ; number of orphans, 900 ; benevolent and charitable institutions, 4; religious orders of women, 12; Catholic population, about 220,000.

The value of the church and school property of the Catholics in this State cannot fall short of some four millions of dollars. It must be admitted that this Church has done much for Christian education, and to bestow charity upon the distressed. There are two excellent Catholic book stores in St. Louis, one for English publications in charge of P. Fox, and the other for the sale of German publications, in charge of F. Saler; also, two Catholic newspapers, the Western Watchman, (weekly,) English, and the Herald Des Glaubens, (weekly) German. There are two very valuable libraries in the Archdiocese, one attached to St. John's Church, St. Louis, and called the Diocesan Library, and the other attached to the St. Louis University. There is a very excellent library at the Christian Brothers' College, and a circulating library attached to most of the Catholic churches of the city of St. Louis.

The literary institutions of the denomination are as follows:
Theological Seminary, St. Vincent's, Cape Girardeau. Very Rev. A. Verinna, C. M., President. 170 students.

St. Louis University, St. Louis. Rev. J. G. Zealand, S. J., President. 400 students.

Christian Brothers' College, St. Louis. Bro. James, Director. 370 students.
Saint Patrick's Academy, St. Louis. Bro. Nicholas, Director. 250 students.

Convent and Academy of the Visitation, St. Louis, for young ladies, in charge of the Sisters of the Visitation. Mother Vincentha Marotte, Superior, and Sister Emia, Directress. 100 lady pupils.

Convent and Academy of the Sisters of Saint Joseph, Hannibal. Mother Gabriel, Superior. 70 lady pupils.

Convent and Academy of the Sacred Heart, Maryville, St. Louis, for young ladies. Madame Tucker, Sunerior; to which is attached a day-school in the old convent, St. Louis. I 40 lady pupils.

Saint Joseph's Convent and Academy, South St. Louis - lately Carondelet - under the Sisters of Saint Joseph. Mother Agatha, Superior, and Sister Mary Joseph, Directress. 100 lady pupils.

Convent and Academy of Loretto, Florissant, in charge of the Sisters of Loretto. Mother Havden, Superior. 85 lady pupils.

Convent and Academy of Loretto, Cape Girardeau, under the Sisters of Loretto. Mother Monarch, Superior. 65 lady pupils. Ursuline Convent and Academy, St. Louis. Mother Aloysia Winkler, Superior. 80 lady pupils.

Academy and Convent of the Sacred Heart, St. Charles, in charge of the Sisters of the Sacred Heart. Mother Miller, Superior. 65 lady pupils.

Convent and Academy of the Sisters of Saint Joseph, Ste. Genevieve. Mother Mary Teresa, Superior. 250 lady pupils.

Convent and Academy of the Sisters of Saint Joseph, Kansas City. Mother Di Pazzi, Superior. 50 lady pupils.

## UNITARIAN.

By Rev. W. G. Eliot, LL. D. Chancellor of Washington University, St. Louis.

In St. Louis, the First Unitarian Church (the Church of the Messiah) was organized in $\mathbf{1 8 3 4}$ by Rev. W. G. Eliot, who remained its pastor for thirty-seven years. The Second Church (Church of the Unity) was established in 1868, under Rev. J. C. Learned, its present pastor. A "Free School and Mission House," for reception and education of destitute children, has been supported by the above churches for thirty years. The first free day school in Missouri was established by the Church of the Messiah. There are twelve or fifteen other Unitarian churches in Missouri, but the statistics have not been received.

## German Independent Evangelical Prot. Union, or United Church.

## By Rev. Dr. J. G. Eberhard,

Pastor of Church of "Holy Ghost," St. Louis.
The first society of this Union was founded in 1834 in St. Louis. Revs. Wall and Picker were the pioneers of this work. With the increase of German population of St. Louis and Missouri, many new societies with similar views were formed, but remained all isolated from each other until 1869. That year, a number of ministers and laymen from several of these societies formed a Union (Verein) in St. Louis. The constitution adopted guarantees to each society, and even each member of the "Union," entire independence in regard to dogmas, demanding as common basis nothing but faith in the Gospel of Christ as explained by modern theology and science, free of all mere human authority-and reciprocity in words and work of Christian love and friendship. Since then three annual conventions of delegates have been held, but as many of the religious societies of similar tendency stand yet aloof from the Union, no full statistical information can yet be given regarding them. The Protestantischen Zeitblätter, in Circinnati, is at present the outward organ of the Evangelical Protestant Union of the West, but a separate periodical will probably be established by them ere long.

United Brethren in Christ.<br>Statistics of 187r,<br>Compiled from the New York Observer's Day Book of 1871.

The "Missouri Conference" contains: Organized churches, 17 ; members, 2,913; itinerant preachers, 28; local preachers, 21 ; meeting houses, 6; Sabbath Schools, 45 ; Sabbath School scholars, 2,047.

Note.-As there are several denominations in the State of which no mention is made in the above article, the publisher, in justice to himself, would state that he made application to several persons connected with those societies, and the information desired either failed entirely to come to hand, or was too late for issue in this volume.

## ENTOMOLOGY.

## ITS RELATIONS TO AGRICULTURE, AND ITS PROGRESS IN MISSOURI

With Brief Instructions for Collecting, Preserving, and Studying Insects.
By CHAS. V. Riley, State Entomologist.

## DEFINITION OF ENTOMOLOGY.

It would seem almost superfluous to define the meaning of this word ; but from the many letters that come to me addressed "State Etymologist," it is evident that there are those who yet imagine that my office is somehow or other connected with philological science. For the benefit of such, then, Entomology is derived from the Greek, (evrouov, insect, hoyos, discourse, ) and constitutes that branch of Natural Science which treats of Insects.
WHAT, THEN, IS AN INSECT?

The term "Insect" is derived from the Latin insectum, which signifies "cut into," and expresses one of the chief characteristics of this class of animals; but we can only obtain an intelligent idea of what constitutes an insect by comparison with other animals.

## THE ANIMAL KINGDOM.

Animals are variously classified by zöologists, but the best known and most comprehensive system of classification is that called the Cuvierian, which separates them into four great Branches or Divisions. These are ;
i-Vertebrata or Backbone Animals, comprising the four respective classes of Mammalia (mammals), Aves (birds), Reptilia (reptiles), and Pisces (fishes.) Normally these all have four limbs and an interral skeleton to which the muscles are attached.

2-Articulata or Jointed or Segmented Animals, comprising the five classes of Insecta (insects), Arachnida (spiders, mites, etc.), Crustacea, (crabs, lobsters, etc.), Myriapola (thousand-legged worms), and Annelida (true worms, as leech, earthworm, etc.). These animals are readily distinguished by their jointed or segmented nature. It is plainly seen in a caterpillar as it crawls along ; each joint moves one after the other, with its own peculiar motion ; each has its separate set of organs, so that a caterpillar may be said to have a head and 12 distinct bodies attacked, for which reason it has 4,000 muscles to move its body, while man has only 529. The jointed character is seen even in the Earthworm ard in the Leech, but not in the slug, which is a Molluscous-not an Articulate animal. Articulates are further characterized by having no internal skeleton; they wear their skeleton on the outside, and every one must have noticed the close resemblance which the exterior of the limbs of a grasshopper or of a lobster bear to the bones of our own limbs or to those of other Vertebrates. Sidney Smith wished that, in hot weather, he could put off his flesh and sit in his bones. He ought to have been an Articulate! It is true that some Articulates, and almost all insects in their young or larval days, have this outer skeleton quite soft and delicate; but the same may be said of the internal skeleton of Vertebrates. We may crush and crunch with ease the bones of a newly hatched
chick ; but he who would undertake to do likewise by those of an old rooster, would, I fancy, have a rather tough job of it!
3-Mollusca or Soft-bodied Animals. These are without distinct joints, and have neither internal or external skeleton, the surface being soft, fleaible and retractile, and often covered with calcareous deposits which assume a variety of different forms.
4-Radiata or Star Animals. These have the body arranged on the plan of an asterisk (*), radiating from a common centre. They are often called zöophites, and comprise the very lowest animals,-some of which, as the sponges, corals, etc., were for a long time considered plants, and do, indeed, connect the Animal and the Vegetable Kingdoms.

With the exception of a few Molluscous snails and slugs, the animals of the last two Branches live almost entirely in water, and we see that an Insect belongs to the second great Branch, and that it shares the jointed or articulate structure in common with the other animals of that Branch. Wherein, then, does it differ from them? Briefly, in having only 13 joints to the body,* and in the adult stage 6 true, jointed legs, and usually (not always) wings. The five classes of Articulates differ from each other in the number of legs they possess in the adult form, as follows: Insecia, 6 legs; Arachnida, 8; Crustacea, 10-14; Myriapoda, more than 14; Annelida, none.
I say true legs and in the ADULT form, because there are some mites (Class Arachnida) which, when young, have six legs only, while many insects have additional legs in their preparatory or adolescent stages, which are not jointed, but membranous, and are lost in the perfect stage ; these are called false, sham, or pro-legs.
Insects are further characterized by having the body divided into three distinct parts, the head which bears the sense organs, the thorax which bears the organs of locomotion, and the abdomen which bears the reproductive organs. They also undergo a series of molts and exist in four distinct stages; 1st, the egg stage ; 2nd, the larva (meaning masked-the future and ultimate form being usually masked or hidden, so far as external appearance goes) or active stage ; $3^{\text {rd }}$, the pupa (sometimes called chrysalis or nymph) or usually quiescent stage ; 4 th, the imago or perfect stage, in which alone the wings appear. To be brief, then, I would give the following definition of an Insect: A 13 -jointed, 6-legged animal, with an external skeleton; undergoing transformations or metamorphoses, and breathing through spiracles (breathing holes,) which lead to trachea (air tubes); the body in the adult divided into three distinct parts (head, thorax, and abdomen); with or without wings.
importance of entomology as a study.
Time was when the entomologist was looked upon as a mere, trifing enthusiast. The derisive term "Bug-hunter" was applied to him as though his sole occupation in life was to run after and catch "bugs." So long as he contented himself with such trivial doings the epithet was, perhaps, not undeserved : but that day has long since passed away! A whole galaxy of illustrious namesSchwammerdam, Ray. Rösel, Reaumur, De Geer, Latreille, Linneus, Fabricius, Kirby, Spence, Harris, Say, and others, of days gone by; and hundreds of others of the present daystand forth to redeem the science of entomology from such
obloquy: and I hazard nothing in the statement that not even her sister science, botany, may boast of a literature more extensive or more worthy; whether judged by its intrinsic merit as pabulum for the philosopher, as a storehouse of facts for the practical man, or as a conscientious and accurate presentation of the pure and unalloyed truths of nature. I am aware that, among those who have never opened the pages of her vast treasure-book, there is yet a prevailing belief that insects are little contemptible things unworthy any special attention on our part; but if it does not detract from our idea of the majesty of a Creator to have produced myriads upon myriads of these tiny beings so perfect in their many parts that Solomon in all his glory was not arrayed like the very meanest of them, it should not, surely, derogate from man's dignity to study them in all their infinitesimal perfection. Nothing is great or small but by comparison. The earth is a mere mustard seed compared to the sun, and the sun viewed in comparison with the host of starry suns scattered through infinite space, sinks into complete insignificance. Now what should we say of a school-boy who objected to study geography, because the earth was too small a body to be worthy his attention?

In common with all the other sciences, Entomology, viewed solely as an educator, fertilizes the human mind by adding to its store of knowledge ; and has few, if any, equals as a means of developing the observing faculties of the young. The life-habits of insectstheir wonderful metamorphoses, their instructive industries-furnish ample food for reflection and for our natural love of the curious and marvelous; and it is surprising that the fact has not been more fully recognized in our educational systems. Botany has long since had her place in our schools, and her importance as a means of mental training is not ignored. Yet lessons in animal life-the histories of living, sentient, active creatures-can certainly be made as instructive and entertaining as lessons in vegetative plant-life-and should receive as much, or more attenion.

## ECONOMIC IMPORTANCE OF ENTOMOLOGY.

Man receives some direct benefits from insects, which fact may be well brought home by taking for example the case of a young lady dressing for an evening party:-Her card of invitation has been written with ink-the principal ingredient in which-if it be good ink-is the gallic acid made from the so-called "gall-nut" produced by a little gall-fly on the leaves of a species of Oak very common throughout the Levant. The sealing-wax which fastens the envelope enclosing the invitation is made principally of shellac, the product of a species of bark-louse. Her toilet table is, of course, illumined with wax tapers, and for these she is indebted to the common honey-bee, a naturalized American citizen. If she be a fashionable young lady, the very rouge on her cheeks is prepared from lac, a secretion of a bark-louse from Hindoostan. The silk that enters into various portions of her dress, comes from the silk-worm, artificially propagated in many parts of Europe and Asia, and now beginning to attract renewed attention in some parts of our own country. Her dress is probably dyed with cochineal, an extract from the dead bodies of another species of bark-louse, artificially propagated on cacti in Mexico. Finally, if the young lady contracts some inflammatory cold, the chances are that
her physician will apply to her person a blister prepared from cantharides, the dried and powdered bodies of a Spanish blisterbeetle, of which we annually import large quantities at great expense, because our pharmaceutists are ignorant of the fact that we have some half-dozen indigenous species belonging to the same family, the vesicatory properties of which are every bit as good, and which are so common during certain years, that they are among the most serious enemies of that valuable esculent, the Potato. Indirectly, insects are also of essential service to us; some acting as guards over the vegetable world by destroying the herbivorous species of their own Class, some as scavengers in clearing away decaying animal and vegetable matter ; while others perform a most important part in the fertilization of plants.

But the direct or indirect benefits we derive from insects are trivial compared with the damage they do us, as destroyers of our crops. It is, therefore, in

THE RELATION OF INSECTS TO AGRICULTURE,
That they more particularly interest us. In his essay on "What I Know of Farming," Horace Greeley says: -
"If I were to estimate the average loss per annum to the farmers of this country from insects at $\$ 100,000,000$, I should doubtless be far below the mark. The loss of fruit alone by the devastations of insects, within a radius of fifty miles of this city, must amount in value to millions. In my neighborhood the peach once flourished, but flourishes no more, and cherries have been all but annihilated. Apples were till lately our most profitable and perhaps our most important product; but the worms have taken half our average crop and sadly damage what they do not utterly destroy. Plums we have ceased to grow or expect; our pears are generally stung and often blighted; even the currant has at last its fruit-destroying worm. We must fight our paltry adversaries more efficiently, or allow them to drive us wholly from the field."

The above estimate, great as it seems, is, I believe, far below the mark; and, indeed, it is only when we begin to make careful computation of the average annual loss to this country by insect depredations, and express the sum in round numbers that we can form any intelligent conception of its magnitude. The State of Missouri, alone, loses annually from fifteen to twenty million dollars, at the very least, and the loss to the Southern cotton-growing States the present year within a single fortnight, by a single insect (the Cotton-worm, Anomis xylina,) was lately estimated at twenty millions. There is not the least doubt but that the damage inflicted by insects on the farmers of the United States exceeds tenfold the united damages of all other animals put together. It is rarely if ever that entire crops are destroyed by birds, rats or squirrels; yet we all know that a single minute insect-the Chinch Bug -often so injures a crop of wheat that it is not worth the cutting.

## How to Counterwork noxious insects:

Since, then, we sustain such immense loss from insect injuries, the question presents itself, how can we avert wholly, or in part, that great evil, and in what way are we to be benefited by the services of one who makes it his especial duty to investigate the subject? There are two grand methods of counter-working a particular noxious insect. Ist, Prevention, i. e., guarding against
he advent of the evil by proper foreknowledge, and prophylactic steps; zd, Cure, i. e., the destruction of the pests, in one way or another, when once they are upon us. This last method consists of two distinct plans of action-that of killing directly by handpicking, machinery, or the application of destructive substances to the plants or animals affected; and that of causing them to be killed by encouraging their natural enemies.

Prevention.-The first method-prevention-is by far the most satisfactory.

> The feathery snow-flake, on its ærial course, Is made, with ease, to vanish by a breath;
> To avalanche augmented, 'tis the source Of dire calamity-inevitable death !

It is a notorious fact that many of the most troublesome weeds of American agriculture as also some of its very worst insect enemies have been imported among us from Europe; and in the Second Missouri Entomological Report will be found a partial list, which might be greatly extended, of such imported species. The single case of the Rape Butterfly (Pieris rapa) will serve to show how rapidly these foreigners multiply, and how injurious they become when unattended by the natural enemies which keep them in check in their native homes. Introduced at Quebec, Canada, in 1856, it has now spread over Canada West and most of the New England States, as far South as Baltimore and nearing the eastern limit of New York. It sweeps the cabbage crop at all points it reaches and caused, in 1871, a losis of $\$ 500,000$ in the vicinity of New York City alone, if we are to believe the New York Tribune.

Now, there cannot be the least doubt but that with the proper precautionary steps many of these immigrants from a foreign land need never have been introduced, or might have been stamped out, on first arrival, and kept from spreading over our fair country.

But insects not only spread from one country to another, they
ground; some never quit the trees on which they are born, while still others are apterous in the female sex, and have otherwise very feeble ambulatory power.

In checking the spread of noxious insects does not consist the only way to prevent their injuries. We can also take advantage of their weak points, or nip the evil in the bud. Thus, when we know that the parent Hessian-fly (Cecidomyia destructor) makes its first appearance in this latitule the fore part of September and usually leaves by the end of the same month, we may avoid its injuries by deferring the planting of our grain till into October. And if the parent Army-worm (Lucania unipuncta) deposits her eggs at at the base of grass stalks in the fall of the year, we may avoid the ravages of her progeny by burning the stubble in the winter. A great many species which, like the Army-worm, are difficult to control in their other stages, are thus readily killed in the egg stage.
Cure.-The second method, namely, the cure of the evil when once it is upon us, is sometimes sufficiently easy; at others almost, or quite, impossible. As, already stated, we have here two distinct lines of action. That of killing the pests requires our ingenuity in the construction of mechanical devices, or our time and patience in the test and repeated trial of some external application that will kill the enemy while it leaves the plant, or the animal, uninjured. Here we learn the value of such contrivances as Dr. Hull's Curcu-lio-catcher [Fig. 1] and the many modifications of it that have been used: here we see the importance of such applications as lime for slug-worms (genus Selandria) and other larve having soft, slimy skins; of white hellebore for the currant-worms (genus (Nematus), and of some preparation having Paris Green as its base, for the notorious Potato Beetle (Doryphora ro-lineata). As a rule, however, these methods of cure are far less satisfactory in their results than the modes of prevention, and should never be relied on when the latter can be resorted to.

spread from State to State, from county to county and from orchard to orchard, and in very many instances this spread from place to place is very easily prevented, but unfortunately, just as easily, and more often, aided by man. Quite a number of our most noxious species would scarcely spread fifty miles in a century, were it not for the aid which man in his carelessness gives them. Some are active but a single day in the year; some move slowly under

That of causing them to be killed by encouraging their natural enemies, is one of the most effectual methods of counterworking noxious insects. Among such natural enemies, birds, toads, snakes and other reptiles hold a prominent place; and we have here to treat of the complicated bird question, or what may be termed ornithological entomology, which is yet in its infancy and calls loudly for more attention. But the more important enemies of noxious insects are
found in their own Class, and consist of the predaceous or cannibal, and the parasitic species, wisely ordained to keep the others within due bounds.
It will be observed that in both these methods of fighting noxious insects-whether of prevention or cure-an accurate knowledge of the nature and of the habits of each particular species is absolutely necessary. It is the all-essential, the basis and groundwork on which every intelligent experiment must rest. It therefore becomes the duty of the economic entomologist primarily to study and give to the world accurate accounts, with descriptions, of such insects, whether friends or foes, as more particularly concern the husbandman.

## DUTIES OF A STATE ENTOMOLQGIST.

Many persons, not familiar with the facts here set forth, have no doubt wondered what can possibly be the duties of a State Entomologist ; while in the minds of not a few the idea prevails that he is to catch and kill, or by some means rid the State of, all vermin. As if by the power of an Aaron's wand or the magic hest of a mighty Mulciber, he could perform the augean task of clearing the land of insect plagues! It may not be amiss, therefore, to briefly define his duties.
Broadly speaking, insects are ten times as numerous in individuals and species as all other animals combined, and it is estimated that, on an average, there are five insects to one plant in any given area. From calculations which I have elsewhere made, (Am. Ent. II, p. 258) it would require the entire working life of eighty-three persons at a cost of one hundred and twenty-six million dollars to describe and figure, in all four stages, the insects of the world. Insufficient as the estimate doubtless is, it will serve to convey some idea of the magnitude of the subject of entomology.
Where the field is so wide the labors must be divided, and the comparatively few insects which particularly interest the producer are more than sufficient to occupy one man's time. The farmer, as a rule, has neither the meanis nor the opportunity to pursue the requisite studies; hence the wisdom of having a State officer for the purpose.
Such an officer should make an annual report, which should reflect the experience and observations of the year. Such a report, if well made, is, necessarily, the result of much labor in the field and close study in the closet, and should combine the practically useful with the scientifically accurate. It should be copiously illustrated, and the illustrations must generally be prepared from life by the author ; for, strange as it may seem, there are few artists -however talented they may otherwise be-who can draft an insect with anatomical precision. Such a report, aside from its educational value, is of great material value to the State; but its usefulness will depend on the methods established by law for its distribution, as well as on the time of year of such distribution. In our own State it is bound in with the Agricultural Report, which is often a bulky volume, requiring a large amount of postage when sent through the mail ; and I regret that there is not some provision of the law to have a small edition of the Entomological Report bound separately to meet the demand that is constantly being made of me for the same.
The State Entomologist must, further, answer by letter or through the columns of different journals a host of queries that are contin-
ually pouring in upon him from correspondents. He should endeavor to protect the farmer from the impostors and quack nostrum venders who are ever ready to palm off their vile compounds upon the unsophisticated, as panaceas for all vegetable and animal ills. He must lecture ; he must read a paper here and an essay there whenever good can thus be accomplished. He must travel hither and thither over the State, to investigate the insects that are peculiar to different sections; he must carry on all sorts of experiments; but above all he should employ every moment of time not otherwise occupied in ascertaining the habits and transformations of species.

These are the more ostensible duties of such an officer; but he has, in addition, to form a cabinet; and the collecting, the classification and arrangement, the proper determination of the species or description of such as are new-not to mention the manipulation necessary to prepare the specimens for such a cabinet-involve an amount of scientific detail and application, and of correspondence with scientific men throughout the civilized world, which few but those who have some insight into the life of a naturalist can appreciate.

Now, according to the means expended will be the results attained. There is a limit to one man's capabilities, and where the means are restricted, it often happens that only the independent enthusiast who looks for other than mercenary reward, can afford to fill such a position if he wishes to do any good at all. His expenses for engraving, electrotyping and other illustrating material ; for books, stationery, expressage and postage ; for assistance, experiments and experimenting material ; for cabinets, chemicals and paraphernalia for collecting and preserving; for traveling, etc., must all come from a salary which in no instance has yet exceeded $\$ 3,000$ per annum. The means are not at all commensurate with the vital interests at stake, and I hope to live to see the day when there will be a corps of well supported economic entomologists scattered through the country, instead of the few who are now in the field under crippled conditions. It is not well for our legislators to be penny wise and pound foolish in matters of this kind, and the office should be so endowed as to warrant at least the proper assistance. In my own capacity I have often felt cramped and restricted in my efforts; and experiments have frequently been valueless where, if they could have been carried out more thoroughly they might have resulted in great good. An incomplete experiment is negative and simply tantalizing where a full and thorough one would be positive and definite, and might prove of the utmost importance.
how to collect, preserve and study insects.
Few departments of natural history offer greater inducements or facilities to the student than Entomology. He need not pass his threshold for material, for it may be found on every hand and at all seasons. The directions for collecting, preserving and studying insects might be extended indefinitely in detail, as volumes have already been written on the subject: but the more general and important instructions are soon given.

Collecting-Beginners are very apt to supply themselves with all sorts of appliances advertised by natural history furnishing stores. Many of these appliances, when it comes to real practical
field work, are soon abandoned as useless incumbrances; and the greater the experience, the simpler will be the paraphernalia. My own equipment, on a collecting trip, consists chiefly of a cotton umbrella, a strong and narrow steel trowel or digger, a haversack slung across the shoulders, a cigar-box lined with sheet cork, and a small knapsack attached to a waist-belt which girts a coat, not of many colors, but of many pockets so made that in stooping nothing falls out of them. The umbrella is one of the indispensables. It shields, when necessary, from old Sol's scorching rays and from the pelting, drenching storm; brings within reach, by its hooked handle, many a larva-freighted bough which would otherwise remain undisturbed; and forms an excellent receptacle for all insects that may be dislodged from bush or branch. Opened and held inverted under a bough with the left hand, while the right manipulates a beating-stick cut for the occasion, it will be the recipient of many a choice specimen that would never have been espied amid its protective surroundings. Some collectors use an umbrella painted or lined on the inside with white to facilitate the detection of any object that drops into it; but as there are fully as many, if not more, pale and white insects as there are dark or black ones, the common dark umbrella is good enough for all ordinary purposes. The trowel is valuable for prying off the loosened bark from old trees, whether felled or standing, and for digging into the ground or into decaying stumps and logs. The haversack is for the carriage of different kinds of boxes (those made of tin being best) intended for larvæ and other forms which it is necessary to bring home alive for breeding purposes; and if made with a partition so that the filled and empty boxes may be separated, all the better: it may also be used for nets and other apparatus to be mentioned and for such provender as is necessary on the trip. The knapsack may be made on the plan of a cartridge-box, of stout canvas or leather, and should be of moderate size and slung on to the belt so as to be slipped to any part of the waist and not hinder free bodily motion. It may be used to carry bottles, phials and many other small appliances, and should be accordingly partitioned and furnished with loops or pockets on the inside. The cigar-box is for the reception of pinned specimens, and may be slipped on to the belt, or buttoned to the pants, by means of leather.

The greatest requisites in collecting are a pair of sharp eyes and ready hands, bat a few traps will materially aid. One of the most important is the hand-net, which may be made so as to subserve the two purposes of a sweeping, and an air net. The frame of the net which I use is illustrated herewith (Fig. 2), and will be found strong and serviceable and conveniently portable. It is constructed as follows: Take two pieces of stout brass wire, each about 20 inches long; bend them half-circularly and join at one end by a folding hinge having a check on one side (b). The other ends are bent and beaten into two square sockets ( $f$ ) which fit to a nut sunk and soldered into one end of a brass tube (d).
 When so fitted, they are secured by a large headed screw (e) threaded to fit into the nutsocket, and with a groove wide enough to receive the back of a
common pocket knife-blade. The wire hoop is easily detached and folded as at c for convenient carriage; and the handle may be made of any desired length by cutting a stick and fitting it into the hollow tube $a$, which should be about six inches long. It is well to have two separate hoop;, one of lighter wire furnished with silk gauze or some other light material for catching flying insects; and one which is stouter and furnished with a net of stronger material for sweeping non-flying specimens.
Another still more simple, but less convenient frame is thus described by my friend F. G. Sanborn, of Boston, Mass. :
[Fig. 3.]

"Make a loop of strong iron or brass wire, of about 3.16 ths of an inch in thickness, so that the diameter of the loop or circle will not exceed twelve inches, leaving an inch to an inch and a half of wire at each end bent at nearly right angles. Bind the two extremities of the wire together with smaller wire (Fig 3, a), and tin them by applying a drop of muriate of zinc, then holding it in the fire or over a gas flame until nearly red hot, when a few grains of block tin or soft solder placed upon them will flow evenly over the whole surface and join them firmly together. Take a Maynard rifle cartridge tube, or other brass tube of similar dimensions; if the former, file off the closed end or perforate it for the admission of the wire, and having tinned it in the same manner on the inside, push a tight-fitting cork half way through (Fig. 3, c), and pour into it melted tin or soft solder, and insert the wires; if carefully done you will have a firmly constructed and very durable foundation for a collecting net. The cork being extracted, will leave a convenient socket for inserting a stick or walking cane to serve as a handle."

The depth of the bag, in either case, should be fully twice the diameter of the hoop, so that by giving the net a twist the mouth may be closed and the contents thus secured. The sweeping net may be protected around the hoop with a covering of leather, and in use should be kept in a rapid back-and-forth motion, over and touching the plants, urtil the contents are to be examined; when by placing the head at the opening and quietly surveying the restless inmates, the desiderata may be secured and the rest turned out. A sudden dash of the air net will u;ually lay any flying object at the botton. A net for aquatic insects may be made on the same principle, but should be stout, with the meshes open enough to allow free passage of water, and the bag not quite as deep as the diameter of the hoop. A coarse sieve, together with a white towel, or sheet, will be found of great service for special occasions, particularly in the spring, when the search for minute insects found under old leaves or for pupæ around the butts of trees is contemplated. With the sheet spread on the ground, and a few handfuls of leaves and leafy mold sifted over it, many a minute specimen will be separated from the coarser par ticles and drop to the sheet where the eye may readily detect it Conversely the earth taken from around trees may be sifted so as to leave in the sieve such larger objects as pupæ, etc. Another favorite plan, with some collectors, of obtaining specimens, especially night-flying moths, is by "sugaring." This consists of applying to the trunks of trees some sweet and attractive and stupefying preparation. Diluted molasses or disolved brown sugar, mixed with rum or beer, are most frequently employed. I have found sugaring of little use till after the blossoming season, and-notwithstanding assertions to the contrary-it is almost impossible to so stupefy or intoxicate an insect that it will remain till the next morning. I generally sugar at eve and visit the tree, several times between sundown and midnight, armed with widemouthed killing bottles and accompanied by a second person who carries a dark-lantern. The collector should never go unprovided with a small box or tube full of different sized pins (a corked
cartridge tube makes a good box), a pair or two of forceps, a pair of scissors, a little mucilage and the killing apparatus to be described:

Killing-After capturing an insect, intended for the cabinet, the next thing is to kill and dispose of it till one gets home. All those-as the various beetles, bugs, some nerve-winged and some straight-winged insects-which have either hard or naked coverings and do not spoil when wetted, may be thrown into alcohol kept in stout, wide-mouthed and well-corked bottles. The alcohol at once kills and preserves.

The cyanide bottle is very useful for killing the more delicate scaly-winged and two-winged insects. It is a wide-mouthed bottle
 with a few grains of cyanide of potassium kept in place at the bottom by a layer of cotton wadding pressed down upon it and capped with something smooth, such as perforated cardboard. The cyanide is a deadly poison and soon kills anything thrown into the bottle. Different sized bottles may be used, and one made of a chemist's test tube (Fig. 4) is convenient in the field. In countries where the Laurel grows, its bruised leaves may be used in the place of the cyanide ; they kill less quickly, but have the advantage of safety. A small and stout bottle of chloroform with a brush securely inserted into the cork (Fig. 5) will be found very serviceable. A slight moistening through the airnet will stupefy most insects caught in it, and facilitate their removal to the cyanide bottle; while a touch or two with the wet brush under the head and thorax, will kill the more delicate specimens outright, without in the least injuring them. Another way of using chloroform is by means of a small hollow tube passed through the cork (Fig. 6), what is called jewelers' hollow wire answering the purpose. The liquid evaporates more rapidly in such

a bottle and I altogether prefer the first mentioned. Some large insects and especially female moths whose size prevents the use of the ordinary cyanide bottles, are difficult to kill. With these, fluttering may be prevented by the use of chloroform or by a squeeze of the thorax under the wings with the thumb and
 finger; and they may be killed by .puncturing the thorax, or piercing the body longitudinally, with a needle dipped in liquid cyanide, or in oxalic acid. A long bottle with a needle thrust into the cork may be kept for this purpose; but the needle must be of ivory or bone, as those of metal are corroded and eaten by the liquids. Hot water kills rapidly, and leaves the specimens in good flexible condition for mounting: the heads of large insects may be held for a few moments in the water, while smaller specimens should first be thrown into a corked bottle and the bottle submitted to the heat.

Entomotaxy-Unlike the ornithologist, the entomologist has no one word to express the preparing, setting and preserving of his specimens, but that used herewith will very well answer the purpose. In preparing insects for the cabinet, entomological pins, expressly made, should be used. Those manufactured by W. Kleger of Berlin, are far superior to those of American make, and may be obtained through the agency of several of our eastern natural history societies. They range, in number, from oo, or extremely fine, to 7 , which is coarse and stout. Nos. 2, 3, 4, 5 and 6 are the most useful, and the others may, in reality, be dispensed with. All insects should be pinned through the middle of the thorax, where -as is more generally the case-this portion (mesothorax) is largely developed. Beetles (Coleoptera) and Bugs (Hemiptera) should however, be pinned, the former through the right elytron or wing-cover (Fig. 7 a) the latter through the scutel or triangular [Fig. 7.] piece behind the thorax (Fig. 7b).
 The specimens look very pretty with all the legs neatly spread out, but for practical purposes, it is usually as well to let them dry in the naturally folded position: it is a saving of time, a saving of space, and the limbs are not so apt to break. There should always be about half an inch of the pin above the insect to facilitate handling, and uniformity in this regard will have much to do with the neat appearance of a collection. Most insects which are too small to be pierced by a No. 2 pin may be fastened to cardboard by means of gum tragacanth. A drop of corrosive sublimate, added to water with which the gum is diluted, will indefinitely prevent its souring. The card-board or bristle-board may be cut into points or tags of shape to suit the fancy. I use, myself, rows of wedge-shaped points (Fig. 8) of three different sizes
[Fig. 8.] according to the insects to be fast-
 ened ; and to facilitate the cutting of these rows, and to obtain uniformity, I have had three different sized stamps made, which prick the paper and indicate each angle or corner. Delicate flies and moths which it will not do to fasten with mucilage, may first be mounted on very fine pins (Nos. 19 and 20 made by Eddleston \& Williams, Crown Court, Cheapside, London, are very fine and excellent) and these inserted into one end of little strips of cork or pith, through the other end of which a No. 3 or 4 Klæger pin passes to secure the specimen in the cabinet. By this means the proper height is preserved, and the inconvenience and vexation of handling such very fine pins obviated:
For the proper setting of insects with broad and flattened wings, such as butterflies and moths, aspreading board or stretcher is necessary. One that is simple and answers every purpose is shown at Fig.
 9. It may be made of two pieces of thin white-wood or pine board, fastened together by braces, especially at the ends, and left wide enough apart to admit the bodies of the insects to be spread ; strips of cork or pith, in which to fasten the pins, may then be tacked or glued below so as to cover the intervening space. The braces must be deep
enough to prevent the pins from touching anything the stretcher may be laid on, and by attaching a ring or loop to one of them, the stretcher may be hung against a wall, out of the way. For ordin-ary-sized specimens I use boards 2 feet long, 3 inches wide and 5/3 inch thick, with three braces (one in the middle and one at each end) $11 / 2$ inches deep at the ends, but narrowing from each end to I I-6th inches at the middle. This slight rising from the middle is to counteract the tendency of the wings, however well dried, to drop a little after the insect is placed in the cabinet. The wings are held in position by means of strips of paper (Fig. 9) until dry. For stretching the wings, and for many other purposes, a handled needle will be found useful. Split off, with the grain, a piece of pine wood three or four inches long; hold it in the right hand; take a medium-sized needle in the left hand; hold it upright with [Fig. ro.] the point touching a walnut table, or other hard-grained
 wood, and bring a steady pressure to bear on the pine. The head of the needle will sink to any required distance into the pine, which may then be whittled off, and you have just the thing you want (Fig. 10). To obtain uniformity in the position of the wings, a good rule is to have the inner margins of the front wings as nearly as possible on a straight line (Fig. 9). When the specimens are thoroughly stiff and dry, they should be taken from the stretcher and kept for several weeks in the drying box before being permanently placed in the cabinet. The drying box is simply a box of any required dimensions, containing a series of shelves on which to pin the specimens, and without a solid back or front. The back is covered on the inside with fine gauze and on the outside with coarser wire, and the door in front consists of a close-fitting frame of the same material-the object being to allow free passage of air, but at the same time to keep out dust and prevent the gnawings of mice and other animals. The shelves should be not less than two inches deep, and if made in the form of a quadrangular frame braced with two cross pieces on which to tack sheet cork, they will serve for the double purpose of drying spread specimens, and for the spreading of others; as there are many insects with long legs, which are more conveniently spread on such a board, by means of triangular pieces of stiff card-board or "saddles," than on the stretcher already described.

Cabinet and Boxes. - The boxes or cases which are used to keep insects in permanently, may be made of any dimensions to suit the fancy- $12 \times 16$ inches being a convenient size. They must, however, be perfectly tight, and should not be more than $25 / 2$ inches deep on the inside. The bottoms must be lined with something which will hold the pins, and the whole inside covered with white paper. While the size and style of box and cabinet may be left to the individual taste, some choice must be had of material. Red cedar should never be used. I have learned, to my sorrow, the baneful effects of this wood, notwithstanding it is recommendedevidently by those who are guiltless of having used it-as having the advantage over other wood, of keeping off museum pests. It seems impossible to get this wood so seasoned but that a certain amount of resin will continually exude from it; and insects in boxes of this material, are very apt to soften and become greasy. Paper boxes are also bad, as they attract moisture and cause the
specimens to mold. The French used to make very neat boxes of this material, and Dr. Frtch, of New Yorik, imported a number for his insects. He has been paid for his trouble by having almost all of his specimens ruined by mold. I use, myself, well seasoned pine and white wood; and in such boxes as have glass covers and are intended to form part of a neat cabinet for parlor ornament, the fronts may be of walnut or cherry.

A very convenient and secure box, made to look like a book, is manufactured (price $\$ 3.00$ ) by Mr. J. S. Ridings, of Philadelphia. It is neat, may be stood edgewise on a book shelf, is easily handled, and is withal valuable to the working student, because new boxes may be added, in their proper places, as the collection increases; and the insects always kept in proper systematic arrangement. Such boxes are also readily packed and moved from one place to another, and for this reason will commend themselves to the itinerant entomologist. To hold the pins, various substances may be used, but nothing surpasses cork. It may be obtained in sheets, $12 \times 31 / 2 \times 3 / 4$ inches, made expressly. It is for sale by several parties in the East, and is advertised by the Naturalists' Agency, Salem, Mass. The pith of Elder, Broom-corn, or Indian corn may be used by those who have time to properly cut it into uniform and square pieces; but it should first be boiled to extract the saccharine matter it con. tains, and afterwards very thoroughly dried: otherwise it will corrode the pins. Boiler felt, properly split, has the advantage of cheapness and is valuable. Where none of these materials can be obtained, two sheets of stiff paper, stretched on each side of a frame $1 / 4$ of an inch deep, and supported on a ledge of the same depth, may be fastened into the bottom of the box; and even bog peat, or a couple of thicknesses of blanket will serve a good purpose. All specimens should be properly labeled before they are placed in the cabinet. The name, food-plant, date and place of capture and any other brief notes that may be of value for future reference can be inserted with the insect; but more extended notes, such as habits and descriptions of immature stages, should be made in a note book against numbers corresponding to others pinned with the specimens. A collection well mounted and cared for, will last indefinitely. It must be kept from the light, which fades the specimens, and by all means from dampness. The preserved insects if not constantly cared for and watched, will soon be devoured by mites, Psoci, Dermestes and other museum pests, against which there is nothing so effectual as vigilance. A little
 camphor kept in the boxes, will assist in preserving the collection from these enemies: but it should not be used too freely, as I incline to think it has something to do in causing the specimens to grease. For inserting the more delicate pins, and for numerous other necessary operations, different forceps, and especially those shown at Figures 11, 12, and 13, will [Fig. xi.] be found invaluabl

[Fig. 13.] Relaxing.-Specimens which have become stiff before being spread, or which need resetting, may be relaxed by placing them in a tight tin vessel, half filled with moist sand; and a little carbolic acid in the moistening will prevent molding.
Breeding.-Far too little attention has been given by entomologists in this country to the breeding or rearing of insects, notwithstanding it offers a greater field for usefulness, and for original observation, than any other special branch of the science.
Insects are by no means difficult to rear, and there is a genuine pleasure in watching their transformations, and in the anticipation and expectancy with which one looks forward to the ultimate form of some new or uniamiliar larva. If it is gratifying to be able to properly determine and classify a species, it is still more so to be acquainted with it in all its forms, and to understand its curious habits and ways of life.
In the hands of the careful breeder an insect may be secured against its numerous natural enemies, and against vicissitudes of climate; and will consequently be more apt to mature than in a state of nature. Yet the great secret of successful breeding lies in otherwise supplying, as far as possible, the natural conditions. The breeding of aquatic insects requires properly arranged aquaria, and is always attended with the difficulty of furnishing a proper supply of food. The transformations of many others, both aquatic and terrestrial, can only be studied by close and careful out-door observation. But the great majority of insect larvæ may be reared to the perfect state indoors, where their manœuverings may be constantly and conveniently watched. For the feeding of small species, glass jars, and wide-mouthed bottles will be found useful. The mouths should be covered with ganze or old linen, fastened either by thread or rubber; and a few inches of moist earth at the bottom will furnish a retreat for those which enter it to transform, and keep the atmosphere in a moist and fit condition.


For larger insects I use a breeding cage of my own devising and which answers the purpose admirably. It is represented in Fig. 14, and comprises three distinct parts. Ist, the bottom board (a) consisting of a square piece of inch-thick walnut with a rectangular zinc pan (ff), 4 inches deep, fastened to it, above, and with two cross pieces (gg) below, to prevent cracking or warping, facilitate lifting, and allow
the air to pass underneath the cage. $2 d$, a box $(b)$, with three glass sides and a glass door in front, to fit over the zinc pan. 3 d , a cap (c) which fits closely on to the box, and has a top of fine wire gauze. To the center of the zinc pan is soldered a zinc tube (d) just large enough to contain an ordinary quinine bottle. The zinc pan is filled with clean sifted earth or sand (e), and the quinine bottle is for the reception of the food-plant. The cage admits of abundant light and air, and also of the easy removal of excrement and frass which falls to the ground; while the insects in transforming enter the ground or attach themselves to the sides or the cap according to their habits. The most convenient dimensions I find to be 12 inches square and 18 inches high: the cap and the door fit closely by means of rabbets, and the former has a depth of about 4 inches to admit of the largest cocoon being spun in it without touching the box on which its rests.

A dozen such cages will furnish room for the annual breeding of a great number of species, as several having different habits and appearance, and which there is no danger of confounding, may be simultaneously fed in the same cage. I number each of the three parts of each cage to prevent misplacement and to facilitate reference, and aside from the notes made in the note book, it will aid the memory, and expedite matters to keep a short open record of the species contained in each cage by means of slips of paper pasted on to the glass door. As fast as the different specimens complete their transformations and are taken from the cage, the notes may be altered or erased, or the slips wetted and removed entirely. To prevent possible confounding of the different species which enter the ground, it is well, from time to time, to sift the earth, separate the pupæ and place them in what I call " imago cages," used for this purpose alone and not for feeding. Here they may be arranged with references to their exact whereabouts.

A continued supply of fresh food must be given to those insects which are feeding, and a bit of moist sponge thrust into the mouth of the bottle will prevent drowning and furnish moisture to such as need it. By means of a paste-brush and spoon the frass may be daily removed from the earth, which should, by sprinkling, be kept in a fit and moist condition-neither too wet nor too dry. In the winter, when insect life is dormant, the earth may be covered with a layer of clean moss, and the cages put away in the cellar, where they will need only occasional inspection, but where the moss must nevertheless be kept damp. Cages made after the same plan but with the sides of wire gauze instead of glass, may be used for insects which do not well bear confinement indoors, the cages to be placed on a platform on the north side of a house, where they will receive only the early morning and late evening sun.

Such are a few directions, of a most general nature, for those wishing to commence to collect and study insects. Experience will teach a hundred others here unmentioned, and the best closing advice which I can give to the novice is to get acquainted, if possible, with some one who already has that experience. You will find him pleasant and instructive company-whether in the field or the closet.
102.


## CLIMATOLOGY.

By GEORGE ENGELMANN, M.D.

The climate of a country is the result of its geographical position and its topographical configuration. Missouri, in the center of that part of the great North American Continent that estends from the Rocky Mountains eastward to the Atlantic Ocean, in a great plain, so to say, unprotected by mountain ranges, unmodified by the proximity of oceans and their currents: largely partakes of and typically exemplifies the "continental climate," i. e., a climate of extremes, extremes in heat and cold, moisture and drought.

Missouri is a great undulating plain extending from the 36 th to the 4ist degree of north latitude, and between the 12 th and 19th degree of longitude west of Washington, rising from its eastern border, on the winding course of the Mississippi River, toward the west and northwest, from less than 300 feet to 12 or 1,400 feet above the ocean; open towards the Gulf of Mexico, 500 miles distant ; open toward the northern country at the sources of the Mississippi and the Arctic regions, open eastward through the Ohio Valley to the Alleghany Ranges, and open westward through the Missouri Valley toward the Rocky Mountains; well watered by the Mississippi and Missouri Rivers and their affluents.

The altitude above the sea on the Mississippi River rises from only about 275 feet near the southeast corner of the State, to 445 feet on its northeast corner. On the Missouri River, it rises from near 400 feet at its mouth to over 1,000 feet at the northwest corner of the State. The inland portion on these points lies from 50 to 200 feet higher than the low water-mark of the rivers, and on the water-sheds of their affluents it is from 400 to 600 feet higher yet, while the elevation of the Ozark Hills, in the southeastern and southern parts of the State, amounts to several hundred feet more, just enough to influence the climate locally, but not sufficient to bear on that of the whole State.

The principal elements of the climate of a country are its temperature and its moisture. They influence and condition the existence and prosperity of organized life and the well-being of the human family. But these elements are to be considered not only in their averages, but even more so in their extremes; for the extremes establish the geographical limits of many productions. Unfortunately, we have precise observations only of St. Louis, where my observations extend through nearly 40 years. Of other parts of the State we must judge from the scanty observations made in neighboring States, or from analogy. My records give the mean temperature of the city of St. Louis $55^{\circ} 5 \mathrm{~F}$., with a variation in different years from $53^{\circ} 4$ to $58^{\circ} \mathrm{O}$, and with a range between extremes from $-22^{\circ} 5$ to $+104^{\circ} 0$. Comparative observations prove that these temperatures are peculiar to the built-up, paved, and almost vegetation-less city, and that in the country, even in the immediate neighborhood, the temperature is on an average 2 degrees lower, while in certain localities and under certain influences of wind and moisture, it may differ occasionally as much as 8 or ro degrees. We are therefore justified in assuming for the country near St. Louis a mean temperature of 53 degrees. The mean temperature of the seasons varies even more than that of the whole year. Our winters may be estimated at $32^{\circ}$ ( in the city $33^{\circ} 6$ ) with the extremes of $25^{\circ}$ and $40^{\circ}$; and the summers at $75^{\circ}$ ( in the city $76^{\circ} 8$ ) with the extremes of $70^{\circ}$ and $80^{\circ}$. The following table gives the exact datas for the city:


The two last lines, novel in such tables, but practically quite important, require some explanation. They indicate that the lowest temperature in our St. Louis winters may rot fall below $+4^{\circ}$ or it may fall as low as $-22^{\circ}$; it ranges between $+4^{\circ}$ and $-22^{\circ}$ : thus in the same season we reach always a temperature of at least $49^{\circ}$, but it may rise to $81^{\circ}$. Then our summer heat sometimes does not exceed $93^{\circ}$, but may rise to $104^{\circ}$, while it never falls below $43^{\circ}$, but sometimes not below $57^{\circ}$. The extreme daily ranges of temperature amount, in winter and spring, sometimes to $56^{\circ}$, while in summer and fall they do not exceed $40^{\circ}$.
The last frosts in spring occur between March I $3^{\text {th }}$ and May 2d, on an average about April 5 th ; and the earliest autumnal frosts set in between October 4th and November 26th, on an average about October 27 th ; the period between these two terms extends in different years, from 184 to 252 days, on an average 205 days. In the southeast part of the State these limits of the freezing point will, of course, be much wider apart: and in the northwest, rarrowed down considerably. Our spring opens in March, though in some favored seasons vegetation breaks through its wintry bounds already in the latter part of February, while in a few very late years it can hardly be said to have fairly commenced before the middle of April. The progress of vegetable development can best be appreciated by the observation of common and well-known wild or cultivated trees and shrubs. Thus we find that the first in bloom is the alder and the hazel, next-not rarely retarded by intervening cold spells-the soft or silverleaf maple ; and a few days after this, our common white elm blooms, between February 24th and April 15th, on an average March 19th. During the next following days roses, syringas, gooseberries, and many other bushes, and the weeping willows show their young leaves. About two weeks after the elms-between March 18th and April 25th, on an average about April 2d-the peach trees open their first blossoms, and are one week later in full bloom. Plum and pear trees, and sweet cherries blossom about the same time, or a few days later, and then the sour cherries and the glory of our rich woods, the redbuds. Between March 2rst and May ist (mean April 14th), the early apple trees begin to bloom; and between March 28th and May roth (mean April 2oth) may be said to be in full bloom. Syringas bloom about the same time, crab apples five to eight days later, and a few days after them the quince bushes. The acacia, or black locust, native of our southeastern border and cultivated everywhere about farms and in towns, begins to bloom between April Irth and May 23d, on an average May rst, and six to ten days later are in its fullest fragrant glory. Ripening strawberries and cherries, and blooming roses closely follow it, and the catalpa, a very irregular bloomer, comes in full development generally between two and three weeks after the acacia.
The maturity and harvest of the winter wheat immediately succeeds the catalpa, between June roth and July ist, usually about June 20th.
The two seasons of 1842 and 1843 well represented the extremes, the former having exhibited the earliest and the latter about the latest vegetable development, within the last 40 years, in this neighborhood, the difference embracing a period of five to seven weeks.

The average temperature of a State of the extent of Missouri must necessarily vary considerably from that of the country about St. Louis; it recedes as we approach the more elevated plains of the West and of the North; the mean summer temperature probably varies but little in going due West, while the winter temperature falls considerably, as the isothermal lines of the map approximately indicate. The mean temperature of the northern part of the State is about 3 degrees lower than that of the country about St. Louis, and that of the low southeastern corner near 5 degrees higher.

In connection with our winter temperature, it must be mentioned that the Mississippi at St. Louis freezes over about once in four or five years, partly, no doubt, in consequence of the heavy ice floating down from the North, and then remains closed for one or two or even four or six weeks, sometimes passable for the heaviest teams. Our river has been known to close as early as the first week in December, and, in other years, to open as late as the last week in February, while the running ice may impede or interrupt navigation between the end of November and the end of February, sometimes as low down as the southeast corner of the State; the river is said, however, never to freeze over below Cape Girardeau.

The Missouri River is sometimes closed in the latter part of November, and has been known to remain firmly bridged over into the first week of March.
The climate of Missouri is on the whole a dry one, with strong evaporation and an atmosphere but rarely overloaded with moisture. The average amonnt of vapor, or rather dissolved water, in the atmosphere, the relative humidity, is only 66 ( 66 per cent. of complete saturation), 72 in winter, 59 in spring, 66 in summer and 68 in autumn. Thus, spring proves to have the driest atmosphere, and April (56) more than any other month, which, by the way, is perfectly compatible with the considerable fall of rain in spring.
We enjoy in Missouri an unusual amount of fair weather. Our autumnal season is celebrated for it, and also in the other parts of the year fair weather and bright sunshine prevails to the great benefit of organized life and the well-being of the human family.

|  | Winter. | Spring. | Summer. | Autumn. | Whole Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Clear or nearly clear davs................... | 30 |  | 40 | 40 |  |
| Partially clear and variable days........... | 39 | 47 | 48 | 39 | ${ }^{173}$ |
| Days when the sun remains obscured..... | ${ }^{21}$ | 12 | 4 | 12 | 49 |

Meteorologists have still another method to express the same facts, by rating the clear sky as 0 , and the overcast one as 10, with the intermediate grades. Aiter this method, we find the five months from November to March rated between 5 and $5 \frac{1}{2}$; April, May, and October between 4 and 5 ; June till September between $3^{1 / 2}$ and 4 ; and the whole average year at $4 \frac{1}{2}$ of proportional cloudiness.

The average annual rainfall, including the melted snow, in St. Louis is 41 inches, but varies considerably in different years; it has been as low as 25 and as high as 68 inches. Our regular rainy season extends from the middle of April to the middle of July, comprising the latter part of spring and the earlier part of summer. This, however, often suffers exceptions, as in our latitude the seasons are not so distinctly marked as nearer the tropics.

| ranvpazi. | Winter. | Spring. | Summer. | Autumn. | Whote Year. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Average rainfall in inches. <br> Highest | 16 | ${ }_{21}^{12}$ | 13 32 | ${ }_{20}^{9}$ | 47 68 |
| Lowest................................................... |  | 5 | 5 | 3 | 25 |

In the low southeastern part of the State, the annual rainfall is at least five inches higher than at St. Louis, while westward and northwestward, it diminishes to not more than 30 inches.

Our summer rains mostly descend with great abundance and in a comparatively short time, so that the average 13 inches of summer rain fall in 70 hours, distributed over 24 days, while the 7 inches of winter rain (and snow) descend in 160 hours and on 22 days. The days on which it rains vary between 68 and 115 in the year, in the average 92 .

Snow is rather scarce in our climate, and rarely continually covers the ground for more than a few days or a week, but it has been known to fall about St. Louis as early as October 5, and as late as

April 16. In some years it amounted, when melted, to $5^{1 / 2}$ inches, in others to only one half inch; the average is about $2 x / 3$ inches.
Our rivers rise-in consequence of the heaviness of our spring and summer rains much more than from the thawing of snows in the northwestern plains and mountains,-generally between April and June, the Mississippi at St. Louis sometimes not more than 20 or 25 feet, but occasionally (1844) as much as 44 feet, above low water mark, while in the fall and winter months they are quite low.
The atmospherical pressure (indicated by the stage of the barometer) is with us in summer more uniform and regular than on the Atlantic coast, while in winter it fluctuates considerably, and often very rapidly. The average barometrical pressure is highest in January, falls till May and then gradually rises again till January; it is most variable from November to March, and least so from June to August.
The barometrical indications perfectly correspond with the winds ; they are more moderate here in the interior than on the Atlantic coast, but winter storms from the West and Northwest are not rare, and extend over the whole country, traveling from the Rocky Mountains across the Mississippi Valley to the Atlantic coast in about two days. During the winter season, westerly winds prevail scarcely more than southeasterly ones, while during the warmer months, from May to October, "southeasterly ones largely predominate over all others.
Thunderstorms are frequent in spring, (on an average 14,) and especially in summer (20), especially from May to July; much rarer in autumn (7), and winter (2). In the warmer seasons they are sometimes accompanied by short but violent tornadoes, which invariably, like most thunderstorms, come from the southwest, and sometimes do considerable damage. Violent hail storms have prevailed in some seasons and some localities, while others have been free from their imjurious visitations.

The native vegetation which covers the surface of our State results from the climatological conditions above enumerated, and thus permits us to judge of and mark these conditions. In the southwestern corner of the State, marked on the map as being blessed with the warmest temperature and the greatest moisture, we find the cypress and the cane in the predominating low grounds, and the Spanish oak, mixed with more northern oaks and hickories on the slopes. Besides corn and tobacco, cotton is a staple product of this district. West and north of this region we find the broad belt of timbered lands of the State, which sends its spurs up the river valleys. The characteristic trees in the wide river bottoms are, the cottonwood and the sycamore, the elm and black walnut, the pecan, the hackberry and the honey locust, with very few oaks. The smaller river and creek bottoms, and the slopes of their bluffs, are the favorite localities for the linden, the mulberry, the black birch, the buckeye, the silver maple, while on the fertile hills the sugar maple abounds, with several species of hickory. The rolling uplands are characterized by numerous oaks, prominent among which is the white, post and black oak, and the different hickories. Wheat, corn, hemp and tobacco are the staples of this district, distributed according to the fertility of the soil.

The only pine woods in the State (yellow pine, Pinus mitis,) are found where the Silurian formation furnishes a sufficiency of silicious material ; they occupy a belt south of the Missouri River, extending in a southwestern direction along the Ozark hills.

West and northwest of the timbered region spread the great prairies, covered with native grasses, interspersed with numerous flowering herbs, especially of the aster and sunflower tribes; even here some timber is generally found in the valleys along the water courses, and sometimes on the ridges. They furnish excellent wheat and corn lands.
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## GEOLOGY.

## By Hon. G. C. SWALLOW, A. M., M. D.,

Professor of Geology, Agriculture and Botany, in the University of the State of Missouri, and late State Geologist.

## ROCK FORMATIONS OF MISSOURI.

The stratified rocks of Missouri belong to the following divisions:

System I -Quaternary; System II - Tertiary. System III Cretaceous ( ) ; System IV-Carboniferous; System V-Devonian: System VI-Silurian? System VII-Azoic.

The rocks of these divisions will be examined in their order from the top, down.

## SYSTEM I - QUATERNARY.

When it is remembered that these formations contain the entire geological record of all the cycles from the end of the Tertiary period to the present time, and that their economical value is greater than that of all the other formations combined, I shall need no apology for entering somewhat into details in recording the phenomena they present.

The Quaternary or Post Tertiary system comprises the Drift and all the deposits above it-all the strata included in the Alluvium and Diluvium of former authors. There are, within this period, four distinct and well marked formations in this State, which we have thus named in the order of their stratigraphical position:*

Alluvium, 30 feet thick; Bottom Prairie, 35 feet thick; Bluff, 200 feet thick; Drift, 155 feet thick.

All of the latest deposits-all that have been formed since the present order of things commenced upon our continent-are included in the

> alluvium.

All the deposits observed in the State, belonging to this formation, are :

1st, Soils: 2d, Pebbles and Sand; 3d, Clays; 4th, Vegetable Mold or Humus; 5th, Bog Iron Ore; 6th, Calcareous Tufa; 7th, Stalactites and Stalagmites.
ist. Soils are a well known mixture of various comminuted and decomposed mineral substances, combined and mingled with decayed vegetable and animal remains, all comprising those ingredients peculiarly adapted to the nourishment of the vegetable kingdom. They are formed by the action of water, particularly in the form of rain and dews, cold, heat, and other atmospheric influences, together with the coöperation of the vegetable and animal kingdoms.

But the soils of Missouri are made up by the mingling of organic matter with the comminuted marls, clays and sands of the Quaternary Deposits, which cover all parts of the State with a vast abundance of the very best materials for their rapid formation.

* See the Section of the Rocks of Missouri on opposite page.

Hence the soils of the State, are very deep and wonderfully productive; save in those limited localities where the materials of the Quaternary Strata are unusually coarse, or entirely wanting.

2d. Pebbles and Siand. Many of our streams abound in waterworn pebbles, which constitute their beds, and form bars along their margins and across their channels. These pebbles were derived from the drift and the harder portions of the adjacent rocks. They vary in size according to the transporting power of the streams in which they are found.

The economical value of these pebbles for roads and streets, and the obstruction they often present to navigation, as in the Osage, give them unusual importance in our geology. The Osage, Gasconade, Niangua, Marais Des Cygnes, . Sac and Spring Rivers of the South, and the Salt, South, North, Fabius and Chariton of the North, all furnish good and abundant examples of those deposits which have been formed by the action of those streams.

Sand is the most abundant material in the alluvial bottoms of the great rivers in the State. Vast quantities of it are constantly borne along by the irresistible current of the Missouri. Its whirling, rolling, turbulent waters form of it extensive bars in incredibly short periods, which they again wear away, often still more rapidly than they were formed
These sand-bars so common in this stream, frequently extend along its bed several miles, with a brealth varying from one to five orsix furlongs, and limited in thickness unly by the depth of the water. A slight fall in the river leaves these vast sand-beds dry, when their surfaces are soon covered by a growth of weeds, interspersed with young willows, cottonwood, and sycamores. The fickle stream, however, seldom leaves these sand-beds to a long repose, but returns to its old channel by a rapid removal of their loose materials.

At high stages of water, both the Missouri and Mississippi overflow their low bottoms, and leave deposits of a grayish-brown, or a grayish-yellow sand, similar to that in the sand-bars mentioned above. The thickness of these beds depends upon the height and continuance of the overflowing waters, varying from a mere perceptible stratum to several feet.
That from the flood of 1844 is very conspicuous throughout the length of the Missouri bottom. It is sometimes six or eight feet thick, particularly in low bottoms so heavily timbered as to obstruct the current.

At the lower end of the Waconda Prairie, this deposit is very evenly distributed over its surface; but it increases in thickness as the prairie descends to the low timbered bottoms, lower down the stream, where it is six or seven feet, and its surface becomes very irregular, like the surface of a lake, when disturbed by a high wind, or a chopped sea.

These sands were doubtless derived from those extensive sandstone formations on the Platte.

3d, Clays. These are dark bluish-gray, argillaceous strata, rendered more or less impure by fine silicious, calcareous and decomposed organic matter. When the floods of the Mississippi and the Missouri subside, the lagoons, sloughs, and lakes are left full of turbid water. The coarser materials soon settle into a stratum of sand, but the finer particles more gradually subside, and form the silico-calcareous clays of their alluvial bottoms. Thus,
after each flood, new strata of sand and clay are deposited, until the lakes and sloughs are silted up.

When the lakes and sloughs of these bottoms are so far filled up as to sustain vegetable life, the decay of the annual growth, and of the foreign matter which falls or floats into these waters, forms a stratum of humus at the bottom, over the beds of clay and sand, previously deposited by the floods and still waters. Another overflow gives another succession of sand and clay; and the succeeding annual crop of vegetable matter, another stratum of humus.

These changes have often continued until several series of these deposits were formed; but when the bottom; of those bodies of water had been thus raised so high above the river, that the floods thus frequently flowed into them, the deposits of sand diminished, and the long quiet intervals favored the deposition of clay and humus. In time, these shallow waters became mere marshes, where a rank vegetation rapidly formed thick beds of vegetable mold, for the support of the magnificent forests which now occupy the sites of those ancient lakes and sloughs.

Such is the structure of the vast alluvial plains bordering the Missouri and Mississippi Rivers.

The bottom of the Missouri, extending from the Iowa line to its mouth, is about seven hundred miles long and five broad, presenting an area of 3,500 square miles; more than one-half of this, say 2,000 square miles, may be set down as alluvium, while the river, "bottom-prairies" and lakes, occupy the remainder.

On the Missouri side of the Mississippi bottom, there are about, 4,300 square miles of alluvial bottom of a similar character. Thus the alluvial bottoms of our two great rivers alone, give more than $4,000,000$ acres of land based upon these strata of sands, clays, marls and humus.

And besides, the quantity is constantly increasing by the silting up of the slonghs and lakes, as above described.

The soil formed upon these alluvial beds, is deep, light, and rich almost beyond comparison, as is abundantly proved by the immense burden of timber* growing upon it, and by the unparalleled crops of hemp, tobacco and corn, harvested from its cultivated fields.

## BOTTOM PRAIRIE.

This important formation, in many respects, resembles that of the alluvial bottoms above described, with which it has usually been

* In the fall of 1856, our surveying party measured several trees in Southeastern Missouri. The following measurements were obtained from some of the largest trees of those species :-
In Stoddard Co., a Beach, Fagus ferruginea, 18 feet in circumference and 100 feet high.
In Stoddard Co., a Tupelo Gum, Nyssa grandidentata, 20 feet circumference and 120 feet high.
In Dunklin Co., a Catalpa, Catalpa bignonioides, 10 feet circumference and 90 feet high.
In Pemiscot Co., an Elm, Ulmus Americana, 22 feet circumference and 100 feet high.
In New Madrid Co., a Cypress, Tixodium distichum, 29 feet circum!erence and 125 feet high.
In Cape Girardeau Co., a Sweet Gum, Liquidamibar Styracifua, 15 feet circumference and 130 feet high.
In Cape Girardeau Co., a White Ash, Fraxinus Americana, 18 feet circumference and Iro feet high.
In Mississippi Co., a Spanish Onk, Quercus faliata, 28 feet circumference and 100 feet high.
In Mississippi Co., a Sycamore, Platanues occidentalis, 43 feet in circumference. This Scanore was hollow, and the cavity measured $151 / 2$ feet in one diameter, and 13 in the other.
confounded by geologists; though agriculturalists have made a distinction.

There are, however, important differences:-
Ist. The stratification in the prairie is much more uniform, and more regulàrly extended over wide areas.

2d. In the prairie formation, the strata are not so distinct, nor are they so purely silicious or argillaceous.

3d. It was evidently formed by agencies operating over the entire bottoms, whose action was more uniform and quiet, and continued uninterrupted through longer periods than those now forming the alluvial deposits in the same bottoms.
$4^{\text {th }}$. Where these two formations meet, one can usually trace out the line of demarcation. Either the strata of the prairie pass under those of the alluvium, or are cut off and replaced by them.

5th. The alluvial bottom is continually increased at the expense of the prairie, through the action of the rivers. The current is constantly cutting away the prairie, forming new channels, and filling up the old ones with drift and silt.
6th. No causes now in operation could, at the present level of the country, produce a formation of such extent and uniform structure as the bottom prairies.

Such are some of the facts which have convinced me that this is an older formation, and one entirely distinct from the alluvial bottoms. Several facts show it to be distinct from, and newer than, the Bluff. Its composition, structure, and position, are entirely different, and in many places the bottom prairie rests non-conformally upon the bluff, as at St. Joseph, and the mouth of the Big Nemaha.

This formation, like the last, is mide up of sands, clays, vegetable mould, variously interstratified.

The sand in the upper part is fine and yellowish brown, like that of the Missouri sand-bars; but the lower beds are more purely silicious.

The clays are usually dark, bluish-brown, and marly, with more or less sand and humus intermingled.

The humus or vegetable mold has a brownish or black color; when wet it is somewhat plastic, and slightly tenacious; when dry, it is brittle, and breaks into angular fragments, and can be easily reduced to an impalpable powder. These beds of humus were evidently formed by the growth and decay of plants in the localities where they are found.

Range and Thickness. This formation is confined to the bottoms of the Missouri and Mississippi Rivers, and is more abundant and better characterized on the former. The bottom prairie is about half as extensive as the alluvial bottoms above described, and sustains a soil of equal fertility. This estimate will give us about 2,000,000 acres of these vastly rich savannas, all prepared by nature for the plow. Their agricultural capacities are scarcely inferior to any lands in the world, as is fully demonstrated by the mineral contents of the strata, and the products of the numerous flourishing farms located upon them.

The Organic Remains of the bottom prairie, are numerous and well preserved. All the shells of the bluff, save the Helicina occulta, have been found in it; but no remains of the elephant or mastodon have yet been detected. We have collected many species of trees and vines from these beds.

These "Bottom Prairies" extended from the mouth of the Yel. lowstone to the Mississippi, and probably from the St. Peter's to the Arkansas. Since they were formed, the rivers have been ever busy wearing away the bottom prairie and depositing the alluvial bottoms above described, until we have but few remnants, such as the Waconda and Hupan-Kuty, of the vast bottom prairie which once occupied these great valleys. These beautiful savannas are almost universally called "Bottom Prairie," and I have proposed that as the geological name of the interesting formation on which they rest. The scenery of the alluvial bottom and the bottom prairie is well represented in Section 2 and Plate 12 of my Geological Report.

## Bluff.

This formation rests upon the drift, as is obvious whenever the two formations are well developed. In many places, as at St. Joseph and at the mouth of the Big Nemeha, it is seen dipping beneath the beds of the bottom prairie. The bluff formation rests upon the ridges and river bluffs, and descends along their slopes to the lowest valleys. The bottom prairie is confined to the river bottoms, and was deposited in horizontal beds between the bluffs. Thus, while the bottom prairie occupies a higher geological horizon, the bluff is usually several hundred feet above it in the topographical.
This formation, when well developed, usually presents a fine pulverulent, obsoletely stratified mass of light-grayish buff, silicious and slightly indurated marl. Its color is usually variegated with deeper brown stains of oxide of iron. The bluff above St. Joseph exhibits an exposure of it 140 feet thick, presenting its usual characteristic features. When but sparingly developed, it generally becomes more argillaceous, and assumes a deeper brown or red color, as on the railroad south of Palmyra, where it is a dark brick red tinged with purple. In some places, the ferruginous and calcareous matter increases, and we find concretions of marl and iron-stone, either disseminated through or arranged in horizontal belts. At other places, it has made more arenaceous matter, and is much more decidedly stratified, as at a point one mile above Wellington, and in the bluff at St. Joseph.

Range and Thickness. So far as my own observations extend, this formation caps all the bluffs of the Missouri, from Fort Union to its mouth, and those of the Mississippi from Dubuque to the mouth of the Ohio. It forms the upper stratum beneath the soil of all the high lands, both timber and prairie, of all the counties north of the Ojage and Missouri, and also St. Louis, and the other Mississippi counties on the South.
Its greatest development in this State, is in the counties on the Missouri, from the Iowa line to Booneville; but thence to St. Louis it is not so thick. In some places it is two hundred feet thick. At St. Joseph it is one hundred and forty ; at Booneville, one hundred ; and at St. Louis in St. George's Quarry, and the Big Mound, it is almost fifty feet; while its greatest observed thickness in Marion County was only thirty feet.

Organic Remains. The fossils of the bluff are very numerous and interesting.
I have collected from it, of the Mammalia, two teeth of the Elephas primigenius, the jaw bone of the Castor fiber Americana, the
molar of a Ruminant, and the incisor of a Rodent; of the Mollusca, seventeen species of the genus Helix, eight Limnea, eight Physa, three Pupa, four Planorbis, six Succinnea, and one each of the genera Valvasa, Amnicola, Helicina, and Cyclas, besides some others not determined.

These lacustrine, fluviatile, amphibious and land species indicate a deposit formed in a fresh-water lake, surrounded by land and fed by rivers. These facts carry back the mind to a time when a large portion of this great valley was covered by a vast lake, into which, from the surrounding land, flowed various rivers and smaller streams. We see the waters peopled with numerous mollusks, the industrious beaver building his habitation, the nimble squirrel, the fleet deer, the sedate elephant and huge mastodon, lords of the soil. There must have been land to sustain the elephant and mastodon and helices, fresh water and land for the beaver, and fresh water for the cyclas and limnea.

I have been thus minute in my examinations of the bluff, the bottom prairie, and the alluvial formations, both on account of their vast importance to our agricultural interests, and the comparatively little attention geologists have given to them. It is to this formation that the central Mississippi and southern Missouri valleys owe their preēminence in agriculture. The most desirable lands of Iowa, Missouri, western Illinois, Kansas, and Nebraska, all rest upon the fine silicious marls of the bluff formation. Where it is best developed in western Missouri, the soil is inferior to none in the country,

The scenery presented by the bluff formation is at once unique and beautiful and gives character to nearly all the best landscapes on the Lower Missouri. Plates I and II of the Missouri Reports give characteristic views of the scenery where this formation is well developed.

## Drift.

This formation lies directly beneath the bluff, and rests upon the various members of the Palæozoic series, as they successively come to the surface. In this formation there appear to be three distinct deposits:-
rst. What might be called an Altered Drift frequently appears in the banks of the Missouri River.
These strata of sand and pebbles appear to be the finer materials of the drift, removed and rearranged by aqueous agencies subsequent to the Drift period, and prior to the formation of the bluff. The pebbles are from all the varieties of rocks found in the true drift, but are comparatively small.

2d. The Boulder formation, as it was left distributed by those powerful and widely extended agencies, which formed that deposit of the northern hemisphere. It is a heterogeneous stratum of sand, gravel, and boulders, all water-worn fragments of the older rocks. The larger part are from the Igneous and Metamorphic rocks, in place at the north, and the remainder from the Palæozoic strata, upon which they rest. The Metamorphic and Igneous rocks must have come from the northern localities of those strata, the nearest of which, is on the St. Peter's River, about three hundred miles north of St. Joseph. But the Palæozoic fragments are usually from localities near where they rest, as shown by the fossils they contain, and are as completely rounded as those from the more distant points.

Some of these beds, as in St. Louis County, contain scarcely any pebbles from foreign rocks; but nearly all are rounded portions of the underlying strata.

The largest boulders observed in Missouri, are five or six feet in diameter. They are usually granite and Metamorphic sandstone.
$3^{\text {d. }}$. Boulder Clay. In northern Missouri, the Boulder formation just described often rests upon a bed of bluish or brown sandy clay, through which pebbles of various sizes, are disseminated in greater or less abundance. In some localities this deposit becomes a pure white pipe-clay.

Range and Thickness. The Altered Drift has been observed more frequently in the northwestern part of the State, and is often twenty-five or thirty feet thick. The Boulder formation abounds in all parts of the State north of the Missouri, and exists in small quantities as far south as the Osage and Meramec. Its thickness is very variable, from one to forty-five feet. Its development is greater, the boulders larger, and those of a foreign origin more numerous, towards the North.

Its thickness varies from one to fifty feet. The Boulder clay is also most abundant in the northern part of the State, and is, in some places, more than one hundred feet thick.

Organic Remains. I have seen no fossils in this deposit, save a few logs in the Altered Drift of the Missouri. Some of these are still sound, and burn quite well when dry, as we have proved by building our camp fires with them on several occasions. There are other deposits, particularly in the middle and southern parts of this State, which are not genuine drift ; and yet they bear a greater resemblance to that than to any other formation, and occupy precisely he same stratigraphical position. $\frac{5}{5}$

On the high lands beneath the Bluff formation there are angular fragments of the adjacent rocks, somewhat worn, and indiscriminately commingled with sands and clays.

Whether these deposits were formed by the same agencies which produced the drift, or by a part of them only, or by other causes, has scarcely been determined.

## SYSTEM II-TERTIARY.

There is a formation made up of clays and sands, extending along the bluffs, and skirting the bottoms, from Commerce, in Scott County, westward to Stoddard, and thence south to the Chalk Bluffs in Arkansas.
The following section, obtained in the neighborhood of Commerce, will give a good idea of the character of those beds. The strata are numbered in their natural order, from the top, down :

No. $\mathbf{I}, 9$ feet. Pebbles, sand and clay intermingled.
No. 2, 2 feet. Sand and iron ore, brown hematite.
No. 3, io feet. Brown and buff sand interstratified.
No. 4, 12 feet. Buff and white sand interstratified, containing rounded masses of sandstone of the same character and color as the sand forming the strata.

No. 5, 5 feet. Clay and gravel, of a bright chrome yellow.
No. 6, foot. Clay and hematite ore, nearly all iron.
No. 7, 47 feet. Blue shale, which separates on exposure into rhomboidal masses.

No. 8, 2 feet. Carbonate of iron ore.

No. 9, 6 feet. Blue shale, like No. 7.
No. ro, ifoot. Iron ore like No. 8.
No II, II feet. Blue shale like No. 7 .
No. $12,11 / 2$ feet. Carbonate of iron like No. 8.
No. 13, 3I feet. Blue shale like No. 7 , with some thin bands and nodules of iron ore.
No. 14, 7 feet. Sandy clay, with thin strata, and globular masses of hematite ore.

No. 15, 18 feet. White sand, interstratified with thin brown strata, containing some rounded masses of sandstone.

No. 16, 5 feet. Sand, of a light peach-blossom color, interstratified with brown beds.

No. 17,12 feet. White sandstone, in thick beds. The upper part is hard and vitreous; but the lower is soft and friable. This rock very much resembles the Saccharoidal sandstone of the Calciferous series, and appears to have been much worn by running water.

No. I8, $\mathbf{I}$ inch. Very hard, compact, oxide of iron. It is strong and rings like pot-metal.
No. 19, 20 feet. Salmon-colored, white, purple and yellow sands; interstratified with clays of the same color.

No. 20, I foot. Spathic iron ore.
No. 21,13 feet. Blue Potter's clay.
Total thickness, 214 feet.
I have observed no fossils in these beds, except the impression of a leaf on the sandstone of No. 17.

The iron ore of these beds is very abundant, and exceedingly valuable. The Spathic ore has been found in no other locality in Southeastern Missouri, so that the large quantity and excellent quality of these beds will render them very valuable for the various purposes to which this ore is peculiarly adapted.

The white sand of these beds will be very valuable for glassmaking, and for the composition of mortars and cements. The clays are well adapted to the manufacture of pottery and stoneware.

## SYSTEM III-CRETACEOUS. (?)

Beneath the Tertiary beds above described in the bluffs of the Mississippi above Commerce, the following strata were observed:

No. I, $I_{3}$ feet. Argillaceous sandstone, variegated with gray, brown and white.

No. 2, 20 feet. Soft bluish-brown sandy slate, containing large quantities of iron pyrites.

No. 3, 25 feet. Whitish-brown impure sandstone, banded with purple and pink.
No. 4, 45 feet. Slate, like No. 2.
No. 5, 45 feet. Fine white silicious clay, interstratified with white flint more or less spotted, and banded with pink and purple.

No. 6, to feet. Purple, red and blue clays.
The entire thickness is 158 feet.
These beds are very much disturbed, fractured, upheaved, and tilted, so as to form various faults and axes, anticlinal and synclinal; while the strata above described as Tertiary, are in their natural position, and rest nonformably upon these beds.

These facts show the occurrence of great disturbances subsequent to the deposition of these beds, and anterior to the formation of the strata above.

We have no clue to the age of these rocks, save that they are older than the Tertiary beds above, and newer than the Trenton limestone below. They somewhat resemble some Cretaceous beds found in several places on this part of the continent; and these facts have led me to the inquiry, whether they are Cretaceous. Our future investigations may show their true position.

We have observed no fossils in these rocks.

## SYSTEM IV-CARBONIFEROUS.

This system presents two important divisions: Upper Carboniferous, or Coal-Measures; Lower Carboniferous, or Mountain Limestone.
The Coal-Measures are made up of numerous strata of sandstones, limestones, shales, clays, marls, spathic iron ores, and coals. We have observed about 2,000 feet of these coal-measures, containing numerous beds of iron ore, and at least eight or ten beds of good workable coal.

These rocks, with the accompanying beds of coal and iron, cover an area of more than twenty-seven thousand square miles in Missouri.* If a line be drawn from the northeastern corner of the State, through Clark, Lewis, Shelby, Monroe, Audrain, Callaway, Boone, Cooper, Saline, Henry, St. Clair, Cedar, and Dade Counties, to the middle of the western boundary of Jasper, this irregular boundary will separate the great body of the coal-measures, on the northwest, from the older rocks on the southeast. Besides the large body of coal-measures on the north-west side of this line, there are extensive beds in Cole, Moniteau, St. Charles, St. Louis and Callaway Counties. The common bituminous and cannel coals are the only varieties of this mineral observed. These exist in vast quantities-one might almost say inexhaustible.
The fossils are numerous and interesting. So far as our observations extend in Missouri, the Fusulina cylindrica, Spinifer cameratus, S. plano-convexa, S. hemplicata, S. Kentuckensis, Productus splendens, $P$. aquicostatus, P. Nebrascencis, P. Wabashensis, P. Calhoum anus, Chonetes mesoloba, C. Parva, C. Smithi, Myalina subquadrata, Allorisma regularis, A. terminalis, Leda arata, Pleurotomaria sphaerulata, Campophyllum torquium, and Chatetes milleporaceus are confined to and very characteristic of, the coal-measures. The discovery of the fact that these fossils are confined to the coal-measures, has enabled us to point out the existence of the coal-measures, and the coal beds contained in them, over an area of many thousand miles, where some geologists had supposed no coal measures and no coal existed.

Of the lower Carboniferous rock, we have observed the following formations:

Upper Archimedes Limestone, 250 feet; Ferruginous Sandstone, 195 feet; Middle Archịmedes Limestone, 50 feet; St. Louis Limestone, 225 feet; Oolitic Limestone, 20 feet; Lower Archimedes Sandstone, 350 feet.

The upper Archimedes Limestone is developed in Ste. Genevieve County and contains the following fossils: Productus cora,

* The Missouri coal basin is one of the largest in the known world. Besides the 27,000 square miles in Missouri, there are in Nelraska at least 10,000 square miles; in Kansas, 12,000 ; in Iowa, according to Dr. OwEN, 20,000; in Illinois, 30,000 ; making, in all, at least 100,000 square miles.
P. elegans, Spivifer Leidyi, S. incrassatus (1), S. spinosus, S. lineatus ( $\%$ ), Spingera hirsuta, Atheris subtilita, Atrypa serpentina, Orthis umbraculum (f), Fenestella lyra, F. swallvana, F. Meckana, Pentremites pyriformis, P. sulcatus, Agassisocrinues dactyliformis, and Poteriocrinus occidentalis.
The Ferruginous Sandstone is variable in its lithological characters. in some portions it is very white and saccharoidal; in others, fine, impure particles are disseminated through the mass, and the color becomes a dirty brown; and in a few localities, as near Fulton, Callaway County, it is a coarse conglomerate. But generally, when well developed, it is a coarse-grained, heavy bedded, friable sandstone, colored with various shades of brown, red and purple, as it appears in the bluffis near Salt Creek, Sulphur Springs, some twa miles west of Osceola; or clouded with yellow and red, as on Turkey Creek in Cedar County. The upper part is more regularly stratified and finer grained, contains more argillaceous matter, and has a light-brown yellowish gray or cream color. It is very soft wheh quarried, and may then be dressed for building purposes; but exposure renders it much harder and more durable.
This sandstone contains large quantities of oxides of iron, brown and red hematites, which, in many places, form extensive beds of excellent ore.
The large quantities of iron in this sandstone have led me to give it the provisional name, Ferruginous Sandstone. It is found skirting the eastern border of the coal-measures, from the mouth of the DesMorines to McDonald County.
The St. Louis Limestone is made up of hard crystalline, and compact, gray and blue, somewhat cherty limestones, interstratified with thin partings of blue shale. Its stratigraphical position is between the Ferruginous sandstone and the Archimedes limestone, as seen near the DesMoines, and near the first tunnel on the Pacific Railroad. It is found in Clark and Lewis Counties, but attains its greatest development in St. Louis, from which the name is derived.

The most characteristic fossils yet described, are Palachinus. multipora, Lithostrotion Canadense, Echinocrinus Nerci, Poteriocrinus longidactylus, and Atrypa lingulata.

The Lower Archimedes Limestone. In this formation are included the "Arenaceous bed," the "Warsaw or second Archimedes Limestone," the "Magnesian Limestone," the "Geode bed," and the "Keokuk or Lower Archimedes Limestone" of Prof. Hall's section, and the lead-bearing rocks of Southwestern Missouri, which though different from any of the above beds, are more nearly allied to them than to the Encrinital limestone below. All of the above beds are easily recognized in Missouri, save perhaps, the Warsaw limestone, which is but imperfectly represented in our northeastern counties, where the "Keokuk limestone," the "Geode beds" and the Magnesian limestone, are well developed.

The most characteristic fossils described, are Fenestella Worthenii (f), F. Owenana, Agaricocrinus Tuberosus, Actinocunus Humboldtii Spirifer incrassatus (?) Orthis Swallovi.

This formation extends from the northeastern part of the State, to the southwest, in an irregular zone, skirting the eastern border of the Ferruginous sandstone. The extensive and rich lead deposits of Southwestern Missouri are partly in this formation. These mines
occupy an area of more than one hundred square miles, in the counties of Jasper and Newton.
The Encrinital Limestone is at once the most extensive and best characterized of the divisions of the Carboniferous limestone. It is made up of brown, buff, gray and white, coarse, crystalline, heavy bedded limestonès. The darker colored, impure varieties prevail near the base, while the lighter, and more purely calcareous strata abound in the upper part. It everywhere contains globular, ovoid, and lenticular masses of chert, disseminated or arranged in beds parallel to the lines of stratification. These masses of chert are more abundant in the upper beds; in fact, the upper beds are made up almost exclusively of this mineral. The strata of this formation are frequently intersected by joints resembling the sutures of the cranium. The remains of corals and mollusks are very abundant; some of the strata are made up almost entirely of their exuviæ, especially of the joints and plates of Crinoideans. In the southwest, these strata rest upon some seventy or eighty feet of hard, porous and thick-bedded silicious rock, which are inclúded in this formation, as they have more affinities with it than with the Chemung below. There are nine divisions of this formation in Missouri, which are quite well marked by their fossils and lithological characters.

The Encrinital limestone extends from Marion County to Greene, forming an irregular zone on the east of the Archimedes beds.

## SYSTEM V-DEVONIAN.

This system in Missouri contains: Chemung Group, Hamilton Group, Onandaga Limestone, Oriskany Sandstone.

The Chemung group presents three formations, very distinct in lithological characters and fossil remains. They have received the following provisional names:-Chouteau Limestone, 85 feet; Vermicular Sandstone and Shales, 75 feet; Lithographic Limestone, 125 feet.

The Chouteau Limestone when fully developed is made up of two very distinct divisions.
ist. At the top, immediately under the Encrinital limestone, we find some forty or fifty feet of brownish-gray, earthy, silicomagnesian limestone, in thick beds, which contain disseminated masses of white or limpid calcareous spar. This rock is very uniform in character, and contains but few fossils. Reticulated corals, and Fucoidal markings, like the Cauda-galli, are most abundant. In the quarry it is quite soft, but becomes very hard on exposure, and forms a very firm and durable building rock. It is also hydraulic and forms a good cement.

2d. The upper division passes down into a fine, compact, blue or drab, thin-bedded limestone, whose strata are quite irregular and broken. Its fracture is conchoidal, and its structure somewhat concretionary. Some of the beds are filled with a great profusion of most beautiful fossils. In many, the organic substance has been replaced by a calcareous spar. The most characteristic are Spirifer Marionensis, Productus Murchisonianus, Chonetes ornata, Atrypagregaria, A. Occidentalis, A. Obsceo-eoplicata, Leptaena depressa, Avicula Cooperensis, Mytilus elongatus, and several new species of Trilobites.

Chouteau Limestone has been applied to these rocks, as they were well developed at the Chouteau Springs in Cooper County, where I first found large quantities of its new, beautiful, and characteristic fossils.
In the northeastern part of the State, the Chouteau limestone is represented by a few feet of coarse, earthy, crystalline, calcareous rock, like the lower division of the Encrinital limestone, as there developed. There is, indeed, in that part of the State, no change of lithological characters as you pass from the Encrinital limestone to this formation; but the change in the organic remains is both sudden and great.

The Vermicular Sandstone and Shales. The upper part of this formation is usually a buff, or yellowish brown, fine-grained, pulverulent, argillo-calcareous sandstone. It is usually perforated in all directions with pores, filled with the same materials more highly colored, and less indurated. This portion, when exposed to atmospheric agencies, often disintegrates, and leaves the rock full of winding passages, as if it were worm-eaten.

This formation contains but few fossils, and those are in the upper portions. Spirifer Marionensis, Productus Murchisonianus, Chonetes ornata, Avicula circula, the Fucoids, above named, and the cauda-galli, are most numerous. These beds can always be detected by the lithological characters and its peculiar Fucoids.

The Lithographic Limestone is a pure, fine, compact, even-textured, silicious limestone, breaking rather easily, with a conchoidal fracture, into sharp, angular fragments. Its color varies from a light drab to the lighter shades of buff and blue. It gives a sharp, ringing sound under the hammer, from which it is called "potmetal," in some parts of the State. It is regularly stratified in beds varying from two to sixteen inches in thickness, often presenting, in mural bluffs, all the regularity of masonry, as at Louisiana, on the Mississippi. The beds are intersected by numerous fractures, leaving surfaces covered with beautiful dendritic markings of oxide of iron.

It has but few fossils. The most abundant are Spirifer Marionensis, S. cuspidatus, Productus Murchisonianus, P. minutus, Proteus Missouriensis, Filictes gracilis, a conularia, Fucoides caudagalli, ( $?$ ) and several large chambered cells.

The Chemung rocks extend from Marion County to Greene, along the eastern border of the carboniferous strata.

The Hamilton Group is made up of some forty feet of blue shales, and one hundred and seventy feet semi-crystalline limestone, containing Dalmania Calliteles, Phacops bufo, Spirifer mucronatus, $S$. sculptilis, S. congesta, Chonetes carinata, Favosites basaltica.

Onondaga Limestone. This formation is usually a coarse gray or buff, crystalline, thick-bedded and cherty limestone, abounding in Terebratula reticularis, Orthis resupinata, Chonetes nana, Productus subaculeatus, Spirifer euruteines, Phacops bufo, Cyathophyllum revgosum, Emmorisia hemispherica, and a Pentamerus, like gateatus.

No formation in Missouri presents such variable and widely different lithological characters as the Onondaga. It is, generally, a coarse, gray, crystalline limestone; often, a somewhat compact, bluish concretionary limestone, containing cavities filled with green matter or calc-spar; in a few places, a white saccharoidal sandstone; in two or three localities, a soft, brown sandstone, and, at Louisiana, a pure white oölite.

The Oriskany Sandstone of Missouri is a light-gray limestone, which contains the Spirifer arenosa, Leptaena depressa, and several new species of Spirifer, Chonetes, Illanus and Lichos.
The Devonian rocks occupy a small area in Marion, Ralls, Pike, Callaway, Saline and Ste. Genevieve Counties.

## SYSTEM VI-SILURIAN.

Of the Upper Silurian series, we have the following formations: Lower Helderberg, 350 feet; Niagara Group, 175 feet; Cape Girardeau Limestone, 60 feet.

The Lower Helderberg Group is made up of buff, gray and reddish, cherty, and argillaceous limestones, blue shales, and dark graptolite slates, Dalmania triaientifera, Chierurus Missouriensis, Calymene rugosa, Orthis hybrida, O. elegantula, and several species of Platyostoma, are the prevailing fossils.
Niagara Group.* The upper part of this formation consists of red, yellow, and ash colored shales, with compact limestones, variegated with bands and nodules of chert.

Halysites catenularia, Columnaria inequalis, Calymene Blumenbachii, and Caryocrimus ornatus, are the most characteristic fossils.

Cape Girardeau Limestone. I am also indebted to Dr. Shumard for a description of this formation.

According to him, "It is a compact, bluish-gray, brittle limestone, with a smooth fracture, in layers from two to six inches in thickness, with thin argillaceous partings.

These strata contain a great many fossils, principally Trilobites and Crinoides. In a small slab, not more than three by three inches, I have counted four genera of Trilobites, namely: Cyphaspis, Girardeauensis, Acidaspis Halli, Proteus depressus, Asaphus, Nov. Sp. None of the Trilobites have been before mentioned in this country, and, so far as I can ascertain, the species are distinct from European forms. According to Barande, the first three genera occur in the greatest number in the Upper Silurian period, and are very sparingly represented in the Lower Silurian groups. The Crinoids belong mostly to the genera Glyptocrinus, Homocrinus, Tentaculites, and Palæaster ; and the shells to Leptaena, Orthis and Turbo-all being of undescribed species.
"These strata occur on the Mississippi River, about one mile and a half above Cape Girardeau. Thickness, forty to fifty feet.

## LOWER SILURIAN.

We have thus far observed ten formations belonging to this series:

Hudson River Group, 230 feet ; Trenton Limestone, 360 feet; Black River and Birds-eye Limestone, 75 feet; ist Magnesian Limestone, 200 feet; Saccharoidal Sandstone, 125 feet; $2 n d$ Magnesian Limestone, 230 feet; znd Sandstone, ill feet; 3RD Magnesian Limestone, 350 feet; 3rd Sandstone, 60 feet; 4 Th Magnesian Limestone, 300 feet.

[^0]
## HUDSON RIVER GROUP.

There are three formations, which we have referred to this group. rst. Immediately below the Oolite of the Onondaga limestone, in the bluffs both above and below Louisiana, we find some forty feet of blue, gray and brown, argillaceous, magnesian limestone. The upper part of these shales is in thick beds, presenting a dull, conchoidal fracture, and containing Asaphus megistos, and Caly. mene senaria.

The lower part of this division becomes more argillaceous, and has several thin beds of bluish-gray, crystalline limestone, intercalated, which contain many fossils of the following species: Leptaena sericea, L. alternata, L. planumbona, Orthis jugosa, $O$. subquadrata, and Rhynconnella capax.

There are, also, strata of calcareo-arenaceous slate, in the same position, filled with remains, which I am unable to distinguish from Prof. Hall's Palaophycus virgatus, and another contorted species. There are, also, beds of slate, similar to those above mentioned, at the base of these shales, whose surfaces are covered with great numbers of the Lingula ancyloidea.

2d. On the Grassy, three and a-half miles northwest of Louisiana, about sixty feet of blue and purple shales are exposed below the beds above described. They contain three species of Lingula: Lingula quadrata, L. fragilis, and still another, not named.

3d. Under the ad division are some twenty feet of argillo-magnesian limestone, similar to that in the 1st division, interstratified with blue shales. Orthis subquadrata, O. jugosa, Leptana alternata, Rhyncomnella capax, and Asaphus megistos are abundant.

These rocks crop out in Ralls, Pike, Cape Girardeau and Ste. Genevieve Counties. On the Grassy, a thickness of one hundred and twenty feet is exposed; and they extend below the surface to an unknown depth.

## TRENTON LIMESTONE.

The upper part of this formation is made up of thick beds of hard, compact, bluish-gray and drab limestone, variegated with irregular cavities, filled with greenish materials; while the beds below are filled with irregular cylindrical portions, which readily decompose on exposure, and leave the rocks perforated with numerous irregular passages that somewhat resemble those made in timber by the Toredo navalis. The appearance of the rock, when thus decomposed, is very singular, and is a well marked character of this part of the formation. The decomposed, honey-combed portions are most admirably adapted to ornamental rock work. These beds are exposed on the plank road, from Hannibal to New London, north of Salt River, and near Glencoe, St. Louis County, and are seventy-five feet thick. Below them are thick strata of impure, coarse, gray and buff, crystalline, magnesian limestone, with many brown, earthy portions, which rapidly disintegrate on exposure to atmospheric influences. This part may be seen in the bluff of Salt River, near the plank road, 150 feet thick. The lower part is made up of hard, blue and bluish gray, semi-compact, silico-magnesian limestone, interstratified with light buff and drab, soft and earthy magnesian beds. Fifty feet of these strata crop out at the quarries south of the plank road bridge over Salt River, and on Spencer's Creek in Rall's County. The middle beds sometimes
pass into a pure white crystalline marble of great beauty, as at Cape Girardeau, and near Glencoe.

Organic Remains. Fossils are abundant in all parts of the formation. Leptaena deltoidea, L. Sericea, L. Alternata, Orthis pectinella, O. testidudinaria, O. tricenaria, Rhynconnella capax, Murchisonia gracilis, M. bellicincta, Receptaculites sulcata, and Chaeteles lycoperdon are mest common.

## black river and bird's-eye limestone.

"They are bluish-gray or dove-colored, compact, brittle limestones, with a smooth conchoidal fracture. The beds vary in thickness from a few inches to several feet." "Near the base, the rock is frequently traversed in all directions by vermicular cavities and cells."

Gonioceras anceps, Ormoceras tenuifolium, Cythere subleris are the most abundant fossils.

## ist magnesian limestone.

This formation is developed in many parts of the State. It is usually a gray or buff, crystalline, cherty, silico-magnesian limeStone, filled with small, irregular masses of a soft white or greenish yellow, silicious subitance, which rapidly decomposes when exposed, and leaves the rock full of irregular cavities, and covered with rough, projecting points. These rugged, weather-worn strata, crop out in the prairies, and cap the picturesque bluffs of the Osage in Benton and the neighboring counties.

These beds often pass into a homogeneous buff or gray crystalline magnesian limestone, which is frequently clouded with blue or pink, and would make a good fire-rock and building stone. At other places, the strata become compact, hard and clouded, as above, forming a beautiful and durable marble.

Some of the upper beds are silicious, presenting a porous, semitransparent, vitreous mass, in which are disseminated numerous small, globular, white, enameled oolitic particles. They are sometimes in regular and continuous strata ; at others, in irregular mass, presenting mammillated and botryoidal and drusy forms of this
beautiful mineral. In some parts of Benton and the neighboring Counties, these masses left by the denuded strata, literally cover the surface, and render the soil almost valueless for ordinary cultivation. Other strata abound in concretions, or organic forms, which resemble wooden button-molds, with a central aperture and one convex surface. Masses of calcareous spar are quite abundant in the upper beds. But the lower part of this formation is made up of thin, regular strata, of a soft, earthy, light drab or cream-colored silico-argillaceous magnesian limestone, called cotton rock.

Above the beds already described, we find, in several places in the State, a succession of hard, silicious, dark bluish-gray, semicrystalline limestones, interstratified with grayish-drab, earthy, magnesian varieties, all in regular layers, destitute of chert. These strata have been joined to the 1st. Magnesian limestone, with the expectation that they may prove distinct from the Calciferous sandrock, and the rst Magnesian limestone, and be identified with the Chazy limestone, or some other formation. Straparollus laevata, a small variety of Cythere sublevis, and a large Orthoceras, have been observed in these rocks.

## saccharoidal sandstone.

This formation is usually a bed of white friable sandstone slightly tinged with red and brown, which is made up of globular concretions and angular fragments of limpid quartz. It presents very imperfect strata, but somewhat more distinct lines of deposition, variously inclined to the planes of stratification.

This interesting formation has a wide range over the State. I have seen it in Ralls, Boone, Saline, Cooper, Moniteau, Pettis, Benton, Morgan, Hickory, St. Clair, Cedar, Polk and Dallas; and Drs. Shumard and Litton observed it in Perry, St. François, Franklin, Ste. Genevieve, and other Counties.

Its thickness is very variable, from $\mathbf{I}$ to $\mathbf{1 2 5}$ feet. At times it thickens very rapidly, so much so as to increase thirty or forty feet in a few hundred yards. In a bluff about two miles northwest of Warsaw, is a very striking illustration of this' change of thickness. This sandstone crops out along the bluff, between the ist and 2 d

## EXPLANATIONS OF THE GEOLOGICAL MAP.

The Quaternary Sustem covers nearly the whole surface of the State, but it is represented by the light carmine color in the river bottoms only, where no other rocks appear on the surface. All the rocks or deposits in the swamp country of the southeast belong to this system as colored. It must be remembered that the soil, sur-face-clays, marls, and sands in all parts of the State belong to this system. The sands and clays of the Tertiary excepted.
the tertiary system
Is represented by the orange color, in Scott, Stoddard and Dunklin Counties. It is found only on the borders of the swamp country. the cretaceous (?) system.
These rocks are reprcsented by the drab shade on a small area in Scott County:
Coal measures

Are represented by the purple. Many of the outlines are so small that they cannot be put down on a map of so small a scale.
LOWER CARBONIFEROUS,

Represented by the blue, skirts the edge of the coal measures from the Des Moines to the southwest of the State, and down the Mississippi to Grand Tower.

## devonian system,

Represented by the dark green, covers a very narrow strip between the Carboniferous and Silurian rocks. It is often so thin and the area exposed so irregular that it is impossible to represent it on so small a map. This is particularly true in Ralls, Pike, Callaway, Hickory, Polk, Christian, and other Counties.
I have tried to place some green in the region where these narrow and irregular areas are found.

## THE UPPER SILURIAN,

Colored dark red, covers only a small area in Cape Girardeau County.

## the lower silurian,

Colored yellow, covers a large area in southeast Missoari.
the azoic system,
Colored with India ink, has but a small area covered at Pilot Knob. The outcrops are so small it is impossible to represent them in proportion.

## the igneous rocks,

Colored with the bright carmine, are developed in numerou irregular areas, many of them much too small to be represented.


Magnesian limestone, and in a few yards decreases in thickness from twenty feet to one. Where thinnest it is semi-vitreous, and the line of demarcation between it and the limestones is very distinct.

A very large Orthoceras is found in this sandstone.

## 2D MAGNESIAN Limestone,

The lithological characters of this formation are very much like those of the ist Magnesian limestone, above described.

## 2D sandstone.

This is usually a brown or yellowish-brown, fine grained sandstone, distinctly stratified in regular beds, varying from two to eighteen inches in thickness. The surfaces are often ripple-marked and micaceous. It is sometimes quite friable, though generally sufficiently indurated for building purposes. The upper part is often made up of thin strata of light, soft and porous, semi-pulverulent, sandy chert or hornstone, whose cavities are usually lined with limpid crystals of quartz. Fragments of these strata are very abundant in the soil and on the ridges, where this sandstone forms the surface of the rock. It sometimes becomes a pure white, finegrained, soft sandstone, as on Cedar Creek, in Washington County, in Franklin, and other localities.

3D Magnesian limestone.
This limestone is exposed in the high and picturesque bluffs of the Niangua, in the neighborhood of Bryce's Spring, where the following strata were observed:

No. 1. 50 feet of the $2 d$ Sandstone.
No. 2. 80 feet of gray and crystalline silico-magnesian limestone, somewhat clouded with flesh-colored spots and bluish bands.
No. 3. 50 feet of blue and white ferruginous chert, interstratified with hard, compact, and flesh colored silicious limestone.

No. 4. Igo feet, like No. 2, save some beds are hard, compact, buff or flesh-colored silicious limestone.

No. 5. 20 feet of light-drab, fine grained crystalline silicomagnesian limestone, often slightly tinged with peach-blossom, and beautifully clouded with darker spots and bands of the same hue or flesh color. It is distinctly stratified in beds of medium thickness.

No. 6. 50 feet, like No. 2.
No: 7. 30 feet of the 3 d Sandstone.
It also covers large areas in the southeast mining region.
$3^{\text {D }}$ SANDSTONE.
This is a white, Saccharoidal sandstone, made up of slightly cohering, transparent, globular, and angular particles of silex. It shows but little appearance of stratification, yet the well-marked lines of deposition, like those of a Missouri sand-bar, indicate its formation in moving water.

4th magnesian limestone.
This presents more permanent and uniform lithological characters than any of the other Magnesian limestones. It is usually a grayishbuff, coarse-grained, crystalline Magnesian limestone, containing a few cavities filled with less indurated silicious matter. Its thick uniform beds contain but little chert. The best exposures of this formation are on the Niangua and Osage Rivers.

This Magnesian Limestone Series is very interesting, both in its scientific and economical relations. It covers a large portion of

Southern and Southeastern Missouri, is remarkable for its extensive caves and springs, and contains all the vast deposits of lead, zinc, copper, cobalt, ores of iron, and nearly all the marble beds of the State. They indeed contain a large jart of all our mineral wealth.
The lower part of the 1st Magnesian limestone, the Saccharoidal sandstone, the 2d Magnesian limestone, the 2d Sandstone, and the upper part of the 3 d Magnesian limestone belong, without doubt, to the age of the Calciferous sandl-rock; but the remainder of the series, to the Potsdam sandstone.

## SYSTEM VII-AZOIC ROCKS.

Below the Silurian rocks, as above described, we find a series of Silicious and other slates, which contain no remains of organic life. These rocks therefore we refer to the so-called Azoic Age.
In Pilot Knob we have a good exposition of these Azoic Strata. ignemts rocks.
There are a series of rounded knobs and hills in St. François, Iron, Dent, and the neighboring counties, which are principally made up of granite, porphyry, syenite and greenstone. These igneous rocks contain some of those wonderful beds of Specular Iron, of which Iron and Shepherd Mountains are samples. This iron ore often occurs in regular veins in the porphyry.

## HISTORICAL GEOL.OGY.

- In the short space allotted me, it will be possible to give a mere outline only of the wonderful events, which transpired during the formation of the rocks above described, and the development of our State into its present physical condition.

If we go back to the time when this continent began to emerge from the primeval ocean, the geological record will inform us that Pilot Knob, Shepherd Mountain, and some of the neighboring heights, were among the first portions of land that appeared above the waters. When Pilot Knob became an island, there was an unbroken ocean on all sides, save an island to the nortinwest, the top of the Black Hills, a larger cluster to the northeast, in New York and Canada, and a small cluster to the southwest.
These islands were formed in the Azoic Seas by the eruptions that forced up the porphyry, granite, the azoic slates and iron beds of Pilot Knob, and the neighboring heights.

In the tranquil cycles which succeeded, the ocean was peopled with innumerable species of Mollusca, Zoophytes, and Trilobites. Plants too appeared in the waters. But for some reason these animals were not abundant in the waters about Pilot Knob.

This is what we call the Age of Mollusks; and in it were deposited the series of Magnesian limestones and sandstones, so largely developed in the southern and eastern portions of the State. In the middle portion of this age, mollusks, with conical shells as large as saw-logs, made their appearance.
Towards the close of this age the higher portions of Southeast Missouri became dry land, and the surrounding waters were filled with vast numbers of Corals, Trilobites, bivalve, spiral and conical shells. At the end of the Age of Mollusks, the land emerged as high up the Mississippi as Louisiana, and all that portion of the State colored yellow on the map, became dry land ; and the waters of the Pacific and the Atlantic were separated by a chain of islands
along the line of the Upper Mississippi, and the Great Lakes, and the St. Lawrence.
The next period, the Age of Fishes, was characterized by tranquil seas filled with coral reefs, around which sported the primeval fishes. Huge Nautili spread their sails over the placid waters, and plants clothed the rising continent in green. At the close of this age the Pacific retired a little to the northwest and left a narrow belt of Devonian rocks along its sinuous shores. These are colored green on the map.

For many cycles the seas remained tranquil and continued to be filled with numerous fishes, corals, stone lillies, trilobites, star fish and algæ, while the vast beds of Carboniferous limestone were deposited. But toward the close of this period turbulent times intervened. Rocks were broken up, rounded to boulders and pebbles, or ground to sand, and drifted to the sea and piled into vast beds, in the central portions of the Mississippi Valley.
St. Louis now rose above the waters and formed a peninsula which had its connection to the South with the older part of the continent. A shallow bay extended around St. Louis to the North and West. It widened out over all the coal regions of Illinois and Kentucky and opened out into the Pacific through St. Charles. All Northwest Missouri, and the coal regions of Iowa, Nebraska, Kansas, Arkansas and the Indian Territory were covered with warm shallow waters, steaming under the rays of tropical suns.
A hot atmosphere filled with vapor and carbonic acid nourished the rapid growth of trees, ferns and sigillaria, and other plants in vast forests. Steaming marshes, fens and lagoons abounded. The lands were many times raised and submerged, and the forests swept away into vast beds, which formed the coal deposits over more than 100,000 square miles in the States above named. The turbulent waters deposited the clays and sands intercallated with the coal beds Clear tranquil waters returned filled with fishes, mollusks and corals, and the limestones of the coal-measures were deposited.
Such changes followed each other in some twenty successive courses, revolving through the vast cycles of the Age of Plants.

At the close of this period the Pacific had retired westward to Sioux City and Manhattan ; and the Gulf of Mexico extended up as high as Cape Girardeau, and a part of Scott County was a large island.

During the succeeding Age of Reptiles, while the vast saurians, like the Zeuglodon, were sporting in the waters that covered the Lower Mississippi Valley, and the flying Pterodactyli were flapping their wings over the shores of the Pacific, in Wyoming and Colorado, Missouri was quiescent, producing her quota of animal and vegetable life.
In the succeeding Age of Mammals Missouri remained as before, but the regions bordering on the Gulf of Mexico and those on the Upper Missouri and westward to the Pacific, underwent various depressions and elevations by which several dynasties of wonderful animals were buried in the rocks which now contain their remains. At the close of this vast period the continent assumed its present form, with some unimportant exceptions. The Gulf of Mexico still extended above the mouth of the Ohio. Our large rivers had cut their present channels to depths varying from 100 to 300 feet, and in width irom I to 10 miles. Mighty waters poured over the solid strata and wore for themselves these vast channels to the sea.

But a change came over the continent. Some mighty power of water or ice, or both, swept over the surface, grinding the softer rocks to atoms and rounding the harder into pebbles, vast boulders were moved hundreds of miles and dropped in strange places.
Another change, and a large part of the Upper Mississippi and the Lower Missouri Valleys were covered with a vast fresh water lake. The land was covered with forests similar to our own. The land and waters were peopled with many of our present races of animals. The beaver built his dams as now. The squirrel ate the same mast and the deer cropped the same herbage. But the huge elephant and mastodon were then lords of the soil. The Bluff formation was deposited in this lake. Another change and the lake was gradually drained and the waters subsided to the channels of the rivers. The currents of the great rivers were sluggish, their waters were spread from bluff to bluff, and the Bottom Prairic was deposited.
Again the level changed, the great rivers became more rapid, and cut their present channels in the Bottom Prairie.
The alluvial deposits were formed, the gulf was driven back to its present limits, the swamp country was added to our State, the soil was formed, and Missouri was finished.
The Age of Man commenced, and the Geological Record gives place to History.

## DEVELOPMENT AND NATURAL SEIECTION

But in this countless array of animals, whose orders and genera and species have come and gone through the vast cycles since Pilot Knob announced the rising continent, among them all, do we find one species of animal developed from another? Nay, verily.
Species come without progenitors, maintain their identity for countless ages, and utterly perish, leaving nothing developed to call them ancestors.
But have not the species, and genera, and orders, improved by natural selection? Not at all.
When we examine through their whole existence, they degenerate rather than improve. In some instances they do improve for a time; but in almost all instances they retrograde again, and finally perish miserably.
The Trilobite was one of the first animals that appeared in the primeval ocean; he lived through the entire palæozoic period. They sometimes improved and sometimes degenerated; but finally they dwindled down to a few insignificant species, and utterly perished.

The Trilobite stood at the head of the primitive orders. He had the world for his field and all time was before him. He perished by no catastrophe; and yet natural selection did not improve him, and much less save him from utter extinction.

At the close of the Age of Mammals, the elephant and mastodon were at the head of the order on this continent. They had space enough, climates enough, time enough, and none to molest or make them afraid, and yet natural selection could not save them. They dwindled away and died out.

The genus Cyrtia and the species Spirifer cameratus, and a thousand others might be named to show that natural selection, where it had the widest field, the longest time, and the most favorable circumstances, failed utterly to make a new species.

## Population of Missouri by Townships,

From advance sheets of the United States Census of 1870

Nots. -The marginal column marks townships or land survey townships ; the frrst indentafion, cities; the second, towns. Names of towas are placed under the names of che townshipe or land-surver townships in which they are respectively situated. The population of each township or land-survey townehip includes that of all towns situated in it and not named in chis lisi


## POPULATION OF MISSOURI BY TOWNSHIPS.



Population, Wealth, Taxation, and Public Indebtedness BY COUNTIES,
From Adrance Sheets of the United States Census of 1870:

| COUNTIES. | POPULATION OF MISSOURI BY COUNTIES, frow 8820 to 8870 Inclusive. |  |  |  |  |  | VAlUATION. |  |  |  | $\begin{aligned} & \text { тахатыon } \\ & \text { mattomal. } \end{aligned}$ | PUBLIC DEBT. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1870 | 1860 | 1850 | 1840 | 1830 | 1820 | real mesis. | dest | alue of reat and percopal ethtt. | Ind And par comel enter |  |  | All other. |
| Total. | 1,721,295 | 1,182,072 | 820,044 | 283,703 | 140,445 | 66,557 | 8418,527,535 | 8137,600 A34 | \$556,829,969 | 81,284,973 897 | \$13.008,498 | (10,265,489 | 1,553,593 |
| Adair. | 11,448 | 8,533 | 2,342 | ......... | ......... | .......... | 8,506,700 |  | 2,535,998 | - |  |  |  |
| Andrew. | $\begin{array}{r} 15,137 \\ 8,440 \end{array}$ | $\begin{array}{r} 8,538 \\ 11,850 \\ 4,649 \\ 8.007 \end{array}$ | $2,3{ }^{2}$ <br> 9,433 <br> 1,678 | …......0. | .......... | ......... | $\begin{aligned} & 8,556,700 \\ & 3,486,550 \\ & 1,831,424 \end{aligned}$ |  |  |  | $\begin{gathered} 4 \mathrm{~B}, 359 \\ 207,178 \end{gathered}$ | 6.000 100,000 | $\begin{array}{r} 70,000 \\ 15,000 \\ 3,000 \end{array}$ |
| Audrain. |  |  |  | 1.949 | ......... | ......... |  |  |  |  | ${ }^{48} 8$ | 1,500 |  |
| Barry.. |  | 7.995 <br> 1817 | 3.506 3.467 |  | …....... | -........... | $\begin{array}{r} 680,799 \\ 1,247,753 \end{array}$ | $8,280,654$524,700288,5271023 |  | $\begin{aligned} & 8,503,07 \\ & \mathbf{8 , 5 0 0 , 0 0 7} \end{aligned}$ |  |  |  |
| Bates.. | +5.960 | 1.817 7.215 |  | …....... |  |  |  |  | $\begin{aligned} & 1,466,280 \\ & 5,506,256 \end{aligned}$ | $\begin{aligned} & \text { Soco,000 } \\ & \text { B,000,000 } \end{aligned}$ | $\begin{array}{r} 34,854 \\ 1206,637 \end{array}$ |  | 10,000 |
| Benton.. | 11, 322 8,162 | 9.072 |  | 4.205 | $\cdots$ | .......... | $\begin{aligned} & 4,474,575 \\ & 2,205,568 \end{aligned}$ | $\begin{aligned} & 1,032,0102 \\ & 3,000628 \\ & 499,800 \end{aligned}$ | $\begin{aligned} & 3,25,796 \\ & 3,554,295 \end{aligned}$ | $\begin{aligned} & 6,000,000 \\ & 4,00,00 \\ & 2,106,000 \end{aligned}$ | $\begin{aligned} & 51779 \\ & 18,784 \\ & \hline 10 \end{aligned}$ | $\begin{array}{r}20,000 \\ \times \ldots \ldots \ldots \ldots \\ \hline 1.942\end{array}$ |  |
| Boone ... | -20,765 | 7.371 r9.486 2. | $\begin{array}{r} 8.015 \\ \ldots . . . . . \\ \hdashline 4.979 \end{array}$ |  | 8,859 |  | $\begin{aligned} & 1,054,495 \\ & \text { 4,505,013 } \end{aligned}$ | $\begin{gathered} 49,800 \\ 1,856,090 \end{gathered}$ | $\begin{aligned} & 1,554,295 \\ & 6,363,203 \end{aligned}$ | 2,100,000 20,00,0000 |  |  |  |
| Buchanan | 35.1094.298 | 23.86 x2.89 r |  |  |  | …....... |  | $\begin{aligned} & 2,999,1255 \\ & 988,028 \end{aligned}$ | $\begin{aligned} & 12,175,599 \\ & 787,14 \end{aligned}$ |  | $\begin{aligned} & 81,784 \\ & 8,785 \\ & 8,238.254 \\ & 8.25 \end{aligned}$ | $\begin{aligned} & 439.5000 \\ & 8 \times x, 0.0000 \end{aligned}$ | 10,000 28,000 |
| Cuter ${ }^{\text {Cald }}$ |  |  |  |  | .......... | ........... | 2,365,704 |  |  | $20,000,000$ $1,100,000$ $10,00,00$ | $\begin{aligned} & 8,238.747 \\ & 7,678 \end{aligned}$ | $8,3,000$ 32,000 |  |
| Callaway |  | 17.4494.975 | 13.827 <br> 2.338 |  | $6,159$ |  | $\begin{aligned} & 3.89 \pm, 556 \\ & 709,493 \end{aligned}$ | $\begin{array}{r} x, 496,223 \\ 446,633 \end{array}$ | $5,3177.779$ <br> $2,156,28$ | $\begin{array}{r} 7,000,000 \\ 80,00,000 \\ 8,00,000 \end{array}$ |  | $\begin{array}{r} 25.000 \\ 427.500 \end{array}$ | $\underset{\substack{36,000 \\ 7.981}}{ }$ |
| Cape Gir |  |  |  | 11,765 | $6,159$ |  |  |  |  |  | $\begin{aligned} & 20.089 \\ & 90.469 \end{aligned}$ | ........... |  |
| Carroll | (17.446 | 35.547 0.763 |  | ¢, $\begin{gathered}9.359 \\ 2,423\end{gathered}$ | 7,445 ... .1. | $\begin{array}{r}\text { 5,968 } \\ . . . . \\ \hline\end{array}$ | $\begin{aligned} & 3,001,145 \\ & 3,20,385 \\ & 3,06.65 \end{aligned}$ | -7, |  | $\begin{array}{r} 1,500,000 \\ 10,105,000 \\ 9,000,000 \end{array}$ | 83,495 <br> 14,807 <br> 1802 |  | $150.500$ |
| Carte |  | 9.7946.637 |  | ......... |  | ........... | 440,765 | 3 |  | $080,000$ |  |  | 1.1.0.0 |
| Cedar. | 19.296 9.474 |  |  |  | .......... | ........... | 5,430,012 943,895 | $1,638,124$ $5 \times 2,552$ | ${ }_{8}^{7,4585,747}$ | $82,000,000$ $8,000,000$ | 199,386 24,5a9 | 24,6000 | 9,000 700 |
| Charito | 19.136 <br> 6.707 <br> 1 | $\begin{gathered} 12.562 \\ 5.491 \end{gathered}$ | 7.54 | 4,746 | 780 | $\ldots$ | 3,278,685 | 1,054,863 | 4,344, 0.54 | 9,500,000 | ${ }^{2} 30,073$ | 25i,000 | 15,000 |
| Charke | 6,767 $\times 3.667$ |  |  | 46 |  |  | - 27681,3280 | 8,573,975 | 4,200,535 | 2,000,000 $\times 0,560,000$ | 18,742 |  | 10,000 |
| Clay.. | ${ }_{15.564}$ | ${ }_{13,023}$ | 10.332 | 8,282 | 5,338 |  | $3,822,724$ | 2,466,551 | 6,29x,235 | $8.000,000$ | 145.556 | 150,000 |  |
| ${ }_{\text {Clinton }}$ | 17, 4.063 10.292 | 7,848 0.697 |  | 2,724 0,286 |  | ........ |  | \% 959,183 | 4, $4.1802,005$ | 8,000,000 | 755127 |  | $\infty$ |
| Cooper | 20,692 | 17.356 | $\begin{array}{r}12.950 \\ \hline 1.960\end{array}$ | 10,484 | 6,904 | 6,959 | $4.787,165$ | 1,069,197 | 5,856,362 | 10,000,000 | $376,6 \mathrm{~m}$ | ${ }_{97}^{54.650}$ | 16,114 |
| Crawford |  | 5.823 | 6.397 | 3.56 r | 1,712 |  | 1,663,258 | 730,982 | 2,346, 33 | 2,800,000 | ${ }^{32,132}$ |  |  |
| Dade... | 8,683 <br> 8.385 <br> , 68 | 7.072 5.892 | 4.246 <br> 3.648 <br> .68 |  | $\ldots$ |  | 1,309,422 | 759,694 590.305 | $2,009.1186$ $8,364,730$ | $3,000,000$ $3,300,000$ |  | (6,000) | ,000 |
| Daviess | 14.410 | 9.606 | ${ }_{5.298}$ | 2,736 | ........ | ... | 2,380,006 | 8,298,327 | 3,678,833 | 9,000000 | 74,795 | 5\%.0no |  |
| De Kalb | 9,858 | 5.224 5.654 | 2,075 | -.......... | - | ... |  | 527,969 |  | 5,000,000 $1,900,000$ | S5,915 | 6.000 | 1,000 |
| Douglas | 3.915 | 2.414 |  |  |  |  | 258, | 377 | 339.015 | 1,000, | 625 | $\cdots$ | 854 |
| Dranklin. | 5,982 | 5,026 | 1,229 |  |  |  | 405, | 377,908 $1,278,630$ | 4.863 | 1,650,00 | 12,894 80.837 | 253.00 | 19,500 |
| Gasconad | ${ }^{1}$ | 8,727 | 11,02 4.99 | 5,330 | 1,545 |  | 8 8,733, | 909,941 | 2,643, | 5.65 | 22,259 |  |  |
| Gentry | 11.607 21.549 | 11,980 13,186 188 | 4.248 | 5,372 | ........ |  | 1, | 970 | \%, ${ }_{6}^{2,488}$ | 4.500,000 |  | 6,5m0 | 27,000 |
| Grundy | 17.64 10.567 | ${ }^{2} .888$ |  | \%3\% | ........ | $\cdots$ | 1,526, | 869,443 | 2,396, | 4,000 | 72. |  |  |
| Harrison | 14.635 | 10, 626 | 2.447 |  |  |  | 2,944, | 1,766,228 | 4.740 | 7,500, | 2r, | 1,6 | 4.000 |
| Henry. | 17.401 <br> 6.452 <br> 1 | ${ }^{9.866}$ | 4,052 |  | $\ldots$ | ......... | 4,725,7 | $1,387,217$ 406,194 |  | 2,000, | 80,591 | 0,0 | 00 |
| Holt... | ${ }_{11} 1.652$ | 6.550 | 2,329 3.957 |  |  |  | 2,789,419 | 8,267,305 | 4,056,724 | 8,000,0 | 83.751 | \%. |  |
| Howard | 17,233 4.218 | 15.946 3.169 5 | ז3.969 | 13.108 | 10,854 | 13,426 | 3,623,034 |  | 5 5,420,003 468,48 | 9,000,000 $8,000,000$ | 117,677 | 2700 | 10,000 |
| Iron.. | ${ }_{6,278}^{4.218}$ | 5, ${ }_{5}^{3.189}$ |  |  |  |  | 1,546,5 | +05,665 | 2,952, 167 | 12,406,000 | 88,667 | 18.000 |  |
| Jackson | 55.048 | 22,993 | 14,000 | 7,612 | 823 |  | $13.446,380$ | 8,656,953 | 16,803,333 | $38,000,000$ | 617,179 90.839 | youosf | $\ldots$ |
| Jefferso | 14,928 15.380 | 6, 0,084 | 4,223 6,928 | 4,296 | 592 | 835 | 2,539,960 | $1,351,1609$ $8,16,639$ | 3,696,599 | $8,108,520$ | 72,794 | 57.842 |  |
| Johnso | 24,648 | ${ }^{14} .644$ | 7.464 | 4.47I |  | ........ |  | x,808,257 | $7,879.599$ $3,058.515$ | 18,000,000 | (156,214 | $\begin{array}{r}225.000 \\ 10.000 \\ \hline\end{array}$ |  |
| Laclede | 10.974 | 8.727 5,182 | 2,894 2,498 |  | ........ | ... | 2,021,019 900,147 | 2,036,896 | ${ }_{8}^{3}, 397,272$ | $4.300,000$ $3,000,0$ |  |  | 4,000 |
| Lafayett | ${ }_{22,623}$ | ${ }^{20.098}$ | 13,690 | 6,815 | 912 |  | 5,788, | 2,569,2z8 | 8,357,976 | 20,000,000 | 278.856 | 546,200 | 748,700 |
| Lawren | $\begin{array}{r}13,067 \\ 15.114 \\ \hline 1\end{array}$ | 8,846 12,286 | 4.859 6.578 | 6,040 | ....... | ........ | 1,277,568 $3,36,765$ | $9,9,085$ $8,407,460$ | 2,298646 <br> $4.84,225$ | $3,000,000$ $13,206,000$ | 39,788 97 | 6 \%.000 |  |
| Lincoln. | ${ }_{15.960}$ | 14,210 | 9.42 t | 7,449 | 4,059 | 3,662 | 2,677,500 | 2,149,850 | 3,827 | 10,000 | 38.345 | 7.360 |  |
| Linn.. | 15.900 | 9,112 | 4.058 | 2,245 |  |  | 2,570,700 | 754,6 | 3,602 | 6,500,000 | 156, | 50,000 | 00 |
| Mivingst | 16.730 <br> 23,230 | 7,417 $\mathbf{1 4 - 3 4}$ | 4.247 6.565 | 4, 325 6,034 6,63 |  |  |  | 8,064,604 | 4,973,880 | $7,000,000$ $80,000,000$ | 157.439 | ren 3760000 | 40,599 |
| Madison | 5.849 | 5,664 | 6.003 | 3.395 | 7 I | 94 | 1,488,478 | 377,93 37662 |  | 8,910,000 $1,600,000$ | 26.682 14,547 |  | 22,000 3,000 |
| Maries.. | 5,996 23,780 | $\begin{array}{r}4,901 \\ \times 8.898 \\ \hline\end{array}$ |  |  |  | $\ldots$ | 6,430, ${ }_{6}^{6989}$ | 8,866,091 | 8,287,875 | $1,000,000$ $85,750,000$ | 20, ${ }^{2048} 4$ | 435,000 | -3,000 |
| McDona |  | ${ }_{4}{ }^{1}, 038$ | - |  |  |  | 449,755 | 340,888 | 200,573 | 1,500,000 | 12.880 | 2.550) | 1.500 |
| Mercer. | x1. 557 | 9.300 | 2.69 r |  | ...... | . | ${ }_{5}^{1}, 444,973$ | 854,48 | 2,260,398 $1,488,940$ | 4,000,000 | 78,626 18,265 1,26 | 200,000 | 3,000 |
| Miller.. | 6,616 <br> 4.982 <br> 1032 | 6.812 4.859 | 3,834 <br> 3.123 | 2,282 | .......... | $\ldots$ | $1,036,540$ 700226 | 462,400 $3 \times 9,400$ | 3,079,636 | 2,1,00,00 $4,125,00$ | 13,598 | ... |  |
| Monitea | 41,375 | 10.124 | 6,004 |  |  |  | 2,429,017 | 1,073,572 | 3,502,529 | 7,000,000 | 74,012 | $1000 \times \times 0$ | 2,000 |
| Monroe | 17,149 | 14.785 | 10,541 | ${ }^{9.505}$ |  |  | $3,230,235$ 2,397276 $1,62,50$ | 1,694,774 | 4, ${ }_{3,1265,35}$ | $30,550,000$ $0,550,000$ | ${ }_{6 \times 0,631}$ |  | 1,800 |
| Mortgom. | $\begin{array}{r}10,405 \\ 8,434 \\ \hline\end{array}$ | - ${ }_{8}^{9.718}$ | 5.489 4.650 | 4,3787 | 3,902 | 3,074 | $2,397,276$ $1,66,24$ | 765,370 | 2,348 ,5\% | ${ }_{3} 9,500$, | 54.2 | 1100000 | 12,000 |
| New M | 6.357 | 5,654 | 5.548 | 4.554 | 350 | 2,296 | 57 | 273, | 8, | 5.650 | 18,2 | 13.5 | 12,00 |
| Newton | 12,821 |  | 4,268 | 3.790 |  |  | $1,138,9$ 4,144, 2 | 1,016,620 $\mathbf{x} \cdot 356,843$ | 5.505 | 8,400,000 | 107,4 | 85,000 |  |
| Nodawa | $\begin{array}{r}14.751 \\ 3.287 \\ \hline\end{array}$ | ${ }_{3.009}^{5.252}$ | 2,118 | .... | .......... | ........... | 4,146, | $\begin{array}{r}\text { P. } 356063 \\ \mathbf{1 5 6 , 3 8 2} \\ \hline\end{array}$ | 693 | r,125,000 |  | 5.400 | 1.200 |
| Osage. | 10.793 | 7,879 <br> 2,44 | 6,734 2,294 | ....... | ... | $\ldots$ | 1,202, | 689,976 | ${ }_{8}^{1,882}$ | $3,000,000$ 500,000 | 36,266 <br> 5,102 | 3.300 | 16,000 2,83 |
| Pemisco | 3.059 2.059 | 2,962 | 2,294 |  |  | ......... | ${ }^{126,865}$ | 873, | , 300,647 | , | 4,008 |  |  |
| ${ }^{\text {Perry }}$ Pettis | 0.877 0887 8, | 9.1288 | 7,215 5,150 | 5,760 2,930 | 3,349 | .......... | 1,409,824 $5,338,556$ | 810,887 949,358 |  | 8,650,000 | - 224,46594 | 550,000 | 10, $4 \times 0$ |
| Phelps | 18.756 10.506 | - ${ }_{5}^{9,392}$ | 5,150 |  |  |  | 2,354,948 | 556,546 | 2,872, 994 | 5,000,000 | \%77.23 | 35,000 | 15,000 |
| Pike.. | ${ }^{23.076}$ | 18,417 |  | ro, 646 8,913 | 6,129 <br> ,$\ldots \ldots 0$. | 747 | $4,883,870$ $4,215,945$ | $2,447,230$ $2,846,408$ | \%,378, 6,353 | $13,550,000$ $83,000,000$ | 128,256 629,55 | (0)55.921 300.000 | 39.567 |
| ${ }^{\text {Platte }}$ | 37,352 <br> 12,445 | 18,350 9,995 | +16,845 | 8,913 8,449 | ......... |  | (1,215,945 | $2,46,408$ 993,750 | 2,735,520 | 4,500,000 | 45.,368 |  | 5.000 |
| Pulaski | 4.714 | 3,835 | 3,998 | 6,529 | - | ..- | I, 434,6000 | 278,115 007903 |  | 1,000 | $8,9,98$ 65179 |  | 1.500 |
| Putnam | 11,217 10.510 | 8,207 | (1,636 | 5,670 |  | ........ | $1,600,45$ $3,290,577$ | 1,070,903 | 4,337,047 | rio,250,000 | ${ }^{8} 83.655$ | 85,000 | 15.750 |
| Randol | 17050 15,908 | 11,407 | 9,439 | ${ }_{7}^{7,198}$ | 2,942 | ......... | 2,205,672 | 1,255,880 | $3,466,552$ $6,699,964$ | 6,000,000 $10,000,000$ | 83.020 05.299 | 26,000 292,600 | 12.976 |
| Ray....il | 18.700 3.756 3 | 14.092 3,173 | ro. 373 $\mathrm{r}, 849$ , | 6,553 | 2,657 | .......... |  | $2,445,46$ 176,665 | - | $10,000,000$ $1,000,000$ 1,50000 |  | +14.000 | $\cdots$ |
| Ripley... | 3,175 | ${ }_{3} \mathbf{3} 747$ | 2,830 | 2,856 | 2,873 | ........ | 618,576 | (751,248 | 9,270, | $1,500,00$ $13,000,000$ | $\begin{array}{r}15.070 \\ 138,854 \\ \hline\end{array}$ | 4,000 37,600 | 20,000 6,000 |
| Saline.... | 21,672 8,820 | 14.699 6.797 | 8,843 3.287 | 5,258. | 2,873. <br> . <br> ... | ......... | $7,251,080$ $1,043,844$ | $1,959,030$ 923023 | ¢,965 | -8,550,000 | 56.150 | 33.900 | 19.400 |
| Scotland. | צ0,670 | 8,873 | 3.782 |  | 136 | ......... | 1, 3133,153 | 705,673 | 2,038,82 | 8,250, | 53.0. | 49,150 | 5,350 |
| Scott..... | 7.317 2.339 | ¢5,248 <br> 2,284 |  | 5,974 | ,36 | ........ | $\begin{array}{r}1,257,271 \\ \hline 704672\end{array}$ | 707,550 | 778,2 | 7,850, | 17.921 | ......... | 8.000 |
| Shelby. | 10,119 | 7.301 | 4.253 | 3.056 | 320 |  | 1,966,652 | 688,56x x,46,8x | 6,776,860 | $8,850,00$ $\times 5,650,0$ | 129.213 108,54 | 2,400 47.000 | 21,750 |
| St. Charl | $\underset{\substack{21.304 \\ 6,742}}{ }$ | 16.523 6.812 8 | $\begin{array}{r}11,454 \\ 3.556 \\ \hline\end{array}$ | 7.911 | 4,320 | 3,970 <br> ... | 5,270,050 1,988819 | $1,446,610$ 744,603 | 2,653,422 | 4,00,00 | 63,834 |  | 9,000 |
| St.C.Gene | $6,74{ }^{2}$ 8.384 | 8,029 | 3,556 4,964 | 3,148 | , 886 | 4,692 | 1,1,135,439 |  | x,647 | 4,550, | 35.113 <br> 29.654 <br> 2. |  | 10,000 |
| St. Franco | $9.74{ }^{2}$ | 7,249 | 5,313 | 3,211 | 2,366 |  | $\begin{array}{r}1,466,935 \\ 155,767,860 \\ \hline\end{array}$ | 523,730 $3 \mathrm{~F}, 577,560$ | 187,345,420 | r2,550,00 $5 \times 7,035,000$ |  | 15,325,000 | 250,000 |
| St. Louis | $\begin{array}{r}31.1889 \\ 8.535 \\ \hline\end{array}$ | 190,524 7,877 | 104.978 4.277 | 35,979 3,253 | 84,125 -.....0. | 10,020 | $155,767,860$ 932,573 | $31,577,560$ 372,497 | T,245,069 | 5r1,035,000 $9,550,000$ | 4.54.025 | ) | 26,000 |
| Stoddard | 8,535 3,253 | 7,877 2,400 | 4,277 | $\ldots$ | …....... | $\cdots$ | 902,830 1000 | ${ }^{1778,549}$ | 274,379 $2,325,895$ | 500 , | 5.456 |  |  |
| Sullivan | 11.907 | 9.198 | 2.983 <br> 4.373 <br> 2,38 | 3,264 | .......... | ........... | $1,594,842$ 136,729 | 731,053 152,002 | 288,771 | 4,000,000 | 6,203 | 9.800 | 800 |
| Taney.. | 4,6078 | - 3,5756 | 4,373 | 3,264 | -......... | $\cdots$ | 1361,300 <br> 620 <br> 2,3680 | - 285,578 | - $\begin{array}{r}906,820 \\ 3,022,732\end{array}$ | 2,500,000 $10,000,000$ | 19,009 65,091 | 3.000 | 2,000 251,300 |
| Vernon.. | 11,247 | 4,850 8,839 |  |  | -......... | .......... | $2,369,804$ $1,238,727$ | 642,948 922,985 |  | 10,65 8,5 | 51.409 | 1.801 | 80,000 |
| Wasting | 9,673 11,719 | ${ }^{8,723}$ | 8,811 | 7,213 | 6,784 | 2,769 | 1,666,848 | 711 ,452 | $2,398,300$ $1,296,243$ | 4,550,000 $5,550,000$ | 27.882 19.507 |  | 6,000 |
| Waynee... | 6,068 10,434 | 5,629 7,099 | 4.518 -.acosoe. | 3.403 | 3,264 | 1,443 | ${ }^{9807,902}$ | - | ¢, | 3,5000000 3,000000 | 25,427 20,593 | 10,000 | 1,000 |
| Weorter.. | 10,434 50,604 | 7,099 | ...0.0.0.0.0. | -1.....0. | $\ldots$ | ............ | ( | 43, 48083 327,955 | $1,2170,787$ 833,589 | $3,600,000$ $1,700,000$ | 20,593 $9,73^{\circ}$ | .............. | 1,200 |
| ight.. | 5,684 | 4,508 | 3,367 |  |  |  |  |  |  |  |  |  |  |

## 尺曰円円尺ENCEF TABIE

CONTAINING THE
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FORMING
A LIST OF THE CITIES，TOWNS，AND VILLAGES，WITH THEIR LOCATION．




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| 12 |  |  | EFERENC | E TABLE． |  |  |  |
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| elt |  | Cree | 隹 | Pitterstiown．．．．．．IUunterion．N．J． |  | Quitman（c．h．）． |  |
|  | ． | Plumer＊i．．．．．．．i．Temungo，Pai | Poplar Maius．．．．．．Fleming KY． |  |  |  |  |
|  | ， |  |  |  | Princetrowa．．．Schenectudy，N．Y． Priuceville．．．．．．．．．．．Peoriu，Ili． | Quogue．．．．．．．．．．．．．．．．Whfor，N．Y． |  |
|  |  | Plum River．．．．．．Jo Datriess，Yii． |  |  |  |  |  |
| 俍 |  |  |  |  |  | R． |  |
| Crive |  | Plum Valley．．．．．．．．．．．Texas，Mo． |  |  |  | Riv |  |
| Pine Hill |  |  |  |  |  |  |  |
| Pine Hiill． |  | M M ymonth（c．h．）Marshall Y nd． |  |  |  |  | Red Banks．．．．．．．．．Robsesom， N ． C ． |
|  |  |  |  |  |  |  |  |
| Pine Hill．．．．．．．．．．．．$R_{2}$ |  | Plymouth |  |  |  |  | Red Murf．．．．．．．．．Wayne，Mides |
| ITan， |  | disu |  |  |  | Rucoon．．．．．．．．．．．．iPeston，W．W． Y ． | Red Brige．．．．．．．．Ingham，Mich： |
| ek Knob．．．．．．．．．．．．． |  | outh |  | Powder Spring．．．．．．．．．．．．．Cobb，Ga． |  |  |  |
| $e$ Land． |  |  |  |  |  |  |  |
| Level |  | Plymuth（c．L．）Washingion |  |  |  |  |  |
| ${ }^{\text {Loge }}$ |  | ${ }^{\text {ath＊}}$ |  |  |  |  |  |
| M |  |  |  |  | Welder |  | ， |
|  | Plattswuth（c，h．）＊$C$ |  |  |  |  |  |  |
| ${ }_{\text {Preme }}^{\text {Pine Ril }}$ |  | Plymouth Meeting， 1 |  |  |  | Rainier．．．．．．．．．．．．．．．．． |  |
| River．．．．．．Wa | ${ }_{\text {Pla }}$ | ymouth Rock，Winne | Sr．＊Westchester N．Y． |  | ${ }_{6}^{t H i}$ | $\begin{gathered} \text { High } \\ \cdots \end{gathered}$ |  |
| ， |  | pton．．． |  |  | Prospect Hill．．．．．．．．Fairfax，Va． |  |  |
| Pine Top．．．．．．．．．．${ }^{\text {a }}$ | P1 | （1ass． |  |  | Prospect Lake，Van Buren Mich． |  | Rea |
| ${ }_{\text {Piue }}$ Pownsinip．．at |  |  |  |  |  |  | ed |
| ce． |  |  |  |  | Prospectrille．．．，Monttgomery，Pi． | Raleigh（c．hi．）．．．．．．Shelley，Teun． | Red |
|  |  | Ark． |  |  |  | Raleigh C．H．．．．．．ralerigh，W．Ya． | d Hook．．．．．．．．．．Dutches，，．Y． |
| Pine Falley ．．．．inush |  |  |  | ${ }^{\text {Poygan ．．．．．．．．．．Hinzebugo，Wis．}}$ |  |  |  |
| Hiew．．．．．．．．Fu |  | Pocahontasas．．．．1 |  |  |  |  | Tr．ra． |
| ille |  |  |  |  |  |  | k． |
| villee．．．．． $\mathbf{H}$ cecklenbu | P P |  |  |  |  |  |  |
| \％ool | Pleasant Grive，Dis Il |  |  |  |  | msey＇s．．．．．．．．．．iebergen，N．J． | Red Lion．．．．．．．i．Marrn，Ofio． |
| ${ }_{y}^{\text {Woods．．．．．．3a }}$ | ${ }_{\text {ns．}}$ | ， | Alu |  |  | nale |  |
| ${ }_{\text {S }}$ Flatat | Pleasaut Grove．．．olmsted | s，LIache（c．b．） | Statio |  |  | cho． |  |
| Grov |  | Mlurf． |  |  |  |  | $n$. |
| ${ }^{\text {Hill }}$ | Pleasant Grivee．．．．Chth，Et till | 兂 |  |  | Providence Centre．．．Lucas，Ohio． | Randal1．．．．．．．．．．．Saginaw，Hich． |  |
| $\underset{\text { Prairi }}{\text { Pill }}$ |  | Lupa | $\mathrm{n} .$ | $\left\lvert\, \begin{aligned} & \mathrm{Pr} \\ & \mathrm{Pr} \\ & \mathrm{pr} \end{aligned}\right.$ | $\begin{aligned} & \text { Man } \\ & \text { Mas } \end{aligned}$ | dall．．．．．．．．．．．．．．Cuy |  |
|  | Pleasant Hall．．．．．．Franklin，Pa． | Minn． | Port Gibson（c．h．）Claiborne， |  | Provo City（c．h．）．．．．．Utah，Utah． | Rataial |  |
| Pin Oak．．．．．．．．．i．aib | Hi | $\xrightarrow{\text { East }}$ | Port（ iibson．．．．．．．．．Ontario，A． Port ITery |  |  |  |  |
| ，uk | $t$ Hill | Isa |  | Prairio du chieu（c．h．）＊Craw－ | Prantytown（c．b．）Taylor， | ． | $\mathrm{C}$ |
| Al |  | $\xrightarrow{\text { lutab }}$ | Port Hope．．．．．．．．columbia，Wis． | Prairie du Rocher，Rana．．ph，IIII． |  | Randolph ${ }^{\text {a }}$ ． |  |
| ， | Hill | ${ }_{\text {fr }}$ |  |  |  |  |  |
| ${ }_{\substack{\text { Pinay，} \\ \text { Pioneer．}}}$ | Pleasant Hill |  | Po |  |  |  |  |
| meer． | Pleasant Hill，Vorthum | Print Peter | Port Jefferson．．．．．．．suffolk，N．Y． | ${ }^{\text {Gr }}$ |  |  |  |
| ， | Pleasant Hiill | Priut Plea |  | ie Ho |  | Ra |  |
| Sity | ：Pleasant Hill | Point Ple | Port Kent．．．．．．．．．．．．．Esex，N．Y． | fie Ho |  | ． |  |
| ville | （the | Point Pleasant，New |  | Prairie Landing．．．．．Desha，Ark．Ark． |  |  |  |
| Pipestone | Pleasant H mim | Point Pleasent | ${ }_{\text {Po }}$ | Prairie Mills．．．．Suscatize，Iowa． | ， | Ra |  |
| Piseataway，Prince fe | Pleasant Lah | Ple | land | ${ }^{\text {en }}$ | Pultnes．．．．．．．．．．．．．．Steuben，X． N ． Y ． |  |  |
| － | Pe Pewant Mills | Pleasant | Portliand．．．．．．．．．．．．．．．Tonia，Mich． | $\begin{aligned} & \text { Prairie Pla } \\ & \text { Prairie Pui } \end{aligned}$ | $\begin{aligned} & \text { neys } \\ & \text { on } \end{aligned}$ | $\begin{aligned} & \text { nyer. } \\ & \text { nser. } \end{aligned}$ |  |
|  |  | Point Truth．．．．．．．．．．Russ |  |  |  |  |  |
| ns | Mim． |  | nid（c．h．$)^{-1}$ Hututhomut ${ }^{\text {a }}$ | ${ }_{\text {Pr }}$ |  | Rapid Anu Station，Culuppur， |  |
|  | Pleayan M | Pooland．．．．．．．．．．．an | nit | Pra | Punxatawney．．．．．．．efetirson，Pa． |  |  |
|  |  |  |  |  |  |  |  |
| townewh．．．Hen | －Pleasanton．．．．．．．Ituerumbx，M | nd．．．．．．．．．．．．Mahoning | prama | Prattsbrr | Purdy Creek．．．．．．．．steuben，N．Y． |  | inton |
| Miss． |  | mat Cente， | $\stackrel{\text { Lav }}{\text { Ley }}$ |  |  | Rarit |  |
| Vtarsugh（c．b．） | ${ }_{\substack{\text { Plemant Park } \\ \text { Pleasat } \\ \text { Plain }}}$ |  |  |  | tsville．．． Hampsh 俍e， |  |  |
|  | Preasat Priun |  | autison（c．．h．）Kitsap， | $\xrightarrow{\text { Pratteville }}$ Pratesile |  |  |  |
| d． | Pleasant Pra | cis | Matilda．．．．．．．．．．en |  | Pushmataha．．．．．．．．．chuctuw，Ala． |  |  |
| sh.. |  | ${ }_{\text {Patan }}^{\text {Pat．．．．．．．．．er }}$ | Port Murry．．．．．．．．．．Warren，N．．． |  | am |  | ． |
| burre（c． | ${ }_{\text {at }}^{4 \mathrm{Re}}$ |  | $\mathbf{y} .$ |  | Putnam．．．．．．．．．．．．．．．Fuyette，lowa． Putnam．．．．．．．．Washrngton，N．Y． |  |  |
|  |  | Polk ville．．．．．．．．．．．．．．．Warren，N．J． | Port Orange．．．．．．．．．Vohusia，Fla， | iss |  |  |  |
|  | Pleasant Riflse，Rock |  | Port Penn．．．．．．．．．．New Casilte，Del． |  |  | ${ }^{\text {Hin }}$ | Reese Hill |
| Pittstith i．．．．．．．．．．．．．．immersth，Me | Pleasant Ritige， |  | Providence，Alontgomery， | Pre |  | Raveus steam．．．．．．s．scott Min． |  |
| . .1... |  |  | Port teppblic．．．．．．．cravert，Md． | $\left.\right\|_{\mathbf{P r}_{r}} ^{\mathbf{P r}_{0}}$ | rubut．．．．．．Montyonerery， 0 |  |  |
|  | Pleamant Rid | roy | Port Republic，Kockingham，Va． |  |  | hawhing＇s station，Alleghany， | c． |
| Ru | Rililit | P，minfet．．．．．．．．．．．．Win／son，te： | ichmond |  | ken Kill |  |  |
|  | Prent | Conn. | Royal |  | aer Buttom， | Rawson．．．．．．．．．．．．．．．Aroostook，Me． | $\begin{aligned} \text { rex. } \\ \text { con, } \end{aligned}$ |
|  | Plpasiont Run |  | Port Royal．．．Montgomery |  |  |  |  |
|  |  |  | yill |  |  |  |  |
|  | Pleasnt Site－ |  | heldo |  |  | Ray Centre．．．．．．．．． Macomb，Mich． |  |
| ， |  | Pomptin | mouth（e．h．）＊Hockingh | ， | ity H | Raymoud．．．．．．bleck Huwk，Lowa． |  |
| C．H．，Pittsyl |  |  | Portsimbut？ |  |  | Raymond．．．．．．．．．Cumberland，Me． | Rehrersburgh．．．．．．．．．．．．Berlis．Pa． |
| wercille（c．h．）${ }^{\text {E }}$ El Dowado， |  | 边 | Pr | Priam． |  |  | ${ }_{\text {Reiden }}^{\text {Reacili＇s }}$ |
| Pmuervile．．．．．．．．．．．Bnise，Ihaho | Pleasant Valley，Ster |  | ， | $\text { es } \mathrm{Br}$ | Quarryvile．．．．．．．．．rhinnd Conn． |  |  |
|  | $\xrightarrow{\text { Pleasanat }}$ Yalle | $1 \mathrm{Cr}$ | $\begin{aligned} & \text { Purt T, wnsen } \\ & \text { Wish. } \end{aligned}$ | Pricers Landing．．．．．．．．Scott，Mr． | Quarry ville．．．．．．．．Lancustor．Pa． Quasqueton．．．．Buchunan．Inwa． | Raymonds．．．．．．．．．．．．．．．．．otter，Pa． Raymondville，St．Luurencr， |  |
| Whor， Ct |  | Pond Eday．．．．．．．．．．．．．．．Bention，In it | Porton |  |  |  |  |
| d．．．．．．．．．．．．．．．．．Witl． |  | Pomil Pu | Purt Washington．．．ULums，X．Y． | Prickly Pear（c．h．），Jefferson， | ．．．．． |  |  |
| H．．．．．．．．．．．．．Brurviks．I |  | Pond Spring．．．．widilumber，（iat． | Port Wasbington，Tuscaruwas， Ohi．． | $\begin{aligned} & \text { Mont. } \\ & \text { Prillaman } \end{aligned}$ | Queens．．．．．．．．．．．．．．Quens，N．Y． | swille．．．．．．．．．．．．Columbia，Ga． | $\begin{gathered} y y . . . . . . . . . ~ \\ \text { deer.. } \end{gathered}$ |
|  | Ple | Poney Hollow．．．Tumpleins，N．X Ponka Agency ．．．．．．．．Todd，Dak． | Port William．．．．．．．．Tinton，Ohis． Poneyville．．．．．．．．．．．．．Fons．g Ind． |  | wo．．．©uent | Raysville．．．．．．．．．．．．．．．．．．．．．．．enry，Youse，Lad． Raysville．．．．．．．．．．．．Madison，N． C ． | $\begin{aligned} & \text { organ, } \mathrm{Chio}, \\ & \text { Lancaster, } \end{aligned}$ |
| Paunhold． | P1 |  |  |  | us tiruve．Seitzerlum | Rayville．．．．．．．．．．．Baluimore，Md． | ．．． |
|  |  | ae．．．．． | 隹 |  | Stic．Mectlenuurgh | belit | ．．．．． |
|  | Pleawant Yiew．．．．．．．．．．．．Ray，Mo | Ponturnce |  | Pribce Prevererickium | 日．．．．．．．．．．．．．．．．．．．．．． | dreld Depot K | Blufic． |
|  |  |  |  |  | cs（c．h．）．．． |  |  |



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| nsoh（c．b．）Johnson，N |  | Tuwseud Harbor，Middlesex， |  |  |  | Yan na：．．．．．．．．．．．Tompheins，x． $\mathbf{Y}$ ． | iil．．．．．．．．．．Groparmi，K．us |
| Tawdin..............chteon, on | Station | Mrsend Inlet，Cape May， | Iロy่า． | Inamilib．．．．．．．．．．．．．．otsta＂ | Pr |  |  |
|  | derow | T．uwiseude yills，Gilmee wr Wa． |  |  |  |  |  |
| amah（c．h．）．．．．．Burt， |  |  | Tuck | im |  | Pu | ＂ |
| aph City ．．．cularerse， | y | T．Minumul | Turbertit $\times$ Roads，Wilson， | Culdestili Centres |  |  | City（c．b．）${ }^{*}$ Stor，${ }^{\text {a }}$ ， |
| Stionner， |  |  | Tucke | Luger＇s Store．．．． |  |  | Dale．．．．．．Lerimer．colo． |
| Slaids．．．． | Tildea | 峌 |  |  | Martherwug（c．i．） |  | 为 |
| Tenperance |  |  |  |  |  | Yenedwia．．．．．．．．tan hert Whili |  |
| nue Hall， D ．hath，It |  | creek |  |  |  |  |  |
|  |  | 5， |  |  |  |  |  |
| Temperacevevile，Al |  |  |  |  | Upper Red Ilook，Dudchass，N．Y． |  |  |
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| －Iifil． |  |  | ania | $\stackrel{i}{i m}$ | Etinw |  |  |
| Mills | Timber Crowk．．．．．． Humt ．Tex． |  |  | Yni．，n | er sitast |  |  |
| 俍pe offe |  |  | Tuly |  | ${ }^{\text {r }}$ Tram | ？ |  |
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| land |  |  |  |  |  | Verdijrris Falls，Green |  |
| Ten Yile．．． | Ti |  |  |  |  |  |  |
| Tmin Litee．．．．．．．．$L_{\text {L }}$ |  |  | 1：lic |  |  |  |  |
| Ten Milit ITtue，Milue |  |  | Turnel．．．．．．．．Wastingt | Ln |  |  | ttauca，jich． |
| Ten Yile stand．e． |  |  | $\left.\right\|_{\mathrm{T}} ^{\mathrm{T} .4}$ |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Tennestree Colony， |  |  |  |  | cr |  |  |
| Tuxis |  |  |  |  |  |  |  |
| H11．． |  | Traveres des Sivux，Nicolut， | Tupelow．．．．．．Sturembut，Misis． |  |  | Yerment．．．．．．．．．．．．．．．．Fulton，Tll． |  |
| T．rre B．onn |  | h．）＊ |  | cn |  |  | ． |
| Terees Come |  | Traviturerse，Mieh Austion Tox | Tw | Un | Lsuluopatigh，Heashingt hh，R．I． |  | ； |
| Hant | Tip |  | Tureand ${ }^{\text {a }}$ ． |  |  |  |  |
| Terre | T： | Trenusit．．．．．．．．．．．．．．Taszeeil， 11.1 |  |  |  |  |  |
| Terre Hill |  |  |  | Ynion＜R Roads | Utie |  |  |
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| T．tererdurch．．．．．．．． |  |  | Th |  |  |  |  |
|  | Mr Coruers， |  |  | \|en" |  |  |  |
| ${ }_{\text {Toxane }}^{\text {Texant（c．h．）}}$ | Ti |  |  | L |  |  | bur |
| Tex：4．．．．．．．．．．．．Wusk |  | Tr |  | U， | tanladuy ．．．．．．．．．．．．Int／anu，Wilsh． |  |  |
|  |  |  |  |  | rester， M |  |  |
| s． | T | Treenton．．．．．．．．．．．Perethern，Yium． | Turuers Peoint．．．Kans mum，Tex． | L |  |  |  |
| via |  |  |  |  |  |  |  |
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| The Corne | Romt | ．ab |  | mare Md．${ }^{\text {Ma }}$ | Vail＇s Cross Roads，$M$ |  |  |
| The Forks．．．．．．．．．．${ }^{\text {S }}$ |  | Gil |  | Yil | ${ }^{\text {i }}$ | Yerona．．．．．．．．．．．．．．．．．．Boone． K y． |  |
|  |  |  |  | siil |  |  | Wagner．．．．．．．．．．．．llaytom，Iowa． |
| The Sarrow | Tomidsviluey．．．．．．．．． |  | Alat | Hill |  | Yero |  |
| at | T， | Trevilian＇s \epput．．．Louzis，\a． | Taseatusa．．．．．．．．．．．FFuller，Tex． | Unicu Yills |  |  |  |
| esa． |  | Trexlertown．．．．．．．．．．．Lehingh，Pi． |  | Union Silil | alla | 5 |  |
| am | $\cdots T_{n}$ |  | Tusearora．．．．．．．．schaydzal，Pill |  | rings， |  | $\frac{\mathrm{ion},}{} \mathrm{a}$ |
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| rd | nug | Triala | Tuarumbia（c．hi．）．．．．Viller，Mio ： | Thin Pruirie，Allamabke，Tluwa． | Yalley．．．．．．．．．．．Giuthtupe，Tex． | Ye |  |
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## APP正INDIX

Wew Post Offices established since the compilation of the Reference Table

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| School House |  |  |  |  | ， | itsville．．．．．．．．Pul |  |
| Meteo，cal．Cass | － | tag |  |  |  |  |  |
| uyler Colfax．．．Pl． | Si | stanford | Taconia．．．．．．．．ilicree W．Ter． | Valley．．．．．．．．．．．Dou | auhee Station．．．．D | Wilthrue | Zem Zem．．．．．．．．．．．．．Lake， Cal ． |
| Scioto．．．．．．．．．．hcDonougin，III． | Sineatlis．．．．．．．charleston， | : sta |  | ey．．．．．（＇olumbliana，Ohio． |  | Wild | i． |
| Scioto．．．．．．．．．．．．．．Honroe，Pa． |  | －t |  |  | aylanid Springs | Willard＇s Landiny Union， 111. |  |
| at ．．．．．．．．．．．．al Grat | Sitha．．．．．．．．．．．．．．．Martin．Ind． | tanwood．．．．．．．．．．．Cedar， |  |  |  |  |  |
| Scuftletown．．．Henderson，ky． |  | cton Mi．ils ．．．．Amberst | Teargue＇s Mills．．Hardeman，Ia． |  | Barth |  |  |
|  |  |  |  |  |  |  |  |

## POPULATION OF THE UNITED STATES

BY THE CENSUS OF 1860 AND 1870

|  | Ma． |  | Crunties． | 1870. | 1860. | Counties． | 1870. | 1860. | Counties． | 1870. | 1860. | Counties． | 1870. | 1860． | Countios． | 1870. | 1860．${ }^{\text {I }}$ | unties． | 1870. | 1860. | s． | 1870. | 1860. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| rounties． | 1870 | 1860. | M | $1 \because 107$ | 1133 | Jetfersion |  | $1+971$ | Humburd | （14） | 4， | Sew L | ris | $017,1$ | Santa Rus | － | 54 5 | Iaty | 31：3 | \％14．3 | M1：$\quad$ mell | 6， | 450 |
| Altanga | $1112 \cdot 3$ | 16739 | Perry | 2495 | \％ | Juhrew | ${ }^{915}$ | 7612 8164 | Inyo | 边 |  |  | 23140 | $24 \pi$ | Sr．Jontin | 201s | \％njo | 1）an－n | 4．3． 2 | 3rin！ | M | $1 \% 13$ | 20， |
| Baker | 6194 |  | Pickens | $11+23$ | －1435 | Lafayetie |  | ${ }_{93} 9$ | Klamath | 16it | 803 |  |  |  | Suwintee | 3196 |  | 1werntr | 1．123 | 1192 | 14． 1 s \％me | 为 | 299\％ |
| Bahtwin | Gu0t | T330 | lialudilph | $12{ }^{2} 116$ | 20009 | Little liver | 3：36 |  | Lake | 294 |  | Totals | 53743 | 460147 | Tiakur | 14\％3 | 13， | 1）．amev | 4－414 | 8 | питas | 12060 | 990\％ |
| Bationur | 29309 | 30012 | liussell | c10：3t | 26，942 | Madisun | 79.7 | Ti40 | Lassen | 13： |  |  |  |  | Viluar | $17: 3$ | 11．i） | 1）mithery | 11.17 | San； | Muser ise | 16 fta | 1 1－ast |
| ${ }^{\text {Remitun }}$ |  |  | St．Clair | чзбы | 11013 | Mation | $39 \% 9$ | 6193 | Los Angelos | 15303 | 113：3 |  |  |  | W．．kulla | \％ | 20， | Etar | （1） | \％1t． | 入＂uta． | 14125 | 1.358 |
| Bilh | 7669 | 1183 | Salufud | －49\％ |  | Miosit－．ipp | 36：3 3 | $3 \times 45$ | Maxin | 69.3 | 洨3 | DEL | Ware． |  | W：uton＊ | $3 \mathrm{t}+1$ | $303 \%$ |  | $1: 5$ | 1＋：1 | （1）－win | 11：～ | 11：49 |
| ${ }^{\text {Blonnt }}$ | 934．7． | 1usct： | Shelby | 1219 | 12418 | M，mure | 43，${ }^{\text {c }}$ | 5 ¢й | Maripms | $45^{4}$ | 624：3 | Counties． | 1870. | 1860 | Wioblingtun | 2\％ | 210t | b，hustra | 421 | 4 | bandeg | Ttme | 71038 |
| Butler | 1＋う， | 1rize | Sumter | $2+109$ | 2＋us5 | 1 M，intemery | 29nt | 3ten | Memucin | 201\％ | $11+1$ | Kent | \％294t |  | Tutals |  | 1＋60 | E．ine t | 9\％43 | 104.3 | Pi，hens | $5.1 \%$ | 4301 |
| theun | 13．90 | 21．3．3 | Titladega | $\xrightarrow{1 \times 106}$ | － | Ouwchata | 129\％ | 1030 | M， | ＋30 |  | Sew Castle |  |  |  |  |  | F．umul | 61．97 | jund | Pume | 2 F | 19.3 |
| Chambers | 15：922 | 23314 | Tuscatur | 21031 | 23：2（1） | Perry | 2025 | $2+6$ | M mitere | 9，6 | 4739 | Su | 31 tist | ， |  |  |  | Fayetto | \％ | \％14， | pilk | － | （10） |
| Cherok | 1113： | 183itio | Walker | 6543 | 7980 | Phillips | 1035 | 14n\％ | Sura | T16\％ | 5.21 | Totals | 12\％゙け | 11：216 | GEO | gia． |  | Fl | 1720 | 1：19\％ | Pratheh | 11940 |  |
| Chuet | 12 | 120.4 | Washingtou | 2912 | 4669 | Pike | 3748 | 425 | Nevada | 1913 | 16iti |  |  |  |  |  |  | Fwirth | －4as 3 | － | Puthem | 20＋1 | 1012 |
| Clark | 14613 | 15049 | Wilcox | 28337 | 24614 | P，ins | 17： | 3621 | Placer | 113\％ | 13\％ |  |  |  | Counties． | 1870. | 1860. | Ff．kilin |  | 7an | vamaman | 41 | 349 |
| ${ }_{\text {Clay }}$ | ${ }_{8}^{9017}$ |  | Winston | 1.5 | 5.6 | P，in | 350 | 4268 | Plumas | $\stackrel{4609}{ }$ | 43：38 |  | IDA． |  | Alphug | 5150 | ＋15\％ | Furua | 3.544 | 1＋42\％ | R．lime | 32：5 | 3 |
| C．iffee | 6171 | 9623 | Totals | 996992 | 964201 | Prairie | 5601 | 8xit | San Bertaudino | 3 3x | －5．01 | Counties． | 1870. | 1860. |  | $1 \mathrm{mbl}{ }^{\text {a }}$ | tor | （1）Tock | cita | 10， | Rexhmon | 20， | $21<84$ |
| Criltert | 122337 |  |  |  |  | Pulaski | 3\％u：6 | 1109 | San Dicg | 49\％1 | 4：3－4 | Alachua | 173\％ | 8：32 | 13．unks | 4：3 | 4 | cily ${ }^{\text {a }}$（ | 53 | 8 m | Stles | 5i－9 | ＋123 |
| ${ }_{\text {Cramectab }}$ | － 119.95 | ${ }_{1} 18181$ |  |  |  | Randolph | 7460 | 6 | Sanl framise | 149＋73 |  | Baker | 1：3\％ |  | isurtu | 1sintis | \％．．． | （ 4 ， |  | 1104 ； | Truser |  | 8uTt |
| C．wiagton | taria | 6469 | ARI | Nsas． |  | St．Fraucis | ${ }_{3911}$ | ${ }_{6} 6.4$ | Sinl Lutiv Ubispo | 4こ2 | 1－ | ${ }_{\text {Bratinu }}^{\text {Bradird }}$ | 3nt |  | Berne | $21 \sim 3$ | 16， | Siwnutet | 12＋51 | 1244， | Stumat | 36－4 | 1322 |
| Crenle hat | 11156 | 12193 | Counties． | 1870， | 1860 | scutt | $74 \times 3$ | 3145 | Sanh Miter | 6 | 3214 | Brevad | 1216 | $2+3$ | 13 rak | 80 | 6， 3 ，$\times 6$ | 11 thees ${ }^{\text {a }}$ | 6） | \％sam | sumber | 1 m | 94.28 |
| Dallas | $40=15$ | 33625 | Arkunsas | 8：68 | ss4 | Serrcy | 2010 | － | Eanta Clara | 26 | 1191. | Calho |  |  | myta | － | $\pm$ | H．1． | 11．11 | 1．n） | T | 5， | 1316 |
| be Kalt | 7120 | 10ías | Asthley | 8142 | $8{ }^{5} 59$ | Sevier | 4492 | 10.16 | suntia Cruz | －it3 |  | Cutumbia | Fi， | 46iti | b，ke | 12 Ca | 1－1位 | п．trlan | 4 | 5， | Tuall |  | $4 \times 2$ |
| Fhmore | 1417 |  | Benton | 138．31 | $931 \%$ | Shatpe | $5{ }^{\text {＋10 }}$ |  | Shasta | 4173 | 4\％施 |  |  |  | Buti－ |  | ＋ | Har | 1：－ | $1 .$. | Taylt | 7 | 54.43 |
| Excaubia | 1） 41 |  | Bumbe | 70，2 |  | ［niwn | 10.71 | 12930 | Sierra | $5 \cdot 19$ | 11.7 | Duval | 119\％1 | 50.4 | Callown | \％ | 494. | ［1］： | 10： 0 | \％1， | Trif．ir | ：34． | 273 |
| Etowah | 10109 |  | Bradtey | 8 8i＋6 |  | Vial Buren |  | 83. | si－kiyou | 6048 | －1， | Exambia | Tッ， | 5 ¢， | Cunton | $4{ }^{\text {a }}$ | 5＋－1 | Heat 1 | －rit | ai： | T＂．al！ | 80e3 | サッド |
| Fayetre | 7136 | 128．71 | Calhnur | 30.3 | 4193 | Wasliugton | 17266 | 1403 | Sollanu | 1s－1 | 1－1 | Franklin | 123\％ | 19， 4 | Cenmberl | 915 | 4 | II． | 1 1， | 11. |  | 120．7\％ | 14.5 |
|  | 8 | 1562 | Care 11 | 5 | 93.3 | White | 10：47 | 831， | Soluma | 13－19 | $11 \times 6$ | （i，duden | ysuy | 为为， | Caras | 1192 | 1193 | II | 21 | 1.511 | T wn |  | 24．19 |
| Greene | 15：99 | 30889 | Clark | 11953 | 9735 | Windr | 6 | 60\％ | Sumer | \％ | 3） | Itumituod |  | trist | （ax | ＋140 | 1－2， | 年： | 111 | 10． | T＊＊ |  | 1 Hext |
| Hale | 21792 |  | C．lumbia | 11：397 | 12449 |  |  |  | Teh， | $3 \cdots$ | $40+4$ | Hilliburough | 3215 | 号 | Charlton | $1 \times$ | 1\％－n | Jットロ | 14： | 10，¢\％ | （1） | $t=$ | 4413 |
| Нане， |  |  | Conway | 13 |  | Tutals： | 8315\％ | 4330.50 | minity | 113 | 5123 | Homes | 1：\％ | 1； 34 | Chatham | 41 | 310 | duftr | 129：4 | 1 l | 1100 | 97 | 940 |
| Henry | 14191 | 14918 | （raighea | 437 | 31146 |  |  |  | Tulare | 4021 | ＋6\％ | Juckeou |  | 100： | Chattabisa | in： |  | Jれが | － | ces． | ＂，wher | \％ | 10wis |
| Jackson | $19+10$ | 182 $\times 3$ | Crawford | 80．71 |  |  |  |  | Tn． 1 Mmus | 81.0 | 163 | Juffer | $13 \% 3 \times 1$ | 95： | Chate ed | ¢\％\％ | 72， | $\ldots$ | 4 |  | Wulton | 11038 | 111．7 |
| Jefferson | 1234， | 11i＋6 | Cittendea | 3＊31 | 4920 |  |  |  |  | $9 \times 9$ | （b） | Lutayet | 1：－ | 2thr | charnke | $110 \times$ | 1129 | Lemint | － | rixay | W\％－ | 2 | － |
| Lauderdal | 15091 | 12120 | Criss | $3: 15$ |  |  | NIA． |  |  |  | －im | Leon |  | 133＊ | （luske | 12341 | 1120 |  |  | Tin | W：rom | 16 | 989 |
| Lawrence | 16.108 | 119\％．： | 1millis | 6 |  | Corntios． | 1870. | 1860． | Ttals | 564 | 37999 | Levy | 217 | 1701 |  | －1．313 | 4 | 1，uys | 1 | － | H1－11：gtun | 1.0 |  |
| Limestone | 15：17 | 153306 | Diew | 996） | 97 | Al：meda | 24237 | 927 |  |  |  | Liberty | $111 \ldots 1$ | 17．0． | Clivich | 3 3 45 | 3 3143 | L，wiolea | $\cdots$ | 边， | W．．．late | ¢ | 20130 |
| Lowndes | 23719 | 27.16 | Framil | 95 | 59 | Alpine | 9\％－3 | 190：30 | ONNE | CTICUT |  | Hanatee | $19 \% 1$ | 8．5） | c．t．b | 1：～14 | 14＊＊ | L．umblin | 51 | trs， | White | $4{ }^{4} \times 15$ | 8345 |
| Macon |  | Stis | Futou | 4843 | $4{ }^{4} 24$ |  |  | 1：114 | conn |  |  | Marion | 10n＇t | 86 | C．iffee | $3!$ | 2 |  | －14，${ }^{\text {d }}$ | 4．4， | Whatheld | 190 |  |
| Madison | 31：267 | 26.51 | （3rant | 393 | 4 | ${ }_{\text {Calta }}$ | 8495 | 16.99 | Counties． | 1870. | 1860. | Миг | ： | 2943 | $\bigcirc$－tquit | $1{ }^{10+4}$ | 1：1\％ | Wels－n |  |  | Wimx | 2 | 2110 |
| Marengo | ${ }^{266151}$ | 311181 | Green Hempstead | $13: 68$ | 1：994 | C－lina | 6169 | 2it | Fairfield | 9．2\％6 | 74\％\％ | Yassau | 4247 | 3844 | Columbia | 1352 | 11880 | $\underset{\text { Mariun }}{\text { VrIntab }}$ | 8149 | 7394 | Wilkeg | 117 | 11420 |
| Marsh | $95 \% 1$ | $114 \%$ | Hot Springs | $5 \times 7$ | 5 | Comera costa | $8+61$ | 53.2 | Marfira | 109\％ | 43818 | Orance |  | 887 | Crawford | $\bigcirc$ | ${ }_{7} 693$ |  |  |  |  | 377\％ | 24 |
| M | 49311 | 41131 | Independence | 14 ¢ibi | 1436 | bel Surte |  | 26\％ | Mididleex | ni， 99 | 3心59 | Polk | 3169 |  |  |  |  | Miller | 3391 | 1794 |  |  |  |
| Monrie | 14214 | 15667 35904 | Yzand | ${ }_{7}^{6 \times 2689}$ | 10493 | Elesno | 6330 | 4605 | Sew llaven | 121237 | 973 | Putaam | 3821 | 2712 |  | me |  | Milton | 424 | 4002 | Tutals | 113家䢒 | 1057806 |




# TABLE OF POPULATION, GOVERNMENTS, \& C 



## TABLE OF DISTANCES.

ROUTES TO AND FROM FOREIGN PORTS ANDCITIES
distances from new york to the privgipal fobeign AND DOMESTIC SEAPOATS OF THE WORLD, IN GEOGRAPHHCAL MILES, SIXTY TO A DEGREE
sary to
The me
Note. To obtain thr distances in Rtatute miles, it will bo neces From NEW YORE to A.exandrich Ekypt
Archangel, Russia
A shin wall ris II Aspin wall,
Azores, The
Balize.................................
Baltimore, via Chesapeake Bay.
Boston, via Cape Cod Boston, via Cape
Bristonen, England.
Buenos Ayres ........................
Calcutta, via Cape of lood Hope Calcutta, via listhmus of Panama Callao (port of Lima), via Cape Hor Canton, China, via Cape of Good Hope.
Canton, Canton, " Via Cape Horn..........
Canto, "
Cape of Good Hope............ or Panama Cape Horn.
Charleston, South Carolin
Cherbourg, France ...................
Catzacallor River, Tehuantepe
 Guayaquil,
Halifax, No
Havana........................................................ Hong Kong, via Isthmus and sandwich Islands Kingston, S Jamaica.................
Liverpool, by Mercators sailing..
Liverpool, by Mercator and Great
London, Enqrand....................................
Mazaran, Mexico, via Cape Horn
Mazatlan, "«stralia, vianama Cape Ho.
Mellourne, " $\quad$ via Cape or
Via Panama
Molile, Alabama
Molinle, Alabama
Monrovas Liberia
Nanyasaki, Japan
New Orleans .......
New Orleans .........
Nortolk. Virginia.
Patama. via Isthmus of Panama
Panama, via Cape Horn ..................
Penracola, Florida.......
Pernamburo, Brazil....

St. Peterslnury, Russia.................
San Blas, Mexico, via Cape Horn

dIStances from san francisco. callfornia, to many of THE MOST PROMINENT SEAPORTS IN THE WORLD.
From SAN FRANCISCO to

Liverpool, E'ingland, via Panama..... Merbourre, Australia.

New York, via Accepule ond Vera Cruz.
New York, via proposed Paciec Railroad.
New York,
Panama
Panama
San Diego, Californiala
Sandwiche

Shanyhae, "ast Ina Great Circle sailing ....

distances from new orleans, From NEw ORLEANS to

Callao (port of Lima), via Panama
Cillao (port of Li
Galveaton Texas.
Intvana Cuba ....
Liverpool...
Nellourne,
New York.
Melbourne An ustrailin, via Panuma


DISTANCES FROM BOSTON. (Ser dillances from New York.)
 From GaLIEAX to

Galway, Ireland (by gea). .....
Galway to Dublin hy laod).
Dublin to Holyhend
Dublin to Holyhend......
Holybead to LONDDON.. $\qquad$


$$
\text { Total, } \frac{2,591}{}
$$


Calcutten wia Cape of Good Hope


Borton, Marsachusetho...........
Charlipeton, Louth Carlina......
Liverphol. via Mercators railing
Liverpool. via Mercator's Ralling. ............
New Orlenns.
New Orlenns
New York...
DISTANCES FROM LIVERPOOL, ENGLANO, TO THE MOST IMPOATANT SEA-PORTS OF THE WORLD. From Liverpool t

LAND ROUTESTOPLATES WTTHINTHEUNITEDETATES



TELEGBAPH STATIONS ON THE LIAE OF THE OVEB. LAND MAIL ROUTE
Fort Kearney, Cottonwood Springs, Alkali, Overland City, Hams Fork, Fort Bridger. Weber River, Salt Lake City Camp Floyd, Ruby Va' Fort Churchill, Carson City and Placerville

| union Pacific railroad. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Papillion. | 12 | ..omo | 12 |  | 6 | , | 1120 |
| Elkhorn... | 17 | ...... | 23 |  | 15 | - | 1135 |
| Dimond's. | 8 | ...... | 85 |  | 10 |  | 1154 |
| Fremont. | 18 | ...... | 47 | Nurth Fork. | 24 | ..... | 1178 |
| North Bend. | 14 | nomos | 61 |  | 9 | **oos | 1187 |
| Shell Creek. | 15 | ...0.0 | 76 | Two-Mile Canon..............................e.o. | 22 | ...... | 1279 |
| Columbus. | 15 | ...... | 91 | Twelve-Mile Canor.. | 5 |  | 1224 |
| Jackson.... | 9 | ...... | 100 | Gravelly Pord... | 4 | .00.0. | 1228 |
| Silver Creek ....................................... | 9 | .....0 | 109 |  | , | ...... | 1236 |
| Clark's.......................................... | 11 | ...... | 120 | Shoshono Point. | 13 | ...... | 1249 |
| Lone Tree...................................... | 12 | .o.". | 132 | Skull Rapch. | 10 | ..... | 1259 |
| Chapman's....................................... | 10 | ...... | 142 | Reese River. | 33 | .0.0.0 | 1292 |
| Grand Island..................................... | 12 | ...... | 154 | Iron Point.. | 19 | ...... | 1311 |
| Wood River........................................ | 18 | ...... | 172 | Big Bend İumbuldt. | 87 | ...... | 1348 |
| Kearney ...........................................eo | 18 | ...... | 190 | Mile City.... | 35 | ..omes | 1383 |
| Elm Creek......................................... | 21 | ...... | 211 | Oreans... | 90 | .oseos | 1413 |
| Plum Creek...................................... | 19 | ...... | 230 | Humboldt Lake. | 41 | ... | 1454 |
| Willow Island....................e.c.o........... | 20 | ...... | 250 | Big Bend Truclsee.. | 29 | ...... | 1483 |
| Brady Island.................................... | 18 | ...... | 288 | Glendale... | 8 | .ocoe. | 1491 |
| McPherson ....................................... | 12 | .thoo | 280 | Hunter'a......................................... | 9 | $\cdots$ | 1500 |
| North Platte.................................... | 10 | ...... | 290 |  | 131/2 | $\ldots$ | 1513) |
| 0'Fullon.......................................... | 18 | ...... | 306 | Little Trackee................................... | 81/1 | .... | 1532 |
| Alkali ... | 16 | ...... | 322 | Truckee River................................ | 14 | ... | 1538 |
| Ogallala...............................0.e.e........ | 19 | .....0 | 341 | Crest. | 13 | .....0 | 1549 |
| Big Spring........................................ | 20 | ...... | 361 | Cisco.. | 8 | .nowe | 1597 |
| Julesburg ......................................... | 16 | ..... | 377 | Emigrant Gap....... | 8 | $\cdots$ | 1593 |
| Lodge Pole....................................... | 19 | -.o." | 396 | : Blue Canun... | 5 | $\cdots$ | 1568 |
| Silney .............................................. | 18 | ...... | 414 | Shady Run.. | 4 | - | 1522 |
| Potter.............................................. | 18 | ...... | 432 | Alta... | 2 | s.mm | 155 |
| Antelope............................................ | 19 | ...... | 451 | - Dutch Flat.. | 3 | $\cdots$ | 1577 |
| Pine Bluff. | 22 | ...... | 473. | Guld Run.. | 10 | .omem | 1387 |
| Hill's Dale....................................... | 33 | ...... | 506 | Colfax... | 11 | ....... | 1598 |
| Cheyenne..................................... | 20 | .-.... | 5.6 | Clipper Gap... | 7 | am | 1805 |
| Hazard..... |  | ...... | 5 | Aulura. | 5 | . | 1610 |
| Granite Canon..................................... | 13 | ...... | 545 | Newcastle. | - | ...... | 1018 |
| Sherman.......................................... | 13 | ...... | 558 | Pino ... | 3 | ....... | 1019 |
| Red Butte.......................................... | 13 | ...... | 581 | Iucklin.. | 4 | . | 1828 |
| Fort Saunders.. | J | ..... | 578 | Junction... | s | ... | $10 \% 5$ |
| L tramie..... | 2 | .-... | 580 | Antelope...... | 8 | - | 1034 |
| Little Laramie........................o.oso.o.eno.e | 12 | ..ome | 592 | Arcade... | 1 | -- | 1641 |
| Meticine Dow... | 57 | - | 649 | Sacramento... | 18 | . | 1859 |
| North Fork Platte.. | 36 | ...... | 693 | Cunsumas River.. | 14 | ... | $1 \mathrm{~F} / 3$ |
| Brilger's Pass. | 85 | ...... | 720 | Wordbridge......... | 13 | ... | 1886 |
| Lat Clede........................................... | 61 | ...... | 281 | Stockton... | 10 | ...... | $189 \%$ |
| Point of Rocks.. | 40 | ...... | 821 | San Joaquin River. | 20 | ...oco | 171\% |
| Green River.... | 45 | ...... | 886 | Livermere Pass...... | 12 | ...... | 1728 |
| Suath Bend..... | - 32 | ...... | 898 | Kottiogers ... | 10 | ...... | 1738 |
| Fort Bridger..... | - 33 | ...... | 931 | Tallejo's Mill ................................ | 8 | ...... | 1746 |
| Bear River...... | 32 | ....e. | 963 | IIayward's ................................... | 5 |  | 1751 |
| Echo Canon........................................ | 20 | ...... | 983 | San Ineandro........ | 8 | ...... | 1759 |
| Weber ..... | 20 | ...... | 1003 | Oakland. | $41 / 2$ | ...... | 11031/2 |
| Kimball's.....................oco.................. | - 24 | .... | 1027 | Goat Islnnd.................................. | 13/2 |  | 1685 |
|  | - 28 | ...... | 103 | San Prancisco......................... |  |  |  |

$$
\begin{aligned}
& \text { From Halmax to Land Routo. }
\end{aligned}
$$

## MOUNTAINS OF THE WORLD

Mourvans are the most conspicuous and has most durable features of the land; they are the immediate offspring of the glabe, and owe their origin lesa to surface action than any other of its features. They are generally composed of rocks of some description or other, of which
here are three classes, which show that they have been here are three classes, which show that they have been
produced by different causes. The first are those which have been produced by deeply-seated action, without an access to the atmosphere, or other agent of comisuation or melting. They may he termed subterranean rock: : and, so far as observation has gone, they range from granite upwards to the older porpbyry, or to the more indurated epecies of the slaty or stratified rocks.
Secondly, there are those which appear to have under gnse a greater or less degree of the action of cornbustion, which begin with porphyry and end with the more recent lavas which have been ejected from volcanoes. They may Bo termed igreous rocks, for though they have not, of course, been produced by fire, they show marks of its action.
Thirdly, there are stratified rocks, including, among others, the limestones, some of which are of crystalline texture, showing that they have been subjected to strong heat, under very great pressure. The whole of this third
division may be regnrded as consisting of debris, produced and accumulated by surface action; the limestnnes, gene rally speaking, and also some of the others, haring been formed in the ocean.
Besides their varied composition, and the grandeur which they add to the landscape, mountains are exceedingly useful in the grand economy of terrestrial nature. If they rise to lofty elevations, and have their escarpments steep and precipitous, they are not in themselves fertile;
bat they are the causes of fertility in the sumrounding lands. They conduce to this effect in various way., by generally shounding in springs, and pouring down living streams of water in all directions; the overflowing of these streams fertilizes the soil of the places which their waters flood; and the mountains elaborate out of the atmosphere a constant supply of water for them.
In most of the continents, and many of the islands, there are mountain summits which rise above the limit of the now, and rise the bigher the nearer they are to the equator. The snow melts to certain extent, during the dry and Farm season of the year, and thus gives out annually a aighly beneficial supply of water. In high latitudes, where the elevation of the snow-line is less, and the melting of the snow produced more quickly, destructive floods often reault, and carry everything before them; but, in all the more favorable ploces of the earth, the effect in generally the reverse.

Mountains are thas most interesting suhjects for stady, independently of those useful materials with which they Ebound, and which are most easily worked or obtained in mountain districts. The hills are the bones of a country, and determine its form just as the bores of an animal do ; for, according to the direction of the hills must be the course of the rivers. If the hills come near the sea, the rivers are short, and their course very rapid; if they are a long way from the sea, the rivers are long and comparatively gentle. But rivers of the latter sort are generally navigable, and become large enough, near the sea, to be capable of receiving ships of great size. Here, then, eities will be built, and these will become rich and populous, and bills denend the mineral riches of a country; if they are composed of granite or slate, they may contain gold, silver tin, and copper: if they are composed of limestone, they are very likely to have lead-mines ; if of sund or gritstone, it is probable that there will be coal at no very great distance. Ow the contrary, if they are made up of the yellow they will contain neither coal, nor lead, nor any valunble mineral whatsoever. But on the mineral wealth of a sountry, and particularly on its having coal or not, depends the nature of the employment of its inhabitants, if they are It a civilized state.
Thas, then, on the direction and comporition of the hilla If w country dopends, first of all, the size and character of .ts rivers On the character of its rivers depend the situafrcilitiey for internal communication and foreigo trade And again, on the composition of the hills depends the employment of the people, their number in a given space, chil it a great degree th

Migh as many of the mountains of the globe anpear to bo when contracting their height with any well-known shfect, they are insigaifleant in comparison with ity general man. Sir John Herschell compared the inequalities on the carth's surface to the roughness of the rind of an orange, the highest mountain being about five miles in perpendicular elevation, would bo only $1-1000$ th part of the earth's diameter, consequently, era a globe sixteen inches a diameter, ance a mountain would be represental by a
protaberance of not more than the 1-100th part of an inch. Now as there is no entire continent, nor even any very extensive tract of land known, whose general elevation above the sea is anything like half this quantity, it follows that if we could construct a correct model of our earth, with its seas, continents, and mountains, on a globe sixteen inches in diameter, the whole of the land. with the exception of a few prominent points and ridges, must be comprised on it within the thickness of thin writing paper, and the highest hill would be represented by the smallest fisible grain of sand.
Baron Humboldt has ehown, by the closest calculation, that the entire range of the lofty Alps, which cover an area of 45,000 square miles, would, if reduced to powder, and spread over the continent of Europe, only raise its general surface trenty-one and a half feet; and that the Pyrenees, which divide France from Spain, would only have the effect of raising the same continent six feet; while the central table-Jand of Spain, the greatest height of which is only 1920 feet, would, if applied to the same purpose, raise the general land of Europe to the altitude of seventy ix feet.
The mean height of Europe has been determined to be 61 feet above the level of the sea; Asia, 115 f feet; and he united continent of America, 949 feet. South America elevation of 1151 feet-about the same as that of Asia.
the principal mountains in the world, with their HEIGHT IN FEET
MOUNTAINS OF NORTII AMERICA.
Name. Country.
Mr. St. Elias, Rusgian Americ
Height in ft.

## Popocatepetl, Mexico. Orizaba (Peak), Mexico

MT. Hooper, British Americ
Nevada of Toluca, Merico.
Sierra Nevada, Mexico......... ©o.....
Mt. Fairweather, Russian America
Fremost's Peake, Rocky Mountains
De Perote, Mexico. ....a..................
Long's Peak, Rocky Mountains, Jdmes's Pear,
Larampte Prak
Sibrra de Cubre, Cuba..........
South Pass, Rypery Mountaing, U. S. ....
Blue Mrs., Jamaica .......................................
Blace MT, or MT. Mitcheli, North Carolina,
Roan Mr., North Caroliab............
Grandpather MT. North Carulina.
Mt. Wasbington, White Mountains,
Mt. Adams,
Mt. Jefperso
Mt. Madisor,
Mt. Monroee,
Mr. Frankliw
Mr. Marcy, New York.
Dix's Peak,
Mt. McMarty
buta de Cosiftiriachic, Sierra Madre, Mexico. MT. Mansfield. Green Mits., V
Peaks or Otter, Virginia....
Round Top, Catekill Mountain
Round Top, Catekill Mountains.
SADDLE-BACK MT, Massachusetts.

MOUNTAINS OF SOUTH AMERTCA Aconcagua (volcano), Chilian Ande
Chimborazo, Equador........
Nevada be Illimani, Botivia
Arequipa (volcano), Peru.......
Cotopani, Equador..................
ToLima (volcano), New Grenada
Cerro de Potost, Bolivir.........
Sichincbar de Caraccas, Venezuela.
Organ Mts., Bratil.................
Cape Hpran, Terta del Fuego .o...
mountains of europe
 Mt. Rasbeck,
Mint Blane, Alps.

15,345
15,781

- Elbronz and Krabeck, the two greatest elevations of the CauCasinn range are frequently placed among the mountaing of Assia
This ranze it the diviling line betwen Europe and Asia in the




MOUNTAINS OF ASIA.
Ktwchivginga, Himalaya M.untains. Deawalaghiry,
Jamnoutri,
Dhatban,
Hindoo Koosh,
Chumalaree, Thibet
Klioutseerski, Kamtschatka.
A Watska (volcano), Kamtschatka
Mr. Lebanon, Syria.........
Mt. Horeb, Arabia Petrea
podrogalla, Ceylon
Mt. Melify, China...
Mt. IDA, Asia Minor
MT. Sios, Palestine
Mr. Carmel,
MT. TABor,

## MOUNTAINS OF AFRICA

|  |  |
| :---: | :---: |
|  |  |
|  |  |
| Peak of Tenerifte, Canary Is | 12,170 |
| Wiltsin, Morocco ...................0.0. .................. 11,200 |  |
| Clarence Peak, Fernando Po.o.o...................... 10,650 |  |
|  |  |
|  |  |
| Fono Pear, Cape Verde Islandso........................ 9,150 |  |
| Volcano Mr., Isle of Bourbo | 7,680 |
| Frigo, Canary Islands ....................................e.e. \%,400 |  |
| PEAK OF PICO, Azores |  |
|  |  |
|  |  |
| Devil's Peak, un .oococou.0.0.0.0.0.0.0.0. 3,315 |  |
| Green Mr., Isle of Ascension .o............................. 2,868 |  |
| Diana's 1 He | 2,692 |
|  |  |

## MOUNTAINS OF OCEANICA.

Mouna Kea, Sandwich Islands.
Mouna Roa,
MT. Ophir, Sumatra
Gunone Demp (voleano), Sumatra
PEAK, Otaheite, or Tnhite
Peak, Otaheite, or Tahiti............
Ben Lonond, Yan Diements
Ben lomond, Van Diemen's Land
Forest HuL, Nem South Walen

## 

.


Lengit of the principal mountain-chains n the warld WITH THE HEIGHTS OF THEIR CUIMINATING PO.NTS.

Mountain Chains. Length. Culminat- Mright
Miles. ing Points.
in feet. $\left.\begin{array}{l}\text { Ppresees, from the Mediterra- } \\ \text { nean to the Bay of Biscaat... }\end{array}\right\}$ 225, Pic Nethou, 11,168 Arpenises, from the Maritime Alps, west of Genoa, to the
southern extremity of Italy... southern extremity of Italy...
Alps, from Mont Blanc to the Alps, from Mont Blanc to the
frontiers of Huagary, beyond Gratz and Laybach.
Scandinatian System, taking
successively the names of
successively the names of
Thulian, Dovrefield, and Kaelen Mountains.
Cadcasus, from the Black Sea
to the Caspian, belorging
equally to Europe and Asing
Ural, common to Europe and
Asia, from the Arctic Ocean
Asia, from the Arctic Ocean
to the river Ural, where it
Allows from east to west........
boundary of Siberia, from the
affluents of the Irtish to Lake
afluen
Eaikal
Thian-Chan, from the intersece-
tion with the Bolor to the
centre of Mongolia............
Korenle, the northern bound-
ary of Thibet, from the Bolor
Chain to the sources of the
Chain to the sources of the
Yellow River...................
Minalayans, from the frontiers
the Hindoo Koosh, or Indian
Caucasus, and the Persian
Elibrouz, to the south-western
extremity of the Caspian Sea, Bolor-tage, a meridional chain
proloned from the Punjaub,
in lat. $32 \frac{1}{2}^{\circ}$, across the Hima
laya and the Kouenlun to
lat. $454^{1}$....
Arlas, from Cape Gehr, on the
shore of the Atlantic, to the
shore of the Atlantic, to the
Gulf of Sidra, on the Medi-
terranean.........................
Isthmus of Panama.............
Rocky Moustains, of North
America, including the Sea
Alps of California and of the
North-west Coast...............
800, Monte Ccrno, 9,523
450, Mont Blanc, 15,75

900, Sneehaelten, 8,122

700, Elbrouz ..... 17,ヶ96
1250, Deneskin Kar
men .........o. 5,3e7

884, Bieloukha.. 11,063

464 ….............. 20,000

600, Karakorum, 18,000

2800, Kunchin-
ginga....... 28,178

800, Tutucan-
Moutcani, 20,480

2000, Miltsin .o.... 11,400
4550, Aconcagua, 23,915

3000, Mt. St. Elias, 17,780
elevation of several remarkable localities, With some OF THE HIGHEST ALTITUDES ATTAINED BY MAN.
Culminating point of the Globe, Kanchinginga Himalaya............................................ greatest beight ever attained by a balloon...... 27,000 Culminating point of the Western Continent, Acon- 23,915 Ascent of Gay Lussac, in a balloon, at Paris, in Highest flight of the Condor of the Andes ........... 21,000 Mighest point reached by Humbold......................
 Highest snow-
Highest Pass of the Andes, in Bolivia ... Highest snow-line of the Andes....................... 15,300 Highest habitation of man in the Old World-table Highest inhabited spot on the Andes, farm of Anti Potosi, great square of the city.
Titicaca Lake, Bolivia, South America
Culminating point of the Antarctic
lands, Mount 13,600
ds, Moun Erebus, supposed to be a volcano.................. Cuzco, ancient Capital of Pera ............................. 11, 11,380 Highest European Pass, that of Mont Cervin, Pen nine Alps ....
Rinbamba Pass, Andes......................
lighest growth of Peruvian bark
Pass of Sta Maria, house, highest permanent habi-
tation in Europe......................................
Greatest height of the peach, apricot, and walnut,
Ifighest carriage-road in Europe, across Mont Stel
Santa Fe de Bogota, Columbia.......
Pass of the Grimsel, Bernese Alps
Quito, plains...............
Huspice, St. Bernard.
Mexico, city............
Highest village of Europe, Soglio, in the Orisons Source of the Loire....................................... Scotland .............................................
Culminating point of England and Wales, SnowCulminating point of e................................. Calminating point of Treland, Gurrane Tual Magil
licuddy Culminating point of England, Sea-Fell, Cumber-
Land ....................................................
Great Pyramid, Egypt.
2,0

## RIVERS OF THE WORLD



## SAINT LOUIS.

The estimation in'which Campbell's Atlas of Missotrr is held by Professional and Business Men is shown by the following partial List of our Subscribers in this City.

## Miscellaneous Officials.

B. GRATZ BROWN, Governor.

SILAS WOODSON, Governor elect.
EUGENE F. WEIGEL, Secretary of State.
CHARLES SCHACKEL, Chief Clerk Office of Secretary of State.
SAMUEL HAYS, State Treasurer.
D. M. DRAPER, State Auditor.
P. DRAPER, Chief Clerk State Anditor's office.

FRED. SALOMON, Register of Lands.
JOHN MONTEITH, State Superintendent of Public Instruction.
GEORGE E. SEYMOUR, Assistant State Superintendent of Public Instruction.
ALbert sigel, Adjutant General of State.
N. C. BURCH, State Librarian.
R. PUMPELLY, State Geologist.

GAGE \& GUY, at state Geologist's office.
G. C. SWALLOW, late State Geologist.
A. D. HAGER. 1309 Washington avenue, late State Geologist.
C. V. RILEY, State Entomologist.

LOUIS GOTTSCILALK, President pro tem. of Senate. I. W. BUSH, Secretary Missouri State Board of Immigration.
JOHN F. WIELANDY, Corresponding Secretary Mis souri state Board of Agriculture.
E. H. Hesse, Custodian of Missouri Surveys.

Prof. J. L. TRACY, General Agent St. Louis Agricul tural and Mechanical Association.
JOSEPH BROWN, Mayor of St. Louis.
A. J. SMITII, Postmaster of St. Louis.
W. T. HARRIS, Superintendent of Public Instruetion for St. Louis.
WM. D. BUTLER, Assistant Superintendent of Public Instruction for St. Louis.
SAMUEL TREAT, Judge of U. S. District Court.
JOHN F. DILLON, Judge of U. S. District Court.

1. KREKEL, Judge of U.S. District Court.
P. BLISS, Judge of Supreme Court of Missouri.

WASH. ADAMS, Judge of Supreme Court of Missouri. DAVID WAGNER, Judge of Supreme Court of Mo. E. B. EWING, Judge of Supreme Court of Missouri. J. K. KNIGHT, Judge of Circuit Court. GEO. A. MADILL, Judge of Circuit Court. H. M. JONES, Judge of Cireuit Court. JAMES I. LINDLEY, Judge of Circuit Court. CHESTER H. KRUM, Judge of Circuit Court. J. G. WOERNER, Judge of Probate Court. ISAAC F. SHEPARD, U. S. Appraiser. F. W. FOX, U. S. Surveyor of Customs. C. A. NEWCOMB, U. S. Marshal.

JOSEPH H. CLARK, U. S. District Court Clerk.
JOS. M. FITZROY, Chief Clerk of Assessor of Internal Revenue.
L. U. REAVIS, General Statistician.
W. C. KENNETT, County Recorder.
F. W. MATHIAS, County Treasurer.
F. C. SCHOENTHALER, Clerk of County Court. LDMUND P. WALSH, Jury Commissioner. JAS. M. LORTNG, County Superintendent of Schools. JULIUS PITZMAN, County Surveyor. W. H. COZENS, County Surveyor and Civil Engineer.

## Miscellaneous Offlials. <br> rontinued.

EDWARD B. SAYERS, Surveyor and Civil Engineer 118 north $3 d$ street.
JOHN H. TICE, Commissioner of County Poor.
J. G. PRIEST, President Mullanphy Emigrant Relief Fund, 307 Locust street.
CHAS. B. CLARK, State and County Assessor, Sixth District, 2203 north 9th street.

## Agricultural Implements-Dealers in.

FINNEY \& CO., (Successors to Finney \& Clark), 200 and 202 north Commervial street.

## Architects and Superintendents:

GEO. I. BARNETT, Insurance Exchange, southeast corner ath and Olive street.
F. WM. READER, Insurance Exchange, southeast corner ⿹\zh26灬th and Olive streets; arelitect of Board of Public Schools.
GILLESPIE \& KOENIG, 215 north 5th and 212 north 8th streets; John P. Gillespie, Herman A. Koenig.
HENRY KENNEDY \& SOX, 25 south 12th street.
J. H. MCNAMARA, 320.2 north 3 d street.

HENRY R. SWITZER, 305h Olive street.
J. B. LEGG \& CO., 111 north 6th street.
J. W. HERTHEL, 221 Olive street.

FRINCIS D. LEF, 612 Olive street.
MTCHELL \& BRADY, southwest corner 5th and St Charles streets; J. F. Mitchell, T. W. Brady.
D. J. FOLEY, 318 Market street.

Artificial Legs and Arms-Dealer in.
LEWIS LOCKWOOD, office 519 Pine street.

## Artist.

Mrs. C.J. DICKINSON, Artist in Wax Flowers; residence, 1510 Lafayette avenue; studio, Insurance Ex change, southeast corner Olive and 5th streets.

## Asylums and Hospitals.

CITY HOSPITAL, corner Lafayette avenue and Linn street; T. F. Prewitt, M. D., surgeon in charge.
GERMAN EVANG. LUTHERAN HOSPITAL, corner 7th and Sydney streets; Chas. Reiss, M. D., surgeon in charye.
ST. JOSEPI'S ASYLUM, corner 15th street and Clark avenue; under charge of the Sisters of St. Joseph, Mother Basil, Superior.
U. S. Mardee hospital; S. H. Melcher, M. D., surgeon in charge.

## Attorneys at Law.

JAMES TAUSSIG, northwest corner 5th and Chestnut. CHESTER II. KRUM, Custom House.
JOSEPH H. CL.ARK, northwest corner 3d and Pine sts. D. T. JEWETT, southwest corner Pine and 2d streets. SHARP \& RROADHEAD, 211 north $3 d$ street. HENRY HITCHCOCK, 207 north 3d street.
SLAYBACK \& HAEUSSLER, northwest corner 3d and Pine streets.

## Attorneys at Law.

Continuedt
LOUIS GOTTSCHAJK, 4104 Market street.
JOHN M. KRUM, 30 - Olive street.
HENDERSON \& HAYDEN, 220 Pine street. John B. Henderson, Henry C. Hayden.
E. P. JOHNSOX, 223 (hestnut street.

CLINE, JAMISON \& 1D.AY, $41 \%$ Pine street. DRYDEN \& DHYIDEN, 207 Chestnut street. POLK, CACSEY \& DRAKE, 307 Market street. Trus-
ten Polk, William T. Caumey, James E. Drake. LUCIEN FATON, Register in Bankruptey, 203 Pine st. JoHIN W. NOBLE, 315 ()live street. CHAS. E. PEARCE, 229 Chestnut street. D. W. SADLER, 309 ('hestnut street. WELLS HLNDELRSHOTT, southeast corner 5th and Olive streets.
GEORGE DENISON, $51 / 2$ Chestnut street.
 Voorhis, William T. Mason.
RANKIN \& HAYDEN. 304 olive street. JOS. T. TATUM, southwest corner $2 d$ and Pine streets. M. KINEALY, 304 Chestuut street. JOHN WICKHAM, 31s Chestnut street. LEWIS \& IDANIEL, mid Chestnut street. HENRY M. BRYAN, 2192 Chestnut street. EDMLND T. ALLEN, 419 Olive strect. BLAND \& BAKER, 211 north 3d street. C. C. SIMMONS, 513 Chestnut street.

DONOVAN \& CONROY, rooms 11 and 12, Law and Insurance Building, borthwest corner $3+1$ and Pine sts. Frank J. Donovan, J. F. Conroy,
RICHARD A. BARRET, 614 Washington avenue.
JAMES S. GAlRLAND, 203 north 31 ntreet, northwest corner of Pine.
J. P. COLBY, northwest corner 3 d and Pine.

TAYLOR \& WATKINS, northwest corner 3 and Pine streets.
ENOS CLARKE, northeast corner 3d and Olive streets. R. ASH, 314 north 3 d street.

ROBERTS. MCDONALD, 302 Chestnut street. T. J. CORNELILS; residence 1328 north 15 th street. HAMILTON GAMBLE, 203 Pine street. STERLING \& WEBSTER, 315 and 317 Chestnut street. H. F. O'CONNOR, 222 Pine street. YEAMAN \& BERRY, 211 north 3d street. SAMUEL SIMMONS, 12 north 4th street. FRED SPIES, 120 north $3 d$ street.
J. S. BUND, 304 Chestnut street.

JAMES M. LORING, 306 Chestnut street.
U. S. LAW ASSOCIATION \& COLLECTION UNION, northwest corner 3 d and Pine streets. J. P. Colby, director.

## Average Adjusters.

SHEWELL \& BOFINGER, Average Adjusters, Insurance Brokers, Marine Notaries, 108 Pine street.

## Banks

SECOND NATIONAL BANK, 212 north 3d street. E D. Jones, Cashier.

MERCHANTS' NATIONAL BANK, Main, northwest corner Locust streets. James E. Yeatman, Cashier.

## SAINT LOUIS.

Banks.
Continued.
GERMAN BANK, Market, southeast corner 5th street. P. Weiss, Cashier.

NATIONAL BANK OF THE STATE OF MISSOURI, IN ST. LOUIS, northwest corner ad and Pine streets. Edw'd P. Curtis, Cashier.
NATIONAL LOAN BANK, 210 north 3d street. E. Karst, Cashier.
WEST ST. LOUIS SAVINGS BANK, southwest cor ner Franklin avenue and 14th street. William F Wernse, Cashier.

## Baths-Turkish.

GEO. F. ADAMS, M. D., 1603 Washington avenue.

## Bellows Makers.

FRANK CHRISTEN, 1418 Biddle street.
J. W. EVENDEN \& CO., 10 Cherry street.

## Bitters.

WARREN A. SHERWOOD, Southern Tonic Bitters, 1016 north 5th street.

## Blank Book Manufacturers.

C. A. CHAMBERLIN \& CO., 201 north Main street PATTERSON \& FITCH, 300 Main street.
VAN BELK, BARNARD \& TINSLEY, 316 and 318 norial bd street.
JOILN J. DALY \& CU., 213 north 3 d street.

## Book \& Job Printers.

BARNS \& BEYNON, 215 Pine street MUSICK \& BLYTHE, 309 Locust street.

## Book Binders.

VAN BEEK, BARNARD \& TINSLEY, 316 and 318 north 3d street.
CHRIST. WISSMANN, 225 Pine street.

## Book Publishers-Subscription.

F. G. GILMAN \& CO., 516 Pine street.

NATIONAL PUBLIshing CO., 410 Market street. M. S. Barnett, Agent.
F. A. HUTCHINSON \& CO., 502 morth 6th street. H. C. WRIGHT \& CO., 616 Market street.
R. A. CAMPBELL, 38 Insurance Exchange, southeast corner Olive and 5th streets.

## Booksellers \& Stationers.

ST. LOU'IS BOOK \& NEWS CO., 307 north 4 th street. W. D. Baker, Manager.

SOULE, THOMAS \& WENTWORTH, (Law and General Books), 219 north 5th street.
HENDRICKS, CHITTENDEN \& CO., 204 north 5th st. WILLIE H. GRAY, 306 and 308 Olive street.
CANTWELL \& SHORB, 004 north Main street. SOUTIIWLSTERN BOOK PUBLISHING CO., 510 \& 512 Washington avenue.
PATTERSON \& FITCE, 300 north Main street. R. \& T. A. ENNIS, 118 Olive street.

PATRICK FOX, (Catholic Books), 14 south öth street. CONRAD WITTER, 21 south 4th street.
F. B. MEISSNER, 216 south 4th street.

THE BLBLE \& PUBLICATION SOCIETY, 209 north G.a strect.

WARREN CEASE \& CO., (Liberal Books), 614 north 6th street.

## Booksellers and Stationers.

Continued.
W. J. GILBERT, (Law Books), 209 north 4th street. HITCHCOCK \& WALDEN, 413 Locust strect. GEO. B. WINTLE, 610 Washington avenue. SCRIBNER, ARMSTRONG \& CO., (0) A Broadway New York. M. Babcock, Agent, $60 \times$ and 710 Chestnut st. F. RoEsLEIN, (German Bookseller and Art Depot), 22 south 4th street.
L. VOLKENING, 22 south 5 th street. C. G. THALMANN, 22 south $2 d$ street. FRITZ OTTO, 9 south 2 d street. II. C. WRIGHT, 616 Market street.

CHAMBERLIN \& CO, 201 north Main street.
FRANCIS SALER, ((iermat Catholic Books), 305 and 307 Couvent street.

## Box Manufactory.

WOERHEIDE \& LUEHRMANN, 813, 815, 817, 819 and 821 Cass avenue.

## Brewer.

WM. J. LEMP, corner Second Carondelet avenue and Cherokee street.

## Brick Msnufacturers

HYDRAULIC PRESS BRICK COMPANY. E.C. Sterling, President, T. W. Sterling, Secretary. Works, corner Grand and Chouteau avenues.

## Builders.

GIVENS \& ADAMS, 903 St . Charles street.
HENRY KENNEDY \& SON, $42 \bar{a}$ south 12 th street, between Poplar and Spruce streets.

## Cabinet Carving.

J. W. ANGUS, 221 south 5 th street

## Cabinet Maker.

HENRY ARND, corner Soulard and 14th streets.

## Capitalist.

MRS. CHARLES ELLEARD, Elleardsville.

## Chemists-Analytical.

ENNO SANDER, Ph. D., 19 south 11th street.
THEODORE FAY, M. D., 619 Walnut street.

## China, Glass and Queensware.

MANNING \& CO., 501 and 503 north 4th street.

## Claim and Collection Agent.

T. A. HEQUEMBOURG, Solicitor of Claims, etc., 314 north 3d street.

## Clergymen.

A. H. burlingitam, Pastor Second Baptist church, corner 6th and Locust streets.
W. PUPE YEAMAN, Pastor Third Baptist church, corner 14th street and Clark avenue.
D. T. MORRILL, Pastor Fourth Baptist church, 12th and Benton Streets.
GEO. KLINE, Pastor Park Avenue Baptist church, Park avenue near St. Ange avenue.

## Clergymen. <br> Continued.

A. A. KENDRICK, late pastor Beaumont Street Baptist church, corner Beaumont and Morgan streets.
JOSHCL MCKMAN, late Pastor Bernard Street Baptist church.
G. J. JOHNSON, Agent American Bible \& Publication Society, 200 north 6thr street.
W. P. PAXSEN, Superintendent of S. W. for American Sunday Schoul Ćnion.
JOHN A. BROOKS, late Pastor First Christian church, corner 1 th and Olive street.
T. M. POST, Pastor First Trinitarian Congregational church, corner 10th and Locust streets.
E. P. POWELL, Pastor Mayflower Cong. church, Grand avenue and Boston street.
H. C. HAYDEN, Pastor Pilgrim Congregational church, Washington and Ewing avenues.
C. F. ROBERT AON, Bishop of the Diocese of Missouri, Protestant Episcopal Church.
M. SCHUYLER, Rector of Christ's church, corner 13th and Locust streets.
J. P. T. INGRAHAM, Rector of St. John's Episcopal church, corner Hickory and Dolman streets.
JOS. CROSS, Rector Trinity church, 1100 Washington avenue.
R. A. HOLLAND, Rector St. George's Episcopal church, corner Tith and Locust streets.
P. G. ROBERT, Rector Church of the Holy Communion, (Episcopal), 2800 Washington avenue.
M. RHODES, Pastor St. Mark's English Evangelical Lutheran church, 2700 Wash street.
E. Roos, Pastor St. Peter's German Evangelical chureh 15th and Care streets.
C. F. STARK, Pastor German Evang. Bethania church, 24th and Carr streets.
A. REUSCH, Pastor St. Luke's German Evang. church, corner Pratte and Scott avenues.
T. M. KOPF, Pastor German Evang. Friedens church, 1300 Newhouse avenue.
J. F. KOWING, Pastor Zion's Evangelical church, 20th and Benton streets.
A. MUELLER, Pastor German Evangelical church, 4th street, Carondelet.
R. JOHN, Pastor St. Paul's German Evangelical church, 1804 Decatur street.
J. F. BUENGER, Pastor German Evangelical Lutheran Immanuel church, 16 th and Morgan streets.
G. SCHALLER, Pastor Evang. Lutheran Trinity chureh, corner 8th and Lafayette streets.
E. BECK, Pastor German Evangelical Lutheran Christ church, corner Bass and Wilkerson avenues.
C. F. W. SAPPER, Pastor Evangelical Lutheran Saint Trinity church, Carondelet.
S. H. SONNESCHEIN, Rabbi Temple of the Gates of Truth, 1700 Pine Street
S. WOLFENSTEIN, Rabbi Bnai El Congregation, corner ${ }^{\text {orth }}$ and Cerre streets.
J. J. BENTLEY, Pastor Central M. E. church, corner 24th and Morgan streets.
J. L. WALKER, Pastor Trinity M. E. church, corner 10th and North Market streets.
E. M. MARVIN, Bishop of the M. E. Church, South.
W. M. LEFTWICII, Presiding Elder St. Louis District, M. E. Church, South.

JOSEPI W. LEWIS, Pastor First M. E. church South, 8th street and Washington avenue.
A. T. SCRUGGS, Pastor St. Paul M. E. church South, 10th and Benton streets.
D. R. McANALLY, Pastor M. E. church South, 5th street, between Pine and Olive, Carondelet.
SAMUEL J. NICCOLLS, Pastor Second Presbyterian church, corner 17th street and Lucas Place.
CHAS. A. DICKEY, Pastor First Presbyterian chureh, corner 14th street and Lucas Place.

## SAINT LOUIS.

## Clergymen.

## Continued.

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ROBT. G. Bliank, Pastor Central l'resb. chureh, sth and Locust streets.
A. P. FORMAN, S. S., Pine Street I'resbyterian churel corner 11th and Pine streets.
H. W. CRABBE, Pastor United Presbyterian church, corner Morgan and 20th streets.
C. H. FOOTE, Pastor North Presbyterian church, 11th and Chambers streets.
A. VANDER LIPPE, Pastor First German Presbyterian church, corner 10th and Rutger streets.
R. P. FARRIS, Pastor of Webster Street Presbyterian church, corner 12th and Webster streets.
P. J. RYAN, Coadjutor Bishop of the Archdiocese of St. Louis of the Roman Catholic Chureh.
H. MUEHLSIEPEN, V. General, and Pastor St. Mary's chureh, (Catholic,) 744 south 3 d street.
MYLES W. TOBYN, Rector St. Louis Cathedral, (Catholic, ) 2d and Walnut streets.
PATRICK McEVOY, Ass't Pastor St. Louis Cathedral
J. DOIIERTY, Pastor Annunciation chureh, (Catholic,) 600 Labadic street.
C. P. SMITH, Pastor St. John's church, (Catholic,) 16th and Chestnut streets.
WM. WALSH, Pastor St. Bridget's church. (Catholic, corner Carr and Jefterson streets.
E. FENLON, Assistant Pastor St. Bridget's church.
J. MURRAY, Assistant Pastor St. Bridget's church.

JAMES J. ARCHER, late Assistant Pastor St. Bridget's church, now Pastor of St. Patrich's church, Kansas City.
EUGENE GRIMM, Pastor of St. Alphonsius' church, (Catholic,) Grand avenue neur Easton avenue.
(f. P. GALLAGHER, Pastor St. Theresa's chureh, (Catholic,) Grand avenue.
JAS. J. McCABE, Pastor Church of the Sacred Heart, (Catholic,) 2000 University street.
P. TSCILIEDEI, S. J., Pastor of St. Joseph's church, (Catholie, ) 1100 Biddle street.
heniry Groll, Assistant Pastor St. Peter's and St. Paul's church, (Catholic,) corner 7th street and A1len avenue.
E. J. SHEA, Pastor Assumption church, (Catholic,) corner 8th and Sidney streets.
J. HESSOUN, Pastor St. John of Nepom. church, (Catholic,) corner Soulard and Rosatti streets.
THOS. BURIEE, Pastor St. Vincent de Paul's chureh (Catholic,) corner Decatur street and Park avenue.
JAMLS ILENIRY, Pastor St. Lawrence OToole's church, (Catholic,) $1400 \mathrm{O}^{9}$ Fallon street.
M. C. WALSEI, Assistant Pastor St. Lawrence O"Toole"s chureh.
R. J. HAYES, Assistant Pastor St. Patrick's church. (Catholic,) corner 6th and Biddle streets.
JANES McCAFEREY, Assistant Pastor St. Patrick? church.
W. F. BODEN, Assistant Pastor St. Liborius' chureh, (Catholic,) 1700 North Market street.
F. M. Kellty, Pastor Church of Holy Angels, (C'atholic,) corner St. Ange and Chouteau avenues.
F. BRINKHOFF, Pastor Holy Trinity church, (Catholic,) 1100 Mallinckrodt street.
H. LeyGranfF, Pastor St. Agatha's church, (Catholic,) corner 8th and Utah streets.
THOMAS J. O'HANLON, Assistant Pastor St. Michael's church, (Catholic,) corner 11th and Jefferson streets. P. WIGGER, Pastor Francis of Sales' church, (Catholic,) Gravois road and Ohio avenue
P. F. BERGMEYER, Pastor of St. Anthony's church, (Catholic,) Meramec street.
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. Eliot, late laster thumeh of the Messiah, (Unitarian, cormer phand (Nive streots.
( (i. (iERBFRR, liastor German Independent Evangelit "al Protestant Chureh, 1910 north 13 th street.
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*G. A. BOWMAN, D. D. S., 1201 Washington avenue Vice-President St. Iouis Dental Society
*MORRISON RROS. (Wm. N. M., D.D.S. and Presí dent St. Louls Dental toriety. J. B. M., D.D. S.o) Washington avenue ofprosite 14 th werent.
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## Lithographers.

A. MCLEAN \& CO.. 118 north 30 street.
R. P. STUDLEY COMPANY, 221 north Main street.

## Looking Glasses.

HENRY ARND, corner Soulard and 14th streets.

## Lumber Dealers.

M. BROTHERTON, 417 Pine street, and 3938 Broadway.
E. H. HYMERS, 3938 Broadway.

SCHULENBURG \& BOECKELER, 10th and 11th streets, between Howard and Mullanphy streets.

EAU CLAIRE LUMBER COMPANY, (formerly Chapman \& Thorp,) corner Cass avenue and 13th and 14th streets.
KNAPP, STOUT \& CO., Main street, corner Bremen avenue.
C. H. \& J. W. PECK, corner 14th and Poplar streets. DRYDEN \& REID, 3810 Broadway.
LESLEY GARNETT \& CO., 124 Olive street, and corner 7th and Mullanphy streets.
HARTMAN \& GRAHAM, 1428 Broadway, and corner Monroe and Main streets; also foot of Loomis street, Chicago, Ill.
THOMPSON, HENRY \& CO., (late Thompson Bros. \& Co., 3922 Broadway; also Quarry street, Chicago, Illinois.
MISSISSIPPI PLANING MLLL COMPANY, corner 13th and O'Fallon streets; J. Patrick, President; G. T. Riddle, Seeretary.

GEORGE MATLACK, corner 15̈th street and Franklin avenue, and 26th street and Franklin avenue.
JAMES LUTHY, 1211 Market street.
WILLIAM DRUHE, corner of 10 th street and Clark avenue.
FLEITZ \& GANAHL, 1320 Jackson street, and Carondelet avenue and Lesperance street.
PHILIP GRUNER, Jr., corner 9th street and Cass avenue, and corner Broadway and Destrahan street.
JOSEPH DE $\quad$ ENHART \& CO., 1637 Carondelet avenue, corner Soulard street, and $343 C$ Carondelet avenue, corner Bryan street.
AUGUST LEISSE, 904 south 4th street.
WOERHEIDE \& LUEHRMANN, 813 to 821 Cass avenue.
SCHNELLE \& QUERL, cor. 8th and Mullanphy streets, and corner Main and Destrahan streets.
CHARLES NABER, Broadway, between Bremen avenue and Salisbury street.
HOCKER \& HENGELSBERG, corner 7th street and Cass avenue.
BOECKENKAMP \& SURKAMP, corner 9th and Monroe streets.
THEO. STRAUSS \& CO., 1822 Franklin avenue.
H. W. BELDSMEIER \& CO., corner $2 d$ and Destrahan strects, and corner Easton, Spring and Cass avenues.
THEO. BLOESS, corner Carondelet avenue and Barton street.
G. W. RIPPEY \& CO., corner 8th street and Clark avenue, and 9th and Poplar streets.
F. \& J. GANAHL, corner 24 and Schirmer streets, South St. Louis.

## Lumber Dealers.

Continued.
BERTHOLD \& JENNINGS, (Commission,) 18 south Main street.
LOBSINGER, MEEGAN \& CO., corner of Water and Taylor streets, South St. Louis.
COLE \& GLASS, corner 16th and Market streets.

## Iung Diseases-Specialist in.

JOHN H. BAHRENBURG, M. D., 919 Wash street.

## Machines for Butchers.

GUS. V. BRECHT, 912 north 6th street.

## Map Publishers.

E. H. ROSS, 313 Locust Street.
R. A. CAMPBELL, southeast corner of 5th and Olive streets.

## Marble Dealers.

MULDOON, DOYLE \& CO., 1119 Olive street.
ANDREW DODDS, 900 Washington avenue. H. \& O. WILSON, corner 9th and Market streets. E. M. MELICK, 1010 St . Charles street.

JOHN F. GALLIGAN, corner 7th and Elm streets.
Medicines-Dealers in.
JOHN H. BAHRENBURG, M. D., 919 Wash street. Dr. J. DINSBEER, 503 north 7th street.

## Mercantile Agencies.

J. M. BRADSTREET \& SON, 204 Pine street; Geo. B. Eddy, Superintendent.
JOSEPH LATHROP, 125 Pine street.

## Mineral Waters-Dealers in.

ENNO SANDER \& CO., 19 south 11th street.

## Miners and Dealers in Coal and Lead.

E. J. CRANDALL \& CO., northeast corner of 4th and Chestnut streets.
GRANBY MINING \& SMELTING CO., corner Olive and 5th streets; Henry T. Blow, President.
BARTLETT COAL \& MINING COMPANY, Proprietors of OFallon Coal, 311 Pine street; John S. Gorton, General Agent
ILLINOIS \& ST. LOUIS RAILROAD \& COAL COMPANY, 125 Chestnut street, (Illinois Screened Coal); J. S. McCune, President; P. F. Burke, Secretary. JOHN P. HEINRICE \& CO., Illinois Screened Coal White Sand and Wood, corner of 5th and Gratiot streets.
A. BRANDENBURGER, 109 south 11th street.

HAZARD \& WILSON, Wholesale and Retail Dealers in Coal, Wood and Ice, Market street between 7th and 8th; branch office, 38 south 7th street.
PARKER, RUSSELL \& CO., Proprietors of the Oak Hill Vineyards and Russell Coal Mines, 211 north 6th street.
JOS. COLLET \& CO., northeast corner 8th street and Clark avenue.
JOSEPII GARTSIDE, 213 Chestnut street.
illinots black diamond coal \& mining COMPANY; Office, southeast corner Pine and 6th streets; J. T. Edwards, Secretary ; E. C. Sanderson, Treasurer.
A. F. DONK \& CO., 221 Chestnut street.

LINCOLN COUNTY COAL \& MINING COMPANY, 116 north 6th street; Geo. W. Peck, Secretary.

## Mouldings.

J. W. ANGUS, 221 south 5th street.

Music \& Musical Instruments-Dealers in. KUNKEL BROTHERS, 18 south 5th street.

## Notaries Public.

HENRY TANNER, 720 north 4th street.
KNIGHT BROS., 317 Olive street.
W. A. HEQUEMBOURG, 314 north 3d street.

## Organ Builder.

J. G. PFEFFER, 1005, corner Marion and Buel streets.

## Pension Bureau.

FRANK G. PORTER, M. D., Examining Surgeon of Pension Bureau; Office, 517 Olive street.
J. C. Whitehill, M. D., Examining Surgeon of Pension Bureau; Office, northwest corner 6th and Morgan streets.

## Piano Manufacturers:

ST. LOUIS PIANO MANUFACTURING COMPANY, 307 and 309 Chouteau avenue; E.Wuerpel, President; G. A. Spannagel, Secretary.

## Picture Frames

HENRY ARND, corner Soulard and 14th streets.
J. W. ANGUS, 221 south 5th street.

Places of Amusement.
DEBAR'S OPERA HOUSE, R. DeBar, Proprietor, Pine street, between $3 d$ and 4th streets.

## Planing Mills.

M. BROTHERTON, 417 Pine street, and corner Bremen avenue and North Wharf.
SCHULENBURG \& BOECKELER, corner 10th and 11th and Mullanphy streets.
C. H. \& J. W. PECK, Park avenue, corner Fulton street.
WOERHEIDE \& LUEHRMANN, 813 to 821 Cass avenue.
OLCOTT, DUROSS \& CO., corner Broadway and Buchanan streets.

LESLEY GARNETT \& CO., 124 Olive street, and corner 7th and Mullanphy streets.
MISSISSIPPI PLANING MLLL COMPANY, J. Patrick, President; George T. Riddle, Secretary; corner 13th and O'Fallon streets.
COLE \& GLASS, corner 16th and Market streets.

## Photographers.

ROBERT BENECKE, southeast corner 4th and Market streets.
A. J. FOX, 205 north 5th street.

JOHN A. SCHOLTEN \& CO., 509 Olive street.
GEORGE H. McCONNELL, southwest corner 4th and Olive streets.
CRAMER, GROSS \& CO., southwest corner Chouteau avenue and 5 th street.
FRED. HAMMER, 1554 Carondelet avenue.
W. A. ILBERY, 1300 and 1302 south 5th street
J. A. LINDER, 902 north 5th street, corner Franklin avenue.
JOHN A. SEIBERT, 9 south 5th street.

## SAINT LOUIS.

Physicians.
Physicians whose names in the following list are marked
with a * are members of the St. Louis Medical
Society; those marked with a t are
members of the German Medical
Society of St. Louis.
*JOHN S. MOORE, M. D., 601 Walnut street.
*WILLIAM S. EDGAR, M. D., 1217 Pine street.
*H. Z. GILL, M. D., 1117 Pine street.
*T. F. PREWITT, M. D., Surgeon in charge of City Hospital.
*JAMES C. WHITEHILL, M. D., northwest corner 6th and Morgan streets.
*FRANK S. PORTER, M. D., 517 Olive street
*J. S. B. ALLEYNE, M. D., 1903 Carr street.
*J. J. McDOWELL, M. D., 518 Olive street.
*R. W. OLIPHANT, M. D., 711 Locust street.
*S. T. NEWMAN, M. D., Office-416 Washington avenue; Residence 2741 Morgan street.
*I. G. W. STEEDMAN, M. D., 1125 Washington avenue *H. N. SPENCER, M. D., 1615 Washington avenue. *WILLIAM CARR GLASGOW, M. D., 1015 Wash ington avenue.
*T. F. RUMBOLD, M. D., 1205 Washington avenue *S. GRATZ MOSES, M. D., 1709 Olive street. BEN. LINTON, M. D., 314 north 10th street. SYLVESTER L. NIDELET, M. D., 927 north 5 th street *JAMES C. NIDELET, M. D., 927 north 5th street. *JOHN BRYSON, M. D., 610 Pine street.
E. S. \& S. H. FRAZER, M. D'S., 114 north 9 th street JOHN LAUGHTON, M. D., 413 Locust street. WILLIAM B. HAZARD, M. D., 3111 Clark avenue.十GEORGE ENGELMANN, M. D., 3003 Locust street. *TIMOTHY L. PAPIN, M. D., 1601 Washington avenue *E. H. HOFFMANN, M. D., 2430 Franklin avenue.
*D. V. DEAN, M. D. City Chemist, 1325 Chestnut st.
*L. CH. BOISLINIERE, M. D., 2301 Chestnut street.
*G. W. DAVIS. M. D., Recording Secretary St. Louis Medical Society, Lindell avenue near Grand avenue.
*GARLAND HURT, M. D., Treasurer St. Louis Medical Society, 805 north 4th street.
BENJAMIN R. TYLER, M. D., Elleardsville, St. Louis.
*EDWARD MONTGOMERY, M. D., 1316 Olive street.
*ALEXANDER MARSHALL, M. D., 614 north 4th street.
*JULIAN BATES, M. D., 2803 Clark avenue.
*GEORGE JOHNSON, M. D., 3009 Easton avenue.
*E. S. LEMOINE, M. D., 1112 Pine street.
C. H. HUGHES, M. D., (late Superintendent Missouri State Insane Asylum,) corner 7th and Locust streets.
SAMUEL H. MELCHER, M. D., (Surgeon United States Marine Hospital,) private office 11 north 5th street.
*H. AULER, M. D., 1910 State street, between Emmet and Calhoun streets.
*+F. C. CASTELHUN, M. D., 1833 south 7th street.
JOSEPH RINGE, M. D., 2119 Carondelet avenue, between Ann and Russell avenues.

* $\dagger$ FREDERICK M. HAUCK, M. D., 516 Lafayette st. $\dagger$ THEODORE RIMBERGER, M. D., 504 south 5th street. * +PH. WEIGEL, M.D., 634 south 5th street; VicePresident German Medical Society of St. Louis.
R. J. REILLY, M. D., corner 4th and Stein streets (South St. Louis).
W. B. OUTTEN, M. D., Main street between Union and Vine streets (Carondelet).
H. M. STARKLOFF, M. D., Main streeet between Stein and Schirmer (Carondelet).
S. C. MARTIN, M. D., corner Main and Franklin streets (South St. Louis)
L. S. REBER, M. D., Main street near Pine (South St Louis).


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N. L. HORNSBY, M. D., corner Main and Pine streets (South St. Louis).
C. S. PURKITT, M. D., 6th street near Franklin (South St. Louis).
PERRY E. NOEL, M. D.; Residence corner 4th and Illinois streets; Office on Main street (South St. Louis).
EDWIN E. WEBSTER, M. D., corner Main and Randolph streets (South St. Louis).
ALOIS BLANK, M. D., 1821 south 5th street.
*CHARLES REISS, M. D., 3021 Carondelet avenue; (Surgeon in charge of the German Evangelical Latheran Hospital.)
†LOUIS BOSSE, M. D., 1507 Franklin avenue.
H. R. FUNKE, M. D., 324 Market street.
*H. TUHOLSKE, M. D., Dispensary Physician at Board of Health; Residence 1612 Clark avenue.
P. HAUGHEY, M. D., corner Biddle and 25th streets. F. KOLBENIIEYER, M. D., 209 south 5th street.
-DANIEL KUHN, M. D., 510 Poplar street; Residence 1552 Chouteau avenue.
+4. SCHLOSSSTEIN, M. D., 2412 Carondelet avenue. H. S. LEFFINGWELL, M. D., 1821 north 9 th street. ISAAC B. CLAYTON, M. D., 406 Locust street.
J. G. PARRISH, M. D., Compton avenue near Chou teau avenue.
JOHN MAYGER, M. D., 2341 Chouteau avenue. JEROME B. CAMPBELL, M. D., 1211 south 8th street *CHAS. V. F. LUDWIG, M. D., 320 Cedar street. *EDWARD ROSE, M. D., 917 south 2 d street. *+JOSEPH HEITZIG, M. D., 1409 Carr street. A. R. EARL, M. D., 725 south 3 d street. G. G. STEEVER, M. D., 3414 Olive street. EDW ARD BORCK, M. D., 2310 Chouteau avenue. *F. J. ARZT, M. D., cor 13th street and Geyer avenue ALBERT OSTERTAG, M. D., Residence 1411 Salisbury street; Branch office corner Grand avenue and Natural Bridge Road
R. RATTINGER, M. D. 1410 south 7th street.
T. L. McCARTY, M. D., 1504 Morgan street. JOHN N. FRANK, M. D., 1340 south $2 d$ street. J. K. ALLEON, M. D., 912 north 10th street. *THEODORE FAY, M. D., 719 Wallut street. * $\dagger$ HENRY KIRCHNER, M. D., 1933 Benton street. J. STICKEL, northwest corner 6th and Morgan streets B. ROEMER, 704 Chouteau avenue.

## Homœopathic Physicians.

Physicians whose names in the following list are marked with a are members of the st. Louis Homeopathic Medical Society.
E. C. Franklin, M. D., 1402 Olive street.
*C. EHRMANN, M. D., 1302 Olive street.
*G. S. WALKER, M. D., 1226 Washington avenue.
*JNO. T. TEMPLE, M. D., 1413 Chestnut street.
*CHAS. VASTINE, M. D., 703 Pine street.
*N. D. TIRRELL, M. D., President St. Louis Homœopa thic Medical Society, 606 north 5th street; Residence 1529 Papin street.
*JOHN CONZELMAN, 1417 Carr street.
*JOHN II. BAHRENBURG, 919 Wash street
*JOHN J. KANE, M. D., 1315 Morgan street.

* EMMANLEL A. GRIVEAUD, M. D., late Assistant Surgeon United states Marine Hospital; Residence 610 Hickory street.
*JOHN P. FROHNE, M. D., 1233 north 7th street, between Biddle and O'Fallon.
*J. M. KERSHAW, M. D., 1105 Chestnut street.


## Plumbers.

J. A. LIYNCH \& BRO., 618 north 11th street. WM. SIMPSON \& CO., 721 Olive street.

## Potteries.

H. H. THOMPSON \& Co., Manufacturers of Queensware, Sewer Pipe and Drain Tile, 106 north bth street; Factory 16th street and Pacific Railroad.

## Printers-Book and Job

BARNS \& BEYNON, 215 Pine street. MUSICK \& BLYTHE, 300 Locust street. LITTLE, BECKER \& TRUE, 112 and 114 north $2 d$ st.

## Publishers.

AMERICAN JOURNAL OF EDUCATION, 710 Chestnut street; J. B. Merwin, Publisher and Editor.
ST. LOUIS DEMOCRAT COMPANY, northeast corner 3th and Pine streets
MISSOURI REPUBLICAN, southeast corner 3d and Chestnut streets.
GLOBE, McKee, Houser \& Co., 118 north 3d street. EVENING DISPATCH, 313 north $3 d$ street. ST. LOCIS TIMES, 206 and 208 north 34 street. WESTLICHE POST, 116 and 118 Chestnut street. ANZEIGER DES WESTENS, 317 Chestnut street. MISSOURI STAATS ZEITLNG, 211 Market street. ST. LOUIS CHRISTIAN ADVOCATE, 512 Washington avenue; Southwestern Book and Publishing Company ; Trusten Polk, President.
CENTRAL BAPTIST, 720 north 4 th street; Luther \& Teasdale, Publishery.
ILLUSTRATED JOURNAL OF AGRICULTURE, northeast corner 6ih and Olive streets, and 310 north 6th street.
CENTRAL CHRISTIAN ADVOCATE, 413 Locust street; Hitchcock \& Walden, Publishers.
WESTERN INSURANCE REVIEW, 302 north Main street; H. L. Aldrich, Publisher.
FIRESIDE VISITOR, 302 north Main street; H. L. Aldrich, Publisher.
OLD SCHOOL PRESBYTERIAN, 212 north 5th street; Charles B. Cox, Publisher.
ST. LOUIS JOURNAL, (Daily and Weekly, 409 Olive street; Wolcott \& Hume Company, Publishers and Proprietors.
THE FREEMASON, 7th and Market streets; George Frank Gouley, Editor and Proprietor.
WESTERN WATCHMAN, 313 north 3 d street; W. H. Phelan, Publisher.
POST OFFICE BULLETIN, southeast corner 5th and Olive streets; P. C. Russell \& Co., Publishers.
ST. LOUIS WEEKLY RAILWAY REGISTER, Room 13 Insurance Exchange; Willard A. Smith, Managing Editor.
BAPTIST TEACHER, 209 north 6th street; G. J. Johnson, Agent.
THE WESTERN, (a Magazine of Education and Literature, 615 Chestnut street; E. F. Hobart, Publisher.
WESTERN CELT, 223 north 3d street; Dan. OMadigan, Publisher.
COLMANS RURAL WORLD, northeast corner 5th and Pine streets; N. J. Colman, Editor; Wm. Muir and W. M. King, Associate Editors.

CHILDREN'S ADVOCATE, 510 and 512 Washington avenue; Rev. W. M. Leftwich, D. D., Editor.
CHURCII NEWS, 204 north 5th street; Rev. P. G. Robert, Editor.
MISSOURI STATE ATLAS, southeast corner 3d and Olive streets; Isaac F. Shepard, Editor.
W. J. GILBERT, Law Book Publisher, 209 north 4th street.
CONRAD WITTER, 21 south 4th street.

## SAINTLOUIS.

## Publishers. <br> Continued.

CHARLES PEABODY, District Secretary of the American Tract Society, 4, south 6th street.
ST. LOUIS CITY OFFTCLAL DIRECTORY, 302 north Main street; Gould \& Aldrich, Publishers.
ST. LOUIS MEDICAL AND SURGICAL JOURNAL, Drs. Edgar and Gill. Editors, 1217 Pine street.
JAMES T. HAIR, 221 north Main street
R. A. CAMPBELL, Specialty Atlases, southeast corner 5th and Olive streets.
MEDICAL ARCHIVES, J. C. Whitehill, M. D., Editor. missouri dental Journal, Homer Judd, m.d., D. D. S., Editor, 819 Locust street.
the Central magazine, Miss Mary Nolan, Editor and Proprietor.
FRANCIS SALER, (German Works,) 305 and 307 Convent street.
SUNDAY MORNING, 205 Olive street; R. H. Robbins, Editor and Publisher.

## Railroads.

For number of miles operated by Railroads in Missouri, see page 73 of "Campbell's Atlas of Missouri."
ATLANTIC \& PACIFTC; Ticket office 115 north 4th street; Passenger and Freight Depots, cor. 7th and Poplar streets.
A. Peirce, Managing Director.
A. A. Talmage, General Superintendent.

CHICAGO \& ALTON ; Ticket Office, 117 north 4th st. Passenger and Freight Depots, Carr street Ferry, East St. Louis; Freight Depot corner Carr street and Levee, St. Louis.
J. C. McMlulin, General Superintendent F. H. Knight, Ticket Agent.

ILLINOIS \& ST. LOUIS (East St. Louis to Belleville, III.) Passenger Depot, Chouteau avenue Ferry, East St. Louis; Freight Office on Chestnut street, near 2 nd.
J. S. McCune, President
P. T. Burke, Secretary.
illinois central (Chicago and Sioux City Lines) Ticket Office, 102 north 4th street. Passenger and Freight Depots at Vandalia Depot, East St. Louis. Freight Depot corner Main and Spruce streets, St. Louis.
W. H. Stennett, General Agent, 102 north 4th st.

INDIANAPOLIS \& ST. LOUIS ; Ticket Office 10 north 4th street; Passenger and Freight Depots, Spruce street Ferry, East St. Louis; Freight Depot corner $2 d$ and Poplar streets, St. Louis. O. S. Pease, General Superintendent

MISsOURI, KANSAS \& TEXAS; Tieket Offices, 404 Walnut and 115 north 4th streets; Passenger Depot, cor. 7th and Poplar streets; Freight Depot, cor. 7th and Cerre streets.
MISSOURI PACIFIC; Ticket Office, 115 north 4th st.; Passenger and Freight Depots, corner 7th and Poplar reets.
A. A. Talmage, General Superintendent.
missouri railroad company (Street Cars) Erastus Wells, President.
A. W. Henry, Vice-President and Superintendent. Hexry Wells, Secretary and Treasurer.
OHIO \& MISSISSIPPI; Ticket Office, 101 and 103 north 4th street ; Passenger and Freight Depots, Carr street Ferry, East St. Louis ; Freight Depot corner $2 d$ and and Carr streets, St. Louis.
ROCKFORD, ROCK ISLAND \& ST. LOUIS; Ticket Office, 418 Walnut street ; Depots, same as the Indianapolis \& St. Louis Railroad.
ST. LOUIS, BELLEVILLE \& SOUTHERN ILLINOIS (St. Louis \& Cairo Short Line) ; Ticket Office, 102 north 4 th street; Passenger Depot, spruce street Ferry (Indianapolis \& St. Louis R. R. Depot), East St. Louis ; Freight Depot cor. 21 and Poplar streets, St. Louis.
W. G. Brocghton, General Superintendent

## Railroads. <br> Continued.

ST. LOUIS \& IRON MOUNTAIN; Ticket Office, 105 south 4th street ; Passenger and Freight Depots, cor ner Main and Plum streets.
A. W. Soper, Superintendent.
W. H. Harris, Foreman of Machine Shop (Caron delet).
ST. LOUIS, KANSAS CITY \& NORTHERN (formerly North Missouri) ; Ticket Office, 113 north 4th st.; Passenger and Freight Depots, foot of Biddle street and foot of North Market street W. C. Van Horne, General Superintendent.

ST. LOUIS \& SOUTHEASTERN (consolidated) ; Ticket Office, northwest corner 4th and Walnut streets Passenger and Freight Depots, Carr street Ferry, East St. Louis: Freight Depot, cor. Carr street and Levee, St. Louis.
ST. LOUIS, VANDALIA, TERRE HAUTE AND INDIANAPOLIS; Ticket Office, 100 north 4th st. Passenger and Freight Depots, Spruce street Ferry, East St. Louis; Freight Depot corner Main and Spruce streets, St. Louis.
Charles E. Follett, Gen. Passenger Agent. N. Stevens, General Agent.
F. M. Colburn, Ticket Agent, corner 4th and Chestnut streets.
TOLEDO, WABASH \& WESTERN ; Ticket Office, 408 Walnut street; Passenger Depot, Carr street Ferry, East St. Louis; Freight Depot, corner 2d and Carr streets, St. Louis.

## Railroad Fast Freight Line.

STAR UNION LINE, office, 309 Olive street. C. S. Freeborn, Agent

## Real Estate Dealers

E. G. OBEAR, 312 Chestnut street

WM. EINSTEIN \& CO., 309 Chestnut street. H. W. LEFFLNGWELL \& CO., 320 Chestnut street. MARCUS A. WOLFF, 316 Chestnut street. M. J. KYNE, 107 north 6th street. BELT \& PRIEST, 219 Chestnut street. CONN \& McREE, 315 Chestnut street. JAMES M. CARPENTER, 312 north 6th street. J. E. KAIME \& RBO., 516 Olive street. GRETHER \& BOECK, 322 Chestnut street MELLON \& TIPPET'T, 510 Chestnut street. J. W. SUTHERLAND. 16 south 5th street. BOOTH \& BARADA, 211 Chestnut street. W. F. BRINCK, $513 \frac{1}{2}$ Olive street. BETTS \& SUTTON, 302 Chestnut street. CARR \& KERR, 306 Chestnut street. ANDREW MCKINLEY \& CO., 515 Olive street C. C. LOGAN, 221 Pine street GIBBONS \& McPHERSON, 300 north 4th street. BARTLING \& CHAMBERS, 519 Pine street.
KERNAN \& PATTERSON, southeast corner 8th and Olive streets.
W. E. MOBERLY \& CO., southeast corner 3d and Pine streets.
O. D. TUCKER, 410 Olive street.

KNOPP \& GELLENBECK, 14 south 4th street. CAVENDER \& ROWSE, 311 Olive street. HENRY HOLMES, 519 Chestnut street. CONE BROTHERS, 409 Locust street. J. I. ELLET, 805 Chestnut street. WM. C. WILSON \& BRO., 314 north 6 th street. DANIEL H. DONOVAN \& SON, 513 north 6th street RICHARDS \& WILLIAMS, 423 north 6th street.
R. D. LANCASTER, 309 Pine street.
L. S. BROTHERTON, 417 Pine street.

## Real Estate Dealers.

 ContinuedJOHN B. C. LUCAS, 110 Chestnut street. SCHMITT \& BERGMAN, 721 Olive street WALLACE SIGERSON, St. Louis.
HILL \& STEPHANI, Main street, between Olive and Nebraska streets, South St. Louis.
REISTER, COLLINS \& CO., southwest corner 3d and Olive streets.

## Register in Bankruptcy.

LUCIEN EATON, 203 Pine street.

## Resident.

GEO. J. COCHRAN, 202 north Commercial street

## Roofers.

SAM'L D. WARREN \& CO., Manufacturers of Warren's Improved fire and water-proof Felt and Composition Roofs and Roofing Materials; office, No. 6 Jaccard's Building, northeast corner 5th and Olive streets. References: Robert Campbell, Southern Hotel; Geo. Knapp \& Co., Old Republican Office; St. Louis Mutual Life Insurance Co.
JOHN M. SELLERS, Manufacturer of fire and waterproof Gravel, and Composition Roofs and Roofing Materials; office, southeast corner 4th and Market streets. References: Most Rev. Archbishop; James H. Lucas; Jno Byrne, Jr., \& Co.

## Sand.

JOS. COLLET \& CO., Dealers in White and Rolling Mill Sand, northeast corr. 8th st. and Clark avenue.

## Sash, Doors and Blinds

M. BROTHERTON, 417 Pine street, and 3938 Broadway.

SCHULENBURG \& BOECKELER, 10th and 11th sts., between Howard and Mullanphy streets
C. H. \& J. W. PECK, corner 14th and Poplar streets. DRYDEN \& REID, 3810 Broadway.
LESLEY GARNETT \& CO., 124 Olive street, and corner 7th and Mullanphy streets.
HARTMAN \& GRAHAM, 1428 Broadway, and corner Monroe and Main streets.
THOMPSON, HENRY \& CO., 1420 and 3922 Broadway. MISSISSIPPI PLANING MILL CO., corner 13th and O'Fallon streets. J. Patrick, President; Geo. T. Riddle, Secretary.
GEO. MATLACK, corner 15th street and Franklin avenue, and 26 th street and Franklin avenue.
JAMES LUTHY, 1211 Market street.
WILLIAM DRUHE, corner 10th street and Clark ave. PHILIP GRUNER, JR., 9th street and Cass avenue, and corner Broadway and Destrahan street.
JOSEPH DEGENHART \& CO., 1637 corner Carondelet avenue, and 3430 corner Carondelet avenue and Bryan street.
AUGUST LEISSE, 904 south 4 th street.
WOERHEIDE \& LUEHRMANN, 813 to 821 Cass ave.
SCHNELLE \& QUERL, corner 8th and Mullamphy sts., and corner Main and Destrahan streets
CHARLES NABER, Broadway, between Salisbury st. and Bremen avenue.
BOECKENKAMP \& SURKAMP, corner 9th and Monroe streets.
THEO. STRAUSS \& CO., 1822 Franklin avenue.
H. W. BELDSMEIER \& CO., corner 2d and Destrahan streets, and corner Easton, Spring and Cass avenues.
THEO. BLOESS, cor. Carondelet avenue and Barton st. G. W. RIPPEY \& CO., corner 8th street and Clark avenue, and 9th and Poplar streets.
COLE \& GLASS, corner 16th and Market streets.

## SAINTI.OUIS

Sash, Doors and Blinds.
Contimed

OLCOTT', DUROSS \& CO, corner Broadway and Buchanan street.
LOBSINGER, MEEGAN \& CO., corner Water and Taylor streets (South St. Louis).
F. \& J. GANAHL, corner $2 d$ and schirmer streets, (South St. Louis.)

## Salt

G. L. Joy, General Agent of the Ohio River Salt Co. 122 Olive street.

## School Furniture.

WESTERN PUBLISHING AND SCHOOL FURNISH ING COMPINY, J. B. Merwin, Prevident, 708 and 710 Chestnut street
H. H. LEWIS \& CO., 710 Washington avenue.

EXCELSIOR SCHGOL FURNITURE MANUFACTURING COMPANY, Manufacturers and Dealers in everything for Schools and Colleges, 704 Chestnut street.

## Sewer Pipe.

H. M. THOMPsON \& CO., 106 north ath street; Factory 16th and Pacifie Railroad, Manufacturers of Vitrified Stone Pipe, Flue Linings and Chimney Tops

## Sewing Machines.

GINGER MANUFACTURING COMPANY; Present location 605 north 4 th street; New building northcast corner ⿹th and Locust streets.
Wheeler \& WILson s. M. CO., A. Sumner, Agent 415 north 5 th street.
WILLCOX \& G1BBS s. M. CO.. 203 north 4th street.
GROVER \& BAKER S. M. CO., E. R. Eueston, Agent 305 north 5th street
WeED SEWING MACHINE CO, F. S. Bartram, Agent, 218 north 5th street.
florence sewing machine co., W. E. Plant, Agent, 214 north öth street.
FINKLE \& LYON MANUFACTURNG COMPANY H. B. Dickinson, Agent, 210 north 6th street.
home shettle sewing machine co., John son, Clark \& Co., Agents, 21 south 5th street
Keystone sewing machine co., W. L. Tribbe Agent, 612 Washington avenue.
THE DAVIS SEWING MACHINE CO. Watertown, New York; Branch office 612 north th street; J. B. Collins, Manager

## Sewing Machines

Continurel.
AMERICAN BUTTONHOLE, OVERSEAMING AND SEWING MACHINE CO. D. A. Buck, General Agent, gor north the street
"DOMESTIC" SEWING MACIIINE CO., 511 north 4th street.
WILSON SEIVING MACHINE CO., 610 north 4th street.
THE: ST. LOUIS REMINGTON SEWING MACHINE CO. 114 north 6th street.
WEED SEWING MACHINF, CITY AGENCY, Salo room 522 Pine street, and 1200 and 122 north 6th street; E. C. Sanderson

## Sewing Machine Adjuster.

GEO. FRANZ, 509 north sixth street, Sewing Machine Adjustar and Repairer and Dealer in Sewing Machine Attachment*.

Show Cases.
C. CLAES \& CO., \& W 3 nouth 4 th street.

## Solicitors of Patents.

KNIGHT BROTHERS, Counsellors in Patent Couses and Agents for procuring United States and European Patents; No. 317 Olive street, and Washington, D.

MOODY \& DAVENPORT, with DYER, BEADLE \& CO., Washington, D. C. Chaw. D. Moody, Attorney at Law; F. S. Davenport, Mechanical Engineer. Southeast corner 5th and Olive.
Western patent agency. Herthel \& Co. Solicitors of American and Foreign Patente, an Olive street, oprosite Post Office.

## Stationers and Printers.

LEVISON © BLYTHE, 219 Olive street. R. P. STCDLEY COMPANY, 221 north Main street. PATTERSON \& FITCH, 300 north Main street.
VAN BEEK, BARNARD \& TINSLEY, 316 and 318 north 81 street
A. McLEAN, 118 north in street
C. A. CHAMBERLAIN is $\mathbf{C O}$.. 20ll moth Main street MUSICK \& BLYTHE, 309 LAr'Ist street.
JOHN J. DALY \& CO., 213 north 8 d street.
ST. LOU1S TYPE FOUNDRY CO., 115 and 117 Pine street.

Stenographers' Union
L. L. WAlbridge \& CO.; C. E. WELLER; JAS. HOLLAND, JAMES F. ALLEN : 419 Olive street. Hooms 9

Stone Pipe Sewering.
J. A. LYNCH. \& BRO., 61s north 11 th street.

## Surgical Instruments and Trusses.

A. M. LENLIE \& CO. 819 north 5th street.

Tag Manufacturers.

ST. LOULS TAG MANLFACTORY, northeast corner 5th and Green strects, Dealers in Shippiny and Merchandise Tags; l'ost Oftice Box 2836 .

Tonsorial Artist.
WM. ROBERSON, 410 Market street.

Type Foundry.
ST. LOUIS TYPE FOUNDRY COMPANY, 115 and 117 Pine street.

Turkish Baths.

WM. ROBERSON, 410 Market street.

## Upholstery Goods-Dealer in.

F. J. COMSTOCK, 409 and 411 north $2 d$ street

Veterinary Surgeon

CHARLES HOSS, 2215 Carondelet avenue near Anm avenue.

Watchmaker.
A. G. WISEMAN, Practical Watchmaker, 224 Olive st.

Wax Flowers.

MBS. C. J. DICKINsON, Artist in Wax Flowers and Follage; Studio, Insurance Exchange, southeast corner Olive and ath streets; Residence 1510 Lafayette avenue.

## JACKSON COUNTY．

## KANSAS CITY．

The estimation in which the work is held by Professional and Business Men is shown by the following partial List of our Subscribers in this City．

## Abstracts of Titles．

TRABER \＆NORMAN，south side of 6th street，bet． Main and Delaware streets．
THACHER \＆WEBSTER， 16 West 5th street．

## Agencies．

TIIE WESTERN ADJUSTING AGENCY．J．M． Wise．
MORTEN \＆CO．，Sole Agents for Dr．Cook＇s＂Balm of Lirc，＂and Compounders of Family Medicines， 921 Main street，opposite Diamond Block．
1．AUSTIN \＆CO．，Agents for Cowing \＆Co＇s Pumps， Seneca Falls，N．Y． 703 Main street．
SHAW \＆BEWSHER，Agents for Waters Patent Heater，Niller＇s \＆Wentworth Patent Water Drainer，and Niggara Steam Pump．Office， 16 W．5th street．

## Agricultural Implements．

OLIVER CASE \＆CO．，Dealers in Agricultural and Farming Implements，Spring and Farm Wagons，de． Office， 325 W ． 5 th street．
moline plow co．，Kansas City branch House， Dealers in Farm and Mill Machinery．
EERE，MANSLR \＆CO．，General Agents for Farm Machinery．Office and Warehouse，cor．Ottawa and Santa Fe streets，West Kansas City．
ENGLISH \＆DINON，Dealers in Agricultural \＆Farm－ ing Implements，9th street，West Kansas City．

## Architects．

J．L．PARKINSON，Oftice，room 10 Orr＇s Building，W． ōth strect．
G．A．KARWIESL，west wing of New Court House．
WM．FIRRELL，post office box 1482；Shop on Gran avenue，between oth and 6th streets．

## Artists．

The Misses sargeant，Portrait Painters；also Teachers of Drawing，Painting and French．Studio over Post Office，room 7；post office box 692.
J．C．MERINE，Portrait and Landscape Painter，Studio， cor．7th and Main， 715.

## Artists＇Materials．

WM．E．THORNE，Importer and Dealer in Wax Flower Material，Chromos，etc．，wholesale and retail， 921 Material，Ch
Main street．

## Attorneys at Law．

FRANKLIN \＆NAPTON，cor．4th and Delaware street． rear of Bank Building．
DOUGLAS \＆ADAMS，office，Vaaghan＇s Diamond．
A．A．TOMLINSON，National Bank Building．Refer－ ence，First National Bank．
M．D．TREFREN，4th street，Hart＇s Building；office， room No． 3.
PRATT，ROCKWELI \＆FERREY，office over First National Bank．
GAGE \＆LADD，eth street，between Main \＆Delaware BRUMBACK \＆TRABER，6th street，between Main \＆ Delaware． WARWICK HOUGII，5th street，between Main and
Delaware．

## Attorneys at Law

## Continurt．

F．M．BLACK，cor．th and Walnut streete．
D．W．ROCKHOLD，cor．कth and Main streets，
HOLMES \＆DEAN，room 10，cor．4th and Walmut sts． KARNES \＆ESS，Commercinl Bank Building．
WHITE \＆TITCS，room in，Hart＇s Office Buiking，4： street，between Main and Delaware．
R．L．YEAGER，office，room B Chambers Building．cor bth and Main．
GEORGE W．GALVIN，front room over Mastin＊Bank cor． 4 th and Main．
F．A．MTCHELL，the street，het．Main and Delaware ．P．TWISS，Nos． 5 \＆ 6 Long＇Building， 521 Muin st between 5th and 6th．
JENKLIS \＆TWITCHELL，Orr＂s Office Building，5th street．
WOODSON \＆BRYANT， 18 W．万th street．
O．G．LONG，office Old Court Honse．
PEAK \＆YEAMAS，S．W．eor．Main and bth streets． QUARLES \＆BOWER，ottice Mastin＇s Bank Building． WM．A．SM1TH， 221 Main street，over hansas Clity Nos－ tional Bank．
sheffield，slavins id Medskel，office in Med－ sker＇s Building， 315 Main street．
COBB \＆COOK，office in Court House，cor． 2 l and Main streets．
ALLEN \＆GILL， 10 W． 3 th street．
W．L．T．PHICE， 10 W .5 th street．
SHAAS F．ALLEN， 315 Main street．
CAMPBELL \＆HAMMOND，5th and Main atreet
C．B．PLATT，office，room 1，over Post Office．
B．Wells，over 605 Main street．
GROOM \＆CRANDALL， 521 Main street，post office drawer 2201.
STIERS \＆LYBRAND，oftice，Vaughan＇s Diamond． HENRY H．CRAIG， 505 Walmut street，bet． 5 th and 6th． FRANK B．HAFF，S．W．cor． 2 d and Main streets． GEO．A．BLACK，N．E．cor．Main and 6th streets． J．E．HAVENS，Orr＇s Oftice Building， 19 äth street． COWAN \＆WOODSON， 17 W．street，Orr＇s Building． J．W．DUNLAP，Orr＇s Offlce Building，5th street． W．P．WADE，room 6，Orr＇s Office Building，ôth street． NICHOLSON \＆BALLINGAL，Orr＇s Office Building， 5th street．
HENRY M．WITHERS，Orr＇s Office Building，⿹̄th st． PARSOYS \＆DEWS，office Hart＇s Building，4th street， between Main and Delaware．
CHAS．I．THOMSON， 13 W ． 5 th street．
W．II．SUTTON， 17 Fifth street，Orr＇s Office Building， room 11.
JOHN K．CRAVENS，ȳth street，between Main and Delaware．
CHAS．BREWSTER，office opposite Lnion Depot． N．C．SCOVILLE， 315 Main street．
MILTON MOORE，Court Ilousp．
P．M．AUSTIN，Orr＇s Office Building，öth street．
KANE \＆ARMSTRONG，TZ0 Main street．
JAMES H．KINKEID，oftice and residence，Westport

## Authors．

＂SERVICE OF SONG，＂A Dixcussion of the Praise of God，in song in popular style． $12 \mathrm{mo}, 340 \mathrm{pp}$ ．By Rev．A．G．STACY，A．M．

## Banks and Bankers

FIlsic NATIONAL BANK，cor．5th and Delaware sts． H．M．Holden，President；E．H．Allem，Vice Presi Went；J．D．Bancroft，Cashier．Capital，8250，000；sur－ blas，May 187，\＄100，000．
RANSAS CITY NATIONAL BANK， 521 Main sirmet． Capital，$\$ 100,000$ ；authorized capital，$\$ 000,0(1)$ ．Hon J．B．Wornal，President；D．L．Shouse，Cashier．
INION GERMAN SAVINOS BANK，junction of Main and Delaware streets．Capital，$\$ 100,(00)$ ．Henry Tobener，Prevident；John S．Harrix，Ca－hior．
DAVID 0．SMART \＆（ 0.01124 Main street．
FARMERS ANI DROVERS SAVINGS BANK，Cap ital Stock，\＄2in，（k）Near Luion Depot．A．A．Bain－ bridge，Prevident；E．．．Phillips，（awher
JOHN J．MASTIN \＆CO，cor．Mainand th streets．
LONG，GRANT \＆CO．，5th street，between Main and Delaware．

## Blacksmiths．

R．CLARK，Repairing and Horse－shoeing neatly done；215 Main street．

## Booksellers and Stationers．

MATM＂，FOSTER \＆CO．，61 Main street．
H．T．WRIGHT， 916 Main street．
KANSAS CITY BOOK AND NEWS CO．，Post Office Building，cor．9th and Main strects．Geo．C．Eaton， Manager．
J．R．WHITTEMORE，post oflice box 2070．Religious Book；a specialty．

## Breeder of Thoroughbred Stock．

SAMUEL ARCHER， 1015 Main street．

## Carpenters，Contractors and Bullders．

F．F．MINDS， 5 th street，between Walnut and Grand avenue．
B．S．\＆G．E．CHAMBERS，post othice box 20\％．
Francisco \＆OWEN，Shop cor．10th and Central streets；post office box 396.
J．STRLMPLE，post office box 1141 ；shop，cor．12th and Central streets．
FITZGERALD \＆FARRELL，shop and office，Grand avenue，between 5th and 6th streets；post office box 1482.

JOHN M．JACKSON，office 321 West ⿹勹th street． C．C．WHITMEYER， 1320 Grand avenue．
F．M．COOPER，revid．Walnut street bet．12th and 13th， No． 1213 ；post office box 150.
N．A．JAQUES，ath strect，near New Delaware．？
YOTNGCLAL＇s \＆MALRER，9th street，between Delaware and $W_{y}$ andotte．Specialty Shelving and （counters for stores．

## Carriages and Spring Wagons

T．R．CLARK，Top and Open Buggies，ete．． 213 and 215 Main street．

## JACKSON COUNTY-KANSAS CITY.

## Carriages \& Spring Wagons.

Continued.
JOHN SCHWARZEL \& SON, Carriages and Elliptic Spring Wagons, 606 Grand avenue, cor. 6th street. W. D. GODKIN, cor. 8th and Walnut streets.

## Clty Officers.

Col. E. M. McGEE, Mayor, Real Estate Dealer; early pioneer ; settled in Kansas City in 1824 ; superintend ed the laying out of the principal streets. Residence S. W. cor. Main and 16th streets
O. G. LONG, City Recorder, and Ex-Officio Justice of the Peace.
J. T. CAMPBELL, City Attorney.

## Clergymen and Churches.

GRaND AVENUE M. E. CHURCH, G. De La Matyr D. D., Pastor.

FIRST ENGLISH LUTHERAN CHURCH, Wm. H. Steck, Pastor.
LIberty street m. e. Church, West Kansas Crty, cor. 14th and Liberty streets. A. H. Heinlein, Pastor.
M. E. CHURCH SOUTH, C. D. N. Campbell, Pastor. PRESBYTERIAN CHURCH (OLD SChOOL), A. D Madeira, Pastor.
FLRst PRESBYTERIAN CHURCH, R. Irwin, Pastor AFRICAN M. E. CHURCH, Moses Diekson, Pastor.
CHURCH OF THE IMMACULATE CONCEPTION Broadway, between 11th and 12th. B. Donnelly Pastor; Jas. Phelan, Assistant
A. G. STACY, Presiding Elder of Lexington District M. E. Church South.

CHURCH OF ST. PATRICK, cor. 8th and McGee sts. J. Halpin, Pastor; Thos. Cooney, Assistant.

ST. PETER'S CHURCH (German Ev.), Walnut street, between 10th and 11th. J. C. Feil, Pastor.
FIRST CONGREGATIONAL CHURCH, cor. 10th and Grand avenue. J. G. Roberts, Pastor.
CUMBERLAND PRESBYTERIAN CHURCH, 14th street, between Laurell and Locust. J. E. Sharp, Pastor.
CHRISTIAN CHURCH, cor. 12 th and Main streets. J W. Mountjoy, Pastor.

UNITED PRESBYTERIAN CHURCH, Walnut street between 9th and 10th. Rev. J. K. Martin, Pastor.

## Coal Dealers

FT. SCOTT COAL \& MINING CO., office, Bluff street opposite the Bridge. Thos. Wheeler, Agent
SECOND RAY COUNTY COAL \& MINING CO., of fice and yard cor. 6th and Bluff streets, east of North Mo. R. R. Depot. T. Collins, Superintendent; D. C. Hieatt, Agent.
MITCHELL \& KEITH, Miners and Dealers in Fort Scott Cherokee Coal. Office, Bluff street; post office box 2256 .

## Colleges.

KANSAS CTTY FEMALE COLLEGE, first class Day and Boarding School ; Rev. A. G. Stacy, A. M., President. 713 Walnut street
SPALDING'S COMMERCIAL COLLEGE, established October 25, 1863, ineorporated July 11, 1867. Dry Goods Palace Builling, 712 and 714 Main street. J. F. Spalding, A. M., President; Howard M. Holden, secretary.
ACADEMY OF SAINT TERESA, conducted by Sisters of St. Joseph. Sister Mary Di Pazzi, Superior; cor 12th street and Penn avenue.

## County Offlcers.

R. C. EWING, Judge of the Criminal and Probate Courts.
JOHN E. FLlLE, County Superintendent Public Schools, office in Kansas City, Vaughan's Diamond Building; in Independence, Court House.

## County Offlcers.

Contioued.
Wallace laws, Clerk of the Cireuit Court
JAMES L. GRAY, Sheriff; office, Kansas City and Inpendence.
B. J. FRANKLIN, Circuit Attorney.

THOS. PHELAN, Clerk of the Criminal and Probate Courts.

## Cracker Factory.

KANSAS CITY STEAM CRACKER FACTORY, 1317 Main street. Taylor Bros., proprietors.

## Dentists.

HAMMOND \& HEWITT, office and residence over Palace Grocery, first door north of Lynn's Drug store, 917 Main street.
IINDALL \& STARK, 618 Main street.
C. F. RANKIN, 613 Main street
S. B. PREVOST, 622 Main street, west side.

GEO. M. SAUL, 721 Main street
S. M. BRADBURY, 826 Main street.
H. C. MASSIE, 706 Main street.

JAS. S. PERKINS, 612 Main street.
J. E. CRAVENS, post office box 2149 .

## Elevator.

KANSAS CITY ELEVATOR, Latshaw \& Quade, Proprietors, and Dealers in Grain and Produce, West Levee.

## Engineer.

G. A. KARWIESE, General Engineer, office, west wing of new Court House.

## Flouring Mill.

BANNER MILLS, cor. 19th and Walnut streets. English $\&$ Co., Proprietors
Forwarding, Grain, Produce, \& Commisslon Merchants.
WILSON \& MCCULLOCH, cor. 8th and Delaware sta
W. A. M. VAUGHAN, successor to Hoover \& Vaughan, 5 and 6 West Levee

## A. L. CHARLES, Kansas City.

D. S. ORRISON \& CO., 5th street, under City Hotel. J. Y. LEVERIDGE \& CO., 121 Fourth street.

## Foundries \& Machine Shops.

JOHN C. MURRAY, eor. Main and 19th streets.

## Cents Furnishing Coods.

SAYERS \& WHITE, 1s W. 5th street

## crocers, Wholesale.

THRELKELD \& CO., 306 Delaware street.
WARINNER \& CO., 53 Third street.

## Hair, Lime \& Cement.

W. H. POWELL \& CO., office, 317 Delaware street.

## Harness Maker

I. W. MCDONALD, Dealer in Harness, Saddles, Whips, Collars, etc., cor. Main and 3rd streets.

## Hides. Wool, Furs, Etc.

BENJ. McLEAN, cor. Grand avenue and 13th street.

## Hominy Mills

KANSAS CITY PEARL HOMINY MILLS, affice and Mills, 4th street near Broadway. Branham \& Sons, Proprietors.

## Hotels.

NEW UNION HOTEL, opposite Union Depot, West Kansas City. Fred. Drogmund, Proprietor.

## Hotels.

## Continued.

BROADWAY HOTEL, cor. 10th street and Broadway; 150 rooms; elegantly furnished; first class in all appointments. K. Coates, Proprietor; W. H. Savage, Manager.
ST. NICHOLAS HOTEL, cor. 4th and Main streets. Joe Sigemunt, Proprietor.
BROADWAY HOTEL, cor. 5th and Broadway, John Jones, Proprietor. Free buss to and from the cars.
GRAND CENTRAL HOTEL, cor 6th and Main streets, over James \& Sons Queensware store. J. H. Roberts, Proprietor.
state line house, West Kansas. A. G. Currier, Proprietor.

## Ice Dealers.

A. G. Eidemiller, Wholesale and Retail Dealer in Ice; building, at the mouth of the Kaw River; office, cor. 5 th and Walnut streets; post office box 1080 .
W. W. PAYNE, post office box 1575.

## Insurance Agents

EDWARD H. WEBSTER, General Agent; Represents 6 first class Eastern Companies, 'Phoenix,' 'Home,' ' Underwriters,' etc. Office, 16 W .0 5th street.
H. N. CHITTENDEN \& CO., General Agency Fire, Marine, Life, and Accident; representing six Companies, including ' North British and Mercantile,' Office, S. W. cor. 5th and Delaware streets.
F. A. BENSON \& SON, Represent six Companies, Life, Fire, Accident and Marine, second to none. Long's Block, 21 Main street.
S. II. KINNEY, Fire Insurance. 'Imperial', London; 'Continental,' New York; ‘German American,' New York, and other first class Companies. Office, Orr's Building, 5th street.
BUCKNER \& ALGER, Life, Fire, and Marine Insurance Agents, 707 Main street.
D. W. ROCKHOLD, cor. 5th and Main streets.

## Justices of the Peace.

W. H. SUTTON, room 11, Orr's Office Building, 5th st., between Main and Delaware.
HENRY ROEE, cor. 4th and Main streets.

## Life Insurance

WALKER BUCKNER, State Agent 'Equitable Life Assurance fociety of U. S.," 707 Main street. Gentlemen of ability wanted as Local Agents through the State of Missouri. Chas. H. Freeman, District Agt.
NORTWESTERN MUTUAL LIFE INSURANCE CO., Assets, $\$ 11,000,000.00$. Branch office, 717 Main st.

## Livery, Sale and ExChange Stables.

EUGENE CARLAT, 3rd street, bet. Main and Walnut. CARLAT \& BROTHER, Sale and Auction Stable, cor. 3rd and Walnut streets.
J. H. ROBERTS, 613 Walnut street, opposite St. James Hotel.
JEROME \& CARSON, corner 4th and Walnut atreets. Strict attention paid to handling horses.
DORMAN \& LEAS, 1032 Main street.
STREETER \& BRANDENBURGER, 1206 Grand ave.

1. R. HILL, Stable located at Union Stock Yards.

Liquor Dealers, Wholesale and Retail.
DE LUCE \& SLYE, cor. 4th and Main streets, opposite Mastin's Bank.

## Lumber Merchants, Wholesale and Retail.

. DUBACH \& CO., yard and office, cor. 11th and Main streets.
CRAWFORD \& CROUSE, West Levee.
A. MCDOWELL, 5th street, between Mulberry and Santa Fe.

## JACKSON COUNTY-KANSAS CITY.

## Manufacturers.

A. CLAEs, Manufacturer of Show Cases, 211 Main st.
J. R. HICKS, Inventor and Manufacturer of Monroe' Improved Rotary Harrow, Pulverizer, and Grain Coverer. P. O. box 118.
OLIVER CASE \& CO., Manufacturers of Multiper Combined Reaper, Mower, Corn Sheller and Feed Mill. office and show rooms, 325 West 5 th street.
G. W. LOVEJOY, Manufacturer of Sash, Doors, Blinds, Mouldings, Brackets, etc. Main street, cor. 14th.
W. P. GOOLMAN \& CO., Manufacturers of Goolman' Improved Hay, Stock, Depot, and Grain Scales Foundry and shop cer. Walnut and 20th streets.
JOHN W. LEE, Manufacturer of Doors, Sash, Blinds, etc., 1319 Main street.
ENGLISH \& DIXON, Manufaurers Ohio Reaper and Mower, and Philadelphia Thresher and Separator. New Philadelphia, O. Branch House Kansas City.
BRANHAM \& SONS, Manufacturers of kiln-dried Pearl Hominy, Pearl Grits, Meal, Corn Chop and Feed of all kinds. Office, 4th street near Broadway.
de luce \& SLYE, Manufacturers, Wholesale and Retail Dealers in Syrups, Cordials, Cocktail Bitters, \&c Cor. 4th and Main streets, opposite Mastin's Bank.
bellchambers \& CO., Manufacturers, and Wholesale Dealers in Brooms, 1326 Main street; post office box 954 .
I. W. MCDONALD, Manufacturers of, and Wholesale Dealers in Harnesses, cor. Main and 3d streets.
JOHN C. MURRAY, Manufacturer of Castings of all descriptions, Railroad \& Machinery Castings, House Fronts, Ornamental Work, etc., cor. Main and 19th streets.
kansas city bag manufactubing co. Flour Sacks, Grain Bags, and Bags of all descriptions; 206 Main street, post office box 159. Edwd. Dunscomb, Manager.
H. HANSON \& CQ., Manufacturers of Sash, Doors, Blinds, Mouldings, etc. Office änd salesroom 8th st. near Union Railroad Depot, West Kansas City.
CRAWFORD \& CROUSE, Manufacturers of Native Lumber and Timber, West Levee.
L. A. MCDOWELL, Manufacturer of Native Lumber and Timber, West Levee

## Marble Dealers

J. H. SCHELL \& CO., Western Marble Works, Manufacturers of Monuments, Mantels, Table Tops, ete. Yard, Grand avenue, near 11th street.

## Master Mechanics, and other Officials of

 R. R. Companies.J. S. McCRUM, M. M. M. R., Ft. Scott \& Gulf R. R. Co. S. ESHNAUR, M. M. of Hannibal \& St. Jo. R. R. Co. ED. RICE, M. M, of K. C. St. L. \& N. R. R. Co.
L. H. WAUGH, Superintendent Machinery K. P. D. P. and D. \& B. V. Railways; office Armstrong, Kansas JOHN A. HANGLIN, M. M. Kaw Valley Div., Armstrong, Kansas.
THOS. TICKROY, Chief Clerk Motive Power K. P. D. P., and D. \& B. Valley Railroads.

WM. HAZEN, Foreman Blacksmith Shop K. P. R. R.
R. T. SLEEPER, Round House, K. P. R. R., Armstrong.

## Merchant Tailors

H. SWINDLER, 12 South 5th street, between Main and Delaware.
W. E. WHITING \& CO., 605 Main street, old Union Hotel Building.
S. B. WINRAM, 18 West 5 th street.

VAL. BICKING, 529 Main street.
LAARSON \& BRINK, 710•Main street.

## Music and Musical Instruments.

H. T. WRIGHT, 916 Main street.

CONOVER BROTHERS, 823 Main street. Pianos to rent.

## News Dealers.

H. T. WRIGHT, 916 Main street.

KANSAS CITY BOOK AND NEWS CO., Post Office Building. Geo. C. Eaton, Manager

## Notaries Public.

O. G. LONG, office, Old Court House.
J. T. CAMPBELL, S. W. cor. 5 th and Main streets.
C. B. PLATT, office, Room 1, over Post Office.
C. W. WHITEHE.1D, 17 West 5th street, Room 5, Orr's Office Building.
STIERS \& LYBRAND, office, Diamond Block GEO. A. BLACK, N. E. cor. Main and 6th streets. E. H. WEBSTER, 16 W. 5 th street.
E. Y. LANSING, office opposite Union Depot, West Kansas City.
JOHN 2201
N. C. SCOVILLE, 315 Main street.

MILTON MOORE, Court House.
HENRY' ROSE, cor. 4th and Main streets.
P. M. AUSTIN, office. Orr's Office Building, 5th street.

Nurserymen, Seedmen and Florists.
GOODMAN \& SON, Office, Green Houses and Packing Grounds, Ottawa street, cor. Hackberry; Nursery Grounds at Westport. Postoffice box 2034.

## Oculists and Aurists.

I. H. CURTIS, 706 Main street
G. W. FITZPATRICK, 620 Main st., bet. 6th and 7th. JOHN FINN, Intirmary opposite Union Depot, West side

## Physicians and Surgeons,

Comprising the Medical Society of Kansas City.
TAYLOR \& PORTER, M. D., 425 Walnut street EDWARD W. SCHAUFFLER, M. D., 1012 Main st. S. S. TODD, M. D., President College of Physicians. CHAPMAN \& BIGGER, M. D., office over Farmers' and Drovers' Bank, near Union Depot, West Kansas. City.
W. C. EVANS, M. D., 902 Main street, second floor. GEO. HALLEY, M. D., cor. 3 d and Main streets; resid cor. 0th and Wyandotte streets.
J. W. CADWELL, M. D., 1131 $\frac{1}{2}$ Main street.
M. A. BOGIE, M. D., 1007 Main street, opposite P. O. J. HARRIS, M. D., office in Nelson's new building, south side Public Square.
I. B. WOODSON, M. D., cor. 5th and Walnut streets. JENNIE L. HILDEBRAND, M. D., resid. and office, 1115 Walnut street.
I. H. CURTIS, 706 Main street
J. G. RUSSELL, office cor. 12th and Hackberry streets; residence cor. 12th and Locust.
M. L. CAMPBELL, office east side Grand avenue, bet 14th and 15th.
A. M. CROW, 1425 Grand avenue.
G. W. FitzPatrick, 620 Main st., bet. 6th and 7th. R. GOUDY MENDENHALL, 902 Main street.
J. HARLAN, Specialist, office Bulletin Block, cor. 5 th and Walnut streets, room 4, up stairs.
E. E. PERKINS, 921 Main street, op. Diamond Buildg. Mrs. Z. J. McMurtey, Treats Diseases of Women and Children; resid. 909 Main street, P. O. box 1325.
JOHN FINN, Infirmary, opposite Union Depot, West side.
A. S. WHETSTONE, cor. Junction, Liberty and 10th streets, West Kansas City.
WM. MARTLN, 713 Main street.
Physicians. Homœopathists.
J. C. CUMMINGS, 614 Main street.

## Pianos and Organs.

T. W. LETTON, Dealer in all kinds of Musical Instruments, 11 West 6th street
CONOVER BROTHERS, Specialty Pianos and Organs.
Pictures \& Frames, Looking Classe. Etc.
W. W. FINDLAY, i20 Main street; post office box 2110. Dealer in Fine Stationery

MATT. FOSTER \& CO., 615 Main street.
W. E. THORNE, Wholesale and Retail, 921 Main st.

## Planing Mills

G. W. Lovejoy's planing mill, cor. Main and 14th streets.
JOHN W. LEE:S PLANiNG MILL, 1319 Main street.

## Pork \& Beef Packers

PLANKINTON \& ARMOUR, Kansas City. (Plankinton \& Armour, Milwaukee; Armour \& Co., Chicago; Armour, Plankinton \& Co., New York.)
THOMAS J. BIGGER, Curer of "Home" brand Sugarcured Hams, and Breakfast Bacon.

## Publishers \& Job Printers.

JOURNAL COMPANY, Publishers and Proprietors of the JOURNAL OF COMMERCE, Daily, Tri-Weekly and Weekly, West 5th street.
THE KANSAS CITY TIMES, Daily, Tri-Weekly, and Weeky, by the Tmes Publishing Company, cor. 5th and Waluut streets. M. Munford, General Manager.
Daily and Weekly news, News Publishing Co., Proprietors. F. Barnum, Business Manager.
CANNON \& McGEE, Publishers of the MONTHLY LAND REVIEW. Post office box 2088.
FISHER \& CO., Publishers of the MONTHLY LAND EXCHANGE.
DAILY AND WEEKLY POST AND TRIBUNE, 1008 Main street. German Publishing Co., Props.
FAUCHER \& WHITEHEAD, Pub. of the MONTHLY REAL ESTATE INDEX.
KANSAS CITY MEDICAL JOURNAL (Bi-Monthly), Dr. Edward W. Schauffler, Editor and Propiretor. Subscription, \$2.00.

## Pumps, Cas Pipes \& Fixtures, Etc.

D. AUSTIN \& CO., 703 Main street

SHAW \& BEWSHER, office, 16 West 5th street, bet. Main and Delaware

## R. R. Offlcials.

K. COATS, President M. R. F. S. \& G. R. R.

## Real Estate Dealers.

MOORE, BREWSTER \& LANSING, Agents for Railroad and Private Lands. Office opposite Union Depot.
CANNON \& McGEE, cor. 5th and Main streets.
C. B. PLATT \& Co., Room 1 over Post Office, Junetion, Main and Delaware streets.
FISHER \& CO., 1004 Main street.
FAUCHER \& WHITEHEAD, 17 West 5 th street, Room 5, Orr's Office Building.
J. R. HICKS \& CO., Dealers in Real Estate and Live Stock; post office box 118.
JOHN F. SDIONS, N. E. cor. 6th and Main streets ; post office box 1548.
THACHER \& WEBSTER, office, 16 West 5th street. COSE \& BALIS, 327 West 5th street.
BRYAN \& MYERS, office, 17 West 5th street. (C. W. Bryan; J. M. Myers.)
D. W. ROCKHOLD, cor. 5th and Main streets
W. P. TWYMAN, post office box 973 .

RICHARD F. BARRET, 17 Fifth street, Orr's Office Building.
J. K. KTMMONS, cor. 8th and Main streets.
D. W. ROCKHOLD, cor. th and Main sts., up-stairs.

## JACKSON COUNTY-KANSAS CITY, INDEPENDENCE, WESTPORT. WYANDOTTE, KAS.

## Religious Book Depository.

SAMUEL ARCHER \& CO., 1015 Main street.

## Salt Dealers

W. H. POWELL \& CO., Sole Agents for "LaBelle" Nails and Ohio River Salt; office, 317 Delaware st.

Sash, Doors, Blinds, Mouldings, Etc.
H. HANSON \& CO., Wholesale Dealers; office and salesroom, Bth street, near Union Railroad Depot, West Kansas City.
JOHN W. Lee, 1319 Main street

## Scale Works.

GOOLMAN'S SCALES, Patented May 23, 1871, W. P Goolman, Patentee, cor. Walnut and 20th streets.

## Schools.

GERMAN EVANGELICAL ST. PETER'S SCHOOL, under supervision of Pastor.
KANSAS CITY HIGH SCHOOL, W. J. Pratt, Princ.

## Sewing Machines.

SNNGER SEWING MACHINE CO., 616 Main street; L. P. Swayne, Agent.

GROVER \& BAKER SEWING MACHINE CO., 1130 Main street; Geo. M. Forster, Agent.

Shirt Manufacturers.
SAYERS \& WHITE, 18 West 5th street.

## Soap Manufacturers.

PEET BROTHERS, Manufacturers of Family, Castile, and Toilet Soaps, cor. MeGee and 20th streets.

## Steamboat Agents.

W. A. M. VAUGHAN, General Steamboat Agent; office, West Levee.

## Stock Agent

J. E. FINEHART, Live Stock Agent, St. Louis, Kansas City \& Northern Railway; also, Louisiana Short Line via Mexico to Chicago through Jacksonville and Bloomington. Post Office address, Union Stock Yards, Kansas City

## Stock Yards.

KANSAS STOCK YARD CO., James M. Walker, Chicago, Ill., President ; James F. Joy, Detroit, Mich., Treasurer; Geo. N. Altman, Kansas City, Secretary; J. D. Smith, Superintendent, Kansas City.
W. T. KEENAN \& CO., Stock Brokers; Union Stock Yards Chicago and St. Louis. Kansas City office, at Kansas Stock Yards.
J. L. MITCHNER, Stock Broker, office at Kansas Stock Yards.
R. STRAHORN \& CO., Live Stock Brokers, Kansas City, Chicago and St. Louis.
GREGORY, STRADER \& CO., Chicago, Ill.; have established two Branch Houses. one at St. Louis, the other at Kansas City, Mo. Address, Gregory, Strader \& Co., Pacific Yards, St. Louis, or Union Yards, Kansas City, Mo.

## Surgeons.

Dr. WM. MARTIN, office and residence, $\mathbf{7 1 3}$ Main st.
Treatment of Cancer \& Sexual Diseases.
Dr. E. E. PERKINS, 921 Main street.

## Trunk Manufacturer.

LOUIS GEORGE, Manufacturer, Wholesale and Retail Dealer in Trunks, Valises, etc., 230 Main street.

## Undertakers.

J. T. WELDEN, 1016 Main street. CARLAT \& CLAES, 211 Main street.
U. S. Officers.

JOHN K. CRAVENS, U. S. Commissioner and Register in Bankruptcy.
Dr. J. THORNE, U. S. Assessor for the 6th District of Missouri; office, 720 Main street
J. V. C. KEARNS, U. S. Commissioner

Veterinary Surgeons.
W. P. HUMPHREY, (Member Penn. Veterinary Surgeons) ; office south side Public Square.

Wall Paper, Window Shades, Etc,
MATT FOSTER \& CO., 615 Main street.
SAM. ARCHER \& CO., 1015 Main stree

## INDEPENDENCE.

Attorneys at Law.
WOODSON \& SHELEY.
WM. CHRISMAN.
J. H. SLOVER.

Banks and Bankers.
CHRISMAN, SAWYER \& CO., Bankers.
Clergymen \& Churches.
OLD SCHOOL PRESBYTERIAN CHURCH. M. M. Fisher. D.D., Pastor.
CHRISTIAN CHURCH, Alex. Procter, Pastor.
AFRICAN M. E. CHURCH, John A. Fouche, Pastor.

## Hotels.

NOLAND HOUSE, A. A. Howell, Proprietor

## Insurance Asent

PETER HINTERS represents the following Companies ' North British,' 'Mercantile,' 'Underwriters,' of New York;'Triumph,', Cincinnati, and 'Germania Life.'

## Institutions of Learning.

INDEPENDENCE FEMALE COLIEGE, Rev. M. M. Fisher, D.D., President; Teachers: Miss S. A. Allen, Miss M. T. Henderson, Henry E. Schultze, Mrs. M. C. Moulton.
woodland boarding school, Male and Female, A. E. Higgason, President; Teachers: A. Procter, A. F. Smith, I. Hughes, E. J. Jackson.

## Justice of the Peace.

PETER HINTERS, Justice and Notary.
Livery, Sale \& Exchange Stables.
J. W. PERRY, north of Noland House, first block opposite County Jail.

## Marble Dealer.

JAMES CULBERSON, Dealer in Italian and American Marble, Monuments, Tombstones, etc.

## Newspaper, Book \& Job Printer.

" INDEPENDENCE SENTINEL," Southern Walker, Proprietor, J. N. Southern, Editor.

## Physicians and Surgeons.

J. P. HENRY.

JOHN BRYANT \& SON.

## WESTPORT.

Attorneys at Law
JAMES H. KINKEAD.
Clergymen and Churches.
FIRST CUMBERLAND PRESBYTERIAN CHURCH, Walter Schenck, Pastor.

## KANSAS.

## WYANDOTTE.

## Attorneys at Law.

A. B. BARTLETT, Nos. $1 \& 2$ Cook's Building. M. B. NEUMAN, Cook's Building. D. B. HADLEY, Minnesota avenue, North side. COOK \& SHARP, cor. Minnesota avenue and 3d street, up-stairs, rooms $5 \& 6$.
SCROGGS \& BARTLETT, practice in all Courts in Missouri and Kansas, and Federal Courts. Office, cor. Minnesota avenue and 3d street
GLICK \& HOLLINGSWORTH, Minnesota avenue. bet 4th and 5th streets.

## Insurance Agent.

R. B. ARMSTRONG, Fire and Life Insurance Agent, office, Cook's Building.

## Notaries.

EDWARD L. BARTLETT, office, cor. 3d street and Minnesota avenue.

## Publishers, Book \& Job Printers.

WYANDOTTE WEEKLY GAZETTE, cor. Nebraska avenue and 3d street; R. B. Taylor, Editor and Prop.

Real Estate Agents.
NEUMAN \& ARMSTRONG, Cook's Building. JOHN S. COX, Minnesota avenue, bet. 4th and 5th sts.

## BUCHANAN COUNTY.

## SAINT JOSEPH.

The estimation in which the work is held by Professional and Business Men is shown by the following nartial List of our Subscribers in this City.
 STRONG \& HEDENBERG, 76 Felix street.

## Academies.

ST. JOSEPH COLLEGE, conducted by the Christian Brothers; established 1867 ; incorporated 1872. Bro. Agatho, President. Located on 13th street, between Henry and Rielenbaugh.
SEMINARY OF THE SACRED HEART, under the direction of the Religieuses of the Sacred Heart; established 1853; incorporated 1867. M. E. Hamilton, Superior.
YOUNG LADIES INSTITUTE, N. E. cor. 5th and Antoine streets. Rev. Chas. Martin, Principal.

## Agricultural Implements.

GEORGE LYON, cor. 4th and Messanie streets. G. C. FORRY, 7 South Second street.

BUFORT \& W ARREN, Roek Island Agricultural Ware house, 34, S. 4h street, one door south of Post Office.

## Architects.

W. ANGELO POWELL, N. W. cor. 4 th and Edmond.
G. A. KARWIESE, N. E. cor. 3d and Felix; post office box 1666.
STIGERS \& BOETTNER, 91 Edmund street

## Attorneys at Law.

H. M. \& A. H. VORIES, Francis, between 2d and 3d. MURAT MASTERSON, Hamilton's New Building, cor. 4th and Edmond.
HALL \& OLIVER, Francis street, between 4th and 5th. W. P. Hall; M. Oliver.

WOODSON, VINYARD \& YOUNG, S. W. cor 4th and Francis streets. S. Woodson; R. R. Vinyard; S. A. Young.
LANCASTER \& VANWATERS, S. E. cor. 4th street and Francis.
JOHN DONOVAN, west side 5th street, between Felix and Francis.
RAMEY \& LINCOLN, N. W. cor. 4th and Edmond. JEFF. CHANDLER, St. Joseph.
JUDSON \& BARNARD, Francis, between 4th and 5th. HENRY K. WHITE, south side Francis, between 4th and 5 th.
H. C. \& J. K. TOOLE, opposite State National Bank, Felix, between 4th and 5̈th.
M. L. HARRINGTON, 74 Felix street.

EUGENE AYRES, N. E. cor. 4 th and Edmond.
THOMPSON \& CROSBY, St. Joseph.
FRED. T. LEDERGERBER, 102 Felix.
A. SALTZMAN, Edmond street, between 4th and 5th.

## Auctioneers.

W. L. CHADWICK, east side Market square, 2 d door south of Felix.

## Banks and Bankers.

FIRST NATIONAL BANK, Thos. E. Tootle, President; Jos. C. Hull, Cashier.

## Banks and Bankers

## Continued.

GERMAN SAVINGS BANK, Capital, $\$ 100,000.00$, with double liabilities. Organized May, 1869. John Pinger, President; H. R. W. Hartwig, Vice President; I. G. Kappner, Cashier.

STATE NATIONAL BANK, A. M. Saxton, President; C. B. France, Cashier.

BANKING HOUSE of A. BEATTIE, established December 1852, 7 South 3rd street.
BUCHANAN BANK, George T. Hoagland, President, John Williams, Cashier.
COLHOUN BANK, Capital $\$ 800,000.00$. William Zook, President; John Colhoun, Cashier.
REAL ESTATE SAVINGS ASSOCIATION, Capital, $\$ 120,000$. A. Kirkpatrick, President; B. S. Carter, Secretary; James Hull, Treasurer, S. E. cor. 3d and Francis.

## BIII Poster.

MARK JENKINS, Lessee of all walls and mammoth bill boards in the city. Posting and distributing done in boards in the city. Posting and distributing done in
adjacent towns. Office under Pacific Hotel. Post adjacent town

Book Binders and Blank Book Manufacturers.
ST. JOSEPH STEAM PRINTING COMPANY, Printers, Binders, and Blank Book Manufacturers, S. W cor. Felix and 2d streets. F. M. Posegate, Proprietor.

## Boot and Shoe Manufacturers.

LEONARD \& SCHMIDT, Wholesale Manufacturers of Home-made Boots and Shoes, 24 S. 3rd and 63 Edmond street.

## Bridge Builders

C. BAKER \& CO., Patentees and Builders of Baker's National Truss Bridge, Office, south side Francis, between 3rd and 4th.
ST. JOSEPH BRIDGE BUILDING CO., Ed. D. Mason, Chief Engineer.

## Building Companies.

ST. JOSEPH BUILDING CO., subscribed capital \$1, $225,000.00$; paid up capital, $\$ 214,825.50$. J. M. Street, President, F. L. McLean, Secretary. Office, N. S. Francis, between 3rd 4th.
ST. JOSEPH \& KANSAS LOAN \& BUILDING CO. J. M. Street, President; F. L. McLean, Secretary North side of Francis, between 3d and 4th streets.

## Building Materials.

JOHN CLARK, Wholesale Dealer in Building Material Lime, Cement, Plaster, Hair, etc.; Building and Roofing Paper; Manufacturer's Agent for Stone Sewer Pipe, cor. 6th and Charles.

## Business College.

BRY NTS BUSINESS COLLEGE Has no superior. Full particulars sent to any address. Thos. J. Bryant, Principal.

## Carpenters and Contractors.

JOHN DE CLUE, office and shop, cor. 3d and Messanie. R. K. ALLEN, N. side Francis, between Main and 2d.

## Carriage Builders.

velty Carriage works, Mcbain \& Miles, Manufacturers of Carriages, Buggies and Spring Wagons. Office and Works on Charles street, between 2nd and 3rd.
STUDEBAKER BROTHERS MANUFACTURING COMPANY, located S. E. cor. 4 th and James.

## Clergymen and Churches.

ST. JOSEPH CATHEDRAL (CATHOLIC), cor. 10th and Isadore streets. It. Rev. John T. Hogan, Bishop. CHURCH OF IMMACULATE CONCEPTION (German), S. E. cor. 10th and Angelique. Rev. C. Linnencamp, Pastor
First Presbyterian church (o. s.), N. E. cor. 7th and Jule. Rev. J. G. Fackler, Pastor.
WESTMINSTER CHURCH (N. S.), north side of Felix, between 7th and 8th. Rev. Henry Bullard, Pastor. FIRST BAPTIST, S. E. cor. 6th and Francis. Rev. J. M. C. Breaker, Pastor.

CHRISTIAN CHURCH, N. W. cor. 3rd and Robidoux. Rev. Joseph J. W yatt, Pastor.
FRANCIS ST. METHODIST EPISCOPAL CHURCH, (South,) N. W. cor. 7th and Francis. Rev. E. R. Hendrix, Pastor.

## Coal Agent.

J. H. SEIP, Hannibal \& St. Joe R. R. Depot.

## Commission Merchants.

W. L. CHADWICK, east side Market square, 2d door south of Felix.
G. C. FORRY, 7 North 2 d street.

## Courts, County Omfes, Etc.

SUPREME COURT, P. Bliss, David Wagner, Wash Adams, Judges ; Litt. R. Lancaster, Clerk.
CIRCUIT COURT, Bennett Pike, Judge; Wm. Ridenbaugh, Clerk.
COMMON PLEAS, W. C. Toole, Judge; Wm. Ridenbaugh, Clerk.
COUNTY COURT, John B. Harder, Clerk.
PROBATE COURT, James P. Pettigrew, Judge.

## Cracker Bakery

S. D. KING \& CO., Manufacturers, Wholesale Dealers in Coffee, Spices and Crackers. Excelsior Coffee and Spice Mills. Excelsior Cracker Factory, 38 \& 40 4th street.

## Dentists.

DR. CHAS. H. DARBY, north side Francis street, between 3rd and 4th.
J. M. AUSTIN, Rooms 76 and 78, Felix street, near 3 d . E. HEWLETT, Surgeon-Dentist, 83 Felix street, over Woolworth \& Colt's Book Store.

## BUCHANAN COUNTY-ST. JOSEPH.

## Dry Coods (Wholesale)

BAILEY, KAY \& CO., 17 N. 3rd street. R. L. MCDONALD \& CO., S. W. cor. 4th and Felix.

## Foundries.

UNION FOUNDRY AND MACHINE SHOP, BURN side, Crowther \& Rogers, Manufactr.'s of Steam Engines, Iron and Brass Castings in all its branches, Iron Fronts and Shutters made to order. Works, cor. 8th and Messanie streets. Agents for Gardner \& Robertson's Improved Patent Governor.

## Crain Dealers.

HORTON \& KERR, Storage, Forwarding and Grain Merchants, and General Steamboat Agents, St. Joseph, Mo.

## Cuns and Sporting Articles.

FRANK G. HOPKINS, Wholesale and Retail Dealer in and Manufacturer of Shot Guns, Rifles, Pistols, Fishing Tackle, Seines, Seine Twine, Trammel Nets, Shot, Powder, Metallic Cartridges, Gun Materials. and Sporting apparatus of all kinds, 22 Second street

## Hides and Skins

LEONARD \& SCHMIDT, Dealers in Hides, Leather and Findings 24 S .3 rd and 63 Edmond street

## Insurance Companies.

ST. JOSEPH FIRE \& MARINE INSURANCE CO. incorporated 1867. Geo. W. Samuel, President; P. L. McLaughlin, Vice President; Jno. Nicely, Secretary ; Wm. R. Kerr, General Agent.
HOME INSURANCE COMPANY OF ST. JOSEPH, John Pinger, President; Wm. R. Penick, Vice President; D. M. McDonald, Secretary.
ST. LOUIS MUTUAL, J. M. Street, General Agent for North Missouri, Kansas and Indian Territory, N. W. cor. 2d and Francis streets.
R. S. MONROE, Represents "Phœnix," "Hartford," "North America," Philadelphia; "Union," Califor(Life); "Penn" (Fire).
J. A. Mcmenamy, Notary Public and General Agent, S. E. cor. 3d and Felix streets.
J. L. HANNA, General Insurance Agency, representing over $\$ 70,000,000$. N. E. cor. 3 d and Felix streets.
P. V. WISE, Represents "Franklin," "Citizens," "Boat men's," "Commercial," "Washington," all of St Louis, Mo.;"Merchants'" and "People's," of Newark, N. J.; "Franklin," of Wheeling, W. Virginia, Capital over $\$ 3,000,000$.

## Intelligence Office.

MARK JENKINS, Proprietor and Manager, office under Pacific Hotel; post office box 398.

## Jewelers.

BALDWIN \& CO., Wholesale and Retail Jewelers, 95 Felix, and 2 N. 4th street.

## Job Printing.

FRANK SWICK, Railroad and Commercial Printer, Edmond street, near 3d.

## Land and Ceneral Claim Agent

J. C. BENDER, 97 Edmond street.

## Leather and Shoe Findings.

I. G. HAMMAN, 12 Third street.

## Livery Stables.

M. G. FISH \& CO., cor. 2d and Jule streets.

ECLIPSE LIVERY STABLE, cor. 4th and Charles sts W. L. Cundiff \& Co., Proprietors.

Lumber Merchants, Wholesale and Retall.
GEO. T. HOAGLAND, S. E. cor. 5th and Angelique. WATERMAN \& BERNARD, Office and Yard S. 4th st. GEORGE LYON, cor. 4th and Messanie streets.
WM. DOCKENDORFF, Manufacturer and Wholesale Dealer in Lumber, Lath, Shingles, Doors and Sash, Mouldings, etc. Office and Yard, cor. 8th and James streets.
DOUGHERTY, RAY \& CO., Wholesale and Retail Dealers in Lumber, and Building Material of all kinds. Office and Yard cor. 8th and Edmond streets.

## Manufacturers.

ST. JOSEPH STARCH CO. WORKS, established 1872. O. N. Bayly, Manager.

STUDEBAKER BROTHERS, Manufacturers of Express, Farm and Spring Wagons. J. S. Welch, Manager.
CLIPPER PLOW MANUFACTURING CO., R. C Bradshaw \& Co., proprietors.
JOHN Declue, Manufacturer of Sash, Doors, Blinds, etc. Office cor. 3 d and Messanie streets.
BURNSIDE, CROWTHER \& ROGERS, Manufacturers of Steam Engines and Brass Castings, etc. Works, cor. 8th and Messanie streets.
LEONARD \& SCHMIIDT, Manufacturers of Boots and Shoes, 24 S. 3rd, and 63 Edmond street.
GEO. BUELL \& CO., Manufacturers of and Dealers in Woolen Goods and Wool. Office and Factory N. 3d street.
McBAIN \& MILES, Manufacturers of Carriages, Buggies and Spring Wagons. Office and Works, Charles street, between 2 d and 3 d .
F. ENDEBROCK, Manufacturer of all kinds of Traveling and Packing Trunks and Valises, wholesale and retail, 33 Second street, between Francis and Jule streets. Repairing neatly done.
A. M. BARD, Manufacturer of Tin Roofing Galvanized Iron Cornices, Tin and Sheet Iron Ware, etc.

## Marble Dealers.

ISAAC B. THOMPSON, cor. 9th street and Frederic avenue.

## Mercantile Agencies-

THE MERCANTILE AGENCY, R. G. DUNN \& Co., N. E. cor. 4th and Felix streets. Established 1841. P. P. McInerny, Manager. This institution supplies information in detail (to subscribers only) as to the antecedents, character, capacity and capital of every business man in the United States, and British Provinces.
ST. JOSEPH COMMERCLAL AGENCY, Strongs \& Wedenberg, Proprietors, 74 Felix street.

## Newspapers, Book and Job Printers.

DAILY \& WEEKLYGAZETTE, established 1843; Wm. Ridenbaugh \& Co., Proprietors.
THE HERALD (Daily \& Weekly), the oldest, largest and most widely circulated Republican Paper in the State outside of St. Louis. Wilkinson \& Bittinger, Proprietors.
WESTLICHES VOLKSBLATT (GERman, Daily and Weekly). C. Eichler \& Co., N. E. cor. Charles and 3 d streets.
DAILY EVENING COMMERCIAL, the livest Newspaper and best Advertising Medium in Northwest Missouri. Chas. C. Scott, Publisher.
ST. JOSEPH STANDARD (WeekLy), R. R. Calkins Editor, cor. 5th and Francis streets.
ST. JOSEPH DEMOCRATIC REFLECTOR (WEEKLY), J. A. Millan \& Co., Editors and Proprietors, N E. cor. 4 th and Edmond streets.

## Notaries Public.

P. V. WISE, Notary Public and Conveyancer. Law and Collection Office, N. W. cor. 4th and Edmond streets.

## Notaries Public.

Continued.
C. M. LINCOLN, N. W. cor. 4th and Edmond streets. EUGENE AYRES, N. E. cor. 4 th and Edmond streets. J. C. BENDER, 93 Edmund street.

## Oculists.

Dr. D. I. CHRISTOPHER, Makes a specialty of all diseases of the Eye, and treats them without the use of eases of the Eye, and treats them without the use of
Caustic. Artificial Eyes carefully inserted. Office, cor. 3d and Felix streets.

## Opticians.

BALDWIN \& CO.. 95 Felix street.

## Photographers.

RUDOLPH UHLMAN, 51 Edmond street
L. F. COOK, N. E. cor. 4 th and Edmond street.

AUGUST RIPPLE, 77 and 79 Edmond street.

## Railroad Companies

B. \& S. W. R. R. ROBERT GUNN, General Agent.

## Real Estate.

J. A. McMENAMY, Conveyancer and General Agent, S. E. cor. 3d and Felix streets, over Colhoun Bank. DONOVAN \& SAXTON, Office 5th street, between Felix and Francis
RAMEY \& LINCOLN, N. W cor. 4th and Edmond streets.
F. W. SMITH, Dealer in Real Estate. Manufacturing sites for sale or lease. Post office box 407.
W. L. CHADWICK, 4, east side of Market Square. J. C. BENDER, 93 Edmond street.

## Schools.

E. B. NEELY, Superintendent St. Joseph Public Schools. ST. PATRICK SCHOOL (Catholic), N. W. cor. 11th and Monterey; in charge of the Christian Brothers. Bro. David, Director.
ST. JOSEPH HIGH SCHOOL, S. E. cor. 10th and Edmond streets. John S. Crosby, Principal.
EVERETT SCHOOL, S. E. corner 13th and Olive sts. Nathan Somerville, Principal.

## Seed Store.

G. C. FORRY, 7 Second street.

## Sewing Machines.

HOWE SEWING MACHINE CO., Francis street, 2d door west of 5 th.
REMINGTON EMPIRE SEWING MACHINE CO., 96 Francis street. L. L. Richmond, Agent.
For beauty, utility, durability, neatness, and perfection of stitch; easiness and stillness of running, THE BLEES SEWING MACHINE defies competition. Wm. O. Lee \& Co., General Agents.

## Stoves and Furnaces.

A. M. BARD, Wholesale Stoves, Tinware, Tin Plate, Sheet Iron and Tinners' Stock. 67 and 69 Edmond.

## U. S. Omfes.

W. Z. RANSON, U. S. Collector of South District. M. L. HARRINGTON, Register in Bankruptcy.

Wagon Manufacturers.
STUDEBAKER BROS. MANUFACTURING CO. Mcbain \& miles, Novelty Carriage Works.

Watches, Clocks and Jewelry.
BALDWIN \& CO., Watch and Clock Makers, Silversmiths and Jewelers, 95 Felix street.


[^0]:    * I am indebted to Dr. Shumard for the information pussessed respecting the Niagara and Lower Helderberg Groups, and the Oriskany Sandstone, as I have not examined those formations very carefully.

