

depth does not exceed 12 or 13 feet. The first appropriation by Congress to secure increased depth was made in 1837, and was expended in an elaborate survey and in a system of dredging by buckets, but the plan of a ship canal was also discussed. At the next appropriation, made in 1852, a board of officers, appointed by the war department, recommended trying in succession—(1) stirring up the bottom by suitable machinery, (2) dredging by buckets, (3) constructing parallel jetties 5 miles long at the south-west pass, to be extended as found necessary, (4) closing lateral outlets, and (5) constructing a ship canal. A depth of 18 feet was secured by the first plan, and was maintained until the available funds were exhausted. Under the next appropriation (1856) an abortive attempt was made to apply the plan of jetties to the south-west pass. This failed from defects in execution by the contractors, but a depth of 18 feet was finally secured by dredging and scraping. The report of 1861 discussed the subject of bar formation at length. Although it approved the plan of jetties and closure of outlets as correct in theory, the stirring up of the bottom by scrapers during the flood stages of the river (six months annually) was recommended by it as the most economical and least objectionable. After the war this recommendation was carried into effect for several years with improved machinery, giving at a moderate annual cost a depth at times reaching 20 feet at extreme low water, but experience indicated that not much more than 18 feet could be steadily maintained. This depth, entirely satisfactory at first, soon became insufficient to meet the growing demands of commerce, and in 1873 Major Howell, the engineer in charge, revived the project of a ship canal. The subject was discussed carefully by a board of army engineers, the majority approving a ship canal. In 1874 Congress constituted a special board which, after visiting Europe and examining similar works of improvement there, reported in favour of constructing jetties at the south pass, substantially upon the plan used by Mr Caland at the mouth of the Meuse; and in March 1875 Captain J. B. Eads and associates were authorized by Congress to open by contract a broad and deep channel through the south pass upon the general plan proposed by this board. This contract called for "the maintenance of a channel of 30 feet in depth and 350 feet in width for twenty years" by "the construction of thoroughly substantial and permanent works by which said channel may be maintained for all time after their completion." The jetties were to be not less than 700 feet apart. The sum of \$1,080,000 was to be paid for obtaining this channel and \$412,000 for maintaining it for twenty years. In addition the contractors were authorized to use any materials on the public lands suitable for and needed in the work. The south pass was 12 $\frac{1}{2}$ miles long. It had an average width of 730 feet and a minimum interior channel depth of 29 feet. The distance from the 30-foot curve inside the pass across the bar to the 30-foot curve outside was 11,900 feet. The minimum depth at average flood tide on the bar was about 8 feet. The discharge at the mouth was about 57,000 cubic feet of water per second, transporting annually about 22 million cubic yards of sediment in suspension to the Gulf. A small island and shoal existed at the head of the pass, the channel there having a minimum depth of 17 feet. The work was begun on June 2, 1875, and has been so far successful that during the year ending June 30, 1882, a channel was maintained having a least depth of 30 feet between the jetties and extending through the bar. Its least width was 20 feet, the average being 105 feet. The 28-foot channel had a least width of 200 feet, except for a few days. In the pass itself the 26-foot channel had a least width of 50 feet. A very powerful dredge-boat was at work between and beyond the jetties 87 days, of which 51 were devoted to the channel in the Gulf. A deepening of 6 feet has occurred in Pass à l'Outre near its head since 1875. Up to the present time the work has proved of great benefit to the commerce of New Orleans.

For further details, see RIVER ENGINEERING. (H. L. A.)

MISSISSIPPI, one of the Southern States of the American Union, derives its name from the river which for more than 500 miles forms its western boundary between the 35th and 31st parallels of north latitude, separating it from Arkansas and Louisiana. The boundary with the latter State is continued along the 31st parallel, for 110 miles, to the Pearl river, and then down the Pearl to its mouth. The Gulf of Mexico, eastward from the mouth of Pearl river, completes the southern boundary. On the north the 35th parallel, from the Mississippi river to the Tennessee, separates the State from Tennessee, and the boundary then follows the latter river to the mouth of Bear Creek, in 34° 53' N. lat. and 88° 15' W. long. The eastern boundary of the State, separating it from Alabama, follows a line drawn from the mouth of Bear Creek about seven degrees west of south to what was

"the north-western corner of Washington county on the Tombigbee," and thence due south to the Gulf of Mexico. Ship, Horn, Cat, and Petit Bois Islands, and those nearer the shore, form a part of Mississippi. The extreme length of the State, north and south, is 330 miles, and its maximum breadth is 188 miles. Under the United States surveys, begun in 1803, the State has been divided into townships and sections, except such parts as were at the first owned by individuals. The area of the State is given in the census reports for 1880 as 46,340 square miles.

Topography.—There are no mountains in Mississippi, but a considerable difference of level exists between the continuously low, flat, alluvial region lying along and between the Mississippi and Yazoo rivers, called "the Bottom," and nearly all the remainder of the State, which is classed as upland. The latter part, comprising five-sixths of the whole, is an undulating plateau whose general elevation above the water of the Gulf of Mexico increases to 150 feet within a few miles of the coast, and varies elsewhere from 150 to 500 or 600 feet. Some exceptional ridges are probably 800 feet high. The streams of this region flow in valleys varying in width from a few hundred yards to several miles. The fall of each river is not great, and is quite uniform. Usually a considerable part of the valley of each larger stream is several feet above its present high water mark, and forms the "hommock," or "second bottom" lands. On some of the rivers the lowest part of the valley, subject to overflow, is several miles in width, and bears a resemblance to the Mississippi Bottom.

Ridges or plateaus everywhere in the upland region divide the contiguous basins of creeks and rivers, descending more or less abruptly to their valleys. In the north-eastern part of the State, almost level prairies cover large areas overlying a Cretaceous formation called Rotten Limestone.

A line of abrupt bluffs, extending southward from the north-west corner of the State, divides the upland region from the Bottom, where the general surface lies below the high-water level of the Mississippi river. A few low ridges, running north and south, and embracing about 200,000 acres, are barely above high water. The cultivated lands in the Bottom lie on these, and on the borders of the rivers and the numerous lakes and bayous, where the surface is slightly elevated. Low swamps or marshes, in which flourish large cypress trees (*Taxodium distichum*), lie between the streams, and frequently receive the surface drainage from their banks. Large forest trees and dense cane-brakes (*Arundinaria gigantea*) occupy the drier ground. The Mississippi river is prevented from flooding the Bottom during high water by a system of levees or embankments built by a fund derived partly from taxation on the land and partly from the proceeds of the sale of public lands in the State classed as "swamp lands," which were given over for this purpose by Congress. The only compensation for the injury done when breaks in the levees ("crevasses") occur is the deposit of alluvial matter left by the overflow, which adds to the productiveness of the already wonderfully fertile soil. The present levee system usually protects about one-fourth of the 4,000,000 acres in the Bottom. Many crescent-shaped lakes ("cut-offs") occur in the Bottom. Similar phenomena present themselves in the channels of the other rivers having wide bottoms.

The volume of water in the streams varies greatly during the year, and is usually largest between the months of January and April. During high water all the larger streams are navigable by steamboats. These ply upon the Mississippi, Tennessee, and Yazoo rivers throughout the whole year. The rivers flowing into the Gulf are much obstructed by sand-bars, and are chiefly used for floating logs to the saw-mills on the coast.

The best and only deep harbour on the coast is the well-protected roadstead inside of Ship Island. It has a depth of 27 feet, a firm clay bottom, and is readily accessible to lighters from the shallower harbours along the coast.

Climate.—Near the waters of the Gulf of Mexico the climate is much milder than in the northern parts of the State. On the southern borders the temperature rarely falls to 32° Fahr., or exceeds 95°, the annual mean being about 68°. The orange, lemon, almond, banana, and olive can be grown without protection. In the latitude of Vicksburg the temperature ranges from 93° to 20°, very rarely lower; the annual mean is 65°. The range in the northern part of the State is from 98° to 15°, or rarely 10°, and the annual mean is 61°. The first and last hoar-frosts occur, in the central parts of the State, usually in the latter parts of October and March. The ground is seldom frozen to the depth of 3 inches, and only for a few days at a time. The rainfall on the coast is 60 to 65 inches per annum, and at the northern boundary 50 inches. While about two-thirds of this precipitation occurs in winter and spring, a month seldom passes without several inches of rainfall.

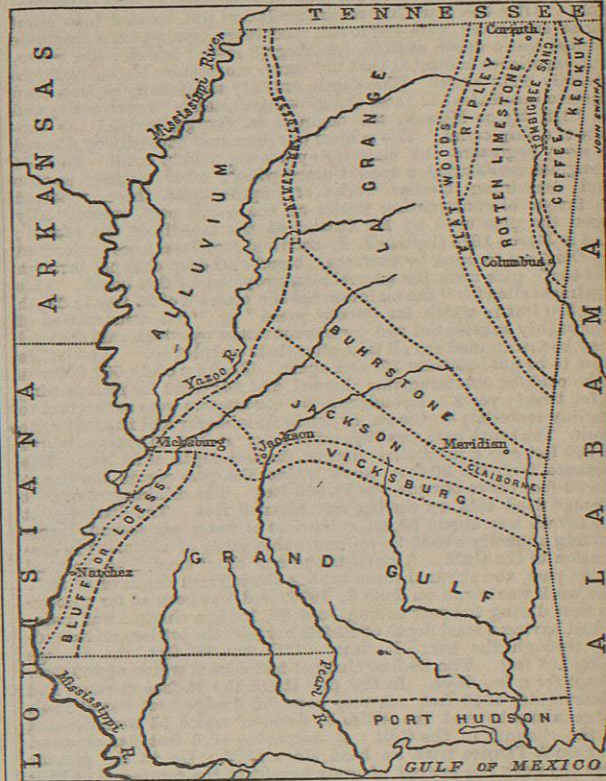
Land and sea breezes in the south, and variable winds elsewhere, make the heat of summer tolerable. In healthfulness Mississippi compares favourably with other States. The average death-rate of thirteen States, variously situated, as given in the census of 1880, is 1.33 per cent.; that of Mississippi is 1.19 per cent. Where the surface is flat and poorly drained malarial fevers are prevalent during the warm season. Yellow fever has become epidemic after importation, but strict quarantine has been successful in preventing it.

Geology.—In accordance with an Act of the legislature passed in 1850, an agricultural and geological survey of the State was begun, which continued, with interruptions, until 1871. Two reports have been published, one in 1854 and another in 1860.

The geological structure of the State is comparatively simple, and closely related to that of the adjacent States. The older formations are nearly all overlaid by deposits of the Quaternary period, which will be described last. In the extreme north-eastern portion are found the oldest rocks in the State,—an extension of the Subcarboniferous formation which underlies the Warrior coal-fields of Alabama. The strata here show some traces of the upheaval which formed the Appalachian mountain chain, whose south-west termination is found in Alabama. When this chain formed the Atlantic mountain-border of the continent, excepting this north-east corner, Mississippi had not emerged from the waters of the ancient Gulf of Mexico. As the shore-line of the Gulf slowly receded southward and westward, the sediment at its bottom gradually came to the surface, and constituted the Cretaceous and Tertiary formations of this and adjacent States. Wherever stratification is observed in these formations in Mississippi, it shows a dip west and south of 20 or 30 feet to the mile. The Cretaceous region includes, with the exception of the Subcarboniferous, all that part of the State eastward of a line cutting the Tennessee boundary in 89° 3' W. long., and drawn southward and eastward through the towns of Ripley, Pontotoc, and Starkville, crossing into Alabama in latitude 32° 45'. Four groups of Cretaceous strata have been determined in Mississippi, defined by lines having the same general direction as the one just described. The oldest, bordering the Subcarboniferous, is the Eutaw or Coffee group, characterized by bluish-black or reddish laminated clays, and yellow or grey sands, containing lignite and fossil resin. Westward and southward to the city of Columbus is the Tombigbee sand group, consisting chiefly of fine-grained micaceous sands of a greenish tint, with many marine fossils. Next in order, westward and southward, is the Rotten Limestone group, made up of a material of great uniformity,—a soft chalky rock, white or pale blue, composed chiefly of tenacious clay, and white carbonate of lime in minute crystals. Borings show the total thickness of this group to be about 1000 feet. Fossils are abundant, but species are few. The latest Cretaceous is the Ripley group, lying west of the northern part of the last-named group, and characterized by hard crystalline white limestones, and dark-coloured, micaceous, glauconitic marls, whose marine fossils are admirably preserved. One hundred and eighty species have been described. The total thickness of the Cretaceous is about 2000 feet. Deposits of the Tertiary period form the basis of more than half the State, extending from the border of the Cretaceous westward nearly or quite to the Yazoo and Mississippi Bottom, and southward to within a few miles of the Gulf coast. Seven groups of the Tertiary strata have been distinguished. Beginning nearest the Cretaceous, the Flatwoods group is characterized by grey or white clays, and a soil which responds poorly to tillage. The Lagrange group, lying to the west of the last, is marked by grey clays and sands, fossil plants, and beds of lignite or brown coal, sometimes 3 feet in thickness. The Bahrstone group, lying south-westward from the last, is characterized by beds of white siliceous clays, and of silicified shells, and sandy strata containing glauconite in valuable quantities. The Claiborne group lies south of the last, and is slightly developed in Mississippi, but well-marked in

Alabama. The Jackson group, south-west of the last two, is made up chiefly of soft yellowish limestones or marls, containing much clay, and sandy strata with glauconite. Zeuglodon bones and other marine fossils are abundant. The Vicksburg group lies next in order south-westward, and is characterized by crystalline limestones and blue and white marls. Marine fossils are very abundant. More than one hundred and thirty species have been determined. The Grand Gulf group, showing a few fossil plants and no marine fossils, extends southward from the last to within a few miles of the coast.

The oldest formation of the Quaternary period is the "orange sand" or "stratified drift," which immediately overlies all the Cretaceous groups except the prairies of the Rotten Limestone, and all the Tertiary except the Flatwoods and Vicksburg groups and parts of the Jackson. Its depth varies from a few feet to over 200 feet, and it forms the body of most of the hills in the State. Its materials are pebbles, clays, and sands of various colours from white to deep red, tinged with peroxide of iron, which sometimes cements the pebbles and sands into compact rocks. The shapes of



Geological Map of Mississippi State.

these ferruginous sandstones are very fantastic,—tubes, hollow spheres, plates, &c., being common. The name stratified drift is used by the geologist of Alabama to indicate its connexion with the northern drift. The fossils are few, and in some cases probably derived from the underlying formations. Well-worn pebbles of amorphous quartz, agate, chalcedony, jasper, &c., are found in the stratified drift along the western side of the Tertiary region of the State, and from Columbus northward. "While this formation is not well understood, it seems tolerably well established that the melting of the great glaciers of the north furnished the water which brought with it fragments of the rocks over which it passed, and flowed into the Gulf with a current which was most rapid where the pebbles were dropped, but overspread the remainder of the State with a gentler flow, leaving sands and clays" (E. A. Smith). The second Quaternary formation is the Port Hudson, occurring within 20 miles of the Gulf coast, and probably outcropping occasionally in the Mississippi Bottom. Clays, gravel, and sands, containing cypress stumps, drift-wood, and mastodon bones, are characteristic. The loess or bluff formation lies along the bluffs bordering the Bottom, nearly continuously through the State. Its fine-grained, unstratified silt contains the remains of many terrestrial animals, including fifteen mammals.

The surface and subsoil of nearly all the upland region of Mississippi, the southern part being the exception, is composed of yellow loam or brick-clay containing no fossils, and showing no stratification. The soil of the Rotten Limestone region is similar in its general make up, but is black, and contains more lime and clay. Both are regarded as an independent aqueous deposit, posterior to the stratified drift and bluff formations, and anterior to the alluvium of the present epoch. The "second bottoms," probably, are later than the yellow loam, and belong to the "terrace epoch." The latest formation, alluvium, is strongly marked, and covers a large area in the Yazoo and Mississippi Bottom, and along other streams.

The following are the equivalents of the Mississippi groups in Dana's Geology:—

Table mapping geological groups: Quaternary (Alluvium, Loom and loess, Port Hudson, Drift) to Tertiary (Eocene: Upper, Middle, Lower) to Cretaceous (Upper, Lower) to Subcarboniferous (Kookuk).

Minerals.—Metallic ores are not found in Mississippi in paying quantities. The only valuable minerals are sandstones and limestones, marls, sands, lignite or brown coal, and fire-clays. None of these have been extensively brought into market. Potable water is found almost everywhere. Artesian wells furnish it in the Rotten Limestone region, when bored into the underlying Coffee strata.

Fauna.—Mississippi affords perhaps no species which are not found in the neighbouring States. There are thirty or forty species of Mammalia, the most remarkable being the American opossum, still quite abundant. The deer (Cervus virginianus), black bear (Ursus americanus), wolves (Canis lupus and Canis americanus), catamount (Felis concolor), and wild-cat (Lynx rufus) have much decreased in number, and may, like the buffalo and elk, shortly become extinct. About one hundred and fifty species of birds are found during at least part of the year. Many are seen only in transitu, and about twenty species from the north spend the winter here. The mocking bird (Mimus polyglottus), the most remarkable songster, is very abundant. The wild turkey (Meleagris gallopavo) survives by virtue of its wary and watchful character. Over fifty species of Reptilia have been found, prominent among which is the alligator (A. mississippiensis), which attains a length of 12 or 15 feet, and is common in the southern river bottoms. The rattlesnake, moccasin, and copperhead, venomous serpents, are occasionally found. About half of the sixty-three species of fish abounding in the fresh and salt waters of the State are valuable for food. The edible oysters and crustaceans of the coast are remarkably fine.

Flora.—Originally nearly the entire State was covered with a growth of forest trees of large size, mostly deciduous. The undergrowth was kept down by annual burnings by the natives, and the ground became carpeted with grasses and herbs. Over 120 species of forest-trees are found; many valuable ones are abundant, and their timber constitutes a large item in the resources of the State. Of the 15 species of oak the most valuable are the live-oak (Q. virens), found near the coast, and the white-oak (Q. alba), widely distributed. The cypress (Taxodium distichum) is very abundant in the bottoms. Various species of hickory, the chestnut, black walnut, sweet gum, cucumber tree, cottonwood (Populus deltoides), red cedar, elms, holly, magnolias, maples, ash, persimmon, sycamore, tupelo, and many others valuable for their timber, are abundant and of large size. The long-leaved pine (P. australis) forms the principal forest growth south of lat. 32° 15'. It attains a diameter of 2 or 3 feet, has a tall and shapely trunk, and its timber is unsurpassed in the variety of its uses. The census reports estimate the merchantable timber of this species now standing in the State at 18,200,000,000 feet, board measure. The amount cut in 1880 was 108,000,000 feet. The short-leaved pine (P. mitis), almost as valuable, is found in various parts, the quantity now standing being estimated at 6,775,000,000 feet. The total value of the pine timber of the State is about \$250,000,000.

Agriculture is the leading industry in Mississippi. Over 300,000 of the population are directly engaged in the cultivation of 4,895,000 acres of land. The character of the soil is varied, and all is productive, except that in the Flatwoods region and in the district covered with long-leaved pine, where only the valleys are fertile. At least half the State is exceptionally fertile. Not more than one-fourth of the arable land has been brought into cultivation, and two millions of acres of the best lands in the State, lying in the Bottom, might be made arable by proper drainage.

Cotton is the chief agricultural product; in 1880 Mississippi ranked first among the States in the amount raised. The crop of

1879-80 amounted to 955,808 bales, worth \$43,000,000. There were produced also of cotton seed 28,000,000 bushels, worth \$3,000,000; of Indian corn, 21,340,800 bushels; of oats, 1,959,620 bushels; of wheat, 218,890 bushels; of rice, 1,718,950 lb. Small quantities of rye, barley, molasses, and tobacco, and abundant crops of potatoes, yams, pease, and all garden vegetables, are annually produced.

Fruits of various kinds flourish in many parts of the State, and, with early vegetables, are largely shipped to the northern markets in spring and early summer. The value of the cotton crop is about three times as great as that of all the other products of the soil, which are sometimes insufficient for home consumption. Economically this specialization of agriculture is to be regretted; but successful efforts are being made to diversify it by growing other crops to which the soil and climate are equally well suited.

Manufactures.—The principal articles manufactured are lumber, cotton and woollen goods, cotton seed oil, and agricultural implements.

Population.—The number of inhabitants according to the different census returns from 1850 is given in the following table:—

Table with 5 columns: Census, Total, White, Coloured, Density per Sq. Mile. Rows for years 1850, 1860, 1870, 1880.

Of the coloured population, mostly freedmen and their descendants, 1738 were Indians or half-breeds in 1880, and about 60,000 mulattoes. The whites own nearly all the farms and other real property. The total property valuation in the State decreased from \$607,324,911 in 1860 to \$209,197,345 in 1870, on account of the losses in war and the liberation of the slaves. There has been, however, a rapid increase in the last decade. The towns in the State have small populations: in 1880 Vicksburg had 11,814 inhabitants, Natchez 7058, and Jackson, the State capital, 5204.

Administration.—The three departments, legislative, executive, and judiciary, are similar to those of other States. The governor and other executive officers are elected for four years. The legislature, which meets biennially, is composed of forty senators, serving four years, and one hundred and twenty representatives, serving two years. These are apportioned to the seventy-four counties according to population, and elected by the people. The judiciary officers, consisting of three justices of the supreme court, twelve circuit judges, and twelve chancellors, are appointed by the governor with the consent of the senate. One attorney-general and twelve district attorneys are elected by the people. The State maintains a public school system, with separate schools for the two races, costing in 1880 \$830,704, besides a State university and other schools of high grade for each of the races.

History.—Mississippi was first visited by Europeans in 1540, when the adventurous expedition of De Soto reached its northern parts. After the disastrous termination of this expedition no other Europeans visited this region until 1673, when Joliet and Pere Marquette descended the Mississippi to lat. 33°. In 1682 La Salle and Tonty descended to the mouth of the river, and claimed the whole region drained by it for the king of France, giving it the name Louisiana. In 1699 the first colonists reached the coast of Mississippi, sent from France under Iberville. Settlements were made on Ship Island and Cat Island, and upon the mainland on the eastern side of Biloxi Bay, at Bay St Louis, and at Mobile. The colony did not prosper, and in 1712 Anthony Crozat obtained by charter from the king all the commercial privileges of the lower Mississippi valley. Under his management the colony languished, and in 1717 the king accepted the surrender of his charter, and granted another with more extended privileges to the "Western Company," or "Mississippi Scheme," with John Law as director-general, and Bienville as governor of the colony. Under this management the rich alluvial lands on the Mississippi river began to be occupied; tobacco, rice, and indigo were cultivated, and African slaves were introduced. Settlements were made near the present city of Natchez in 1720. Two years later, Law's company becoming bankrupt, much embarrassment in the colony followed, and troubles also began with the natives. On November 28, 1729, the Natchez Indians surprised and murdered about 200 of the white male residents, and made captives of about 500 women and children and negroes. A war followed, resulting in the destruction of the Natchez tribe. The representatives of the "Western Company" returned their franchises to the king in 1732, the number of colonists and slaves being then about 7000. After two unsuccessful campaigns against the Chickasaw Indians in the northern part of what is now Mississippi, Bienville was superseded by the Marquis de Vaudreuil in 1740.

By the treaty of Paris, in 1763, France ceded all her possessions east of the Mississippi river to England, excepting the island of New Orleans, ceded to Spain. The British province of West

Florida at first extended eastward from the Mississippi river along the Gulf coasts, with its northern limit at the 31st parallel of north latitude. Soon afterwards the northern boundary was fixed at a line drawn eastward from the point where the Yazoo river unites with the Mississippi.

Under British rule the Natchez country, which had been deserted since the massacre of 1729, and the southern part of the present State of Mississippi, rapidly filled with settlers, many of them emigrants from the Atlantic colonies. Cotton, indigo, and sugar were cultivated, and negro slaves continued to be freely introduced. During the revolutionary war of the Atlantic colonies, West Florida, being far removed, remained undisturbed until 1779. Spain and England being then at war, Galvez, the governor of New Orleans, aided by sympathizers with the revolutionary colonists, took possession of the whole of West Florida for the king of Spain. At the peace of 1783 England acknowledged the 31st parallel as the southern boundary of the United States, and ceded West Florida to Spain. The district between the 31st parallel and the parallel through the mouth of the Yazoo was therefore claimed by the United States and by Spain, the latter being in possession. After tedious negotiations the latter power relinquished the district in March 1798, and Congress at once formed it into "the Mississippi Territory," which extended from the Mississippi river eastward between the two above-mentioned parallels of latitude to the Chattahoochee river.

The State of Georgia claimed as a part of its domain all of the district east of the Mississippi river, and between the 31st and 35th parallels. In 1802 it ceded its claims to the Federal Government for certain considerations, and in 1804 Congress extended the limits of the Mississippi Territory northward to the 35th parallel. Nearly all of the Territory was then owned by the native Indians. The Choctaws occupied the southern part, and the Chickasaws the northern part of what is now the State of Mississippi. In 1812 the United States troops occupied Spanish West Florida, and the district east of Pearl river and south of lat. 31° was added to the Mississippi Territory. The Territory was divided by the present line between Alabama and Mississippi, and the State of Mississippi admitted into the Union in 1817. In 1830-32 the native tribes exchanged their lands for others west of the Mississippi river and were nearly all removed, and a rapid influx of settlers followed. In January 1861 the State seceded from the Federal Union, and, joining the Southern Confederacy, furnished a large number of troops during the civil war. It was the field of many important campaigns, and suffered great losses. Exhausted by the conflict, and harassed by processes of political reconstruction, the State was in a deplorable condition for several years. But within the last decade an era of prosperity commenced, marked by a large increase in population and great activity in agricultural and other pursuits.

Literature.—Gayarré, *History of Louisiana*; Monette, *History of the Valley of the Mississippi*, New York, 1846; Calborne, *Mississippi as a Province, Territory, and State*, Jackson, 1880; Wallis, *Agriculture and Geology of Mississippi*, Jackson, 1854; Hilgard, *Agriculture and Geology of Mississippi*, Jackson, 1860; Smith, *Outline of the Geology of Alabama*, Montgomery, 1880; Wall, *Handbook of Mississippi*, Jackson, 1882.

MISSOLONGHI, or **MESOLONGHI** (*Μεσολογγίον*), a city of Greece, the chief town of the nomarchy of Acarnania and Ætolia, situated on the north side of the Gulf of Patras, about 7 miles from the coast, in the midst of a shallow lagoon, with a population of 6324 in 1879, is notable for the siege of two months which Mavrocordatós with a handful of men sustained in 1821 against a Turkish army 11,000 strong, and for the more famous defence of 1825-26 (see vol. xi. p. 125). Byron died there in 1824, and is commemorated by a cenotaph.

MISSOURI, a Central State of the American Union, lying almost midway between the Atlantic and the Rocky Mountains, British America and the Gulf of Mexico. Its eastern boundary is the Mississippi, separating it from Illinois, Kentucky, and Tennessee. North and south its boundaries with Iowa and Arkansas respectively are mainly coincident with the parallels of 40° 30' and 36° 30' N. lat.; but a small peninsula between the Mississippi and St François rivers stretches 34 miles farther south between Arkansas and Tennessee. The western border, with Nebraska, Kansas, and the Indian Territory, is nearly coincident with the course of the Missouri to the junction of that stream with the Kansas, and then follows the meridian of 17° 40' W. of Washington (94° 43' W. of Greenwich). The area of the State is 65,350 square miles, the extreme length from north to south 282 miles, the extreme width 348 miles. Missouri is divided into

a northern and southern portion by the Missouri river, flowing 400 miles in a generally easterly direction from its junction with the Kansas to the point 12 miles above St Louis where it unites with the Mississippi. Northern Missouri has a surface broken and hilly, but not mountainous. It is mainly prairie land, well watered by streams, and fit for agriculture; but there is a good deal of timber in the eastern parts, especially along the bold bluffs of the two great rivers. Southern Missouri is almost equally divided between timber land in the east and prairie in the west. In its south-western portion rises the table-land of the Ozark hills (highest point 1600 feet above the sea). The Osage, the Gasconade, and other streams flow northward and eastward into the Missouri. The south-eastern lowlands form an undulating country, readily drained after rain, with fertile ridges generally running north and south, occasional abrupt isolated hills, forests of oak, hickory, elm, maple, ash, locust, willow, persimmon, pecan, chestnut, and cherry trees, and in the lowest parts swamps and morasses. High rocky bluffs extend along the banks of the Mississippi from the mouth of the Meramec river to Ste Genevieve, rising sometimes precipitously to the height of 350 feet above the water, and low bottom lands with many lakes and lagoons extend from Ste Genevieve to the Arkansas border. The south-east corner of the State is 275 feet above the sea, the north-east corner 445 feet, and the north-west corner 1000 feet.

Climate.—The climate of Missouri, lying as it does far from the ocean and unprotected by mountain ranges, is one of extremes in heat and cold, moisture and drought. The Ozark range is high enough to influence the climate locally, but not to affect that of the whole State. The mean summer temperature for the ten years 1870-80 ranged from 75° in the north-west of the State to 78°·5 in the south-east; but the thermometer has been known to rise to 104°. The winter temperature averaged 33°·87 for the whole State, varying from 28°·5 in the north-west to 39°·5 in the south-east. In some winters the temperature hardly falls to zero; in others 20° below zero have been registered. The Mississippi at St Louis freezes over once in four or five years; but this is partly caused by the accumulations of floating ice coming down from the north. The river has closed as early as the first week in December, and, again, has remained open until the last week in February. It is in cold seasons sometimes passable for the heaviest teams. The Missouri river is often closed during the whole winter. The mean annual temperature of the State varies from 53° to 58°. The climate is, on the whole, dry; for, in spite of the abundant rains, especially in the spring, evaporation is so rapid that the atmosphere is rarely overloaded with moisture. April is the driest month. The greatest amount of rain falls in the south-eastern part of the State. An unusual amount of fair weather, prevailing clearness of sky, general salubrity of soil and climate, are chief among the natural advantages of this great State.

Geology.—The stratified rocks of Missouri belong to the following divisions:—Quaternary, Tertiary, Carboniferous, Devonian, Silurian, and Archæan. The Quaternary system comprises the drift, 155 feet thick; the bluff, 200 feet above the drift; then the bottom prairie, 35 feet thick; and on the surface the alluvium, 30 feet in thickness. Clays with strata of sands, marls, and humus form the alluvial bottoms of the two great rivers of the State, and make up a soil deep, light, and incomparably rich. Beneath the alluvium is found the bottom prairie, made up also of sands, clays, and vegetable moulds. This formation is found only in the bottom lands of the Missouri and Mississippi rivers, and more abundantly in those of the former. Numerous and well-preserved organic remains are found in the bottom prairie.