

CENSUS BULLETIN.

No. 1.

WASHINGTON, D. C.

Feb. 10, 1890.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., November 1, 1889.

By the terms of an act approved March 1, 1889, for taking the eleventh and subsequent censuses, the Secretary of the Interior is required to designate, on the recommendation of the Superintendent of Census, the number, whether one or more, of supervisors of census to be appointed within each State and Territory and the District of Columbia, the whole number not to exceed 175.

In accordance with this provision, the following divisions of the country have been designated as supervisors' districts, each district, as laid out, to be under the direct charge of one supervisor.

This list of supervisors' districts has been submitted to and approved by the Secretary of the Interior, and is here issued in the form of a bulletin, designated as Bulletin No. 1 of the Eleventh Census. Hereafter, as information of public interest is obtained, the Superintendent of Census will from time to time issue bulletins, which will place such information before the public in convenient form.

The spelling of counties in this bulletin is in accordance with the data at hand, and is subject to revision. Lists of counties are being forwarded to officials in each State, with the request that they be revised and returned to this office, in order that some official standard of orthography may be adopted for future use.

Very respectfully,

ROBERT P. PORTER,

Superintendent of Census.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 1, 1889.

To the Honorable the Secretary of the Interior.

SIR: I have the honor to submit herewith, for your consideration and approval, a list showing the supervisors' districts in the several States and Territories, by counties, as contemplated in the taking of the Eleventh Census under the provisions of the act approved March 1, 1889.

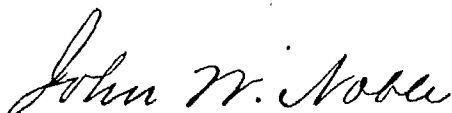
In the formation of these districts it has been the effort of this office to study the geographical advantages of each as to density of population and railroad communication, with a view to obtaining the quickest and most economical results in the work of enumeration.

Very respectfully,

ROBERT P. PORTER,

Superintendent of Census

Approved:



Secretary of the Interior.

SUPERVISORS' DISTRICTS.

ALABAMA—Five Districts.

First District—Blount, Colbert, Cullman, Fayette, Franklin, Jackson, Lamar, Lauderdale, Lawrence, Limestone, Madison, Marion, Marshall, Morgan, Walker, and Winston counties.

Second District—Calhoun, Chambers, Cherokee, Clay, Cleburne, Coosa, DeKalb, Elmore, Etowah, Lee, Randolph, Talladega, and Tallapoosa counties.

Third District—Autauga, Bibb, Chilton, Greene, Hale, Jefferson, Perry, Pickens, Saint Clair, Shelby, Sumter, and Tuscaloosa counties.

Fourth District—Baldwin, Choctaw, Clarke, Dallas, Marengo, Mobile, Monroe, Washington, and Wilcox counties.

Fifth District—Barbour, Bullock, Butler, Coffee, Conecuh, Covington, Crenshaw, Dale, Escambia, Geneva, Herry, Lowndes, Macon, Montgomery, Pike, and Russell counties.

ARIZONA—One District.

The Territory will form one supervisor's district.

ARKANSAS—Three Districts.

First District—Arkansas, Chicot, Clay, Craighead, Crittenden, Cross, Desha, Greene, Independence, Jackson, Jefferson, Lawrence, Lee, Lonoke, Mississippi, Monroe, Phillips, Poinsett, Prairie, Randolph, Saint Francis, White, and Woodruff counties.

Second District—Baxter, Benton, Boone, Carroll, Cleburne, Conway, Crawford, Faulkner, Franklin, Fulton, Izard, Johnson, Logan, Madison, Marion, Newton, Pope, Scott, Searcy, Sebastian, Sharp, Stone, Van Buren, and Washington counties.

Third District—Ashley, Bradley, Calhoun, Clark, Cleveland, Columbia, Dallas, Drew, Garland, Grant, Hempstead, Hot Spring, Howard, La Fayette, Lincoln, Little River, Miller, Montgomery, Nevada, Ouachita, Perry, Pike, Polk, Pulaski, Saline, Sevier, Union, and Yell counties.

CALIFORNIA—Five Districts.

First District—Marin, San Francisco, San Mateo, and Santa Clara counties.

Second District—Alameda, Alpine, Amador, Calaveras, Contra Costa, El Dorado, Nevada, Placer, Sacramento, San Joaquin, and Tuolumne counties.

Third District—Butte, Colusa, Del Norte, Humboldt, Lake, Lassen, Mendocino, Modoc, Napa, Plumas, Shasta, Sierra, Siskiyou, Solano, Sonoma, Sutter, Tehama, Trinity, Yolo, and Yuba counties.

Fourth District—Fresno, Kern, Mariposa, Merced, Mono, Monterey, San Benito, San Luis Obispo, Santa Cruz, Stanislaus, and Tulare counties.

Fifth District—Inyo, Los Angeles, Orange, San Bernardino, San Diego, Santa Barbara, and Ventura counties.

COLORADO—Two Districts.

First District—Arapahoe, Boulder, Cheyenne, Clear Creek, Douglas, Eagle, Elbert, El Paso, Garfield, Gilpin, Grand, Jefferson, Kit Carson, Larimer, Lincoln, Logan, Morgan, Park, Phillips, Rio Blanco, Routt, Sedgewick, Summit, Washington, Weld, and Yuma counties.

Second District—Archuleta, Baca, Bent, Chaffee, Conejos, Costilla, Custer, Delta, Dolores, Fremont, Gunnison, Hinsdale, Huerfano, Kiowa, Lake, La Plata, Las Animas, Mesa, Montezuma, Montrose, Otero, Ouray, Pitkin, Prowers, Pueblo, Rio Grande, San Miguel, Saguache, and San Juan counties.

CONNECTICUT—Two Districts.

First District—Fairfield, Litchfield, and New Haven counties.

Second District—Hartford, Middlesex, New London, Tolland, and Windham counties.

DELAWARE—One District.

The State will form one supervisor's district.

DISTRICT OF COLUMBIA—One District.

The District of Columbia will form one supervisor's district.

FLORIDA—Two Districts.

First District—Alachua, Baker, Bradford, Brevard, Citrus, Clay, Dade, De Soto, Duval, Hernando, Hillsborough, Lake, Lee, Levy, Manatee, Marion, Monroe, Nassau, Orange, Osceola, Pasco, Polk, Putnam, Saint John's, Sumter, and Volusia counties.

Second District—Calhoun, Columbia, Escambia, Franklin, Gadsden, Hamilton, Holmes, Jackson, Jefferson, Lafayette, Leon, Liberty, Madison, Santa Rosa, Suwannee, Taylor, Wakulla, Walton, and Washington counties.

GEORGIA—Six Districts.

First District—Banks, Bartow, Catoosa, Chattooga, Cherokee, Cobb, Dade, Dawson, Fannin, Floyd, Forsyth, Franklin, Gilmer, Gordon, Habersham, Hall, Haralson, Lumpkin, Milton, Murray, Paulding, Pickens, Polk, Rabun, Towns, Union, Walker, White, and Whitfield counties.

Second District—Burke, Clarke, Columbia, Elbert, Glascock, Greene, Hancock, Hart, Jefferson, Lincoln, McDuffie, Madison, Oglethorpe, Richmond, Taliaferro, Warren, Washington, and Wilkes counties.

Third District—Butts, Campbell, Carroll, Clayton, Coweta, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, Jackson, Jasper, Morgan, Newton, Oconee, Putnam, Rockdale, Spalding, and Walton counties.

Fourth District—Baldwin, Bibb, Crawford, Harris, Heard, Houston, Jones, Meriwether, Monroe, Muscogee, Pike, Talbot, Taylor, Troup, Twiggs, Upson, and Wilkinson counties.

Fifth District—Appling, Berrien, Bryan, Bulloch, Camden, Charlton, Chatham, Clinch, Coffee, Dodge, Echols, Effingham, Emanuel, Glynn, Irwin, Johnson, Laurens, Liberty, Lowndes, McIntosh, Montgomery, Pierce, Pulaski, Screven, Tatnall, Telfair, Ware, Wayne, and Wilcox counties.

Sixth District—Baker, Brooks, Calhoun, Chattahoochee, Clay, Colquitt, Decatur, Dooly, Dougherty, Early, Lee, Macon, Marion, Miller, Mitchell, Quitman, Randolph, Schley, Stewart, Sumter, Terrell, Thomas, Webster, and Worth counties.

IDAHO—One District.

The Territory will form one supervisor's district.

ILLINOIS—Eight Districts.

First District—Cook, Du Page, and Lake counties.

Second District—Boone, Carroll, DeKalb, Jo Daviess, Kane, Kendall, Lee, McHenry, Ogle, Stephenson, Whiteside, and Winnebago counties.

Third District—Bureau, Fulton, Hancock, Henderson, Henry, Knox, McDonough, Mercer, Peoria, Putnam, Rock Island, Schuyler, Stark, and Warren counties.

Fourth District—Grundy, Kankakee, La Salle, Livingston, Logan, McLean, Marshall, Mason, Tazewell, Will, and Woodford counties.

Fifth District—Champaign, Clark, Coles, Cumberland, DeWitt, Douglas, Edgar, Ford, Iroquois, Macon, Moultrie, Piatt, Shelby, and Vermilion counties.

Sixth District—Adams, Brown, Calhoun, Cass, Christian, Greene, Jersey, Macoupin, Menard, Montgomery, Morgan, Pike, Sangamon, and Scott counties.

Seventh District—Bond, Clay, Clinton, Crawford, Effingham, Fayette, Jasper, Lawrence, Madison, Marion, Monroe, Richland, Saint Clair, and Washington counties.

Eighth District—Alexander, Edwards, Franklin, Gallatin, Hamilton, Hardin, Jackson, Jefferson, Johnson, Massac, Perry, Pope, Pulaski, Randolph, Saline, Union, Wabash, Wayne, White, and Williamson counties.

INDIANA—Six Districts.

First District—Crawford, Daviess, Dubois, Gibson, Greene, Knox, Lawrence, Martin, Orange, Perry, Pike, Posey, Spencer, Sullivan, Vanderburgh, and Warrick counties.

Second District—Bartholomew, Brown, Clark, Dearborn, Decatur, Floyd, Franklin, Harrison, Jackson, Jefferson, Jennings, Ohio, Ripley, Scott, Switzerland, and Washington counties.

Third District—Delaware, Fayette, Hamilton, Hancock, Henry, Johnson, Madison, Marion, Randolph, Rush, Shelby, Tipton, Union, and Wayne counties.

Fourth District—Boone, Clay, Clinton, Fountain, Hendricks, Monroe, Montgomery, Morgan, Owen, Parke, Putnam, Tippecanoe, Vermillion, Vigo, and Warren counties.

Fifth District—Benton, Carroll, Cass, Fulton, Howard, Jasper, Lake, La Porte, Marshall, Miami, Newton, Porter, Pulaski, Saint Joseph, Starke, and White counties.

Sixth District—Adams, Allen, Blackford, De Kalb, Elkhart, Grant, Huntington, Jay, Kosciusko, Lagrange, Noble, Steuben, Wabash, Wells, and Whitley counties.

IOWA—Four Districts.

First District—Cedar, Clinton, Davis, Des Moines, Henry, Iowa, Jackson, Jasper, Jefferson, Johnson, Jones, Keokuk, Lee, Louisa, Mahaska, Muscatine, Poweshiek, Scott, Van Buren, Wapello, and Washington counties.

Second District—Allamakee, Benton, Black Hawk, Bremer, Buchanan, Butler, Chickasaw, Clayton, Delaware, Dubuque, Fayette, Floyd, Franklin, Grundy, Hardin, Howard, Linn, Mitchell, Tama, and Winneshiek counties.

Third District—Adair, Adams, Appanoose, Audubon, Cass, Clarke, Dallas, Decatur, Fremont, Guthrie, Harrison, Lucas, Madison, Marion, Mills, Monroe, Montgomery, Page, Polk, Pottawattamie, Ringgold, Shelby, Taylor, Union, Warren, and Wayne counties.

Fourth District—Boone, Buena Vista, Calhoun, Carroll, Cerro Gordo, Cherokee, Clay, Crawford, Dickinson, Emmet, Greene, Hamilton, Hancock, Humboldt, Ida, Kossuth, Lyon, Marshall, Monona, O'Brien, Osceola, Palo Alto, Plymouth, Pocahontas, Sac, Sioux, Story, Webster, Winnebago, Woodbury, Worth, and Wright counties.

KANSAS—Four Districts.

First District—Allen, Anderson, Bourbon, Butler, Chase, Chautauqua, Cherokee, Coffey, Cowley, Crawford, Elk, Greenwood, Labette, Linn, Lyon, Montgomery, Neosho, Wilson, and Woodson counties.

Second District—Atchison, Brown, Doniphan, Douglas, Franklin, Geary, Jackson, Jefferson, Johnson, Leavenworth, Marshall, Miami, Morris, Nemaha, Osage, Pottawatomie, Riley, Shawnee, Wabaunsee, and Wyandotte counties.

Third District—Cheyenne, Clay, Cloud, Decatur, Dickinson, Ellis, Ellsworth, Gove, Graham, Jewell, Lincoln, Logan, Mitchell, Norton, Osborne, Ottawa, Phillips, Rawlins, Republic, Rooks, Russell, Saline, Sheridan, Sherman, Smith, Thomas, Trego, Wallace, and Washington counties.

Fourth District—Barbour, Barton, Clark, Comanche, Edwards, Finney, Ford, Garfield, Grant, Gray, Greeley, Hamilton, Harper, Harvey, Haskell, Hodgeman, Kearney, Kingman, Kiowa, Lane, McPherson, Marion, Meade, Morton, Ness, Pawnee, Pratt, Reno, Rice, Rush, Scott, Sedgwick, Seward, Stafford, Stanton, Stevens, Sumner, and Wichita counties.

KENTUCKY—Six Districts.

First District—Ballard, Butler, Caldwell, Calloway, Carlisle, Christian, Crittenden, Daviess, Fulton, Graves, Hancock, Henderson, Hickman, Hopkins, Livingston, Lyon, McCracken, McLean, Marshall, Muhlenberg, Ohio, Todd, Trigg, Union, and Webster counties.

Second District—Allen, Barren, Breckinridge, Edmonson, Grayson, Hardin, Hart, La Rue, Logan, Meade, Metcalfe, Monroe, Simpson, and Warren counties.

Third District—Anderson, Bullitt, Carroll, Green, Henry, Jefferson, Marion, Mercer, Nelson, Oldham, Shelby, Spencer, Taylor, Trimble, and Washington counties.

Fourth District—Boone, Bourbon, Bracken, Campbell, Clark, Fayette, Franklin, Gallatin, Grant, Harrison, Jessamine, Kenton, Owen, Pendleton, Scott, and Woodford counties.

Fifth District—Bath, Boyd, Carter, Elliott, Fleming, Floyd, Greenup, Johnson, Lewis, Lawrence, Magoffin, Martin, Mason, Menifee, Montgomery, Morgan, Nicholas, Pike, Powell, Robertson, Rowan, and Wolfe counties.

Sixth District—Adair, Bell, Boyle, Breathitt, Casey, Clay, Clinton, Cumberland, Estill, Garrard, Harlan, Jackson, Knott, Knox, Laurel, Lee, Leslie, Letcher, Lincoln, Madison, Owsley, Perry, Pulaski, Rockcastle, Russell, Wayne, and Whitley counties.

LOUISIANA—Four Districts.

First District—Ascension, East Baton Rouge, East Feliciana, Jefferson, Lafourche, Livingston, Orleans, Plaquemines, Saint Bernard, Saint Charles, Saint Helena, Saint James, Saint John Baptist, Saint Tammany, Tangipahoa, Terrebonne, Washington, and West Feliciana parishes.

Second District—Avoyelles, Bienville, Bossier, Caddo, De Soto, Grant, Natchitoches, Rapides, Red River, Sabine, Vernon, Webster, and Winn parishes.

Third District—Caldwell, Catahoula, Claiborne, Concordia, East Carroll, Franklin, Jackson, Lincoln, Madison, Morehouse, Ouachita, Richland, Tensas, Union, and West Carroll parishes.

Fourth District—Acadia, Assumption, Calcasieu, Cameron, Iberia, Iberville, La Fayette, Point Coupee, Saint Landry, Saint Martin, Saint Mary's, Vermillion, and West Baton Rouge parishes.

MAINE—Two Districts.

First District—Androscoggin, Cumberland, Franklin, Kennebec, Oxford, Sagadahoc, Somerset, and York counties.

Second District—Aroostook, Hancock, Knox, Lincoln, Penobscot, Piscataquis, Waldo, and Washington counties.

MARYLAND—Three Districts.

First District—Baltimore, city and county.

Second District—Caroline, Cecil, Dorchester, Harford, Kent, Queen Anne, Somerset, Talbot, Wicomico, and Worcester counties.

Third District—Allegany, Anne Arundel, Calvert, Carroll, Charles, Frederick, Garrett, Howard, Montgomery, Prince George's, St. Mary's, and Washington counties.

MASSACHUSETTS—One District.

The State will form one supervisor's district.

MICHIGAN—Six Districts.

First District—Branch, Calhoun, Hillsdale, Jackson, Lenawee, Monroe, Washtenaw, and Wayne counties.

Second District—Genesee, Huron, Lapeer, Macomb, Oakland, Saginaw, Saint Clair, Sanilac, and Tuscola counties.

Third District—Clinton, Eaton, Gratiot, Ingham, Ionia, Isabella, Livingston, Mecosta, Midland, Montcalm, and Shiawassee counties.

Fourth District—Allegan, Barry, Berrien, Cass, Kalamazoo, Kent, Muskegon, Newaygo, Oceana, Ottawa, Saint Joseph, and Van Buren counties.

Fifth District—Alcona, Alpena, Antrim, Arenac, Bay, Benzie, Charlevoix, Cheboygan, Clare, Crawford, Emmet, Gladwin, Grand Traverse, Iosco, Kalkaska, Lake, Leelanaw, Manistee, Mason, Missaukee, Montmorency, Ogemaw, Osceola, Oscoda, Otsego, Presque Isle, Roscommon, and Wexford counties.

Sixth District—Alger, Baraga, Chippewa, Delta, Gogebic, Houghton, Iron, Isle Royale, Keweenaw, Luce, Mackinac, Manitou, Marquette, Menominee, Ontonagon, and Schoolcraft counties.

MINNESOTA—Four Districts.

First District—Blue Earth, Brown, Cottonwood, Dodge, Faribault, Fillmore, Freeborn, Houston, Jackson, Lac-qui-parle, Lincoln, Lyon, Martin, Mower, Murray, Nicollet, Nobles, Olmsted, Pipe Stone, Redwood, Rock, Steele, Waseca, Watonwan, Winona, and Yellow Medicine counties.

Second District—Big Stone, Carver, Chippewa, Dakota, Goodhue, Hennepin, Kandiyohi, Le Sueur, McLeod, Meeker, Renville, Rice, Scott, Sibley, Swift, Wabasha, and Wright counties.

Third District—Aitkin, Anoka, Benton, Carlton, Cass, Chisago, Cook, Crow Wing, Isanti, Itasca, Kanabec, Lake, Mille Lacs, Morrison, Pine, Ramsey, Saint Louis, Sherburne, and Washington counties.

Fourth District—Becker, Beltrami, Clay, Douglas, Grant, Hubbard, Kittson, Marshall, Norman, Otter Tail, Polk, Pope, Stearns, Stevens, Todd, Traverse, Wadena, and Wilkin counties.

MISSISSIPPI—Four Districts.

First District—Alcorn, Benton, De Soto, Itawamba, Lafayette, Lee, Marshall, Panola, Pontotoc, Prentiss, Tate, Tippah, Tishomingo, and Union counties.

Second District—Attala, Calhoun, Carroll, Chickasaw, Choctaw, Clay, Grenada, Holmes, Le Flore, Lowndes, Monroe, Montgomery, Noxubee, Oktibbeha, Tallahatchie, Webster, Winston, Yalobusha, and Yazoo counties.

Third District—Adams, Amite, Bolivar, Claiborne, Coahoma, Franklin, Hinds, Issaquena, Jeff Davis, Jefferson, Quitman, Sharkey, Sunflower, Tunica, Warren, Washington, and Wilkinson counties.

Fourth District—Clarke, Copiah, Covington, Greene, Hancock, Harrison, Jackson, Jasper, Jones, Kemper, Lauderdale, Lawrence, Leake, Lincoln, Madison, Marion, Neshoba, Newton, Perry, Pike, Rankin, Scott, Simpson, Smith, and Wayne counties.

MISSOURI—Eight Districts.

First District—Jefferson, Saint Charles, and Saint Louis, city and county.

Second District—Bollinger, Butler, Cape Girardeau, Carter, Dunklin, Iron, Madison, Mississippi, New Madrid, Oregon, Pemiscot, Perry, Reynolds, Ripley, Saint Francois, Sainte Genevieve, Scott, Shannon, Stoddard, Washington, and Wayne counties.

Third District—Audrain, Boone, Callaway, Camden, Cole, Crawford, Dent, Franklin, Gasconade, Lincoln, Maries, Miller, Montgomery, Osage, Phelps, Pike, Pulaski, and Warren counties.

Fourth District—Barry, Christian, Dade, Dallas, Douglas, Greene, Howell, Jasper, Laclede, Lawrence, McDonald, Newton, Ozark, Polk, Stone, Taney, Texas, Webster, and Wright counties.

Fifth District—Adair, Chariton, Clark, Howard, Knox, Lewis, Linn, Macon, Marion, Monroe, Putnam, Ralls, Randolph, Schuyler, Scotland, Shelby, and Sullivan counties.

Sixth District—Barton, Bates, Benton, Cass, Cedar, Cooper, Henry, Hickory, Johnson, La Fayette, Moniteau, Morgan, Pettis, Saint Clair, Saline, and Vernon counties.

Seventh District—Andrew, Atchison, Caldwell, Carroll, Clinton, Daviess, DeKalb, Gentry, Grundy, Harrison, Holt, Livingston, Mercer, Nodaway, Ray, and Worth counties.

Eighth District—Buchanan, Clay, Jackson, and Platte counties.

MONTANA—One District.

The State will form one supervisor's district.

NEBRASKA—Three Districts.

First District—Adams, Butler, Chase, Clay, Dundy, Fillmore, Franklin, Frontier, Furnas, Gosper, Hamilton, Harlan, Hayes, Hitchcock, Jefferson, Kearney, Nuckolls, Phelps, Polk, Red Willow, Saline, Seward, Thayer, Webster, and York counties.

Second District—Antelope, Arthur, Banner, Blaine, Boone, Box Butte, Brown, Buffalo, Burt, Cedar, Cherry, Cheyenne, Colfax, Cuming, Custer, Dakota, Dawes, Dawson, Deuel, Dixon, Dodge, Garfield, Grant, Greeley, Hall, Holt, Hooker, Howard, Keith, Keya Paha, Kimball, Knox, Lincoln, Logan, Loup, McPherson, Madison, Merrick, Nance, Perkins, Pierce, Platte, Rock, Scott's Bluff, Sheridan, Sherman, Sioux, Stanton, Thomas, Thurston, Valley, Washington, Wayne, and Wheeler counties.

Third District—Cass, Douglas, Gage, Johnson, Lancaster, Nemaha, Otoe, Pawnee, Richardson, Sarpy, and Saunders counties.

NEVADA—One District.

The State will form one supervisor's district.

NEW HAMPSHIRE—One District.

The State will form one supervisor's district.

NEW JERSEY—Three Districts.

First District—Bergen, Essex, Morris, Passaic, Sussex, and Warren counties.

Second District—Hudson, Hunterdon, Mercer, Middlesex, Somerset, and Union counties.

Third District—Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Monmouth, Ocean, and Salem counties.

NEW MEXICO—One District.

The Territory will form one supervisor's district.

NEW YORK—Eleven Districts.

First District—New York, city and county.

Second District—Kings, Queens, Richmond, and Suffolk counties.

Third District—Columbia, Dutchess, Putnam, and Westchester counties.

Fourth District—Delaware, Orange, Rockland, Sullivan, and Ulster counties.

Fifth District—Albany, Green, Otsego, Rensselaer, and Schoharie counties.

Sixth District—Fulton, Hamilton, Herkimer, Montgomery, Saratoga, Schenectady, Warren, and Washington counties.

Seventh District—Clinton, Essex, Franklin, Jefferson, Lewis, and Saint Lawrence counties.

Eighth District—Cayuga, Madison, Oneida, Onondaga, and Oswego counties.

Ninth District—Allegany, Broome, Chemung, Chenango, Cortland, Schuyler, Steuben, Tioga, and Tompkins counties.

Tenth District—Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne, Wyoming, and Yates counties.

Eleventh District—Cattaraugus, Chautauqua, Erie, and Niagara counties.

NORTH CAROLINA—Five Districts.

First District—Beaufort, Bertie, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Greene, Hertford, Hyde, Jones, Lenoir, Martin, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, and Washington counties.

Second District—Chatham, Durham, Edgecombe, Franklin, Halifax, Johnston, Nash, Northampton, Orange, Vance, Wake, Warren, Wayne, and Wilson counties.

Third District—Bladen, Brunswick, Columbus, Cumberland, Duplin, Harnett, Moore, New Hanover, Onslow, Pender, Robeson, Richmond, and Sampson counties.

Fourth District—Alamance, Anson, Cabarrus, Caswell, Davidson, Davie, Forsyth, Granville, Guilford, Iredell, Mecklenburg, Montgomery, Person, Randolph, Rockingham, Rowan, Stanley, Stokes, Surry, Union, and Yadkin counties.

Fifth District—Alexander, Alleghany, Ashe, Buncombe, Burke, Caldwell, Catawba, Cherokee, Clay, Cleveland, Gaston, Graham, Haywood, Henderson, Jackson, Lincoln, McDowell, Macon, Madison, Mitchell, Polk, Rutherford, Swain, Transylvania, Watauga, Wilkes, and Yancey counties.

NORTH DAKOTA—One District.

The State will form one supervisor's district.

OHIO—Eight Districts.

First District—Allen, Crawford, Defiance, Fulton, Hancock, Henry, Lucas, Ottawa, Paulding, Putnam, Sandusky, Seneca, Van Wert, Williams, Wood, and Wyandot counties.

Second District—Auglaize, Champaign, Clarke, Darke, Greene, Hardin, Logan, Mercer, Miami, Montgomery, Preble, and Shelby counties.

Third District—Butler, Clermont, Clinton, Hamilton, and Warren counties.

Fourth District—Adams, Brown, Gallia, Highland, Hocking, Jackson, Lawrence, Pike, Ross, Scioto, and Vinton counties.

Fifth District—Delaware, Fairfield, Fayette, Franklin, Knox, Licking, Madison, Marion, Morrow, Perry, Pickaway, and Union counties.

Sixth District—Ashland, Cuyahoga, Erie, Holmes, Huron, Lorain, Medina, Richland, and Wayne counties.

Seventh District—Athens, Belmont, Coshocton, Guernsey, Harrison, Meigs, Monroe, Morgan, Muskingum, Noble, and Washington counties.

Eighth District—Ashtabula, Carroll, Columbiana, Geauga, Jefferson, Lake, Mahoning, Portage, Stark, Summit, Trumbull, and Tuscarawas counties.

OKLAHOMA—One District.

Oklahoma will form one supervisor's district.

OREGON—Two Districts.

First District—Benton, Clackamas, Clatsop, Columbia, Coos, Curry, Douglas, Jackson, Josephine, Lane, Linn, Marion, Multnomah, Polk, Tillamook, Washington, and Yamhill counties.

Second District—Baker, Crook, Gilliam, Grant, Harney, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, and Wasco counties.

PENNSYLVANIA—Eleven Districts.

First District—Philadelphia, city and county.

Second District—Chester, Delaware, Lancaster, and York counties.

Third District—Berks, Bucks, Lehigh, Montgomery, and Northampton counties.

Fourth District—Columbia, Dauphin, Lebanon, Montour, Northumberland, and Schuylkill counties.

Fifth District—Carbon, Lackawanna, Luzerne, Monroe, Pike, Susquehanna, Wayne, and Wyoming counties.

Sixth District—Bradford, Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Sullivan, and Tioga counties.

Seventh District—Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder, and Union counties.

Eighth District—Armstrong, Cambria, Clarion, Indiana, Jefferson, and Westmoreland counties.

Ninth District—Allegheny county.

Tenth District—Butler, Crawford, Erie, Forest, Lawrence, Mercer, Venango, and Warren counties.

Eleventh District—Beaver, Fayette, Greene, Somerset, and Washington counties.

RHODE ISLAND—One District.

The State will form one supervisor's district.

SOUTH CAROLINA—Four Districts.

First District—Abbeville, Anderson, Greenville, Laurens, Oconee, Pickens, and Spartanburgh counties.

Second District—Aiken, Chester, Edgefield, Fairfield, Lexington, Newberry, Richland, Union, and York counties.

Third District—Barnwell, Beaufort, Berkeley, Charleston, Colleton, Hampton, and Orangeburgh counties.

Fourth District—Chesterfield, Clarendon, Darlington, Florence, Georgetown, Horry, Kershaw, Lancaster, Marion, Marlborough, Sumter, and Williamsburgh counties.

SOUTH DAKOTA—Two Districts.

- First District*—Aurora, Beadle, Bon Homme, Brookings, Brown, Brulé, Buffalo, Campbell, Charles Mix, Clark, Clay, Codrington, Davison, Day, Deuel, Douglas, Edmunds, Faulk, Grant, Hamlin, Hand, Hanson, Hughes, Hutchinson, Hyde, Jerauld, Kingsbury, Lake, Lincoln, McCook, McPherson, Marshall, Miner, Minnehaha, Moody, Potter, Roberts, Sanborn, Spink, Sully, Turner, Union, Walworth, and Yankton counties, and Sisseton Indian Reservation.
- Second District*—Boreman, Burdick, Butte, Chateau, Custer, Delano, Dewey, Ewing, Fall River, Gregory, Harding, Jackson, Lawrence, Lugenbeel, Lyman, Martin, Meyer, Nowlin, Pennington, Pratt, Presho, Rhinehart, Schnasse, Scoby, Shannon, Stanley, Sterling, Todd, Tripp, Wagner, Washabaugh, Washington, Ziebach, and unorganized territory.

TENNESSEE—Five Districts.

- First District*—Anderson, Blount, Campbell, Carter, Claiborne, Cocke, Grainger, Greene, Hamblen, Hancock, Hawkins, Jefferson, Johnson, Knox, Loudon, Morgan, Roane, Scott, Sevier, Sullivan, Unicoi, Union, and Washington counties.
- Second District*—Bledsoe, Bradley, Cannon, Clay, Cumberland, DeKalb, Fentress, Grundy, Hamilton, Jackson, James, McMinn, Macon, Marion, Meigs, Monroe, Overton, Pickett, Polk, Putnam, Rhea, Sequatchie, Smith, Van Buren, Warren, and White counties.
- Third District*—Bedford, Cheatham, Coffee, Davidson, Franklin, Giles, Lincoln, Marshall, Maury, Moore, Robertson, Rutherford, Sumner, Trousdale, Williamson, and Wilson counties.
- Fourth District*—Benton, Carroll, Decatur, Dickson, Hardin, Henderson, Henry, Hickman, Houston, Humphreys, Lawrence, Lewis, McNairy, Montgomery, Perry, Stewart, and Wayne counties.
- Fifth District*—Chester, Crockett, Dyer, Fayette, Gibson, Hardeman, Haywood, Lake, Lauderdale, Madison, Obion, Shelby, Tipton, and Weakley counties.

TEXAS—Eight Districts.

- First District*—Bowie, Camp, Cass, Delta, Fannin, Franklin, Gregg, Harrison, Henderson, Hopkins, Hunt, Lamar, Marion, Morris, Rains, Red River, Smith, Titus, Upshur, Van Zandt, and Wood counties.
- Second District*—Anderson, Angelina, Chambers, Cherokee, Galveston, Hardin, Harris, Houston, Jasper, Jefferson, Liberty, Montgomery, Nacogdoches, Newton, Orange, Panola, Polk, Rusk, Sabine, San Augustine, San Jacinto, Shelby, Trinity, Tyler, and Walker counties.
- Third District*—Collin, Cooke, Dallas, Denton, Ellis, Grayson, Hill, Johnson, Kaufman, McLennan, Navarro, Rockwall, and Tarrant counties.
- Fourth District*—Austin, Burleson, Brazoria, Brazos, Calhoun, Colorado, Falls, Fayette, Fort Bend, Freestone, Grimes, Jackson, Lavaca, Lee, Leon, Limestone, Madison, Matagorda, Milam, Robertson, Waller, Washington, and Wharton counties.
- Fifth District*—Aransas, Atascosa, Bastrop, Bee, Bexar, Caldwell, Cameron, Comal, De Witt, Dimmit, Duval, Encinal, Frio, Goliad, Gonzales, Guadalupe, Hayes, Hidalgo, Karnes, Kinney, La Salle, Live Oak, McMullen, Maverick, Medina, Nueces, Refugio, San Patricio, Starr, Travis, Uvalde, Victoria, Webb, Wilson, Zapata, and Zavala counties.
- Sixth District*—Bandera, Bell, Blanco, Bosque, Brown, Burnet, Callahan, Coleman, Comanche, Concho, Coryell, Eastland, Edwards, Erath, Gillespie, Hamilton, Hood, Kendall, Kerr, Kimble, Lampasas, Llano, McCulloch, Mason, Menard, Mills, Runnels, San Saba, Somervell, Taylor, and Williamson counties.
- Seventh District*—Archer, Armstrong, Baylor, Briscoe, Carson, Childress, Clay, Collingsworth, Cottle, Dallam, Deaf Smith, Dickens, Donley, Fisher, Floyd, Gray, Hall, Hansford, Hardeman, Hartley, Haskell, Hemphill, Hutchinson, Jack, Jones, Kent, King, Knox, Lipscomb, Montague, Moore, Motley, Ochiltree, Oldham, Palo Pinto, Parker, Potter, Randall, Roberts, Scurry, Shackelford, Sherman, Stephens, Stonewall, Throckmorton, Wheeler, Wichita, Wilbarger, Wise, and Young counties.
- Eighth District*—Andrews, Bailey, Borden, Brewster, Buchel, Castro, Cochran, Coke, Crane, Crockett, Crosby, Dawson, Ector, El Paso, Foley, Gaines, Garza, Glasscock, Hale, Hockley, Howard, Irion, Jeff Davis, Lamb, Loving, Lubbock, Lynn, Martin, Midland, Mitchell, Nolan, Parmer, Pecos, Presidio, Reeves, Schleicher, Sutton, Swisher, Terry, Tom Green, Upton, Valverde, Ward, Winkler, and Yoakum counties.

UTAH—One District.

The Territory will form one supervisor's district.

VERMONT—One District.

The State will form one supervisor's district.

VIRGINIA—Five Districts.

First District—Accomac, Charles City, Elizabeth City, Essex, Gloucester, Greensville, Isle of Wight, James City, King and Queen, King William, Lancaster, Mathews, Middlesex, Nansemond, New Kent, Norfolk, Northampton, Northumberland, Prince George, Princess Anne, Richmond, Southampton, Surry, Sussex, Warwick, Westmoreland, and York counties.

Second District—Amelia, Appomattox, Brunswick, Buckingham, Charlotte, Chesterfield, Cumberland, Dinwiddie, Fluvanna, Goochland, Halifax, Henrico, Lunenburg, Mecklenburg, Nottoway, Powhatan, and Prince Edward counties.

Third District—Alexandria, Caroline, Clarke, Culpeper, Fairfax, Fauquier, Frederick, Greene, Hanover, King George, Loudoun, Louisa, Madison, Orange, Page, Prince William, Rappahannock, Rockingham, Shenandoah, Spottsylvania, Stafford, and Warren counties.

Fourth District—Albemarle, Alleghany, Amherst, Augusta, Bath, Bedford, Botetourt, Campbell, Franklin, Henry, Highland, Nelson, Patrick, Pittsylvania, and Rockbridge counties.

Fifth District—Bland, Buchanan, Carroll, Craig, Dickinson, Floyd, Giles, Grayson, Lee, Montgomery, Pulaski, Roanoke, Russell, Scott, Smyth, Tazewell, Washington, Wise, and Wythe counties.

WASHINGTON—Two Districts.

First District—Chehalis, Clallam, Clarke, Cowlitz, Island, Jefferson, King, Kitsap, Lewis, Mason, Pacific, Pierce, San Juan, Skagit, Skamania, Snohomish, Thurston, Wahkiakum, and Whatcom counties.

Second District—Adams, Asotin, Columbia, Douglas, Franklin, Garfield, Kittitass, Klickitat, Lincoln, Okanogan, Spokane, Stevens, Walla Walla, Whitman, and Yakima counties.

WEST VIRGINIA—Two Districts.

First District—Barbour, Berkeley, Brooke, Calhoun, Doddridge, Gilmer, Grant, Hampshire, Hancock, Hardy, Harrison, Jefferson, Lewis, Marion, Marshall, Mineral, Monongalia, Morgan, Ohio, Pendleton, Pleasants, Preston, Randolph, Ritchie, Taylor, Tucker, Tyler, Upshur, Wetzell, Wirt, and Wood counties.

Second District—Boone, Braxton, Cabell, Clay, Fayette, Greenbrier, Jackson, Kanawha, Lincoln, Logan, McDowell, Mason, Mercer, Monroe, Nicholas, Pocahontas, Putnam, Raleigh, Roane, Summers, Wayne, Webster, and Wyoming counties.

WISCONSIN—Five Districts.

First District—Dodge, Jefferson, Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha counties.

Second District—Crawford, Dane, Grant, Greene, Juneau, Iowa, La Fayette, Richland, Rock, Sauk, and Vernon counties.

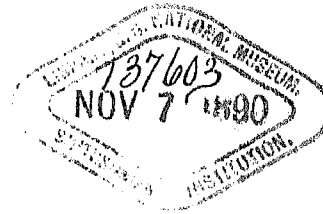
Third District—Adams, Brown, Calumet, Columbia, Door, Fond du Lac, Green Lake, Kewaunee, Manitowoc, Marquette, Outagamie, Sheboygan, Waushara, and Winnebago counties.

Fourth District—Ashland, Clark, Florence, Forest, Langlade, Lincoln, Marathon, Marinette, Oconto, Oneida, Portage, Price, Shawano, Taylor, Waupaca, and Wood counties.

Fifth District—Barron, Bayfield, Buffalo, Burnett, Chippewa, Douglas, Dunn, Eau Claire, Jackson, La Crosse, Monroe, Pepin, Polk, Pierce, Saint Croix, Sawyer, Trempealeau, and Washburn counties.

WYOMING—One District.

The Territory will form one supervisor's district.



[7-010.]

CENSUS BULLETIN.

No. 2.

WASHINGTON, D. C.

Dec. 20, 1889.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., November 20, 1889.

The act of Congress approved March 1, 1889, for taking the Eleventh and subsequent censuses, imposes upon the Superintendent of Census the duty of securing statistics of the fishing industry. For this purpose he is authorized to employ one or more special agents to take charge of the details of the work. In accordance with that authority a division has been organized and two special agents have been appointed.

The accompanying list of aquatic animals which are sought by fishermen is issued (1) for the information of the public, as showing in part the scope of the census inquiry into the fishing industry, and (2) in the hope of securing corrections and additions. It is desired that the list contain the names of all aquatic animals which are useful commercially. In the case of fishes there is some confusion, due to several popular names being assigned to the same species in different parts of the country. To obviate this the various synonyms in common use are given. The enumeration of synonyms, however, is not exhaustive.

Scientific names have not been used in this bulletin, since it will go mostly to people unfamiliar with them. But in the manual, which is soon to be prepared, it is hoped to give not only the common and scientific names, but a figure of each important species. This will form a perfect means of identification, not only for the fisherman, but for the naturalist.

It will be regarded as a kindness if persons who can do so will furnish to the special agent in charge, Mr. CHARLES W. SMILEY, Census Office, Washington, D. C., any additional information regarding popular names of food fishes.

ROBERT P. PORTER,

Superintendent of Census.

Products of the Fisheries of the United States.

MAMMALS.

A.—WHALES AND PORPOISES.

The sperm whale, the blackfish, the grampus or cowfish, the harbor porpoise or sea-hog or herring-hog, the dolphin, the killer whale or orca, the sperm-whale porpoise, the white whale or beluga, the narwhal or sea-unicorn, the Greenland whale, bowhead or polar whale, the right whale, the humpback whale, the sulphur-bottom whale, the finback whale, the scrag whale, the gray whale.

B.—SEALS AND WALRUSES.

The walrus, the sea-lion, the fur-seal, the harbor seal, the harp seal, the ringed seal, the ribbon seal, the West Indian seal, the hooded seal, the California sea-elephant.

C.—SIRENIANS OR SEA-COWS.

The manatee, the Arctic sea-cow.

REPTILES AND BATRACHIANS.

D.—ALLIGATORS.

The alligator.

E.—TORTOISES, TURTLES, AND TERRAPINS.

The loggerhead turtle, the hawk's-bill turtle, the green turtle, the soft-shelled tortoise, the snapping turtle, the musk tortoise, the fresh-water terrapin, the diamond-back or salt-water terrapin, the pond tortoise, the box turtle.

F.—AMPHIBIANS.

The frog or bull-frog.

FISHES.

G.—FILE-FISHES, PIPE-FISHES, AND ANGLERS.

The ocean sun-fish, the porcupine-fish, the bellows-fish, the trunk-fish, the file-fish, the sea-horse, the pipe-fish, the devil-fish, the goose-fish or monk-fish.

H.—FLAT FISHES AND FLOUNDERS.

The American sole, the plaice, the bastard halibut or Monterey halibut, the flat-fish or winter flounder, the starry flounder, the rough limanda, the diamond flounder, the long-finned sole, the halibut, the sand-dab or rough-dab, the Greenland turbot, the pole flounder or craig flounder, the spotted sand-flounder.

I.—COD AND ITS KINDRED.

The cod, the tomcod, the haddock, the pollock, the beshowe or coal-fish, the cusk, the hake, the burbot, the silver hake or whiting, the California hake or merluccio, the red cusk of California, the grenadier or onion-fish, the lant or sand eel.

J.—WOLF-FISHES, SCULPINS, AND WRASSES.

The mutton-fish or lamper-eel or wolf eel (Pacific) or ling, the sea catfish or wolf-fish, the Pacific blenny (often called eel), the toad-fish or oyster-fish, the lump-fish, the goby, the sea-robin or wing-fish, the sculpin or puffing-grubby, the rose-fish or red perch or Norway haddock, the rock-cod, the yellow rock-fish (Cal.), the black rock-fish (Cal.), the red rock-fish (Cal.), the rock trout, the tautog or chub or blackfish, the chogset or anner, the blue parrot-fish or slippery-dick, the red-fish or fathead (Cal.), the kelp-fish, the hog-fish, the cow-pilot (Fla.), the Garibaldi (sometimes called gold-fish or red perch), the surf-fish or perch (Cal.) (also called porgee), the moharra or long-boned shad (Gulf), the thread-fish, the surgeon-fish or doctor-fish (Fla.), the angol-fish (Fla.).

K.—MACKEREL AND ALLIES.

The mackerel, the chub mackerel or thimble-eye, the frigate mackerel, the Spanish mackerel or bay mackerel, the cero or king-fish (Gulf), the Monterey mackerel (Pacific), the bonito, the horse mackerel or albacore (sometimes called tunny), the little tunny or albacore (Gulf), the silver moon-fish, the blunt-nosed shiner or horse-fish (N. C.) or humpbacked butter-fish (Mass.), the cavally or horse crovalli (S. C.), the goggler or goggle-eyed jack, the jund or hard-tail (Fla.) or skip-jack or yellow mackerel (N. J.), the round robin or cigar-fish, the scad, the Carolina pompano, the pilot-fish, the amber-fish, the rock salmon (Fla.), the yellow-tail or white salmon (Cal.), the banded rudder-fish, the runner (Fla.), the dolphin, the butter-fish (N. Y.) or harvest-fish (N. J.) or dollar-fish (Mo.) or sheepshead and skip-jack (Mass.) or pumpkin-seed (Conn.) or star-fish (Va.) or whiting (Va.), the California pompano, the rudder-fish or barrel-fish, the outlass-fish or Florida sword-fish or saber-fish (Tex.) or silver eel (Ga.), the sword-fish.

L.—TILE-FISH FAMILY.

The tile-fish, the white-fish, (Cal.).

M.—DRUM FAMILY.

The squeteague or drummer (Mass.) or yellow-fin (R. I.) or weakfish (N. J.) or blue-fish (Va.) or grey trout or shad trout (south) or sea-trout, the spotted squeteague (improperly called salmon and spotted trout in the south), the drum (salt water), the fresh-water drum or croaker or crocus or sheepshead (of Great Lakes) or jewel-head or white perch (Ohio) or gaspergon (La.), the spot or Lafayette or Cape May goody or roach (S. C.) or chub (Fla.), the red drum or red-fish (erroneously called red bass, spotted bass, channel bass, etc.), the yellow-tail or silver perch (N. J.) or mademoiselle (Fla.), the king-fish or lake (N. J.) or tom-cod (Conn.) or black mullet (Va.) or sea-mink (N. C.) or whiting (S. C.), the whiting or barb (Fla.) or king-fish (Fla.) or ground mullet (Fla.), the croaker or surf-fish, the white sea-bass (commonly called sea-bass or sea-trout), the red roncador (Cal.), the little roncador (improperly called little bass in Cal.), the yellow-tined roncador (Cal.), the bagre or California sucker, the queen-fish.

N.—SHEEPSHEAD, BASS, BREAM, PERCH, ETC.

The sheepshead or sheephead, the seup or scappaug (very improperly called porgy about N. Y. and in S. C.), the sailor's choice or robin or pin-fish (N. C.) or salt-water bream (S. C.) or squirrel-fish (Ga.) or yellow-tail (Fla.) or porgy or shiner (Fla.) the margate-fish, the sheepshead porgy (Fla.), the Bermuda chub (improperly called bream), the half-moon (Cal.), the red snapper, the mangrove snapper or bastard snapper, the black grunt, the red-mouth grunt, the hog-fish (grunt or pig-fish) (Va.), (also erroneously called sailor's choice in S. C.), the large-mouth black-bass or Oswego bass (N. Y.) or jumper (Ky.) or moss bass (Md.) (erroneously called trout throughout the south, but chub in N. C.), the small-mouth black-bass (also called jumper, perch or trout), the rock bass or goggle-eye or red-eye, the Sacramento perch (Cal.), the Warmouth (often called perch, sun-fish, red-eye, or goggle-eye), the black Warmouth, the sun-fish or pumpkin-seed or sunny, the long-eared sun-fish the blue sun-fish or blue bream or copper-nosed bream, the calico bass or strawberry bass (Ohio) or grass bass (Ohio) or bar-fish (Mich.) or goggle-eye (south), the crappie (Miss.) or bachelor (Ohio) or new-light (Ky.) or Campbellite (Ind.) or chinquapin perch (La.), the sea-bass or blackfish (south) or black-will or Hannahills (Middle States) or blue-fish (R. I.) or rock bass (Mass.), the red grouper, the black grouper or jew-fish (Tex.), or Warsaw (Fla.), the spotted hind, the jew-fish (Cal.), the cabrilla or kelp salmon (Cal.) or lookee-cod (Chinese), the Jonny Verde, the perch (yellow or ringed), the log perch or rock-fish or darter, the wall-eyed pike or yellow pike or dory or glass-eye or jack-salmon or pike perch (the pickerel in Canada), the sauger or gray pike or sand pike or pickering (St. Lawrence), the striped bass (north) or rock-fish (south) or rock, the white bass, the yellow bass, the white perch, the blue-fish (New England) or horse-mackerel (R. I.) or skip-jack and green-fish (south) (also known as snapper, blue-snapper, tailor, snapping mackerel, skip mackerel, and even white-fish), the cobia or crab-eater (bonito or coal-fish in the Chesapeake) or sergeant-fish or ling (Fla.), the triple-tail (N. Y.) or black perch (S. C.) or grouper (Fla.), the moon-fish or angel-fish or spade-fish (Gulf).

O.—BARRACOUTA, MULLET, PIKE, AND MUMMICHOGS.

The barracouta, the mullet (striped and white), the sand smelt or silver-side (called friar in N. E., capelin in Boston, anchovy in N. Y., and merit-fish), the silver gar-fish, the skip-jack, the pike, the pickerel or jack (south), the muskellunge, the mummichog or brook-fish or minnow, the blackfish of Alaska.

P.—SALMON FAMILY.

The steel-head salmon or Gairdner's trout (Pacific), the Penobscot salmon or land-locked salmon or fresh-water salmon or Schoodic trout or Sebago trout (Me.), the rainbow trout or mountain trout (Cal.), the black-spotted trout or silver trout (Rocky Mountains), the Rio Grande trout, the dog salmon, the hump-back salmon (Alaska, etc.), the silver salmon, (Oreg., etc.), the blue-back salmon or red-fish (Oreg., etc.), the Quinnet salmon or California salmon or Chinook salmon (Pacific), the nanaycush trout or lake trout or salmon trout (Great Lakes) or togue (Me.) or Mackinaw trout, the siscowet, the speckled trout or brook trout (east), the saibling or Bavarian char, the Dolly Varden trout or bull trout (improperly called lake trout or salmon trout), the grayling, the white-fish (Great Lakes), the moon-eye or cisco (Great Lakes), the lake herring or Michigan herring, the blue-fin or black-fin (Lake Mich.), the mongrel white-fish, the Menomonee white-fish or shad-waiter, the Rocky Mountain white-fish or mountain herring, the smelt (Atlantic) or frost-fish, the California smelt, the Alaska smelt, the surf smelt, the capelin (bait), the eulachon or candle-fish.

Q.—HERRINGS AND MENHADENS.

The sea-herring or sperling or brit, the California herring, the California sardine, the menhaden or pogy (Maine) or mossbunker (N. Y.) or alewife (Del.) or bug-fish (Va.) or yellow-tail (Fla.) or shiner or herring (So. Fla.) (improperly called white-fish in Conn.), the Gulf menhaden.

R.—SHAD, ALEWIVES, AND ALLIES.

The river herring or alewife or gaspercan or branch herring or glut herring or blue-back, the inland alewife or skip-jack (Miss. valley), the shad or white shad (Ala.), the hickory shad or mattowacca or tailor shad or fresh-water tailor (Potomac) (improperly called tailor herring and sea shad), the mud shad or winter shad or stink shad (Chesapeake) or hairy-back or thread herring (N. C.) or gizzard shad or white-eyed shad (Fla.), the tarpum or tarpon or jew-fish (Ga.) or silver-fish (Fla.) or Savanilla (Tex.), the big-eyed herring or ten-pounder (rare), the anchovy or whitebait (N. Y.), the moon-eye, the toothed herring, the silver bass.

S.—SUCKERS, CARP, CATFISH, AND EELS.

The rabbit-mouth sucker or hare-lip or split-mouth sucker (Ohio and Tenn.), the red-horse or mullet, the chub sucker or creek-fish, the common sucker or brook sucker or stone-roller or mud sucker, the black-horse or gourd-

S.—SUCKERS, CARP, CATFISH, AND EELS—CONTINUED.

seed sucker or Missouri sucker or suckerel, the carp sucker or spear-fish or quill-back, the buffalo-fish, the golden shiner, the Utah chub, the California chub, the gila, the Sacramento pike, the split-tail (Cal.), the orthodon, the fall-fish or chub or roach or dace, the horny-head or river chub or jerker, the shiner or red-fin or red dace, the cut-lips or nigger chub or bashaw, the German carp (scale carp, mirror carp, and leather carp), the channel cat or blue cat, the Mississippi cat, the flannel-mouth cat (Great Lakes), the horned pout or bull-head or bull-pout, the mud cat or yellow cat or goujon, the sea cat or gaff-topsail, the salt-water catfish, the conger eel or conger, the common eel.

T.—STURGEONS, SKATES, SHARKS, AND LAMPREYS.

The bow-fin or Johnny grindle or dogfish and sawyer (Great Lakes), the Eastern sturgeon, the lake sturgeon, the white sturgeon (Cal.), the shovel-nosed sturgeon, the gar-pike or bill-fish or gar, the hilly gar, the alligator gar, the sting ray, the butterfly ray, the eagle ray or corn-cracker or whipparee, the skate, the torpedo or cramp-fish, the mackerel shark or blue shark, the tiger shark, the shovel-nosed shark or dogfish shark, the oil shark or white shark (Cal.), the dogfish (Pacific), the lamprey or lamper-eel.

MOLLUSKS.

U.—CUTTLES OR CEPHALOPODA.

The cuttle or cuttle-fish or common squid.

V.—SEA SNAILS OR GASTEROPODA AND TUSK-SHELLS OR SOLENOCONCHA.

The periwinkle or whelk or wrinkle, the drill or borer or snail-borer, the helmet-shell, the conch or queen conch, the abalone or haliotis, the ear-shell, the oarner-shell or sea-ear, the chiton, the snail, the tusk-shell or dentalium.

W.—CLAMS, MUSSELS, AND OYSTERS.

The razor-fish or razor clam or knife-handle, the soft clam or long clam or mananose or nanninose, the sea clam or surf clam (bait), the quahog or hard clam or round clam, the mussel, the scallop, the union, the oyster.

CRUSTACEANS AND LOWER FORMS.

X.—GRABS, LOBSTERS, SHRIMPS, AND PRAWNS.

The fiddler crab, the shore crab (Pacific), the oyster crab, the rock crab, the Jonah crab, the common Pacific coast crab, the red crab (Cal.), the stone crab (south), the Joe-rocker or green crab, the lady crab or sand crab, the common blue crab or sea crab, the spider crab, the kelp crab (Pacific), the sand-bug or bait-bug, the hermit crab, the spiny lobster, the American lobster, the crayfish or crawfish, the common shrimp, the California shrimp, the common prawn, the mantis shrimp or sea mantis, the horseshoe crab or horse-foot (for fertilizer).

Y.—WORMS, RADIATES, AND SPONGES.

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Alewife (=Herring)	R	Capelin (a bait)	P	Croaker (=Surf-fish)	M
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Blue-fish (=Squatengue)	M	Crab, Green	X	Gar-fish, Silver	O
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Bream, Salt-water	N	Crab, Red	X	Goggle-eye (=Calico Bass)	N
Brit	Q	Crab, Rock	X	Goggle-eye (=Rock Bass)	N
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Bull-head	S	Crab, Stone	X	Goose-fish	G
Bull-pout	S	Crab-eater	N	Goujou	S
Barbot	I	Cramp-fish	T	Grampus	A
Butter-fish	K	Crapple	N	Grayling	P
Butter-fish, Hump-backed	K	Crawfish	X	Green-fish	N
Cabrilla	N	Crayfish	X	Gronador	I

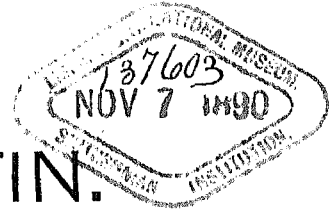
Grouper (=Black Perch).....	N
Grouper, Black (=Jew-fish).....	N
Grouper, Red.....	N
Grunt (=Hog-fish).....	N
Grunt, Black.....	N
Grunt, Red-mouth.....	N
Haddock.....	I
Haddock, Norway.....	J
Hairy-back.....	L
Hake (=King-fish).....	M
Hake (=Phycis).....	I
Hake, California.....	I
Hake, Silver (=Whiting).....	I
Half-moon.....	N
Halibut.....	II
Halibut, Bastard.....	II
Halibut, Monterey.....	II
Hallotis.....	V
Hannahills.....	N
Hard-tail.....	K
Hare-lip.....	S
Harvest-fish.....	K
Helmet-shell.....	V
Herring (=Menhaden).....	Q
Herring, Big-eyed.....	R
Herring, Branch.....	R
Herring, California.....	Q
Herring, Common or Sea.....	Q
Herring, Glut.....	R
Herring, Lake.....	P
Herring, Michigan.....	P
Herring, Mountain.....	P
Herring, River.....	R
Herring, Tallor.....	R
Herring, Thread.....	R
Herring, Toothed.....	R
Herring-hog.....	A
Hind, Spotted.....	N
Hog-fish (=Grunt).....	N
Hog-fish (of Florida).....	J
Horny-head.....	S
Horse-fish.....	K
Horse-foot.....	X
Jack.....	O
Jack, Goggle-eyed.....	K
Jack-salmon.....	N
Jarlor.....	S
Jewel-head.....	M
Jew-fish (=Black Grouper).....	N
Jew-fish (=Turpinn).....	R
Jew-fish, California.....	N
Joe-rocker.....	X
Johnny Grindlo.....	T
Johnny Verlo.....	N
Jumpor (=Large-mouth Black-bass).....	N
Jumpor (=Small-mouth Black-bass).....	N
Jurel.....	K
Kelp-fish.....	J
King-fish (=Cero).....	K
King-fish (=Hake).....	M
King-fish (=Whiting).....	M
Knife-handle.....	W
Lafayette.....	M
Lampor-eel (=Lamprey).....	T
Lampor-eel (=Mutton-fish).....	J
Lamprey.....	T
Lant.....	Y
Leech, Medicinal.....	J
Limanda, Rough.....	II
Ling (=Cobia).....	N
Ling (=Mutton-fish).....	J
Lobster, American.....	X
Lobster, Spiny.....	X
Lockoe-cod.....	N
Lump-fish.....	J
Mackorel.....	K
Mackorel, Bay.....	K
Mackorel, Chub.....	K
Mackorel, Frigate.....	K

Mackorel, Horse (=Albicore).....	K
Mackorel, Horse (=Blue-fish).....	N
Mackorel, Monterey.....	K
Mackorel, Skip.....	N
Mackorel, Snapping.....	N
Mackorel, Spanish.....	K
Mackorel, Yellow.....	K
Mademoiselle.....	M
Mananoso.....	W
Manatee.....	O
Mantis, Sea.....	X
Margate-fish.....	N
Mattowacca.....	R
Menhaden.....	Q
Menhaden, Gulf.....	Q
Merit-fish.....	O
Morluco.....	I
Minnow.....	O
Moharra.....	J
Monk-fish.....	G
Moon-eye (=Chico).....	P
Moon-eye (=Hydon).....	R
Moon-fish.....	N
Moon-fish, Silver.....	K
Mossbunker.....	Q
Mullet (=Red-horse).....	S
Mullet, Black.....	M
Mullet, Ground.....	M
Mullet, Striped.....	O
Mullet, White.....	O
Mummichog.....	O
Muskellunge.....	O
Mussel.....	W
Mutton-fish.....	J
Nammyeash.....	P
Nanninosa.....	W
Narwhal.....	A
Now-light.....	N
Onion-fish.....	I
Orea.....	A
Ormer-shell.....	V
Orthodon.....	S
Oyster.....	W
Oyster-fish.....	J
Parrot-fish.....	J
Perch (=Black-bass).....	N
Perch (=Surf-fish).....	J
Perch (=Warmouth).....	N
Perch, Black.....	N
Perch, Chingquaph.....	N
Perch, Log.....	N
Perch, Pike.....	N
Perch, Red (=Garibaldi).....	J
Perch, Red (=Rosa-fish).....	J
Perch, Ringed.....	N
Perch, Sacramento.....	N
Perch, Silver.....	M
Perch, Yellow.....	N
Perch, White (common).....	N
Perch, White (=Drum).....	M
Periwinkle.....	V
Pickorel (=Jack).....	O
Pickorel (=Pike Perch).....	N
Pickering.....	N
Pig-fish.....	N
Pilke.....	O
Pilke, Gray.....	N
Pilke, Sacramento.....	S
Pilke, Sand.....	N
Pilke, Wall-eyed.....	N
Pilke, Yellow.....	N
Pilot-fish.....	K
Pin-fish.....	N
Pipo-fish.....	G
Placo.....	II
Pogy.....	Q
Pollock.....	I
Pompano, California.....	K
Pompano, Carolina.....	K

Porcupine-fish.....	VI
Porgoe.....	I
Porgy (=Saltors' Choice).....	N
Porgy (=Scup).....	N
Porgy, Sheepshead.....	N
Porpoise, Harbor.....	A
Porpoise, Sporn-whale.....	A
Pout, Horned.....	S
Prawn, Common.....	X
Puffing-grubby.....	J
Pumpkin-seed (= Butter-fish).....	L
Pumpkin-seed (= Sun-fish).....	N
Quahaug.....	W
Queen-fish.....	M
Quill-back.....	N
Ray, Butterfly.....	T
Ray, Eagle.....	T
Ray, Sting.....	T
Razor-fish.....	W
Red-eye (=Rock Bass).....	N
Red-eye (=Warmouth).....	N
Red-fn.....	N
Red-fish (= Blueback Salmon).....	P
Red-fish (= Fathead).....	J
Red-fish (= Red Drum).....	M
Red-horse.....	N
Roach (=Full-fish).....	N
Roach (=Spot).....	M
Robin (= Saltors' Choice).....	N
Robin, Round.....	K
Rock (= Rock-fish).....	N
Rock-eel.....	J
Rock-fish (= Log Perch).....	N
Rock-fish (= Striped Bass).....	N
Rock-fish, Black.....	J
Rock-fish, Red.....	J
Rock-fish, Yellow.....	J
Rouender, Little.....	M
Rouender, Red.....	M
Rouender, Yellow-finned.....	M
Rose-fish.....	J
Rough-dab.....	II
Rudder-fish (= Barrel-fish).....	K
Rudder-fish, Banded.....	K
Runner.....	K
Saber-fish.....	K
Saltling.....	P
Saltors' Choice (=Hog-fish).....	N
Saltors' Choice (=Robin).....	N
Salmon (= Spotted Squetouge).....	M
Salmon, Blueback.....	P
Salmon, California.....	P
Salmon, Chitlock.....	P
Salmon, Dog.....	P
Salmon, Fresh-water.....	P
Salmon, Hump-back.....	P
Salmon, Kelp.....	N
Salmon, Land-locked.....	P
Salmon, Penobscot.....	P
Salmon, Quinnant.....	P
Salmon, Rock.....	K
Salmon, Silver.....	P
Salmon, Steel-head.....	P
Salmon, White.....	K
Sand-bug.....	X
Sand-dab.....	II
Sand-dollar.....	Y
Sardine, California.....	Q
Sauger.....	N
Savanna.....	N
Sawyer.....	T
Scud.....	K
Scallop.....	W
Sculpin.....	J
Scup.....	N
Suppaug.....	N
Sea-bass (=Black-will).....	N
Sea-bass (=Sea-trout).....	M
Sea-bass, White.....	M

Sea-cow, Arctic.....	O	Snapper (=Blue-fish).....	N	Trout, Gairdner's.....	P
Sea-cucumber.....	Y	Snapper, Blue (=Blue-fish).....	N	Trout, Gray (=Squeteague).....	M
Sea-ear.....	V	Snapper, Mangrove.....	N	Trout, Lake (=Dolly Varden).....	P
Sea-elephant, California.....	B	Snapper, Red.....	N	Trout, Lake (=Nanayensh).....	P
Sea-hog.....	A	Sole, American.....	II	Trout, Mackinaw.....	P
Sea-horse.....	G	Sole, Long-finned.....	II	Trout, Mountain.....	P
Sea-lion.....	B	Spade-fish.....	N	Trout, Rainbow.....	P
Sea-mink.....	M	Spear-fish.....	S	Trout, Rio Grande.....	P
Sea-robin.....	J	Sperling.....	Q	Trout, Rock.....	I
Sea-trout (=Squeteague).....	M	Split-mouth (a Sucker).....	S	Trout, Salmon (=Dolly Varden).....	P
Sea-trout (=White Sea Bass).....	S	Split-tail.....	S	Trout, Salmon (=Nanayensh).....	P
Sea-unicorn.....	A	Sponges.....	Y	Trout, Schoolie.....	P
Sea-urchin.....	Y	Spot.....	M	Trout, Sebago.....	P
Seal, Fur.....	B	Squeteague.....	M	Trout, Shad (=Squeteague).....	M
Seal, Harbor.....	B	Squeteague, Spotted.....	M	Trout, Silver.....	P
Seal, Harp.....	B	Squid, Common.....	U	Trout, Speckled.....	P
Seal, Hooded.....	B	Squirrel-fish.....	N	Trout, Spotted.....	M
Seal, Ribbon.....	B	Star-fish (=Butter-fish).....	K	Trunk-fish.....	G
Seal, Ringed.....	B	Stone-roller.....	S	Tunny.....	K
Seal, West-Indian.....	B	Sturgeon, Eastern.....	T	Tunny, Little.....	h
Sergeant-fish.....	N	Sturgeon, Lake.....	T	Turbot, Greenland.....	M
Shad, Gizzard.....	R	Sturgeon, Shovel-nosed.....	T	Turtle, Box.....	E
Shad, Hickory.....	R	Sturgeon, White.....	T	Turtle, Green.....	E
Shad, Long-boned.....	J	Sucker, Brook.....	S	Turtle, Hawks-bill.....	E
Shad, Mud.....	R	Sucker, California.....	M	Turtle, Loggerhead.....	E
Shad or White Shad.....	R	Sucker, Carp.....	S	Turtle, Snapping.....	E
Shad, Sea.....	R	Sucker, Chub.....	S	Tusk-shell.....	V
Shad, Stink.....	R	Sucker, Common.....	S	Unio.....	W
Shad, Tailor.....	R	Sucker, Gourd-seed.....	S	Walrus.....	R
Shad, White-eyed.....	R	Sucker, Missouri.....	S	Warmouth.....	N
Shad, Winter.....	R	Sucker, Mud.....	S	Warmouth, Black.....	N
Shad-waifer.....	P	Sucker, Rabbit-mouth.....	S	Warsaw.....	N
Shark, Blue.....	T	Suckerel.....	S	Weackfish.....	M
Shark, Dogfish.....	T	Sun-fish (=Pumpkin-seed).....	N	Whale, Bowhead.....	A
Shark, Mackerel.....	T	Sun-fish (=Warmouth).....	N	Whale, Finback.....	A
Shark, Oil.....	T	Sun-fish, Blue.....	N	Whale, Gray.....	A
Shark, Shovel-nosed.....	T	Sun-fish, Long-eared.....	N	Whale, Greenland.....	A
Shark, Tiger.....	T	Sun-fish, Ocean.....	G	Whale, Humpback.....	A
Shark, White.....	T	Sunny.....	N	Whale, Killer.....	A
Sheepshead.....	N	Surf-fish (=Perch).....	J	Whale, Polar.....	A
Sheepshead (=Butter-fish).....	K	Surf-fish (=Croaker).....	M	Whale, Right.....	A
Sheepshead (=Fresh-water Drum).....	M	Surgeon-fish.....	J	Whale, Scrag.....	A
Sheepshead, Common.....	N	Sword-fish.....	K	Whale, Sperm.....	A
Shiner (=Menhaden).....	Q	Sword-fish, Florida (=Cutlass-fish).....	K	Whale, Sulphur-bottom.....	A
Shiner (=Red-fin).....	S	Tailor (=Blue-fish).....	N	Whale, White.....	A
Shiner (=Sailors' Choice).....	N	Tailor, Fresh-water (=Hickory Shad).....	R	Whale, White.....	V
Shiner, Blunt-nosed.....	K	Tarpon.....	R	Whipparee.....	T
Shiner, Golden.....	S	Tarpon.....	R	Whitebait.....	B
Shrimp, California.....	X	Tautog.....	J	White-fish (=Blue-fish).....	N
Shrimp, Common.....	X	Ten-pounder.....	R	White-fish (Great Lakes).....	P
Shrimp, Mantis.....	X	Terrapin, Diamond-back.....	E	White-fish (=Menhaden).....	Q
Silver-eel.....	K	Terrapin, Fresh-water.....	E	White-fish, California.....	I
Silver-fish.....	R	Terrapin, Salt-water.....	E	White-fish, Menomonee.....	P
Silver-side.....	O	Thimble-eye.....	K	White-fish, Mongrel.....	P
Siscowet.....	P	Thread-fish.....	J	White-fish, Rocky Mountain.....	P
Skate.....	T	Tile-fish.....	L	Whiting (=Black Mullet).....	M
Skip-jack (=Blue-fish).....	N	Toad-fish.....	J	Whiting (=Ground Mullet).....	M
Skip-jack (=Butter-fish).....	K	Togoe.....	P	Whiting (=Harvest-fish).....	K
Skip-jack (=Inland Alawife).....	R	Tomcod.....	M	Whiting (=Silver Hake).....	I
Skip-jack (=Jurel).....	K	Torpedo.....	T	Wing-fish.....	J
Skip-jack (=Skipper).....	O	Tortoise, Box.....	E	Winkle.....	V
Slippery-dick.....	J	Tortoise, Musk.....	E	Wolf-fish.....	J
Smelt.....	P	Tortoise, Pond.....	E	Worm, Marine.....	Y
Smelt, Alaska.....	P	Triple-tail.....	N	Yellow-fan.....	M
Smelt, California.....	P	Trout (=Large-mouth Black-bass).....	N	Yellow-tail (=Menhaden).....	Q
Smelt, Sand.....	O	Trout (=Small-mouth Black-bass).....	N	Yellow-tail (=Sailors' Choice).....	N
Smelt, Surf.....	P	Trout, Black-spotted.....	P	Yellow-tail (=Silver Hake).....	M
Snail.....	V	Trout, Brook.....	P	Yellow-tail (=White Salmon).....	K
Snail-borer.....	V	Trout, Bull.....	P		
Snapper, Bastard.....	N	Trout, Dolly Varden.....	P		

CENSUS BULLETIN.



No. 3.

WASHINGTON, D. C.

March 1, 1890.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., March 1, 1890.

By the provisions of the eighteenth section of the act of Congress entitled "An act to provide for taking the Eleventh and subsequent censuses," approved March 1, 1889, the Superintendent of Census is authorized to withdraw entirely from the enumerators the collection of the statistics of manufactures, where he shall deem it expedient, and to charge the duty upon experts and special agents to be employed for that purpose.

Acting under the authority thus conferred, the Superintendent has decided that the collection of the statistics relating to iron and steel, to coke, to glass, to the electrical industry, and to illuminating gas shall be collected by expert agents without regard to locality. Enumerators and special agents for cities and towns will therefore not be required to make returns for such establishments.

The collection of the general statistics of manufactures in cities and towns hereinafter noted has been withdrawn from the enumerators and the duty charged upon special agents. This list of cities and towns has been submitted to and approved by the Secretary of the Interior, and is here issued in the form of a bulletin, designated as Bulletin No. 3 of the Eleventh Census.

Supervisors of census are hereby directed to take proper steps to fully inform the enumerators under their charge as to the cities and towns in which they are not to collect the statistics of manufactures.

Very respectfully,

ROBERT P. PORTER,
Superintendent of Census.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., February 20, 1890.

To the Honorable the Secretary of the Interior.

SIR: I have the honor to submit herewith, for your consideration and approval, the foregoing list of industries the collection of the statistics of which has been entirely withdrawn from the enumerators and assigned to expert special agents without regard to locality. I submit also the within list of cities and towns in which the collection of the general statistics of manufactures has been withdrawn from the enumerators and the duty assigned to special agents, to be appointed for each of such cities and towns in accordance with the provisions of section 18 of the act of Congress approved March 1, 1889.

Very respectfully,

ROBERT P. PORTER,
Superintendent of Census.

Approved:

John W. Noble

Secretary of the Interior.

CITIES AND TOWNS

BY SUPERVISORS' DISTRICTS

IN WHICH STATISTICS OF MANUFACTURES WILL BE COLLECTED

BY SPECIAL AGENTS.

ALABAMA.

First District—Huntsville.
Third District—Birmingham.
Fourth District—Mobile; Selma.
Fifth District—Eufaula; Montgomery.

ARKANSAS.

First District—Helena; Pine Bluff.
Third District—Little Rock; Texarkana.

CALIFORNIA.

First District—San Francisco; San José.
Second District—Oakland; Sacramento; Stockton.
Third District—Marysville; Napa City; Petaluma; Santa Rosa; Vallejo.
Fourth District—Santa Cruz.
Fifth District—Los Angeles.

COLORADO.

First District—Denver; Georgetown.
Second District—Leadville.

CONNECTICUT.

First District—Branford; Bridgeport; Danbury; Derby; Greenwich; Hamden; Meriden; Milford; Naugatuck; New Haven; New Milford; Newtown; Norwalk; South Norwalk; Stamford; Thomaston; Wallingford; Waterbury; Winchester.
Second District—Bristol; Enfield; Farmington; Hartford; Killingly; Manchester; Middletown; New Britain; New London; Norwich; Putnam; Southington.

DELAWARE.

First District—Wilmington.

DISTRICT OF COLUMBIA.

First District—Washington.

FLORIDA.

First District—Jacksonville; Key West.

GEORGIA.

First District—Rome.
Second District—Athens; Augusta.
Third District—Atlanta.
Fourth District—Columbus; Macon.
Fifth District—Savannah.

ILLINOIS.

First District—Chicago; Waukegan.
Second District—Aurora; Dixon; Elgin; Freeport; Galena; Rockford; Sterling; Sycamore.
Third District—Canton; Galesburgh; Moline; Monmouth; Peoria; Rock Island.
Fourth District—Bloomington; Joliet; Kankakee; La Salle; Ottawa; Peru.

ILLINOIS—Continued.

Fifth District—Danville; Decatur.
Sixth District—Carlinville; Jacksonville; Litchfield; Quincy; Springfield.
Seventh District—Alton; Belleville; East Saint Louis.
Eighth District—Cairo.

INDIANA.

First District—Evansville; Mount Vernon; Vincennes.
Second District—Aurora; Columbus; Jeffersonville; Lawrenceburgh; Madison; New Albany; Seymour.
Third District—Connersville; Indianapolis; Muncie; Richmond; Shelbyville.
Fourth District—La Fayette; Terre Haute.
Fifth District—Kokomo; La Porte; Logansport; Michigan City; Peru; South Bend.
Sixth District—Elkhart; Fort Wayne; Goshen; Huntington; Wabash.

IOWA.

First District—Burlington; Clinton; Davenport; Fort Madison; Iowa City; Keokuk; Lyons; Mount Pleasant; Muscatine; Ottumwa.
Second District—Cedar Falls; Cedar Rapids; Dubuque; Waterloo.
Third District—Council Bluffs; Des Moines.
Fourth District—Boone; Marshalltown; Sioux City.

KANSAS.

First District—Fort Scott.
Second District—Atchison; Kansas City; Lawrence; Leavenworth; Topoka.
Third District—Salma.
Fourth District—Wichita.

KENTUCKY.

First District—Owensborough; Paducah.
Third District—Louisville.
Fourth District—Covington; Frankfort; Lexington; Newport.
Fifth District—Ashland; Maysville.

LOUISIANA.

First District—New Orleans.

MAINE.

First District—Auburn; Augusta; Bath; Biddeford; Deering; Gardiner; Gorham; Hallowell; Lewiston; Portland; Saco; Skowhegan; Waterville; Westbrook.
Second District—Bangor; Belfast; Calais; Ellsworth; Oldtown; Rockland; Thomaston; Waldoboro.

MARYLAND.

First District—Baltimore.
Third District—Cumberland; Frederick; Hagerstown.

MASSACHUSETTS.

First District—Abington; Adams; Amesbury; Amherst; Andover; Ashland; Athol; Attleborough; Beverly; Blackstone; Boston; Braintree; Bridgewater; Brockton; Brookfield; Brookline; Cambridge; Canton; Chelmsford; Chelsea; Chicopee; Chicopee Falls; Clinton; Concord; Dalton; Danvers; Dartmouth; Dedham; Douglas; Dudley; Easthampton; Easton; Everett; Fall River; Fitchburg; Foxborough; Framingham; Franklin; Gardner; Georgetown; Gloucester; Grafton; Great Barrington; Greenfield; Hanover; Haverhill; Holbrook; Holliston; Holyoke; Hopkinton; Hudson; Hyde Park; Ipswich; Lawrence; Lee; Leicester; Leominster; Lowell; Lynn; Malden; Mansfield; Marblehead; Marlborough; Medford; Melrose; Merrimac; Methuen; Middleborough; Milford; Millbury; Monson; Montague; Natick; New Bedford; Newburyport; Newton; North Adams; Northampton; North Andover; Northbridge; North Brookfield; Norwood; Orange; Palmer; Peabody; Pepperell; Pittsfield; Plymouth; Quincy; Randolph; Reading; Rockland; Rockport; Salem; Salisbury; Saugus; Somerville; South Abington; Southborough; Southbridge; South Hadley; Spencer; Springfield; Stoneham; Stoughton; Sutton; Taunton; Templeton; Upton; Uxbridge; Wakefield; Walpole; Waltham; Ware; Wareham; Warren; Watertown; Webster; Westborough; Westfield; West Springfield; Weymouth; Wilbraham; Williamstown; Winchendon; Winchester; Woburn; Worcester.

MICHIGAN.

First District—Adrian; Ann Arbor; Battle Creek; Coldwater; Detroit; Jackson; Wyandotte; Ypsilanti.
Second District—East Saginaw; Flint; Pontiac; Port Huron; Saginaw.
Third District—Big Rapids; Greenville; Ionia; Lansing.
Fourth District—Grand Haven; Grand Rapids; Kalamazoo; Muskegon; Niles.
Fifth District—Alpena; Bay City; Ludington; Manistee; West Bay City.
Sixth District—Monominee.

MINNESOTA.

First District—Mankato; Owatonna; Rochester; Winona.
Second District—Faribault; Minneapolis; Red Wing.
Third District—Saint Paul; Stillwater.

MISSISSIPPI.

Third District—Natchez; Vicksburg.
Fourth District—Meridian.

MISSOURI.

First District—Saint Charles; Saint Louis.
Second District—Capo Girardeau.
Third District—Jefferson City; Louisiana.
Fourth District—Cartiago; Joplin; Springfield.
Fifth District—Hannibal.
Sixth District—Sedalia.
Seventh District—Chillicothe.
Eighth District—Kansas City; Saint Joseph.

NEBRASKA.

Third District—Lincoln; Nebraska City; Omaha.

NEVADA.

First District—Carson City; Virginia City.

NEW HAMPSHIRE.

First District—Concord; Dover; Exeter; Farmington; Franklin; Keene; Laconia; Manchester; Nashua; Portsmouth; Rochester; Somersworth.

NEW JERSEY.

First District—East Newark; Newark; Orange; Passaic; Paterson; Phillipsburgh.
Second District—Elizabeth; Hoboken; Jersey City; Lambertville; New Brunswick; Plainfield; Rahway; Trenton.
Third District—Bordentown; Bridgeton; Burlington; Camden; Salem; Vineland.

NEW YORK.

First District—New York City.
Second District—Brooklyn; Flushing; Long Island City.
Third District—Hudson; Matteawan; Peekskill; Port Chester; Poughkeepsie; Sing Sing; Tarrytown; Yonkers.
Fourth District—Haverstraw; Kingston; Middletown; Newburgh; Port Jervis.
Fifth District—Albany; Cohoes; Greenbush; Green Island; Lansingburgh; Oneonta; Troy; West Troy.
Sixth District—Amsterdam; Glens Falls; Hion; Johnstown; Little Falls; Queensbury; Saratoga Springs; Schenectady.
Seventh District—Malone; Ogdensburgh; Plattsburgh; Watertown.
Eighth District—Auburn; Oswego; Rome; Syracuse; Utica.
Ninth District—Binghamton; Canisteo; Elmira; Hornellsville; Ithaca; Owego.
Tenth District—Batavia; Brockport; Canandaigua; Geneva; Le Roy; Rochester; Seneca Falls.
Eleventh District—Buffalo; Dunkirk; Jamestown; Lockport; Niagara Falls; Olean; Tonawanda.

NORTH CAROLINA.

First District—New Bern.
Second District—Raleigh.
Third District—Wilmington.
Fourth District—Charlotte.

OHIO.

First District—Bucyrus; Defiance; Findlay; Postoria; Fremont; Lima; Tiffin; Toledo; Van Wert.
Second District—Dayton; Kenton; Piqua; Springfield; Troy; Urbana; Xenia.
Third District—Cincinnati; Hamilton; Middletown.
Fourth District—Chillicothe; Gallipolis; Hillsborough; Ironton; Portsmouth.
Fifth District—Circleville; Columbus; Delaware; Lancaster; Marion; Mount Vernon.
Sixth District—Ashland; Cleveland; Elyria; Mansfield; Sandusky; Wooster.
Seventh District—Bellevue; Coshocton; Marietta; Zanesville.
Eighth District—Akron; Alliance; Ashtabula; Canton; East Liverpool; Massillon; New Philadelphia; Niles; Ravenna; Salem; Steubenville; Warren; Wellsville; Youngstown.

OREGON.

First District—Portland.

PENNSYLVANIA.

First District—Philadelphia.

Second District—Chester; Columbia; Lancaster; South Chester; York.

Third District—Allentown; Bethlehem; Bristol; Easton; Norristown; Reading; South Bethlehem.

Fourth District—Danville; Harrisburg; Lebanon; Middletown; Pottsville.

Fifth District—Carbondale; Hazleton; Scranton; Wilkes-Barre.

Sixth District—Bellefonte; Bradford; Lock Haven; Towanda; Williamsport.

Seventh District—Altoona.

Ninth District—Allegheny; McKeesport; Pittsburgh.

Tenth District—Erie; Greenville; Oil City; Sharon; Titusville.

Eleventh District—Beaver Falls.

RHODE ISLAND.

First District—Bristol; East Providence; Lincoln; Newport; Pawtucket; Providence; Warren; Westerly; Woonsocket.

SOUTH CAROLINA.

First District—Greenville; Spartanburg.

Second District—Columbia.

Third District—Charleston.

TENNESSEE.

First District—Knoxville.

Second District—Chattanooga.

Third District—Columbia; Nashville.

Fifth District—Jackson; Memphis.

TEXAS.

Second District—Galveston; Houston; Marshall; Texarkana.

Third District—Dallas; Fort Worth.

Fifth District—Austin; San Antonio.

UTAH.

First District—Ogden; Salt Lake City.

VERMONT.

First District—Bennington; Brattleboro; Burlington; Rutland; Saint Johnsbury.

VIRGINIA.

First District—Norfolk; Portsmouth.

Second District—Manchester; Petersburg; Richmond.

Third District—Alexandria; Fredericksburgh.

Fourth District—Danville; Lynchburgh.

WASHINGTON.

First District—Seattle; Walla Walla.

WEST VIRGINIA.

First District—Parkersburgh; Wheeling.

WISCONSIN.

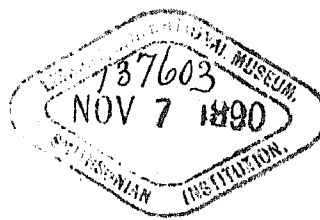
First District—Beaver Dam; Kenosha; Milwaukee; Racine; Watertown; Whitewater.

Second District—Beloit; Janesville; Madison.

Third District—Appleton; Berlin; Fond du Lac; Green Bay; Manitowoc; Menasha; Neenah; Oshkosh; Shoboygan.

Fourth District—Oconto; Stevens' Point; Wausau.

Fifth District—Chippewa Falls; Eau Claire; La Crosse; Menomonee.



[7-010]

CENSUS BULLETIN.

No. 4.

WASHINGTON, D. C.

April 23, 1890.

Names and Addresses of Supervisors of the Eleventh Census.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., April 15, 1890.

By the terms of an act approved March 1, 1889, for taking the Eleventh and subsequent censuses, the Secretary of the Interior is required to designate, on the recommendation of the Superintendent of Census, the number, whether one or more, of supervisors of census to be appointed within each state and territory and the District of Columbia, who shall be appointed by the President, by and with the advice and consent of the Senate, the number of such supervisors not to exceed 175.

In accordance with this provision, the country has been divided into 175 supervisors' districts, each district to be under the direct charge of one supervisor. A full description of the several supervisors' districts, as approved by the Secretary of the Interior, was published as Census Bulletin No. 1, under date of February 10, 1890.

The following persons have been duly appointed and confirmed as supervisors of census, and have entered upon the discharge of their duties in their respective districts.

Very respectfully,

Robert S. Forster

Superintendent of Census.

Names and Addresses of Supervisors.

Alabama.

- First district*—Andrew J. Ingle, Double Springs, *Winston county.
Second district—Thomas P. Ivy, Attalla, Etowah county.
Third district—James L. Watkins, Birmingham, Jefferson county.
Fourth district—Jack R. Wilson, Grove Hill, Clarke county.
Fifth district—Willett T. Brightman, Hayneville, Lowndes county.

Arizona.

- One district*—Elias S. Clark, Prescott, Yavapai county.

Arkansas.

- First district*—Jacob Trieber, Helena, Phillips county.
Second district—Otis E. Guilley, Springdale, Washington county.
Third district—John W. Howell, Box 148, Hot Springs, Garland county.

California.

- First district*—John P. Sheehan, Room 7, Appraiser's Building, San Francisco.
Second district—William A. Anderson, 209 J street, Sacramento.
Third district—Allen B. Lemmon, Santa Rosa, Sonoma county.
Fourth district—Hamilton Wallace, Box B, Tulare, Tulare county.
Fifth district—Leroy E. Mosher, Los Angeles, Los Angeles county.

Colorado.

- First district*—George L. Sopris, Box 1832, Denver.
Second district—Willard B. Felton, Lock-box 515, Canon City, Fremont county.

Connecticut.

- First district*—John McCarthy, Box 1153, New Haven.
Second district—James McLaughlin, Stafford Springs, Tolland county.

Delaware.

- One district*—Stansbury J. Willey, 1010 King street, Wilmington.

District of Columbia.

- One district*—Harrison Dingman, Room 36, Atlantic building, Washington.

Florida.

- First district*—Charles S. Partridge, Sanford, Orange county.
Second district—John W. Tompkins, Lake City, Columbia county.

Georgia.

- First district*—Christopher C. Haley, Jasper, Pickens county.
Second district—William F. Bowers, Bowersville, Hart county.
Third district—Joseph H. Thibadeau, Atlanta.
Fourth district—Marion Bethune, Talbotton, Talbot county.
Fifth district—Isaac Beckett, 135 Congress street, Savannah.
Sixth district—William A. Harris, Isabella, Worth county.

Idaho.

- One district*—Adoniram J. Pinkham, Ketchum, Alturas county.

Illinois.

- First district*—Frank Gilbert, Custom House, Chicago.
Second district—Cash C. Jones, Rockford, Winnebago county.
Third district—John W. Bailey, Princeton, Bureau county.
Fourth district—Oscar F. Avery, Pontiac, Livingston county.
Fifth district—John W. Fisher, Paris, Edgar county.
Sixth district—Jacob Wheeler, Springfield.
Seventh district—Emil Schmidt, Nashville, Washington county.
Eighth district—Norman H. Moss, Mount Vernon, Jefferson county.

Indiana.

- First district*—Frederick J. Scholz, Custom House, Evansville.
Second district—Ambrose E. Nowlin, Lawrenceburgh, Dearborn county.
Third district—Sidney Conger, Flat Rock, Shelby county.
Fourth district—Wilson H. Soale, Terre Haute, Vigo county.
Fifth district—Charley Harley, Delphi, Carroll county.
Sixth district—Samuel B. Beshore, Marion, Grant county.

Iowa.

- First district*—John W. Rowley, Keosauqua, Van Buren county.
Second district—David W. Reed, Lock-box 417, Waukon, Allamakee county.
Third district—Bradbury W. Hight, Council Bluffs, Pottawattamie county.
Fourth district—John W. Near, Madrid, Boone county.

Kansas.

- First district*—Littleton S. Crum, Oswego, Labette county.
Second district—Sylvester R. Burch, Olafhe, Johnson county.
Third district—William E. Case, Norton, Norton county.
Fourth district—Thomas A. Hubbard, Wellington, Sumner county.

Kentucky.

- First district*—Napoleon B. Chambers, Hawesville, Hancock county.
Second district—Alfred Allen, Hardinsburgh, Breckinridge county.
Third district—William H. Spencer, Lebanon, Marion county.
Fourth district—John Woodhead, Box 824, Falmouth, Pendleton county.
Fifth district—Edward C. O'rear, Mount Sterling, Montgomery county.
Sixth district—Richard L. Ewell, London, Laurel county.

Louisiana.

- First district*—George Baldey, Custom House, New Orleans.
Second district—Bartholomew C. White, Shreveport.
Third district—James C. Weaks, 10 North Grande street, Monroe, Ouachita parish.
Fourth district—Bowman H. Peterson, Wheelock, Iberville parish.

Maine.

- First district*—James S. Wright, Paris, Oxford county.
Second district—Frank Gilman, Bangor, Penobscot county.

Maryland.

- First district*—John C. Rose, 301 N. Charles street, Baltimore.
Second district—John P. Owens, Salisbury, Wicomico county.
Third district—William H. Perkins, Hancock, Washington county.

Massachusetts.

- One district*—Horace G. Wadlin, 20 Beacon street, Boston.

Michigan.

- First district*—John C. Sharp, Jackson, Jackson county.
Second district—Charles H. Wisner, Flint, Genesee county.
Third district—James N. McBride, Owosso, Shiawassee county.
Fourth district—Donald C. Henderson, Allegan, Allegan county.
Fifth district—James Watson, Roscommon, Roscommon county.
Sixth district—George A. Newett, Ishpeming, Marquette county.

Minnesota.

- First district*—Herbert J. Miller, Luverne, Rock county.
Second district—Edward J. Davenport, Minneapolis.
Third district—Theophilus F. Smith, 22 Chamber of Commerce, Saint Paul.
Fourth district—Elmer E. Adams, Fergus Falls, Otter Tail county.

Mississippi.

- First district*—Edward Aldrich, Olive Branch, De Soto county.
Second district—John W. Chandler, Cliftonville, Noxubee county.
Third district—Joseph E. Ousley, Rosedale, Bolivar county.
Fourth district—Garfield S. McMillan, Brookhaven, Lincoln county.

Missouri.

- First district*—Eugene F. Weigel, N. E. corner Eighth and Olive streets, Saint Louis.
Second district—Eugene C. Baugher, Richwoods, Washington county.
Third district—Walbridge J. Powell, Rolla, Phelps county.
Fourth district—William N. Davis, Mount Vernon, Lawrence county.
Fifth district—John M. McCull, Kirksville, Adair county.
Sixth district—Arthur P. Morey, 410 Ohio street, Sedalia.
Seventh district—Hobart G. Orton, Princeton, Mercer county.
Eighth district—William H. Miller, 613 Delaware street, Kansas City.

Montana.

- One district*—William O. Speer, Butte City.

Nebraska.

- First district*—William S. Randall, Fairfield, Clay county.
Second district—Benjamin F. Stouffer, Fremont, Dodge county.
Third district—Thomas M. Cooke, Box 431, Lincoln.

Nevada.

- One district*—George I. Lammon, Virginia City.

New Hampshire.

- One district*—Everett B. Huse, Enfield, Grafton county.

New Jersey.

- First district*—Arthur B. Pearce, P. O. Box 807, Paterson.
Second district—John Bumsted, 99 Clinton avenue, Jersey City.
Third district—Richard T. Starr, Salem, Salem county.

New Mexico.

- One district*—Pedro Sanchez, Santa Fé.

New York.

- First district*—Charles H. Murnay, 135 Eighth street, New York.
Second district—Robert B. Sedgwick, 41 Court street, Brooklyn.
Third district—William C. Daley, Chatham, Columbia county.
Fourth district—Benjamin B. Odell, jr., 14 Water street, Newburgh, Orange county.
Fifth district—Richard A. Derriek, cor. Congress and Second streets, Troy.
Sixth district—Benjamin S. Robinson, Greenfield Centre, Saratoga county.
Seventh district—Willard S. Augsbury, Antwerp, Jefferson county.
Eighth district—Myron W. Van Auken, Mann Building, Utica.
Ninth district—Joseph Schnell, 8 Main street, Binghamton, Broome county.
Tenth district—Edwin L. Wage, Albion, Orleans county.
Eleventh district—Silas J. Douglass, 50 Niagara street, Buffalo.

North Carolina.

- First district*—George W. Cobb, Elizabeth City, Pasquotank county.
Second district—Madison Haykins, Box 382, Henderson, Vance county.
Third district—Caleb P. Lockey, Wilmington.
Fourth district—William E. Webb, Roxborough, Person county.
Fifth district—Henry Hardwicke, Asheville, Buncombe county.

North Dakota.

- One district*—David S. Dodds, Lakota, Nelson county.

Ohio.

- First district*—Isaac M. Kirby, Upper Sandusky, Wyandot county.
Second district—John Devor, Greenville, Darke county.
Third district—Lot Wright, Custom House, Cincinnati.
Fourth district—Mark Stemberger, Jackson, Jackson county.
Fifth district—Samuel H. Peterman, Mount Vernon, Knox county.
Sixth district—Thomas M. Beer, Ashland, Ashland county.
Seventh district—James P. Wood, Athens, Athens county.
Eighth district—William Grinnell, South Walnut street, Ravenna, Portage county.

Oklahoma.

- One district*—Harry P. Clark, Guthrie.

Oregon.

- First district*—John Kelly, Eugene, Lane county.
Second district—John W. Strange, La Grande, Union county.

Pennsylvania.

- First district*—Robert B. Beath, Room 8, P. O. building, Philadelphia.
Second district—John H. Landis, Windom, Lancaster county.
Third district—John H. White, Norristown, Montgomery county.
Fourth district—J. Henry Miller, Lebanon, Lebanon county.
Fifth district—George K. Ashley, Montrose, Susquehanna county.
Sixth district—Peter D. Bricker, Jersey Shore, Lycoming county.
Seventh district—David G. Alter, Port Royal, Juniata county.
Eighth district—George W. Hood, Indiana, Indiana county.
Ninth district—George T. Oliver, Pittsburgh.
Tenth district—James B. Mates, Butler, Butler county.
Eleventh district—William Denney, Claysville, Washington county.

Rhode Island.

- One district*—Alonzo Williams, 10 Cushing street, Providence.

South Carolina.

- First district*—Samuel T. Poinier, Spartanburg, Spartanburg county.
Second district—Delevan Yates, Aiken, Aiken county.
Third district—Randall D. George, 159 Spring street, Charleston.
Fourth district—Francis W. Macusker, Georgetown, Georgetown county.

South Dakota.

- First district*—James A. Wakefield, Huron, Beadle county.
Second district—Charles W. Mather, Deadwood, Lawrence county.

Tennessee.

- First district*—William C. Hunt, 120 Hill street, Knoxville, Knox county.
Second district—James G. Parks, Chattanooga.
Third district—Peyton C. Smithson, Lewisburgh, Marshall county.
Fourth district—Henry R. Hinkle, Savannah, Hardin county.
Fifth district—John R. Walker, Trenton, Gibson county.

Texas.

- First district*—Hiram A. David, Greenville, Hunt county.
Second district—Joseph F. Pells, Palestine, Anderson county.
Third district—John Nevins, Denison, Grayson county.
Fourth district—Thomas A. Pope, Cameron, Milam county.
Fifth district—James P. Newcomb, 250 W. Commerce street, San Antonio, Bexar county.
Sixth district—David Redfield, Cisco, Eastland county.
Seventh district—Joseph E. Ryus, Graham, Young county.
Eighth district—Edward T. Terrell, Colorado, Mitchell county.

Utah.

- One district*—Amasa S. Condon, Ogden, Weber county.

Vermont.

- One district*—Marshall O. Howe, Newfane, Windham county.

Virginia.

- First district*—Benjamin Upton, jr., Norfolk, Norfolk county.
Second district—Richard A. Young, Petersburg, Dinwiddie county.
Third district—Joseph A. Wingfield, Hanover Court House, Hanover county.
Fourth district—George A. Revercomb, Warm Springs, Bath county.
Fifth district—Campbell Slemp, Turkey Cove, Lee county.

Washington.

- First district*—Will D. Jenkins, Whatcom, Whatcom county.
Second district—John M. Hill, Pullman, Whitman county.

West Virginia.

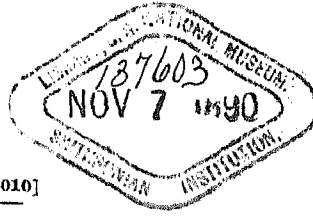
- First district*—George M. Bowers, Martinsburg, Berkeley county.
Second district—Thomas G. Mann, Hinton, Summers county.

Wisconsin.

- First district*—William T. Rambusch, Juneau, Dodge county.
Second district—John C. Metcalf, Janesville, Rock county.
Third district—Andrew J. Turner, Portage, Columbia county.
Fourth district—Luther B. Noyes, Marinette, Marinette county.
Fifth district—James L. Linderman, Osseo, Trempealeau county.

Wyoming.

- One district*—Homer Merrell, Rawlins, Carbon county.



[7-010]

CENSUS BULLETIN.

No. 5.

WASHINGTON, D. C.

May 15, 1890.

Statistics of Farms, Homes, and Mortgages.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., May 15, 1890.

In consequence of the public interest manifested in the investigation now being prosecuted by this office in relation to recorded indebtedness of private individuals and corporations and the statistics of farms, homes, and mortgages, and in view of the fact that every day letters are received at the Census Office asking for information on this subject, it has been deemed advisable to print the following letter of the Superintendent of Census, in reply to a Senate resolution, as a bulletin. It contains a full statement of the character of the inquiries referred to and a description of the methods adopted.

Very respectfully,

Superintendent of Census.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

Washington, D. C., May 6, 1890.

SIR:

On the 22d ultimo I had the honor to receive direct from the Senate of the United States a resolution introduced by Senator F. M. Cockrell, and adopted by that honorable body on that day, of which resolution the following is a copy:

Resolved, That the Superintendent of the Census be directed to communicate to the Senate the instructions, rules, and regulations formulated by him for the purpose of ascertaining the facts required by the act approved February 27, 1890, entitled "An Act to require the Superintendent of the Census to ascertain the number of people who own farms and homes and the amount of the mortgage indebtedness thereon."

I have the honor to submit to you my reply to said resolution, for transmission to the Senate.

THE BASIS OF THE INQUIRY.

The above resolution specifically calls upon the Superintendent of Census to furnish the instructions, rules, and regulations formulated by this office for the purpose of ascertaining the facts required by the act approved February 27, 1890.

The basis of the above inquiry will be the five questions numbered 26, 27, 28, 29, and 30 on the population schedule, as follows:

26. Is the home you live in hired, or is it owned by the head or by a member of the family?
27. If owned by head or member of family, is the home free from mortgage incumbrance?
28. If the head of family is a farmer, is the farm which he cultivates hired, or is it owned by him or by a member of his family?
29. If owned by head or member of family, is the farm free from mortgage incumbrance?
30. If the home or farm is owned by head or member of family and mortgaged, give the post-office address of owner.

The Census Office has not as yet formulated any instructions, rules, or regulations excepting those hereinafter given, which apply exclusively to enumerators.

It is not the intention to place in the hands of special agents the work of gathering these statistics until the other methods of the Census Office have been exhausted.

OBSTACLES ENCOUNTERED.

Experience has shown that it is impossible to secure reliable data in relation to the value and ownership of property or the amount of private indebtedness of individuals directly through the medium of enumerators. In 1879, when the act entitled "An Act to provide for taking the Tenth and subsequent censuses" provided specifically for certain inquiries to be incorporated in the enumerators' schedule in relation to the ownership of the public debt of the United States, by whom owned, and the respective amounts, the matter came up in Congress in consequence of a report made by my predecessor, General Francis A. Walker, giving reasons why the law should be repealed. The particular points touching the impracticability of securing or expecting to secure from the women of the household accurate information concerning the ownership of property were emphasized at that time. In the report referred to, urging the abandonment of the interrogatory relating to the ownership of the public debt, General Walker called attention to the fact that the questions on the population schedule would often have to be answered by the women of the family in the temporary or protracted absence of the head thereof, and that it is difficult to obtain accurate information excepting from the head of the family respecting the investment of the family property. Even when the head of the family is present, the direct inquiry of an enumerator respecting how much the head of the family owes is likely to engender distrust, and in the end only secure partial returns.

THE METHOD ADOPTED.

It was therefore decided when the act of February 27, 1890, relating to farms, homes, and mortgages, was passed by Congress that the enumerators should simply be called upon to secure information which will enable the Census Office, by correspondence and ultimately by special agents, and probably in many cases by searching the records, to obtain with almost absolute accuracy and final completeness the facts required. There are several advantages in this method. The office will be able to tabulate and give to the country in a comparatively short time the number of persons in each county who own the homes they occupy and the farms they cultivate, the number of people who are tenants of their homes and farms, the number of all owned and tenanted farms and homes which are mortgaged, and the number free from mortgage incumbrance. If the enumerator performs his duty in accordance with the instructions hereinafter appended the post-office address of every person owning and occupying a mortgaged home or farm will be in the possession of the Census Office, together with the addresses of all owners of farms and homes in cases where a doubt exists as to whether said farms and homes are mortgaged or not. It should be borne in mind that these addresses, unlike those obtained from the real estate records by abstractors in search of mortgaged indebtedness, and referred to hereafter, will not be subject to any considerable change in the short time elapsing between their collection and the forwarding from the Census Office of the circular of inquiry. As the law provides a penalty of \$100 for a refusal to answer these questions, it is believed that a very large percentage of the circulars which will be sent from this office as soon as the population schedules are returned will be answered forthwith. It is not likely that these circulars will be required before July, so they have not as yet been formulated. It is the intention, however, to include such questions as will elicit the amount of mortgaged indebtedness due upon every mortgaged home and farm occupied by the owner, the value of the mortgaged property, the rate of interest borne by the debt, the causes and purposes of the indebtedness, and such other information as may be obtainable and will aid in making this inquiry as complete as possible.

ADVANTAGES OF THE PROPOSED PLAN.

It should also be borne in mind that the enumerator is a local man, and in many cases known to the person to whom the inquiry is directed. It was therefore fair to assume that persons called upon to make returns relating to such a delicate matter as debt will more cheerfully fill out a blank addressed to the Superintendent of Census, to be mailed directly to Washington, there to lose its identity among millions of other returns, than give information as to the amount of their indebtedness to the enumerator. In any event, the Census Office will secure, and by the aid of special agents will ultimately be able to work up the list of delinquents, until by one method or another practically every return is obtained. It is not likely, with the liability to a fine staring them in the face, that people will refuse to reply to the census circular, and should they finally refuse to give the information to a special agent of the office the opportunity of searching the records is still open as a last resort. Having carefully considered all the obstacles to be overcome in order to make this report thorough and complete, the first step in the inquiry, as we have seen, has been taken by the insertion in the population schedule of the five questions given above and the framing of the subjoined instructions to enumerators.

INSTRUCTIONS TO ENUMERATORS.

26. Is the home you live in hired, or is it owned by the head or by a member of the family?

If hired, say *Hired*; if owned, say *Owned*, and indicate whether owned by *head*, *wife*, *son*, *daughter*, or other member of family, as *Owned—head*; *Owned—wife*; *Owned—son*, etc. If there is more than one son or daughter in the family, and the home is owned by one of them, indicate which one by using the figure at the head of the column in which the name, etc., of the person is entered, as *Owned—son (4)*.

27. If owned by head or member of family, is the home free from mortgage incumbrance?

If free from incumbrance, say *Free*; if mortgaged, say *Mortgaged*.

28. If the head of family is a farmer, is the farm which he cultivates hired, or is it owned by him or by a member of his family?

To be answered in the same manner as for Inquiry 26.

29. If owned by head or member of family, is the farm free from mortgage incumbrance?

To be answered in the same manner as for Inquiry 27.

30. If the home or farm is owned by head or member of family, and mortgaged, give the post-office address of owner.

In answer to this inquiry the post-office address of the owner of a *mortgaged* home or farm must be correctly stated; that is, the post-office at which the owner (whether head of family, wife, son, daughter, etc.) usually receives his or her mail.

In all cases where it can not be definitely ascertained whether the home or farm is mortgaged or not, return the post-office address of the owner, so that this office can communicate with such persons.

In connection with the definition of mortgage incumbrance it should be stated that judgment notes or confessions of judgment, as in Pennsylvania and Virginia, the deeds of trust of many states, deeds with vendor's lien clause, bonds or contracts for title that are virtually mortgages, crop liens or mortgages upon crops, and all other legal instruments that partake of the nature of mortgages upon real estate, are to be regarded as such; but mechanics' liens are not to be regarded as mortgage incumbrances upon homes or farms.

The enumerator should be careful to use the local name for the mortgage incumbrance when making the inquiries, and should not confine himself to the word "mortgage" when it will be misunderstood.

Some of the difficulties which will arise in connection with the prosecution of the inquiries concerning homes and farms and how they are to be treated may be mentioned as follows:

1. A house is not necessarily to be considered as identical with a home and to be counted only once as a home. If it is occupied as a home by one or more tenants, or by owner and one or more tenants, it is to be regarded as a home to each family.

2. If a person owns and cultivates what has been two or more farms and lives on one, they are not to be taken as more than one farm:

3. If a person owns and cultivates what has been two or more farms and all are not mortgaged, the several farms are to be counted as one farm and as mortgaged.

4. If a person hires both the farm he cultivates and the home he lives in, or owns both, the home is to be considered as a part of the farm.

5. If a person owns the home he lives in and hires the farm he cultivates, or owns the farm he cultivates and hires the home he lives in, both farm and home are to be entered upon the schedule, and separately.

6. If the tenant of a farm and its owner live upon it, either in the same house or in different houses, the owner is to be regarded as owning the home he lives in and the tenant as hiring the farm he cultivates. If the owner simply boards with the tenant no account is to be made of the owner.

7. If the same person owns and cultivates one farm and hires and cultivates another farm, he is to be entered upon the schedule as owning the farm he cultivates.

8. The head of a family may own and cultivate a farm and his wife may own another farm which is let to tenant, perhaps to her husband. In such case only the farm which is owned by the head of the family is to be considered, but the rented farm is to be taken account of when its tenant's family is visited.

9. A person who cultivates a farm is not to be regarded as hiring it if he works for a definite and fixed compensation in money or fixed quantity of produce, but he is to be regarded as hiring it if he pays a rental for it or is to receive a share of the produce, even though he may be subject to some direction and control by the owner.

THE RESULTS TO BE CONNECTED WITH OTHER IMPORTANT FACTS.

Having in this manner and by the several methods herewith presented obtained the facts required by the act of February 27 concerning farm and home ownership and tenancy, it is the intention of this office to connect the results with some of the important facts obtained through the population schedule. The division of farm and home ownership between the sexes, and the extent to which wives are owners, will be ascertained. It will be known whether farm and home owning is associated more with middle age than with youth or with old age, and the general beginning of the home owning period of

a man's life may be determined; that it is or is not principally the married who are owners may possibly be established; whether those of foreign birth are generally tenants or demonstrate an ability to own will be shown. The happy effects of American life, or the contrary, may be disclosed by the number of years during which persons live in the United States before they become owners, and it will be discovered whether foreign born are disposed to be merely tenants. Probably the most important connection that can be made will be between farm and home owning and tenancy and the occupations of owners and tenants. This relationship may be looked upon as deciding what a man's prospects are of becoming the proprietor of his home in the various occupations of industry and professional life. In short, the opportunity is here afforded to present information of a varied character regarding a popular subject, and perhaps the only opportunity for many years to come will be taken advantage of to present a large variety of results, showing the causes and associations of farm and home ownership and tenancy.

WORK PLANNED PRIOR TO ACT OF FEBRUARY 27, 1890.

In view of the fact that considerable public interest is felt in this inquiry, in consequence of its important bearing upon the progress and prosperity of the people and of the novelty of the investigation itself, nothing of so extensive and far-reaching a character having ever been attempted by any government before, I feel justified in taking this opportunity to lay before the Senate a full statement of the work relating to mortgage indebtedness planned and in course of completion by the Census Office prior to the passage of the act entitled "An Act to require the Superintendent of Census to ascertain the number of people who own farms and homes and the amount of the mortgage indebtedness thereon," together with a brief summary of what the office hopes to accomplish in this almost totally unexplored field of statistics.

THE INQUIRY NOW BEING PROSECUTED.

The work referred to above as having been planned before the passage of the act of February 27, and now in course of completion, relates exclusively to the recorded indebtedness of private corporations and individuals. It was begun early last summer, at which time three trained statisticians were put in the field for the purpose of examining the records in different sections of the country and making what may be termed experimental inquiries to aid in formulating a plan of operations.

The method to be adopted in collecting statistics of recorded indebtedness could not be determined upon without experimental investigation. Little was known about the character of the real estate records and their trustworthiness as sources of statistical investigation, and in order that the Census Office might proceed intelligently three special agents were appointed to conduct experimental investigations. Special Agent John S. Lord, of Illinois, selected Sangamon county, in that state, and Scott county, Iowa; Special Agent Frederick W. Kruse, of New York, selected Cattaraugus county, in that state; and Special Agent George K. Holmes, of Massachusetts, selected Hampden county, in that state.

THREE SPECIAL METHODS SUGGESTED.

Three special methods were in mind before these investigations were undertaken, viz:

First. Reliance upon the records.

Second. Direct application by letter and circulars of inquiry.

Third. The personal visitation of agents or enumerators, who should make inquiry concerning the recorded incumbrances on property of persons enumerated.

It was evident at the beginning that whatever plan might be adopted the expense that must be incurred, if it should be adopted in every county in the United States, unless reduced by information derived from the records, would be enormous, and probably greater than the appropriation for census purposes would warrant. Hence the endeavors of these special agents were directed toward discovering the cheapest plan that could be depended upon to establish with a fair degree of accuracy the recorded indebtedness in existence at a given date. Each special agent confined his experiment to real estate mortgages as the most important form of recorded security, and as the one affording the best opportunities for an investigation which must necessarily depend to such a great extent upon public records.

THE DIRECT METHOD.

The direct method of establishing by inquiry the net debt due upon every mortgage in force, and of eliminating the mortgages uncanceled of record, but paid in fact and in full, and the amounts of partial payments, commended itself in the abstract as the one to be most relied upon. This was the sole method employed in Cattaraugus county, New York, and was one of the methods employed in Scott and Sangamon counties. In Cattaraugus county a complete abstract was made of all mortgages remaining uncanceled of record on the 1st of June, 1889. This involved searching the records subsequent to 1818, and included many mortgages, which, although uncanceled, it might reasonably be assumed were not in force. It seemed advisable, however, to ascertain definitely to what extent mortgages of earlier date were still in force, so as to limit and define the scope of investigation. From this examination it appeared that the total number of mortgages remaining uncanceled was 14,266, of which 3,731 were recorded prior to 1869, 3,257 from 1869 to 1879, and 7,278 from 1879 to June 1, 1889.

UTILIZING SAVINGS BANKS AND LOAN ASSOCIATIONS.

After this abstract had been completed, the mortgages made to each of the savings banks and other loan associations were scheduled, and this list sent to each of them, with a letter requesting a statement of the amount unpaid upon each mortgage, together with the terms of payment and rate of interest, and in all cases the information was furnished. The mortgages of nine towns were scheduled, grouping together all mortgages relating to a particular town, and a circular letter mailed to both parties to the mortgage, requesting replies to a series of questions designed to ascertain the amount unpaid upon the mortgage and the motive or cause for making it. The difficulties which were encountered were less than had been expected, and replies were received to the larger portion of these circular letters, but could not be obtained for the remainder of them, owing to the neglect and refusal of the people to answer, to the inability of the special agents to get post-office addresses, to change of residence, and to the death of some of the persons whose names were upon record. These difficulties were to a large extent insurmountable in cases of the older mortgages, especially since these mortgages were presumably mostly paid in full, but were left uncanceled in the times when the business habits of the people were not as exact as they have been in recent years. Under this procedure absolutely complete statistics could not be obtained, and if sole dependence were to be placed upon it the investigation would be interminable, and would probably entail an expense that would consume the whole appropriation for census purposes. In spite of all the efforts made, about 20 per cent of the persons addressed failed to respond; but an estimate was made of the indebtedness in the cases of these persons upon the basis of the debt as shown by the replies which were received, and the total mortgage debt of seven of the nine towns was shown to be \$1,366,289, and the total assessed valuation of the real estate of these towns was \$3,883,534, as corrected and equalized by the board of supervisors of the county.

AN IMPORTANT FACT ESTABLISHED.

It is believed that two important facts in this line of inquiry were established by the Cattaraugus county investigation. First it was shown with a fair degree of accuracy that only eight-tenths of one per cent of the total debt represented by mortgages recorded prior to 1869 remain unpaid. Thus it would not be necessary, under any circumstances, in localities where the conditions are the same as in Cattaraugus county, to extend the scope of the investigation beyond twenty years next preceding the investigation. Indeed, Mr. Kruse, who conducted this inquiry, gave it as his opinion that in some instances less than twenty years would answer, as it was shown that less than 8 per cent of the mortgage debt in force is represented by mortgages recorded prior to 1879. The other experimental inquiries made by the Census Office fully corroborate the fact brought out in Cattaraugus county. It was ascertained, for example, that only 3 per cent of the mortgage debt of the people of Hampden county, Massachusetts, was created before 1870; that only 4 per cent of the recorded debt in Sangamon county, Illinois, was created prior to 1880, and that only 5 per cent of the debt in Scott county, Iowa, was created before 1880. These three conclusions, all pointing in the same direction, would indicate, in the western states certainly, and to a considerable extent in the eastern states, that a comparatively small percentage of the existing recorded indebtedness of the present time was created previous to 1880.

THE MOTIVE FOR MORTGAGING PROPERTY.

The importance of ascertaining the motive or cause for making the mortgage has not been underestimated by the Census Office, and in the inquiry conducted by Mr. Kruse it was made a prominent feature, with the following curious and interesting results, showing, by percentages, the causes for making real estate mortgages, as reported and ascertained in the preliminary investigation made in nine towns of Cattaraugus county, New York :

	Percentage.
For purchase money.....	54.55
For improvements.....	17.30
To pay previous mortgage.....	1.81
To pay debts.....	1.38
To use in business.....	1.68
To secure indorsements.....	1.40
To raise money for investment.....	0.60
To sink oil wells.....	0.20
To secure annuities.....	0.25
To pay off heirs.....	0.16
For support and family expenses.....	0.14
Sickness.....	0.16
Extravagance.....	0.14
Speculation.....	0.08
Miscellaneous.....	0.30
<hr/>	
Total.....	80.24
No motive ascertained.....	19.76
	<hr/>
	100.00

Miscellaneous causes reported for making mortgages : To secure payment for 675 gallons rectified whisky ; for traveling in the West ; for trip to Sweden ; to raise money for son ; to secure estate of sister ; to settle with wife ; to prove that a girl graduate can use an education to advantage ; to pay subscription for preacher.

THE ILLINOIS, IOWA, AND MASSACHUSETTS INQUIRIES.

The experimental inquiries conducted in Hampden county, Massachusetts, Sangamon county, Illinois, and Scott county, Iowa, by Special Agents George K. Holmes and John S. Lord differed largely from the investigations made by Mr. Kruse in Cattaraugus county, New York. The experiments of the two former special agents pointed to the desirability of ascertaining, if possible, the average duration of mortgage indebtedness ; that is, to establish with a fair degree of probability the average life of a mortgage in respective localities.

In an inquiry made by John S. Lord for the state of Illinois he clearly demonstrated that it was unsafe to depend wholly upon what might be called the average contract time of mortgages, for the reason that a large percentage of error might enter the calculation in consequence of the non-payment of mortgages when due. His method, however, was suggestive, and gave direction to the Census Office investigations in Sangamon county, Scott and Hampden counties, with the object of examining every feature of the method of establishing existing indebtedness by means of applying the average time of its duration. The data thus collected in these three counties agreed in showing that the amount of indebtedness placed upon record within a period of time previous to the first of June, 1889, corresponding to the average duration of such indebtedness as determined for each locality, represents, with a small percentage of error, the indebtedness which was actually in force upon said first of June, making allowance for partial payments that had been made upon the original amount of the debt. This was demonstrated in Scott and Sangamon counties by ascertaining what amount of real estate mortgage indebtedness was actually unpaid, which was done by means of inquiries addressed to the holders of mortgages and the owners of mortgaged real estate, and this was true, notwithstanding the diverse conditions existing in these counties. The amount of error in the result obtained by this method of determining the debt in force ranged from 3 to 5 per cent.

AVERAGE DURATION OF MORTGAGES.

In arriving at the amount of mortgages in force at a given date the common method of equating the time of several debts of different amounts and with different times of payment which is employed by bookkeepers was adopted. For example, if the mortgages placed upon record in a given locality in 1887 amounted to \$2,000, in 1888 to \$3,000, and in 1889 to \$2,500, and the average duration or life of a mortgage in said locality was found to be three years, then the debt really in force upon the first of January, 1890, would be \$7,500, minus the partial payments, determined as hereafter explained. In such a case it would be found that the amount of the mortgages now in force but made previous to 1887 is fairly balanced by the fully paid mortgages made in 1887-'89 and included in the above sum of \$7,500 as the recorded indebtedness of that locality January 1, 1890. This method practically overcomes the chief error which would arise from using the real estate records without correction, namely, the amount of uncanceled mortgages that have been really paid in full.

PARTIAL PAYMENTS.

The method adopted for obtaining the percentage to be deducted for partial payments in each locality is to secure information from mortgagees as to the amount of their loans that have been partially paid. In the experimental tests there was obtained at very trifling cost a basis of about six millions of dollars of loans in Sangamon county, of over three millions of dollars in Scott county, and of about five millions in Hampden county, and the percentages of these amounts represented by partial payments made within the average duration or life period of mortgages in these places varied from 7 to 9 per cent only.

These experimental inquiries have shown how valuable results for comparisons of indebtedness in different localities can be obtained, but nothing short of a costly resort to all the three methods already referred to in each individual county would accomplish the work with exactitude, if, indeed, it is possible that statistical accuracy can be obtained by any method whatever. The method that has been adopted will undoubtedly give approximately the amount of recorded indebtedness, and taken in connection with the results of the subsequent inquiry in regard to the ownership of homes and farms a great deal of light will be thrown upon the whole question.

INQUIRY COUNTIES.

Dependence upon enumerators would be out of the question, as has been already shown. Nor would it do to rely solely upon circulars of inquiry sent through the mails and addressed to the parties to mortgages whose names shall be obtained from records. This latter form of investigation is now being conducted by the Census Office in a large number of counties in the United States, termed in the office "inquiry" counties, with partially satisfactory results, but with the prospect of not getting replies for a considerable percentage of the mortgages uncanceled of record. Greater success may be expected in this direction, with the names and post-office addresses that will be obtained by enumerators. There was really no alternative left to the Census Office, the only course open being the method adopted, which does not rely entirely upon the records, but finds in those records the principal sources of information under proper interpretation, to which the results obtained in the "inquiry" counties will contribute.

RESULTS TO BE OBTAINED.

Under the plan of investigation adopted by the Census Office to ascertain the recorded indebtedness the results that will be obtained are substantially as follows:

The financial transactions of the people, as far as indicated by recorded mortgages, will be ascertained for the ten years from 1880 to 1889; the number of acres of agricultural land, and the number of real estate holdings by states and minor civil divisions which have been mortgaged in each year, and the amount of mortgage debt placed upon these two classes of real estate by years and by counties, will be ascertained.

The amount of mortgage debt existing January 1, 1890, upon agricultural land and upon village and city real estate will be obtained for each county.

The rates of interest paid upon debts secured by real estate will be ascertained for each county, and the total interest charged will be computed, together with the average annual rates of interest.

Private corporations as mortgageors, and all corporations as mortgagees, will, so far as practicable, be kept distinct from individuals in these statistics, and such corporations will be classified according to the character of their business. The growth of the business of building and loan associations will be disclosed.

As already explained, a special feature of the investigation will be the discovery of the average duration of mortgage debt and the rate of payment and proportion paid.

The causes and purposes of mortgage indebtedness will be sought and obtained, so far as people are willing to disclose them. This will throw light upon the character of mortgage indebtedness, and reveal to what extent it is an evidence of misfortune or enterprise.

Chattel mortgages are not included in this investigation of recorded indebtedness, partly because the expense would be too great, and partly because of the difficulties in the way of showing the amount of indebtedness in force upon chattels.

INSTRUCTIONS RELATING TO RECORDED INDEBTEDNESS.

The resolution asks that the instructions, rules, and regulations formulated by the Superintendent of Census for the purpose of ascertaining the facts required by the act approved February 27, 1890, be communicated by him to the Senate. As already stated, the rules directly relating to the inquiry provided for in the act of February 27, 1890, have not yet been formulated, so far as they relate to the work of special agents. I have the honor, however, to inclose copies of the instructions to such special agents as are now employed in abstracting mortgages from the records of every state and territory for the past ten years. These are general instructions, but in addition it has been found necessary to issue supplementary instructions applicable to special cases, to particular regions, and to perplexing problems which have constantly arisen. There is great lack of uniformity in the laws of the several states concerning mortgages and public records, and this has entailed an immense amount of labor in formulating instructions applicable to the different states, and not infrequently to different counties within the same state.

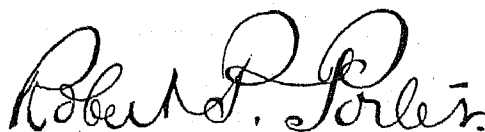
It has been found that, although in certain states the rate of interest is commonly stated in mortgages, in many other states the reverse is true, and rather than entirely abandon the endeavor to discover what rates of interest are paid upon real estate mortgages the Census Office has deemed it advisable to instruct its special agents to assume the customary rates of interest where mortgages do not disclose the rate. This work is being rapidly advanced in every state and territory in the Union except Nevada. In some states the work is nearly completed, and before many months it is hoped that results will be reached.

The reply to the resolution might, and perhaps ought in strictness, to have been confined to a transmittal of the printed "instructions, rules, and regulations," but this would have fallen far short of putting the Senate in possession of the full scope of the plan adopted thus far, and of the tests and experiments by which it has seemed preferable to others considered.

The whole subject is one of great importance and of obvious complexity, difficulty, and delicacy. It is the purpose of this office to make the investigation thorough and as nearly accurate as may be, to the end that the Eleventh Census may show the actual situation of our people in respect of financial prosperity, and may furnish foundation for comparison with the results of censuses to be taken in the future.

The Superintendent is glad of the opportunity afforded by the resolution to lay before Congress the plan adopted, in order that it may have criticism and give rise to suggestion, and in so doing trusts he shall not be deemed to have gone beyond the spirit or substantial purpose of the inquiry of the Senate.

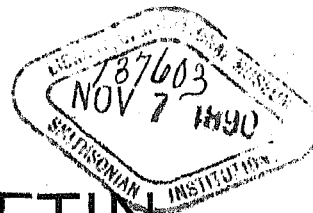
Very respectfully,



Superintendent of Census.

The Honorable THE SECRETARY OF THE INTERIOR.

[7-010.]



CENSUS BULLETIN.

No. 6.

WASHINGTON, D. C.

August 4, 1890.

FINANCIAL CONDITION OF COUNTIES.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., August 1, 1890.

The work of collecting the statistics of wealth, debt, and taxation for the Eleventh Census has been intrusted to Mr. T. CAMPBELL-COPELAND, Special Agent, in charge of this division.

The inquiry was begun in the summer of 1889, and is now well advanced toward completion. The returns thus far received make it possible to publish a preliminary bulletin showing the bonded, floating, gross, and net debt; sinking fund, available resources, and annual interest charge of the several counties of the United States. This statement is substantially correct, though a few counties in sparsely-settled states and territories have failed to respond to the repeated calls of this office. It is not likely, however, that the returns from these counties will make much difference in the total herewith presented, which may be fairly taken as the county indebtedness of the country for the census year. In securing the reports from minor civil divisions it has been impossible to obtain them for exactly the same date. In every case the fiscal year ending as nearly as possible to the census year, which closed May 31, 1890, has been taken.

Within a short time this bulletin will be followed by similar exhibits relating to the financial condition of municipalities and other minor civil divisions having debt-creating and taxing powers.

The symbolic maps accompanying this bulletin were designed by Mr. CAMPBELL-COPELAND, and are intended to illustrate the geographical distribution of county debt and of available resources. They will also enable those interested to ascertain the general range of indebtedness in particular counties.

Superintendent of Census.

FINANCIAL CONDITION OF COUNTIES.

The accompanying tables are intended to exhibit the results of an inquiry made since June, 1889, into the financial condition of the counties of the several states of the United States. The introductory tables, giving the amount of bonded debt, floating debt, and gross debt, with increase and decrease, include the figures for 1870 as taken from the report on finance of the Ninth Census. With the exception, perhaps, of half a dozen states, the figures given in the tables will be found to differ slightly from those to be finally published. Although every effort has been made to obtain from each county the necessary figures for 1880 and 1890, there are some counties still delinquent. At least ten appeals were made to certain counties before complete figures were forthcoming, and at this moment there are a few counties, scattered here and there throughout the sparsely-settled states and territories, from which it has been impossible to secure returns.

THE MAPS.

The purpose of the maps accompanying this bulletin is to show principally the gross debt for 1890 of counties. These maps are as follows:

- (1) The United States.
- (2) The New England States.
- (3) The Middle States.
- (4) The Southern States.
- (5) The Western Central States.
- (6) The Western States and Territories.

Sufficient room has been found on the map of the United States to place symbols within the bounds of states and territories indicative of—

- (a) Bonded debt.
- (b) Gross debt.
- (c) Total available resources.

In this map the symbols are arranged pyramidically, the upper one representing the bonded debt, that on the left-hand side of the base the gross debt, and opposite to it, on the right, the total available resources. The symbols indicate the amount of indebtedness of counties as returned for 1889-'90, and it will be understood that the map of the United States shows symbols only by states and territories.

In order that the group maps may be understood aright, the meaning of the symbols within the boundaries of one or two states will be explained here.

In Maine there are three symbols resembling each other. From the explanation just given and the legend at the right-hand bottom corner of the map it will be seen that these symbols indicate respectively a bonded debt, gross debt, and total available resources of over \$100,000 and under \$500,000. Georgia stands exactly in the same position as Maine.

From Pennsylvania the returns give both a bonded debt and gross debt of over \$7,000,000 but not exceeding \$9,000,000.

Kansas reaches the highest point on bonded and gross debt, each being over \$12,000,000 and under \$15,000,000. So far as counties are concerned, the total available resources of that state are under \$1,000,000.

Illinois shows a bonded and gross debt respectively between \$9,000,000 and \$12,000,000, with total available resources between \$1,000,000 and \$2,000,000.

From these illustrations the purpose of the maps may be readily understood.

NEW ENGLAND STATES.—The scale of this map and that of the other group maps is considerably lower than that of the United States. The highest amount represented is \$2,000,000 and over, only the gross debt of 1890 being represented within the county boundaries. Without a close examination it may be noticed that Vermont is nearly free of debt, and that the debt of Connecticut is very light. Massachusetts and some of the southern counties of New Hampshire show a heavy debt.

MIDDLE STATES.—There are a great many black dots on the map of Pennsylvania, and not a few on that of New York. In the latter state the debt has accumulated in the southeastern counties more than in other sections, but there are in that section groups of counties totally free from liability. There are several groups of counties, viz: Orleans, Genesee, Wyoming, Erie, Chautauqua, Cattaraugus, and Allegany, in the southwest, and Wayne, Ontario, Seneca, Yates, Schuyler, and Chemung, more toward the center, all without a gross debt, while on the north and northeast, starting from Lewis county, a semicircle of counties without debt is formed by Jefferson, Saint Lawrence, Franklin, Essex, Warren, and Fulton, with Washington in close proximity.

SOUTHERN STATES.—Starting from the northeastern corner of this map, it will be observed that nearly all of the debt of Virginia is along the western boundary and in the southwestern section. In the central and eastern sections of this state there are not more than eight or nine counties from which a debt has been reported. Sussex, Powhatan, and Stafford counties have a comparatively heavy debt, while the debts of Norfolk and Southampton do not exceed \$5,000. Nearly all of the counties in the southwestern section of this state running through the extreme of the boundary line are free from liability. The counties in West Virginia having a debt are nearly all centrally situated.

The only section of North Carolina having a large gross debt is the southwestern. Cumberland, Craven, and Durham counties have a large gross debt, but the section most heavily marked comprises Mecklenburgh, Rutherford, Henderson, McDowell, and Buncombe counties.

Florida, Alabama, Tennessee, Arkansas, Mississippi, Louisiana, and northern and southeastern Texas show but little solid black on the map. The counties of Texas, except those referred to, are more or less involved, but throughout the state there may be found counties entirely free of debt.

There is a marked difference in the indebtedness of the southern and eastern counties of Kentucky and those of the northern and western sections.

WESTERN CENTRAL STATES.—Among the lightest groups of counties on this map are those of Michigan, a black dot appearing only here and there throughout the state. Wisconsin also makes a good showing.

The western counties of Ohio show a heavy debt, while those in the northeastern part of the state, with the exception of Mahoning, Stark, Holmes, Knox, and Tuscarawas counties, have no debt. The counties in the southeastern section having debt are Belmont, Muskingum, Perry, Lawrence, Meigs, Hocking, Vinton, Morgan, Noble, and Athens.

Throughout Indiana, more particularly in the northern counties, the gross debt is very considerable.

Illinois has a large group of counties in the northern section, and another group, consisting of Woodford, McLean, Livingston, Iroquois, Vermilion, and Edgar counties, without debt of any kind.

The southern counties of Minnesota, particularly those of Faribault, Freeborn, Mower, Fillmore, and Houston, together with Waseca, Steele, Dodge, Olmsted, Murray, Cottonwood, and Watonwan, have at present no outstanding debt. The same may be also said of the group formed by Dakota, Goodhue, and Wabasha counties.

The northwestern counties of Iowa are somewhat heavily involved, but on the northeast, running down toward the south, there are quite a number of counties represented on the map by a plain circle. Wright, Franklin, and Butler counties stand together; so do Tama, Benton, and Linn counties; while in another row are found Iowa, Johnson, Cedar, and Clinton counties.

The counties in the northern portion of Missouri are heavier in debt than those toward the south and east. One group, composed of Osage, Gasconade, Crawford, Washington, Saint Francois, Sainte Genevieve, Perry, Madison, Iron, Reynolds, Carter, Wayne, Cape Girardeau, Scott, New Madrid, and Mississippi counties, has no debt.

In North Dakota only five counties are without debt. South Dakota has more counties free from debt, and the debts are smaller.

Although Nebraska shows a considerable scattered debt, here and there on the map may be found small groups of counties without liability. Pierce, Cedar, and Dickson counties in the northeast corner, and Clay, Fillmore, Saline, Jefferson, and Thayer counties in the southeast, may be mentioned as instances.

The counties in Kansas are heavily involved, there being only one group free of debt, and that stands in the southeastern corner of the state, comprising Neosho, Crawford, and Cherokee counties.

WESTERN STATES AND TERRITORIES.—Few of the counties in the states comprised in this group are free from debt, and some are very heavily involved.

Oregon seems to have the only group of counties without liability. That group is situated in the northwestern section of the state, and comprises Gilliam, Wasco, Multnomah, Washington, Clackamas, Marion, Linn, Sherman, and Lane counties.

Of the territories Utah has the largest number of counties without debt.

AGGREGATE DEBT OF COUNTIES IN THE UNITED STATES.

Table I shows the amount of bonded debt, floating debt, and gross debt in 1870, as compared with that of 1880. The figures for 1870 have been taken from the report on finance of the Ninth Census, and those for 1880 are from the report of the Tenth Census on the same subject, with such revisions as have been called for through correspondence with county officials since the commencement of the Eleventh Census. In many instances variations have been caused by statements made under a misapprehension by former county officers. It will be noted that 185 new counties came into existence between 1870 and 1880, but notwithstanding this fact the figures show a decrease of 32 per cent of bonded debt and 36 per cent of floating debt.

I.—BONDED DEBT, FLOATING DEBT, AND GROSS DEBT OF COUNTIES IN THE UNITED STATES FOR 1870 AND 1880.

CHARACTER OF DEBT.	1870.		1880.		INCREASE OR DECREASE.					
	No. counties.	Amount.	No. counties.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Bonded debt.....	2,251	\$167,955,880	2,436	\$106,767,946	-----	185	-----	\$61,187,934	-----	32
Floating debt.....	-----	29,600,660	-----	18,853,509	-----	-----	-----	10,747,151	-----	36
GROSS DEBT.....	-----	187,556,540	-----	125,621,455	-----	-----	-----	61,944,085	-----	33

Table II gives a comparison between 1880 and 1890 under the same headings, from which it will be seen that there has been an increase of 290 counties within the past ten years. As a matter of fact, the number of counties at the present time in the United States is 2,809, but according to present reports only 2,728 of these are organized and keep accounts. This series of tables, and all totals given in this bulletin, include results from 2,616 counties. An increase

of 22 per cent of bonded debt is shown, with a decrease of 21 per cent of floating debt, making an increased gross debt of 16 per cent.

II.—BONDED DEBT, FLOATING DEBT, AND GROSS DEBT OF COUNTIES IN THE UNITED STATES FOR 1880 AND 1890.

CHARACTER OF DEBT.	1880.		1890.		INCREASE OR DECREASE.					
	No. counties.	Amount.	No. counties.	Amount.	Increase.	No. counties.	Percentage of Increase.	Decrease.	No. counties.	Percentage of decrease.
Bonded debt.....	2,436	\$106,767,940	2,728	\$130,734,959	\$23,967,019	292	22			
Floating debt.....		18,853,609		14,958,881				\$3,894,728		21
GROSS DEBT.....		125,621,555		145,693,840	20,072,385		16			

In Table III is given the debt for 1870 as a basis of comparison with that for 1890. Within twenty years 477 new counties have been created. Leaving out the fluctuations of intervening years, at the end of twenty years a decrease of 17 per cent of bonded debt, 49 per cent of floating debt, and 22 per cent of gross debt has resulted.

III.—BONDED DEBT, FLOATING DEBT, AND GROSS DEBT OF COUNTIES IN THE UNITED STATES FOR 1870 AND 1890.

CHARACTER OF DEBT.	1870.		1890.		INCREASE OR DECREASE.					
	No. counties.	Amount.	No. counties.	Amount.	Increase.	No. counties.	Percentage of Increase.	Decrease.	No. counties.	Percentage of decrease.
Bonded debt.....	2,251	\$167,355,880	2,728	\$130,734,959		477		\$27,220,921		17
Floating debt.....		29,600,660		14,958,881				14,650,779		49
GROSS DEBT.....		197,665,540		145,693,840				41,871,700		22

It has been deemed best not to carry out the comparison between 1880 and 1890 in the matter of resources, net debt, and annual interest charge, because the figures are still wanting for 1880 under the head of sinking fund, and in many instances the records are incomplete and the figures can not be furnished.

Table IV shows the resources, net debt, and annual interest charge for 1890. The gross debt as given is \$145,693,840, and the total available resources \$30,468,955, leaving a net debt of \$115,224,885.

While on the subject of resources, net debt, and annual interest charge, it may be proper to observe that in the summary by states (pages 21 to 23, inclusive), where the figures for 1880 appear in detail, the increase in the sinking fund is very large in proportion to that of the bonded debt. Funds specially set apart for the payment of debt have been authorized and required by revised statutes issued during the past ten years, and such funds have thus accumulated. An examination of county reports will show that many counties without such funds prior to the Tenth Census have established them within the decade and yearly increased them. In all cases the statements of the financial condition of counties have indicated "sinking funds" distinct from "general funds," and, where explanations have been requested or needed, sinking funds have always been construed to mean "funds specially set apart for the payment of public debt."

A statement of "cash in treasury and other available assets" has been obtained for the Eleventh Census, but on account of impossibility from one cause or another to obtain data, as alleged by county officers, many counties have not reported their cash balances in general funds on hand at the close of each year back to 1880. The "cash and other available resources" as reported for 1890 is a very complete statement.

Figures as to the debt of counties, made public before the issue of this bulletin, gave as a basis of comparison the aggregates of a series of figures for the year 1880 recently received

from county officials. The differences between such aggregates and those now published are due to the insertion or non-insertion of bond transactions consummated between the dates when the figures were furnished for the Tenth Census and the dates when the reports were issued from the press.

IV.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE UNITED STATES FOR 1890.

Gross debt.....	\$145,693,840
Sinking fund.....	\$6,174,859
Cash in treasury and other available resources.....	24,294,096
Total available resources.....	30,468,955
Net debt.....	115,224,885
Annual interest charge.....	7,318,374

In Table V the bonded debt of counties in the United States is exhibited by geographical groups. According to reports received, only one new county has been organized in the Middle States since 1880, while the Southern States show an increase of 83 counties. In the Western States 198 additions have been made to the list of counties, and there were also 10 new counties formed in the territories. There has been a remarkable increase (218 per cent) in the bonded debt of the New England States, as will be seen in the summaries. The Middle States show a decrease of 8 per cent, the Southern States an increase of 15 per cent, the Western States an increase of 31 per cent, and the territories an increase of 1,135 per cent in the bonded debt.

V.—BONDED DEBT OF COUNTIES IN THE UNITED STATES FOR 1880 AND 1890 BY GEOGRAPHICAL GROUPS.

GEOGRAPHICAL GROUPS.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
New England States.....	67	4	\$1,135,100	67	4	\$3,608,600	\$2,473,500		218			
Middle States.....	174	2	26,016,167	175	2	23,855,568		1		\$2,160,599		8
Southern States.....	1,095	3	20,065,843	1,178	3	22,984,071	2,918,228	83	15			
Western States.....	1,061	1	69,399,437	1,259	1	77,676,949	8,277,512	198	31			
The territories.....	39	5	211,379	49	5	2,699,771	2,488,392	10	1,135			
TOTAL.....	2,436		106,767,946	2,728		130,734,959	23,967,013	292	22			

In Table VI the floating debt is given by geographical groups, and shows a decrease of 12 per cent in the New England States, 69 per cent in the Middle States, and 49 per cent in the Southern States. The Western States show an increase of 20 per cent in the floating debt, while the increase in the territories is 175 per cent.

VI.—FLOATING DEBT OF COUNTIES IN THE UNITED STATES FOR 1880 AND 1890 BY GEOGRAPHICAL GROUPS.

GEOGRAPHICAL GROUPS.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
New England States.....	67	4	\$1,591,777	67	4	\$1,304,977				\$286,800		12
Middle States.....	174	2	4,909,064	175	3	1,513,617		1		3,395,447		69
Southern States.....	1,095	3	4,494,170	1,178	2	2,287,061		83		2,207,109		49
Western States.....	1,061	1	7,616,656	1,259	1	9,098,353	\$1,481,697	198	20			
The territories.....	39	5	241,842	49	5	664,873	423,031	10	175			
TOTAL.....	2,436		18,853,509	2,728		14,958,881		292		\$3,894,628		21

A study of Table VII will be found interesting in connection with the two tables immediately

preceding, for herein is exhibited the gross debt of each group, with increase, decrease, and percentages fully stated.

VII.—GROSS DEBT OF COUNTIES IN THE UNITED STATES FOR 1880 AND 1890 BY GEOGRAPHICAL GROUPS.

GEOGRAPHICAL GROUPS.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
New England States.....	67	4	\$2,720,877	67	4	\$5,003,577	\$2,276,700		83			
Middle States.....	174	2	30,925,231	175	2	25,369,185		1		\$5,556,046		18
Southern States.....	1,095	3	24,560,013	1,178	3	25,271,132	711,119	83	3			
Western States.....	1,061	1	65,956,113	1,259	1	86,775,302	19,819,189	198	30			
The territories.....	39	5	453,221	49	5	3,274,644	2,821,423	10	623			
TOTAL.....	2,436		125,621,455	2,728		145,693,840	20,072,385	292	16			

Next in order will be found statements of the resources, net debt, and annual interest charge of each group. The gross debt is given in each case as a basis for comparison. Tables VIII, IX, X, XI, and XII will be of interest to all who desire to know the actual status of the counties.

The counties in the Western States have the largest gross debt, leading with \$86,775,302. Then come the Middle and Southern States, the former with a gross debt of \$25,369,185, and the latter of \$25,271,132. The New England States show but \$5,003,577; the territories but \$3,274,644. In the matter of sinking funds as resources the Western States lead with \$3,633,260; then in their order come the Middle and Southern States and territories, the New England States taking last place. The cash in the treasury and other available resources of the Western States amount to \$16,561,365, as against \$3,698,686 in the Southern States, \$2,640,941 in the Middle States, \$925,974 in the territories, and \$467,130 in the New England States. The comparison of net debt is given in the following tables:

VIII.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE NEW ENGLAND STATES FOR 1890.

Gross debt.....	\$5,003,577
Sinking fund.....	\$49,356
Cash in treasury and other available resources.....	467,130
Total available resources.....	516,486
Net debt.....	4,487,091
Annual interest charge.....	189,709

IX.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE MIDDLE STATES FOR 1890.

Gross debt.....	\$25,369,185
Sinking fund.....	\$1,378,806
Cash in treasury and other available resources.....	2,640,941
Total available resources.....	4,019,747
Net debt.....	21,349,438
Annual interest charge.....	1,106,128

Legend

- No Debt
- Under \$ 500
- \$500 and under \$1000
- " 1000 " " " 5000
- " 5000 " " " 10000
- " 10000 " " " 20000
- " 20000 " " " 35000
- " 35000 " " " 50000
- " 50000 " " " 75000
- " 75000 " " " 100000
- " 100000 " " " 250000
- " 250000 " " " 500000
- " 500000 " " " 750000
- " 750000 " " " 1000000
- " 1000000 " " " 2000000
- " 2000000" over " 2000000

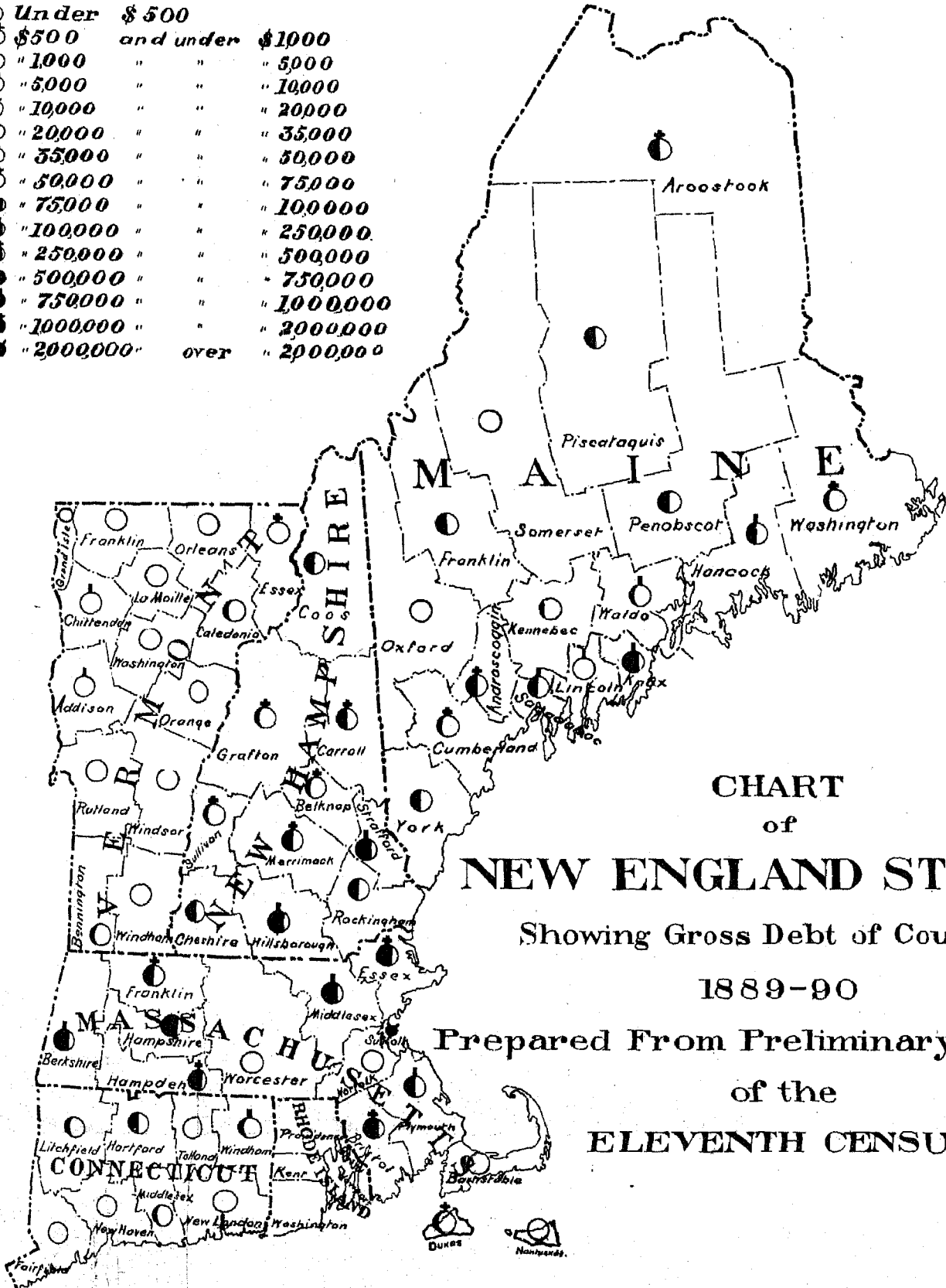


CHART of NEW ENGLAND STATES

Showing Gross Debt of Counties
1889-90

Prepared From Preliminary Returns
of the
ELEVENTH CENSUS

X.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE SOUTHERN STATES FOR 1890.

Gross debt.....	\$25,271,132
Sinking fund.....	\$1,060,967
Cash in treasury and other available resources.....	3,698,686
Total available resources.....	4,759,653
Net debt.....	20,511,479
Annual interest charge.....	1,408,991

XI.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE WESTERN STATES FOR 1890.

Gross debt.....	\$86,775,302
Sinking fund.....	\$3,633,260
Cash in treasury and other available resources.....	16,561,365
Total available resources.....	20,194,625
Net debt.....	66,580,677
Annual interest charge.....	4,411,553

XII.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE TERRITORIES FOR 1890.

Gross debt.....	\$3,274,614
Sinking fund.....	\$52,470
Cash in treasury and other available resources.....	925,974
Total available resources.....	978,444
Net debt.....	2,296,200
Annual interest charge.....	201,903

THE NEW ENGLAND STATES.

The third class of tables places on record the financial condition of counties in the New England States by groups. In Table XIII Maine, New Hampshire, and Connecticut show a reduction of bonded debt, the last-named state showing a complete extinction of such liability. Massachusetts shows an increase of 2,313 per cent, while Vermont reports no bonded debt during either census. Rhode Island is omitted from this table, the counties in that state having no financial responsibility.

XIII.—BONDED DEBT OF COUNTIES IN THE NEW ENGLAND STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Maine.....	16	2	\$367,800	16	3	\$277,100				\$120,700	30	
New Hampshire.....	10	1	617,800	10	2	316,500				232,300	43	
Vermont.....	14			14								
Massachusetts.....	14	3	125,000	14	1	3,016,000	\$2,891,000		2,313			
Connecticut.....	8	4	64,500	8						64,500	100	
TOTAL.....	67		1,335,100	67		3,698,600	2,473,500		218			

^a Includes Rhode Island.

Vermont, without a bonded debt, in Table XIV shows a small and decreasing floating debt. The debt of both New Hampshire and Massachusetts is also reduced. Maine, the counties of which show a decrease of 30 per cent of bonded debt, reports an increase of 220 per cent of floating debt, followed by Connecticut with an increase of 21 per cent.

XIV.—FLOATING DEBT OF COUNTIES IN THE NEW ENGLAND STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Maine.....	16	3	\$54,000	16	3	\$172,778	\$118,760		220			
New Hampshire.....	10	2	231,234	10	2	179,075				\$51,559		22
Vermont.....	14	5	23,421	14	5	5,151				18,270		78
Massachusetts.....	14	1	1,236,213	14	1	902,060				253,653		20
Connecticut.....	8	4	36,000	8	4	44,713	7,813		21			
TOTAL.....	67		1,591,777	67		1,394,977				100,800		12

a Includes Rhode Island.

Inspection of the last two tables will lead to a review of Table XV. The gross debt of the New England States has been nearly doubled within the past ten years.

XV.—GROSS DEBT OF COUNTIES IN THE NEW ENGLAND STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Maine.....	16	3	\$451,800	16	3	\$449,878				\$1,931		1
New Hampshire.....	10	2	779,034	10	2	495,175				283,859		36
Vermont.....	14	5	23,421	14	5	5,151				18,270		78
Massachusetts.....	14	1	1,371,213	14	1	4,008,660	\$2,637,447		192			
Connecticut.....	8	4	101,400	8	4	44,713				56,687		56
TOTAL.....	67		2,726,877	67		5,003,577	2,276,700		83			

a Includes Rhode Island.

In Table XVI Massachusetts takes the first rank in sinking fund resources, with Maine next, while New Hampshire, Vermont, and Connecticut have at present no sinking fund. None of the New England States, however, are entirely without cash in treasury and other available resources. Massachusetts has \$260,733, Maine \$138,645, and New Hampshire and Connecticut have each a considerable amount to their credit. Vermont stands last on the list.

XVI.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE NEW ENGLAND STATES FOR 1890.

STATES.	Gross debt.	Sinking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Annual interest charge.
Maine.....	\$449,878	\$11,057	\$138,645	\$150,002	\$299,276	\$18,148
New Hampshire.....	495,175		30,739	30,739	464,436	21,970
Vermont.....	5,151		7,673	7,673		40
Massachusetts.....	4,008,660	37,399	260,733	208,132	3,710,528	147,760
Connecticut.....	44,713		29,340	29,340	15,373	1,761
TOTAL.....	5,003,577	49,356	407,130	516,486	4,487,091	189,709

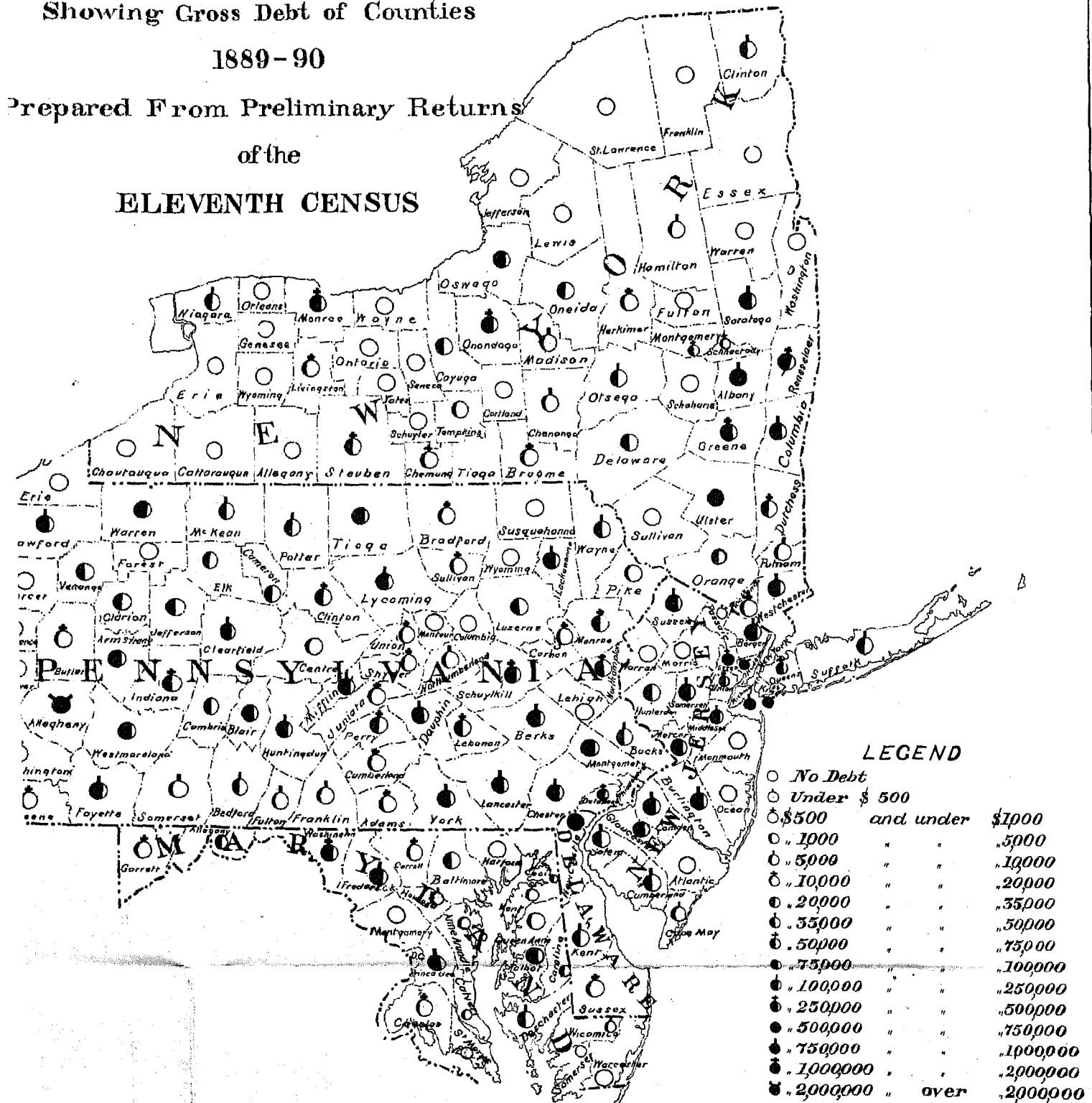
CHART of MIDDLE STATES

Showing Gross Debt of Counties

1889-90

Prepared From Preliminary Returns

of the
ELEVENTH CENSUS



LEGEND

○	No Debt	
○	Under \$ 500	
○	\$500 and under	\$1000
○	"	5000
○	"	10000
○	"	20000
○	"	35000
○	"	50000
○	"	75000
○	"	100000
○	"	250000
○	"	500000
○	"	750000
○	"	1000000
○	"	2000000
○	"	over 2000000

THE MIDDLE STATES.

Next to the counties in the New England States in bonded debt, geographically, are those of the Middle States. New York, New Jersey, and Maryland have decreased their bonded debt, while Pennsylvania shows a considerable increase. Delaware had no bonded debt in 1880, but in 1890 the liabilities of the state under that heading reached \$545,400.

XVII.—BONDED DEBT OF COUNTIES IN THE MIDDLE STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
New York	60	1	\$11,619,074	60	1	\$9,087,839				\$2,531,235		22
New Jersey	21	2	6,643,438	21	3	4,868,823				1,774,615		27
Pennsylvania	67	3	6,512,747	67	2	8,513,606	\$2,000,859	31				
Delaware	3			3	5	545,400	545,400					
Maryland	23	4	1,240,308	24	4	839,900		1		400,408		32
TOTAL	174		26,016,167	175		23,865,568		1		2,160,599		8

It will be seen by Table XVIII that Pennsylvania has nearly canceled her floating debt. Maryland is also reducing her debt very rapidly, with New Jersey following. New York shows an increase in her floating debt, that of Delaware, however, being much more marked.

XVIII.—FLOATING DEBT OF COUNTIES IN THE MIDDLE STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
New York	60	2	\$780,631	60	1	\$676,533	\$104,098	24				
New Jersey	21	3	619,606	21	2	290,510				\$329,096		55
Pennsylvania	67	1	3,268,637	67	3	141,337				3,127,300		96
Delaware	3	5	44,000	3	4	73,000	29,000	66				
Maryland	23	4	160,787	21	5	32,231		1		128,556		80
TOTAL	174		4,909,661	175		1,513,617		1		3,395,447		69

In the gross debt of the Middle States, Maryland, New Jersey, New York, and Pennsylvania take rank respectively in decrease. Delaware has a conspicuous increase of 1,305 per cent, and Maryland a decrease of 38 per cent.

XIX.—GROSS DEBT OF COUNTIES IN THE MIDDLE STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
New York	60	1	\$12,406,398	60	1	\$10,064,372				\$2,341,936		19
New Jersey	21	3	7,292,444	21	3	5,150,330				2,142,114		29
Pennsylvania	67	2	9,781,384	67	2	8,054,043				1,727,341		12
Delaware	3	5	44,000	3	5	618,400	\$574,400	1,305				
Maryland	23	4	1,401,695	24	4	872,131		1		529,564		38
TOTAL	174		30,926,231	175		26,360,185		1		5,556,040		18

By referring to Table XX it will be observed that the counties of New Jersey show much larger sinking funds than those of any other state in this group. Pennsylvania stands first as to cash in treasury. The net debt column shows New York prominent with \$9,148,161; then comes Pennsylvania with \$7,047,690, and New Jersey with \$3,904,725.

XX.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE MIDDLE STATES FOR 1890.

STATES.	Gross debt.	Sinking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Annual interest charge.
New York.....	\$10,064,372	\$23,987	\$892,224	\$916,211	\$9,148,161	\$383,481
New Jersey.....	5,159,339	1,112,912	141,702	1,254,614	3,904,725	302,648
Pennsylvania.....	8,654,943	236,707	1,370,546	1,607,253	7,047,690	337,863
Delaware.....	618,400		600	600	617,800	32,193
Maryland.....	872,131	5,200	235,869	241,069	631,062	39,943
TOTAL.....	25,369,185	1,378,806	2,640,941	4,019,747	21,349,438	1,106,128

THE SOUTHERN STATES.

Table XXI is a statement of the increase or decrease of the bonded debt of counties in each of the Southern States. As in the previous tables, statements are given to show the increase in counties as well as the present rank of states as compared with their position in the reports of the Tenth Census. The percentage of increase or decrease is also given.

Louisiana has the greatest decrease and Kentucky the least, while Texas shows a large increase. The figures for Georgia are considerably larger than those of ten years ago. North Carolina stands last on the list of percentages of increase, showing an advance of six per cent. In 1880 Kentucky held first place as to the amount of bonded debt recorded from the counties; in 1890 Texas holds the most prominent position, with a bonded debt of \$6,166,072. Georgia had the smallest bonded debt in 1880, but this position has been accorded to Louisiana for 1890. The totals show an increase of 15 per cent in the bonded debt of the Southern States as a geographical group. There has been an increase of 83 counties in these states during the past ten years, 66 of them being in Texas.

XXI.—BONDED DEBT OF COUNTIES IN THE SOUTHERN STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Virginia.....	100	7	\$1,258,025	100	4	\$1,655,934	\$397,309		32			
West Virginia.....	54	10	544,606	54	10	895,162	350,556		64			
North Carolina.....	94	8	1,248,711	96	6	1,319,866	71,155		6			
South Carolina.....	33	6	1,276,231	30	8	1,117,650		3		\$158,581		12
Georgia.....	137	13	122,600	137	11	399,000	276,400		225			
Florida.....	30	12	259,097	45	12	320,700	61,603		6	24		
Alabama.....	66	5	1,691,245	66	5	1,392,100				259,145		16
Mississippi.....	74	9	372,292	74	7	1,153,988	281,696		32			
Louisiana.....	68	11	401,163	59	13	46,500		1		414,663		90
Texas.....	165	3	2,090,907	221	1	6,166,072	4,135,165	66	204			
Arkansas.....	74	4	1,001,689	75	9	1,030,631		1		661,058		39
Kentucky.....	117	1	6,140,329	119	2	5,479,677		2		669,652		11
Tennessee.....	94	2	2,559,348	96	3	2,066,791		2		492,557		19
TOTAL.....	1,095		20,065,843	1,178		22,984,071	2,918,228	83	15			

An examination of Table XXII will reveal all available facts concerning the floating debt of the Southern States. Most conspicuous among the decreases is South Carolina, and a very large reduction is also shown for Louisiana, Mississippi, Tennessee, Florida, and Arkansas. An important increase has taken place in West Virginia, the percentage being 167; then follows

Kentucky, with an increase of 50 per cent, and Virginia with an increase of 34 per cent. As a whole, there has been a decrease of 50 per cent of floating debt in the Southern States since 1880

XXII.—FLOATING DEBT OF COUNTIES IN THE SOUTHERN STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Virginia.....	100	13	\$26,449	100	12	\$35,500	\$9,051		34			
West Virginia.....	54	12	48,174	54	6	128,725	80,551		167			
North Carolina.....	94	6	275,943	96	4	201,220		2		\$74,723		27
South Carolina.....	33	5	297,528	36	13	23,900		3		273,628		92
Georgia.....	137	11	59,190	137	10	66,060	6,870		12			
Florida.....	39	8	176,896	45	9	69,916		6		106,980		60
Alabama.....	66	10	112,021	66	11	59,920				52,101		47
Mississippi.....	74	7	262,471	74	8	84,136				178,335		68
Louisiana.....	58	2	646,788	59	7	110,415		1		536,373		83
Texas.....	155	4	468,380	221	2	512,491	44,111	66	9			
Arkansas.....	74	1	1,444,060	75	1	561,951		1		882,109		61
Kentucky.....	117	9	175,073	119	3	261,959	86,886	2	50			
Tennessee.....	94	3	501,197	96	5	170,868		2		330,329		66
TOTAL.....	1,095		4,494,170	1,178		2,287,061		83		2,207,109		50

From Table XXIII may be gathered a significant statement of figures, with comparisons of gross debt for 1880 and 1890, the greatest reduction being in the parishes of Louisiana. The gross debt of Arkansas has decreased 49 per cent. For the entire group an increase of 3 per cent is recorded, Texas showing the greatest percentage of increase, the counties in that state having increased the gross debt from \$2,499,287 in 1880 to \$6,678,563 in 1890.

XXIII.—GROSS DEBT OF COUNTIES IN THE SOUTHERN STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Virginia.....	100	8	\$1,285,074	100	4	\$1,091,431	\$106,360		32			
West Virginia.....	54	11	592,780	54	10	1,023,887	431,107		73			
North Carolina.....	94	7	1,524,054	96	6	1,521,086		2		\$3,568		26
South Carolina.....	33	6	1,573,759	36	0	1,141,550		3		432,209		27
Georgia.....	137	13	181,790	137	11	465,060	283,270		156			
Florida.....	39	12	436,993	45	12	390,616		6		45,377		10
Alabama.....	66	5	1,703,266	66	7	1,392,020				311,246		18
Mississippi.....	74	9	1,134,763	74	8	1,238,124	103,361		9			
Louisiana.....	58	10	1,107,951	59	13	156,915		1		951,036		86
Texas.....	155	4	2,499,287	221	1	6,678,563	4,179,276	66	167			
Arkansas.....	74	2	3,135,749	75	5	1,592,582		1		1,543,167		49
Kentucky.....	117	1	6,324,402	119	2	5,741,636		2		582,766		9
Tennessee.....	94	3	3,060,545	96	3	2,237,659		2		822,886		27
TOTAL.....	1,095		24,560,013	1,178		25,271,132	711,110	83	3			

Table XXIV shows, with gross debt as a basis, the present resources of each state so far as counties are concerned. Kentucky has the largest sinking-fund account in its aggregation of counties, while the counties of South Carolina appear to be without any sinking fund. The counties of Texas show a larger sum in the treasury than those of any other southern state, while Arkansas has the next largest. Then come Alabama, Tennessee, Georgia, and Mississippi, each with substantial credit under this head. The aggregate of counties in any state does not show less than \$50,000 cash in treasury, and cash forms the largest item in nearly every instance. In the column of "Total available resources" Texas is first on the list, and every southern state makes an excellent showing. A net debt exceeding \$5,000,000 is placed against Texas and Kentucky, while Tennessee, North Carolina, and Virginia have each a net debt of over \$1,000,000. Alabama, Mississippi, South Carolina, Arkansas, and West Virginia

are immediately below the million line, while Louisiana has a total of available resources exceeding her gross debt, thus leaving the net debt column blank.

XXIV.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE SOUTHERN STATES FOR 1890.

STATES.	Gross debt.	Sinking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Annual interest charge.
Virginia.....	\$1,691,434	\$141,883	\$106,028	\$247,911	\$1,443,523	\$100,066
West Virginia.....	1,023,887	14,197	133,362	147,559	876,328	50,875
North Carolina.....	1,621,086	8,600	63,854	72,454	1,448,632	93,106
South Carolina.....	1,141,650		177,014	177,014	963,636	75,375
Georgia.....	466,060	32,353	200,431	322,784	143,276	26,925
Florida.....	300,016	17,982	115,906	133,888	256,728	21,026
Alabama.....	1,392,020	5,200	400,209	414,409	977,611	86,230
Mississippi.....	1,233,124	5,000	266,760	271,760	961,364	80,635
Louisiana.....	166,915	16,740	165,430	182,170		4,637
Texas.....	0,678,608	344,078	784,262	1,128,940	5,549,623	417,145
Arkansas.....	1,502,582	22,667	642,760	665,327	927,255	64,868
Kentucky.....	5,741,636	390,485	141,442	537,927	5,203,709	274,161
Tennessee.....	2,237,659	50,282	400,328	450,610	1,787,049	113,322
TOTAL.....	25,271,132	1,060,967	3,608,686	4,750,653	20,511,479	1,468,991

THE WESTERN STATES.

Tables XXV to XXVIII show the financial condition of counties in each of the Western States. In Table XXV six states present a decrease. More than 15 per cent reduction is recorded in three of these states, Illinois and Missouri leading with a reduction, in round numbers, of \$2,500,000. Highest in the column showing percentages of increase are Wyoming, Washington, Montana, the Dakotas, and Minnesota. Illinois had the highest bonded debt in 1880, Missouri taking second place, with Kansas third. After a lapse of ten years Kansas is found to be the most prominent, with Illinois and Missouri, respectively, next on the roll. Since the last census there has been a net increase of 198 counties in the Western States. The footings of bonded debt show an increase of 31 per cent.

XXV.—BONDED DEBT OF COUNTIES IN THE WESTERN STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Ohio.....	88	0	\$2,957,871	88	4	\$7,797,497	\$4,839,626		164			
Indiana.....	92	7	2,880,557	93	5	5,872,050	2,991,493	1	103			
Illinois.....	103	1	14,127,753	102	2	11,467,850				\$2,659,907	1	19
Michigan.....	78	11	870,302	83	14	1,315,000	444,698	5	51			
Wisconsin.....	62	0	2,080,109	68	13	1,615,178		6		464,931		22
Idaho.....	12			15	10	858,700	858,700	3				
Iowa.....	99	8	2,690,467	98	8	3,210,851	520,384		20			
Minnesota.....	78	13	708,727	30	3	3,126,438	2,417,711	2	201			
Missouri.....	115	2	11,760,493	115	3	9,334,175				2,426,318		21
Kansas.....	78	3	7,364,277	106	1	14,220,075	6,855,798	28	93			
Nebraska.....	63	5	4,576,069	90	7	5,003,014	426,945	27	10			
North Dakota } South Dakota }	33	12	803,083	{ 48 68	{ 15 10	{ 944,806 2,210,077	{ 2,359,000	{ 73	{ 203			
Colorado.....	31	10	1,800,050	65	11	1,834,421	33,371	24	2			
Montana.....	10	15	336,100	17	12	1,718,414	1,382,314	7	421			
Nevada.....	14	14	674,625	14	16	651,840				22,785		3
Oregon.....	23	18	16,000	31	20	15,000		8		1,000		6
California.....	52	4	5,493,514	53	6	5,320,051		1		173,463		3
Washington.....	25	16	75,000	34	19	451,000	376,000	9	501			
Wyoming.....	5	17	32,000	10	17	655,000	623,000	5	1,009			
TOTAL.....	1,061		59,330,467	1,259		77,676,949	18,346,482	198	31			

In the matter of floating debt California shows the largest decrease, 84 per cent, while Wisconsin, Nebraska, and Montana also record a large decrease. Ohio, Michigan, Washington,

the Dakotas, and Oregon successively exhibit high percentages of increase. From the totals it will be seen that there has been an increase of 19 per cent in the floating debt of the counties in these states since 1880.

XXVI.—FLOATING DEBT OF COUNTIES IN THE WESTERN STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Ohio.....	88	19	\$1,778	88	20	\$50,313	\$54,635		1,141			
Indiana.....	92	2	1,187,897	93	2	954,718		1		\$233,179		20
Illinois.....	103	9	268,598	102	13	292,740	24,142		9		1	
Michigan.....	78	18	26,398	83	12	300,028	273,630		5	1,037		
Wisconsin.....	62	11	212,085	68	19	66,078		6		146,007		69
Idaho.....	12	14	143,742	15	8	462,095	318,353		3	221		
Iowa.....	99	8	302,100	99	10	426,003	124,867		41			
Minnesota.....	78	17	115,009	80	18	148,949	33,880		2	29		
Missouri.....	115	6	424,910	115	5	640,550	215,640		51			
Kansas.....	78	5	591,644	100	6	588,105		28		3,539		8
Nebraska.....	63	4	630,730	90	15	269,077		27		361,653		57
North Dakota } South Dakota }	33	13	171,392	48	9	437,777	737,792	73	430			
			58	7	471,407							
Colorado.....	31	3	601,491	55	1	1,355,837	664,346		24	96		
Montana.....	10	7	348,612	17	16	218,736		7		129,776		37
Nevada.....	14	10	216,392	14	17	265,438				10,064		5
Oregon.....	23	12	195,767	31	3	767,016	571,248		8	292		
California.....	62	1	1,818,075	53	14	287,399		1		1,531,676		84
Washington.....	26	16	129,384	34	4	719,637	590,253		9	456		
Wyoming.....	5	15	136,777	10	11	426,482	289,705		5	212		
TOTAL.....	1,061		7,616,656	1,259		9,098,353	1,481,697	108	10			

In Table XXVII the relative position of the Western States as to the gross debt of counties is given. Five states have decreased and fifteen states have increased their gross debt since the last census. These facts will be presented in tabular form for each state, and for every county in each state, when the final volumes are published. The increase of debt in counties of the Western States since 1880 has been 30 per cent.

XXVII.—GROSS DEBT OF COUNTIES IN THE WESTERN STATES FOR 1880 AND 1890.

STATES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Ohio.....	88	8	\$2,962,649	88	4	\$7,850,810	\$4,804,161		166			
Indiana.....	92	6	4,074,454	93	5	6,827,674	2,753,220		1	68		
Illinois.....	103	1	14,396,351	102	2	11,700,596				\$2,695,755	1	18
Michigan.....	78	13	806,700	83	14	1,016,028	718,328		5	80		
Wisconsin.....	62	10	2,292,254	68	13	1,681,256		6		610,998		27
Idaho.....	12	19	143,742	15	16	1,320,795	1,177,053		3	819		
Iowa.....	99	7	2,092,673	99	8	3,643,814	651,241		22			
Minnesota.....	78	12	613,706	80	9	3,275,387	2,361,681		2	268		
Missouri.....	115	2	12,185,463	115	3	9,074,734				2,210,669		18
Kansas.....	78	3	7,955,921	100	1	14,817,780	6,861,859		28	80		
Nebraska.....	63	5	5,206,808	90	7	5,302,091	65,283		27	2		
North Dakota } South Dakota }	33	11	975,375	48	15	1,382,583	3,097,602	73	317			
			58	11	2,690,484							
Colorado.....	31	9	2,492,441	55	10	3,190,258	697,817		24	28		
Montana.....	10	15	678,612	17	12	1,037,150	1,258,538		7	185		
Nevada.....	14	14	801,017	14	19	857,278				33,739		4
Oregon.....	23	16	211,767	31	20	782,015	570,248		8	269		
California.....	62	4	7,312,489	53	6	5,697,459		1		1,705,030		23
Washington.....	26	17	204,384	34	17	1,170,637	966,253		9	473		
Wyoming.....	5	18	169,377	10	18	1,081,482	912,105		5	539		
TOTAL.....	1,061		66,956,113	1,259		86,775,302	19,819,189	108	30			

Table XXVIII presents resources, etc., of the Western States. Under sinking fund Indiana and Ohio are the only two states near the half-million dollar line, and Missouri, Illinois, Nebraska, South Dakota, and Michigan have each a sinking fund of over \$250,000. Other states show much smaller amounts. California and Indiana show the largest amount of cash in treasury, each state exceeding \$2,000,000. Iowa follows with nearly \$2,000,000. Minnesota, Missouri, and South Dakota have each more than \$1,000,000 to their credit. In the column of "Total available resources," the highest three states are Indiana, California, and Iowa, and the lowest three, Montana, Wyoming, and Washington. In the net debt column Kansas has \$13,843,832, followed by Illinois with \$10,634,497. These are followed, respectively, by Missouri, Ohio, Nebraska, and Indiana. In the total gross debt of the twenty states in the western group the average is four and one-third million dollars, and the aggregate under the heading of "Total available resources" is \$20,194,625.

XXVIII.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE WESTERN STATES FOR 1890.

STATES.	Gross debt.	Sinking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Annual interest charge.
Ohio	\$7,850,810	\$516,710	\$844,040	\$1,350,756	\$6,497,053	\$355,579
Indiana	0,827,674	563,209	2,280,723	2,843,932	3,983,742	342,641
Illinois	11,700,596	303,763	822,336	1,126,099	10,634,497	353,307
Michigan	1,615,028	251,735	580,553	832,288	782,740	183,704
Wisconsin	1,681,256	54,407	564,631	619,038	1,062,219	97,316
Idaho	1,320,795	103,687	332,603	436,290	884,505	82,497
Iowa	3,643,814	187,917	1,905,724	2,093,641	1,550,173	187,210
Minnesota	3,275,387	84,274	1,316,432	1,400,706	1,874,681	107,200
Missouri	9,974,734	366,709	1,146,423	1,513,132	8,461,602	512,728
Kansas	14,817,780	156,753	817,195	973,948	13,843,832	878,736
Nebraska	5,302,091	292,220	977,148	969,377	4,332,714	286,109
North Dakota	1,382,583	49,534	529,608	579,232	803,351	86,363
South Dakota	2,690,484	291,133	1,040,602	1,331,735	1,358,749	132,504
Colorado	3,190,253	156,601	449,957	606,558	2,583,700	96,790
Montana	1,637,150	23,304	184,337	207,641	1,729,509	104,817
Nevada	857,278	68,128	211,722	279,850	577,428	27,807
Oregon	782,015	8,718	201,259	209,977	572,038	61,068
California	5,607,450	153,443	2,429,839	2,583,282	3,024,168	302,474
Washington	1,170,637	2,000	42,927	44,927	1,125,710	80,134
Wyoming	1,081,482	-----	183,156	183,156	898,326	72,419
TOTAL	86,775,392	3,633,260	16,561,305	20,194,625	66,580,677	4,411,553

THE TERRITORIES.

Table XXIX gives the bonded debt of counties in the territories. Of course this includes only those divisions still denominated as territories, as distinct from the newly-admitted states of North Dakota, South Dakota, Montana, Washington, Idaho, and Wyoming. The bonded debt of New Mexico has increased in ten years 3,277 per cent, from \$46,179 to \$1,559,271.

XXIX.—BONDED DEBT OF COUNTIES IN THE TERRITORIES FOR 1880 AND 1890.

TERRITORIES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of increase.
Arizona	7	1	\$165,200	10	2	\$1,050,500	\$885,300	3	536	-----	-----	-----
New Mexico	12	2	46,179	15	1	1,559,271	1,513,092	3	3,277	-----	-----	-----
Utah	20	-----	-----	24	-----	-----	-----	4	-----	-----	-----	-----
TOTAL	39	-----	211,379	49	-----	2,609,771	2,398,392	10	1,135	-----	-----	-----

Table XXX gives the increase of floating debt in the territories, Utah having the largest percentage. The total increase during ten years for the territories is \$443,931.

XXX.—FLOATING DEBT OF COUNTIES IN THE TERRITORIES FOR 1880 AND 1890.

TERRITORIES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Arizona	7	1	\$188,017	10	1	\$199,197	\$11,180	3	100			
New Mexico	12	2	38,693	15	2	91,500	52,807	3	137			
Utah	20	3	15,132	24	3	74,110	58,978	4	300			
TOTAL	39		241,842	49		664,807	423,065	10	175			

Next in order comes gross debt (Table XXXI). New Mexico and Arizona each show an increase in excess of \$1,000,000, and the increase for all of the territories is 623 per cent.

XXXI.—GROSS DEBT OF COUNTIES IN THE TERRITORIES FOR 1880 AND 1890.

TERRITORIES.	1880.			1890.			INCREASE OR DECREASE.					
	No. counties.	Rank.	Amount.	No. counties.	Rank.	Amount.	Increase.	No. counties.	Percentage of increase.	Decrease.	No. counties.	Percentage of decrease.
Arizona	7	1	\$353,217	10	2	\$1,549,697	\$1,196,480	3	339			
New Mexico	12	2	84,872	16	1	1,650,837	1,565,965	3	1,816			
Utah	20	3	15,132	24	3	74,110	58,978	4	300			
TOTAL	39		453,221	49		3,274,644	2,821,423	10	623			

From the following summary of resources it will be noticed that each of the territories has a considerable amount of cash in treasury. Utah has a total of available resources exceeding her gross debt, which of course leaves the net debt column blank. Taking the totals in round numbers, the showing for gross debt would give an average of about \$1,100,000, and the total of cash in treasury would give to each an average of over \$300,000.

XXXII.—RESOURCES, NET DEBT, AND ANNUAL INTEREST CHARGE OF COUNTIES IN THE TERRITORIES FOR 1890.

TERRITORIES.	Gross debt.	Sinking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Annual interest charge.
Arizona	\$1,549,697	\$1,892	\$335,270	\$337,112	\$1,212,585	\$102,519
New Mexico	1,650,837	50,028	424,602	474,230	1,176,607	94,822
Utah	74,110		100,102	100,102		4,652
TOTAL	3,274,644	52,470	925,074	978,444	2,296,200	201,993

TABLE XXXIII.—INDEBTEDNESS OF COUNTIES BY STATES AND TERRITORIES, WITH RANK AND PERCENTAGES.

STATES AND TERRITORIES.	BONDED DEBT.					FLOATING DEBT.					GROSS DEBT.						
	1880.		1890.			1880.		1890.			1880.		1890.				
	RANK.	AMOUNT.	RANK.	AMOUNT.	PER- CENT'GE.	RANK.	AMOUNT.	RANK.	AMOUNT.	PER- CENT'GE.	RANK.	AMOUNT.	RANK.	AMOUNT.	PER- CENT'GE.		
																Inc.	Dec.
THE UNITED STATES.		\$166,767,946		\$130,734,950	22			\$18,853,509		\$14,958,881	21			\$125,621,455		\$145,693,840	16
Alabama	18	1,691,245	23	1,332,100	16	34	112,021	39	59,920	47	18	1,703,260	27	1,392,020	18		
Arkansas	17	1,691,689	29	1,030,631	39	3	1,444,080	10	561,951	61	11	3,135,749	24	1,692,582	49		
California	8	6,433,514	10	5,320,051	3	2	1,818,976	19	287,399	84	6	7,312,489	19	5,607,450	23		
Colorado	10	1,800,950	18	1,834,421	2	7	691,491	1	1,355,837	96	16	2,492,441	17	3,190,258	28		
Connecticut	38	64,500			100	40	36,900	41	44,713	21	41	101,400	44	44,713	56		
Delaware			35	545,400		38	44,000	35	73,000	66	43	44,600	37	618,400	1305		
Florida	33	250,097	38	320,700	24	26	176,896	36	69,916	60	34	435,993	41	390,616	10		
Georgia	36	122,600	37	399,000	225	35	59,100	38	60,000	12	38	181,790	39	465,000	156		
Idaho			31	858,700		30	143,742	13	462,095	221	40	143,742	28	1,320,705	819		
Illinois	1	14,127,753	2	11,467,856	10	19	268,598	17	292,740	0	1	14,396,351	2	11,760,596	18		
Indiana	11	2,880,557	8	4,872,950	103	5	1,187,897	4	954,718	20	10	4,074,454	7	6,827,074	68		
Iowa	12	2,690,467	13	3,216,851	20	16	302,106	14	426,063	41	13	2,992,573	15	3,643,814	22		
Kansas	4	7,564,277	1	14,229,676	93	11	591,644	9	588,105	15	5	7,955,921	1	14,817,780	86		
Kentucky	7	6,149,329	9	5,479,677	11	27	176,073	21	261,959	50	8	6,324,402	9	5,741,636	9		
Louisiana	30	461,163	41	46,500	90	9	646,788	31	110,415	83	25	1,107,951	42	156,916	86		
Maine	31	397,809	40	277,100	30	36	64,009	26	172,778	220	33	451,809	40	449,878	15		
Maryland	22	1,210,808	32	639,900	32	29	160,787	43	32,231	80	21	1,401,095	34	872,131	38		
Massachusetts	35	125,000	16	3,016,000	2313	4	1,246,213	2	992,660	20	22	1,371,213	14	4,098,600	192		
Michigan	24	870,392	25	1,316,000	51	42	26,398	16	300,028	1037	28	890,700	23	1,615,028	80		
Minnesota	26	798,727	15	3,126,438	201	33	116,069	28	148,949	29	27	913,796	16	3,276,387	258		
Mississippi	23	872,292	26	1,153,988	32	20	262,471	33	81,136	68	24	1,134,769	29	1,238,124	9		
Missouri	2	11,790,493	3	9,234,176	21	14	424,910	8	640,569	51	3	12,185,403	4	9,974,734	18		
Montana	32	330,100	19	1,718,414	421	15	348,512	22	218,736	37	31	678,612	19	1,937,150	185		
Nebraska	9	4,576,069	11	5,033,014	10	10	630,739	29	269,077	57	9	5,296,808	11	5,392,091	2		
Nevada	27	674,626	34	651,840	3	21	216,392	23	206,438	5	20	801,017	35	857,278	4		
New Hampshire	28	537,890	39	316,500	42	21	231,234	25	179,975	22	30	779,034	38	495,176	36		
New Jersey	5	6,643,438	12	4,868,823	27	8	649,006	18	290,516	55	7	7,292,444	12	5,159,339	29		
New York	3	11,619,674	4	9,087,839	22	6	786,634	3	976,533	24	2	12,406,398	3	10,064,372	19		
North Carolina	21	1,248,711	24	1,319,866	6	18	275,943	24	201,220	27	20	1,624,654	26	1,521,086	16		
North Dakota	25	503,983	14	644,800	203	28	171,392	5	437,777	430	26	975,375	13	1,382,583	817		
South Dakota				2,219,077					471,407					2,090,484			
Ohio	10	2,967,871	6	7,797,487	164	45	4,778	40	59,313	1141	14	2,362,649	6	7,856,810	165		
Oregon	41	16,000	42	15,000	6	24	195,767	6	767,615	292	36	211,767	36	782,615	269		
Pennsylvania	6	6,512,747	5	8,513,606	31	1	3,268,637	20	141,327	96	4	9,781,384	5	8,654,943	12		
Rhode Island																	
South Carolina	19	1,276,231	27	1,117,650	12	17	297,528	44	23,900	92	19	1,573,750	31	1,141,550	27		
Tennessee	13	2,559,348	17	2,066,791	19	12	591,197	27	170,868	66	12	3,060,545	18	2,237,659	27		
Texas	15	2,030,907	7	6,166,072	204	13	468,380	11	512,491	9	15	2,469,287	8	6,078,593	107		
Vermont						43	23,421	45	5,151	78	44	23,421	45	5,151	78		
Virginia	20	1,288,625	20	1,655,934	32	41	26,449	42	35,500	34	23	1,285,074	20	1,091,434	32		
Washington	37	75,000	36	451,000	501	32	129,384	7	710,637	456	37	204,384	30	1,170,637	473		
West Virginia	29	544,696	30	895,162	64	37	48,174	30	128,725	107	32	592,780	33	1,023,337	73		
Wisconsin	14	2,080,100	21	1,016,178	22	23	212,685	37	66,078	69	17	2,292,254	21	1,081,250	27		
Wyoming	40	32,000	33	655,000	1600	31	136,777	15	426,482	212	39	169,377	32	1,081,482	539		
TERRITORIES.																	
Arizona	34	165,200	28	1,050,500	536	25	188,017	12	409,197	160	35	353,217	25	1,549,697	330		
New Mexico	39	46,179	22	1,559,271	3277	39	38,693	32	91,566	137	42	84,872	22	1,650,837	1846		
Utah						44	15,132	34	74,110	390	45	15,132	43	74,110	390		

TABLE XXXIV.—TOTAL AVAILABLE RESOURCES OF COUNTIES AGGREGATED BY STATES AND TERRITORIES—1890.

STATES AND TERRITORIES.	Rank.	Amount.	STATES AND TERRITORIES.	Rank.	Amount.
Alabama	24	\$114,409	Montana	33	\$207,641
Alaska			Nebraska	13	969,377
Arizona	25	337,112	Nevada	28	279,850
Arkansas	16	665,327	New Hampshire	43	30,739
California	2	2,583,282	New Jersey	9	1,254,614
Colorado	18	606,658	New Mexico	21	475,230
Connecticut	44	20,340	New York	14	916,211
Delaware	46	600	North Carolina	41	72,454
District of Columbia			North Dakota	19	579,232
Florida	40	133,888	Ohio	7	1,359,766
Georgia	26	322,784	Oklahoma		
Idaho	23	436,290	Oregon	32	209,977
Illinois	11	1,126,099	Pennsylvania	4	1,607,253
Indiana	1	2,843,932	Rhode Island		
Indian Territory			South Carolina	36	177,914
Iowa	3	2,093,641	South Dakota	8	1,331,735
Kansas	12	973,948	Tennessee	22	459,610
Kentucky	20	637,927	Texas	10	1,128,940
Louisiana	35	182,170	Utah	37	166,102
Maine	38	150,692	Vermont	45	7,673
Maryland	31	241,069	Virginia	30	247,911
Massachusetts	27	298,132	Washington	42	44,927
Michigan	15	832,288	West Virginia	39	147,550
Minnesota	6	1,400,766	Wisconsin	17	619,038
Mississippi	29	271,760	Wyoming	34	183,166
Missouri	5	1,513,132			
			TOTAL		30,468,955

TABLE XXXV.—SUMMARY BY GEOGRAPHICAL GROUPS, SHOWING THE NUMBER OF COUNTIES IN EACH GROUP HAVING A GROSS DEBT, CLASSIFIED BY AMOUNTS OF LIABILITY—1890.

GROUPS.	No debt.	Under \$500.	\$500 to \$1,000.		\$1,000 to \$5,000.		\$5,000 to \$10,000.		\$10,000 to \$25,000.		\$25,000 to \$50,000.		\$50,000 to \$100,000.		\$100,000 to \$250,000.		\$250,000 to \$500,000.		\$500,000 to \$1,000,000.		\$1,000,000 to \$2,000,000.		\$2,000,000 and over.
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
New England States	19	3	1	5	2	6	8	3	5	2	4	3											1
Middle States	46			6	11	19	13	10	9	23	8	2	2									1	3
Southern States	540	11	12	110	82	114	72	48	37	29	67	13	1										
Western States	323	4	2	58	73	110	129	95	114	61	107	61	14	4								4	1
The territories	16	2	1	5	1	1	4	2	4	2	7	4											
TOTAL	944	20	16	184	168	250	229	161	170	103	258	79	17	7	6	6							

TABLE XXXVI.—RANK OF STATES AND TERRITORIES IN LIABILITY OF COUNTIES—1890.

STATES AND TERRITORIES.	No debt.	Liability Ranges															
		Under \$500.	\$500 to \$1,000.	\$1,000 to \$5,000.	\$5,000 to \$10,000.	\$10,000 to \$20,000.	\$20,000 to \$35,000.	\$35,000 to \$50,000.	\$50,000 to \$75,000.	\$75,000 to \$100,000.	\$100,000 to \$250,000.	\$250,000 to \$500,000.	\$500,000 to \$750,000.	\$750,000 to \$1,000,000.	\$1,000,000 to \$2,000,000.	\$2,000,000 and over.	
Maine.....	2	1		1	1	2	4	2	2	1							
New Hampshire.....					3	3		2	2								
Vermont.....	9	2	1	2						2							
Massachusetts.....	4				1			1	1	1	2	3				1	
Rhode Island.....																	
Connecticut.....	4			2	1		1										
New York.....	24			1	4	4	3	4	3	1	3	4	1	2		1	
New Jersey.....	6				1			1	2	2	6	1				1	
Pennsylvania.....	9			2	4	10	8	5	7	6	12	2			1	1	
Delaware.....					1								1				
Maryland.....	7			3	2	4	4	1			2	1					
District of Columbia.....																	
Virginia.....	66			6	5	2	5	3		3	6	1					
West Virginia.....	25		1	7	2	3	3	5	2	1	3						
North Carolina.....	33		2	12	15	13	4	1		3	5	1					
South Carolina.....	15			6	2			3	2	1	3	1					
Georgia.....	106	2		7	3	6	4	3	2								
Florida.....	22	2		5	5	3	4	1	1	1							
Alabama.....	37	2		10	3	3	2	3	2	1	1	2					
Mississippi.....	49			5	3	4	1	2	2	1	4						
Louisiana.....	37	1	1	5	3	3	2	1									
Texas.....	46	1	1	12	22	43	33	21	15	8	11	2					
Arkansas.....	16	1	1	12	7	18	5	3	3	2	2	1					
Kentucky.....	42		4	7	9	9	7	2	7	6	13	3	1	1			
Tennessee.....	46	2	2	16	3	7	2		1	2	9	2					
Ohio.....	24			3	5	4	5	7	7	7	10	4	1		2		
Idaho.....	1					2	3	2	2	3	2	1					
Indiana.....	17			4	3	7	10	9	13	5	16	4		1			
Illinois.....	38			2		6	9	1	8	6	21	2					
Michigan.....	38			7	10	9	6	7	1	1	3	1			1	1	
Wisconsin.....	26			7	8	7	7	4	3		6						
Iowa.....	36			4	6	8	9	16	10	3	4	1	1				
Minnesota.....	27			3	5	8	9	5	8	2	5	1		1			
Missouri.....	41	2	1	8	12	8	5	3	5	3	13	11	5				
Kansas.....	10	1		2	2	3	8	10	13	4	34	15	3		1		
Nbraska.....	14			3	12	13	5	8	11	5	11	1	3				
Colorado.....	5			1	3	4	5	6	6	3	9	2					
Nevada.....	5						3	3			2	1					
Oregon.....	9			2	1	5	4	5	1	2	1						
California.....	8			1		6	6	2	7	4	14	3	1	1			
North Dakota.....	5			4	2	6	12	4	4	3	2						
South Dakota.....	12	1		3	2	12	14	1	4	1	4	1		1			
Montana.....	1																
Washington.....	5			4	1	2	1	4	4	2	1	1					
Wyoming.....	1						1	1	3	2	2	1					
Arizona.....	1						2				5	2					
New Mexico.....	1																
Utah.....	14	2	1	4	1	1	2	1	4	2	2	2					
Indian Territory.....																	
Alaska.....																	
Oklahoma.....																	
TOTAL.....	944	20	16	184	168	250	220	161	170	163	258	79	17	7	5	5	

TABLE XXXVII.—COUNTRY FINANCES—SUMMARY BY STATES.

STATES AND TERRITORIES.	Years.	Bonded debt.	Floating debt.	Gross debt.	Staking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Net assets.	Annual interest charge.
THE UNITED STATES	1880	\$106,767,946	\$18,853,509	\$125,621,455	\$1,593,869			\$124,027,586		
	1890	130,734,959	14,958,881	145,693,840	6,174,850	\$24,294,090	\$30,468,955	115,224,885	\$119,769	\$7,318,374
	Increase or decrease	+23,967,013	3,894,638	+20,072,385	+4,580,980			-8,802,701		
Alabama	1880	1,591,245	112,021	1,703,266				1,703,266		
	1890	1,332,160	59,929	1,392,020	5,200	400,209	414,409	977,611		86,260
	Increase or decrease	-259,115	-52,101	-311,246				-725,655		
Arkansas	1880	1,691,689	1,444,000	3,135,749				3,135,749		
	1890	1,690,631	561,951	1,522,582	22,567	642,760	665,327	927,256		64,898
	Increase or decrease	-66,058	-882,109	-1,543,167				-2,208,493		
California	1880	5,493,511	1,818,975	7,312,486				7,312,486		
	1890	5,329,051	287,399	5,697,450	153,443	2,420,839	2,583,282	3,024,108		302,474
	Increase or decrease	-164,460	-1,531,576	-1,705,036				-1,288,321		
Colorado	1880	1,800,950	691,491	2,492,441				2,492,441		
	1890	1,834,421	1,355,847	3,190,268	156,601	440,957	606,558	2,583,700		96,790
	Increase or decrease	+33,471	+664,356	+697,827				+91,259		
Connecticut	1880	61,500	36,900	101,400				101,400		
	1890		44,713	44,713		20,340	20,340	15,373		1,761
	Increase or decrease		+7,813	-56,687				-86,027		
Delaware	1880		44,000	44,000				44,000		
	1890	545,400	73,000	618,400		600	600	617,800		32,103
	Increase or decrease		+29,000	+574,400				+573,800		
District of Columbia (a)	1880									
	1890									
	Increase or decrease									
Florida	1880	259,097	176,806	435,903				435,903		
	1890	329,700	69,916	399,616	17,982	115,006	133,888	256,728		21,626
	Increase or decrease	+70,603	-106,890	-45,277				-179,205		
Georgia	1880	127,600	59,100	181,700				181,700		
	1890	399,000	66,000	465,000	32,353	200,431	322,784	132,276		20,925
	Increase or decrease	+271,400	+6,900	+283,300				-30,514		
Idaho	1880		143,742	143,742				143,742		
	1890	658,700	462,096	1,320,796	104,687	332,603	430,290	884,505		82,497
	Increase or decrease		+318,354	+1,177,054				+740,763		
Illinois	1880	14,137,753	268,598	14,406,351	215,217			14,621,568		
	1890	11,467,856	292,740	11,760,596	303,763	822,336	1,126,099	10,634,497		353,307
	Increase or decrease	-2,669,897	+24,142	-2,645,755	+188,546			-3,987,071		
Indiana	1880	2,986,757	1,187,897	4,174,654	20,400			4,195,054		
	1890	5,875,956	964,718	6,840,674	569,209	2,280,723	2,849,932	3,983,742		342,641
	Increase or decrease	+2,889,199	-223,179	+2,666,020	+548,809			-1,211,312		
Iowa	1880	3,690,467	302,106	3,992,573				3,992,573		
	1890	3,216,851	426,963	3,643,814	187,917	1,045,724	2,093,641	1,550,173		187,210
	Increase or decrease	-473,616	+124,857	-348,759	+187,917			-1,442,400		
Kansas	1880	7,364,277	591,644	7,955,921	5,000			7,960,921		
	1890	14,329,675	588,105	14,917,780	156,753	817,195	973,948	13,843,832		878,736
	Increase or decrease	+6,965,398	-3,539	+6,961,859	+151,753			+5,882,911		
Kentucky	1880	6,149,329	175,073	6,324,402	447,950			6,772,352		
	1890	5,479,677	261,959	5,741,636	396,485	141,442	537,927	5,877,043		274,151
	Increase or decrease	-669,652	+86,886	-582,766	-51,465			-905,309		
Louisiana	1880	461,163	616,788	1,077,951				1,077,951		
	1890	46,500	110,415	156,915	15,740	166,439	182,179	25,264		4,637
	Increase or decrease	-414,663	-506,373	-921,036	+15,740			-1,052,687		

(a) No county financial system.

TABLE XXXVII.—COUNTY FINANCES—SUMMARY BY STATES—CONTINUED.

STATES AND TERRITORIES.	Years.	Bonded debt.	Floating debt.	Gross debt.	Sinking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Net assets.	Annual interest charge.
Maine	1880	\$397,800	\$54,000	\$451,800				\$451,800		
	1890	277,100	172,778	449,878	\$11,957	\$138,645	\$150,602	299,276		\$18,148
Increase or decrease		-120,700	+118,769	-1,931				-152,533		
Maryland	1880	1,240,308	160,787	1,401,095	23,770			1,377,325		
	1890	839,900	32,231	872,131	5,200	235,860	241,060	631,062		39,943
Increase or decrease		-400,408	-128,556	-528,964	-18,570			-746,263		
Massachusetts	1880	125,000	1,246,213	1,371,213				1,371,213		
	1890	3,616,930	992,040	4,608,970	37,319	260,733	298,132	3,710,528		147,730
Increase or decrease		+2,491,930	-254,553	+2,637,447				+2,339,315		
Michigan	1880	870,302	20,338	896,700				896,700		
	1890	1,315,000	300,028	1,615,028	251,735	580,563	832,288	782,740		183,704
Increase or decrease		+444,698	+273,690	+718,328				-113,960		
Minnesota	1880	708,727	115,639	824,366	12,384			811,982		
	1890	3,126,438	148,949	3,275,387	84,274	1,316,432	1,400,706	1,874,412		107,260
Increase or decrease		+2,417,711	+33,310	+2,451,651	+71,890			+1,062,430		
Mississippi	1880	872,292	262,471	1,134,763				1,134,763		
	1890	1,153,983	84,136	1,238,119	5,000	266,760	271,760	966,354		80,635
Increase or decrease		+281,691	-178,335	+103,356				-168,399		
Missouri	1880	11,760,493	424,010	12,184,503	112,091			12,072,412		
	1890	9,334,175	940,559	10,274,734	366,700	1,146,424	1,513,124	8,761,602		612,728
Increase or decrease		-2,426,318	+516,549	-2,210,669	+254,609			-3,511,710		
Montana	1880	330,100	348,612	678,712				659,600		
	1890	1,718,414	218,736	1,937,150	23,304	184,337	207,641	1,729,509		104,817
Increase or decrease		+1,388,314	-129,776	+1,258,538	+4,368			+1,069,813		
Nebraska	1880	4,575,069	630,739	5,205,808	86,446			5,119,362		
	1890	5,933,014	269,077	6,202,091	292,229	677,148	969,377	4,232,714		280,100
Increase or decrease		+1,357,945	-361,662	+996,283	+205,783			-986,648		
Nevada	1880	674,025	210,392	884,417				891,017		
	1890	651,840	265,438	917,278	98,128	241,722	279,850	638,428		27,837
Increase or decrease		-22,185	+55,046	+33,861	+98,128			-252,589		
New Hampshire	1880	547,800	231,234	779,034				779,034		
	1890	315,500	179,675	495,175		30,739	30,739	464,436		21,739
Increase or decrease		-232,300	-51,559	-283,859				-314,598		
New Jersey	1880	6,643,438	649,066	7,292,504	623,381			6,669,123		
	1890	4,868,823	290,516	5,159,339	1,112,612	141,702	1,254,314	3,904,725		302,648
Increase or decrease		-1,774,615	-358,490	-2,133,105	+489,231			-2,764,738		
New York	1880	11,610,674	786,634	12,397,308	7,000			12,390,308		
	1890	9,987,839	976,535	10,964,374	23,987	892,224	916,211	9,148,161		393,481
Increase or decrease		-1,622,835	+189,901	-1,432,934	+16,987			-3,242,147		
North Carolina	1880	1,248,711	275,943	1,524,654				1,524,654		
	1890	1,319,868	201,226	1,521,094	8,600	63,851	72,451	1,448,632		93,100
Increase or decrease		+71,157	-74,717	-3,560	+8,600			-76,022		
North Dakota (a)	1880	803,983	171,392	975,375	13,805			961,570		
	1890	644,806	437,777	1,082,583	49,534	629,698	679,232	803,351		66,301
Increase or decrease		-159,177	+266,385	+107,208	+35,729			-158,219		
Ohio	1880	2,957,871	4,778	2,962,649				2,962,649		
	1890	7,707,497	59,313	7,766,810	515,716	844,040	1,359,756	6,407,053		355,679
Increase or decrease		+4,749,626	+54,535	+4,804,161				-3,565,596		
Oregon	1880	16,000	195,767	211,767				211,767		
	1890	15,000	767,015	782,015	8,718	201,259	209,977	672,638		61,068
Increase or decrease		-1,000	+571,248	+570,248	+8,718			-439,129		

(a) Includes South Dakota in 1880.

TABLE XXXVII.—COUNTY FINANCES—SUMMARY BY STATES—CONTINUED.

STATES AND TERRITORIES.	Years.	Bonded debt.	Floating debt.	Gross debt.	Sinking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Net assets.	Annual interest charge.
Pennsylvania	1880	\$6,512,747	\$3,268,637	\$9,781,384				\$9,781,384		
	1890	8,513,606	141,337	8,654,943	\$236,707	\$1,370,546	\$1,607,253	7,047,690		\$937,893
	Increase or decrease	+2,000,859	-3,127,300	-1,120,441				-2,733,604		
Rhode Island (a)	1880									
1890										
South Carolina	1880	1,276,231	297,628	1,573,759				1,573,759		
	1890	1,117,650	23,400	1,141,550		177,914	177,914	963,636		75,376
	Increase or decrease	-158,581	-273,628	-432,209				-610,123		
South Dakota (b)	1880	803,983	171,392	975,375	13,895			961,870		
	1890	2,219,077	471,407	2,690,484	291,133	1,019,602	1,311,735	1,368,740		192,504
	Increase or decrease									
Tennessee	1880	2,659,348	501,197	3,160,545				3,160,545		
	1890	2,066,791	170,868	2,237,659	56,292	469,328	486,610	1,751,049		113,322
	Increase or decrease	-492,557	-330,329	-922,886				-1,279,406		
Texas	1880	2,630,007	468,380	3,098,387				3,098,387		
	1890	6,166,072	512,491	6,678,563	344,078	784,262	1,128,340	5,549,623		417,146
	Increase or decrease	+4,436,065	+44,111	+4,179,276				+3,650,336		
Vermont	1880		23,421	23,421				23,421		
	1890		5,151	5,151		7,079	7,079		\$4,522	40
	Increase or decrease		-18,270	-18,270						
Virginia	1880	1,268,625	26,449	1,295,074	1,500			1,293,574		
	1890	1,655,934	35,500	1,691,434	141,883	106,928	247,911	1,443,523		100,066
	Increase or decrease	+387,309	+9,051	+400,360	+140,383			+150,949		
West Virginia	1880	544,606	48,174	592,780				592,780		
	1890	895,162	128,725	1,023,887	14,197	133,362	147,559	876,328		60,375
	Increase or decrease	+350,556	+80,551	+431,107				+283,548		
Washington	1880	75,000	129,384	204,384				204,384		
	1890	461,000	719,637	1,170,637	2,000	42,927	44,927	1,125,710		80,134
	Increase or decrease	+376,000	+590,253	+966,253				+921,326		
Wisconsin	1880	2,080,103	212,085	2,292,188				2,292,188		
	1890	1,615,178	66,078	1,681,256	51,467	564,431	615,898	1,065,358		97,310
	Increase or decrease	-464,925	-146,007	-610,934				-1,226,830		
Wyoming	1880	32,000	136,777	168,777				168,777		
	1890	655,000	426,482	1,081,482		183,156	183,156	898,326		72,419
	Increase or decrease	+623,000	+289,705	+912,705				+729,549		
THE TERRITORIES.										
Arizona	1880	105,200	188,017	293,217				293,217		
	1890	1,050,500	499,197	1,549,697	1,842	335,270	337,112	1,212,585		102,519
	Increase or decrease	+945,300	+311,180	+1,256,480				+919,368		
New Mexico	1880	46,179	38,693	84,872				84,872		
	1890	1,559,271	91,566	1,650,837	60,628	924,662	975,290	1,175,607		94,822
	Increase or decrease	+1,513,092	+52,873	+1,565,965				+1,090,735		
Utah	1880		15,132	15,132				15,132		
	1890		74,110	74,110		166,162	166,162		91,062	4,052
	Increase or decrease		+58,978	+58,978						
Indian Territory (c)	1880									
	1890									
Alaska (a)	1880									
	1890									
Oklahoma (c)	1880									
	1890									

a No county financial system.

b Includes North Dakota in 1880.

c No county organization.

TABLE XXXVIII.—SUMMARY OF COUNTY FINANCES BY GEOGRAPHICAL GROUPS.

STATES.	Years.	Bonded debt.	Floating debt.	Gross debt.	Sinking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Net assets.	Annual interest charge.
THE UNITED STATES	1880	\$106,767,046	\$18,853,509	\$125,621,455	\$1,593,869			\$124,027,586		
	1890	130,784,959	14,058,881	145,693,840	6,174,859	\$24,294,096	\$30,468,955	116,224,885	\$119,769	\$7,318,374
	Increase or decrease	+23,967,913	-3,894,628	+20,072,385	+4,580,990			-8,802,701		
NEW ENGLAND STATES.										
Maine	1880	397,800	54,000	451,800				451,800		
	1890	277,100	172,778	449,878	11,957	138,635	150,692	299,276		18,148
New Hampshire	1880	547,800	231,234	779,034				779,034		
	1890	315,500	179,075	495,175		30,739	30,739	464,436		21,970
Vermont	1880		23,421	23,421				23,421		
	1890		5,151	5,151		7,673	7,673		2,522	40
Massachusetts	1880	125,000	1,246,213	1,371,213				1,371,213		
	1890	3,016,000	902,600	4,008,600	37,309	260,733	298,132	3,710,528		147,760
Rhode Island (a)	1880									
	1890									
Connecticut	1880	64,500	36,900	101,400				101,400		
	1890		44,713	44,713		29,340	29,340	15,373		1,791
TOTAL	1880	1,135,100	1,591,777	2,726,877				2,726,877		
	1890	3,008,000	1,394,977	5,003,577	49,356	467,130	516,486	4,487,091	2,522	189,709
Increase or decrease		+2,473,500	-196,800	+2,276,700				-1,700,214		
MIDDLE STATES.										
New York	1880	11,019,074	786,634	12,406,308	7,000			12,399,308		
	1890	9,087,830	976,533	10,064,372	23,987	892,224	916,211	9,148,161		393,481
New Jersey	1880	6,643,438	640,000	7,292,444	623,081			6,668,463		
	1890	4,868,823	290,516	5,159,339	1,112,912	141,702	1,254,614	3,904,725		362,648
Pennsylvania	1880	6,512,747	3,268,637	9,781,384				9,781,384		
	1890	8,513,600	141,337	8,654,937	230,707	1,370,546	1,607,253	7,047,690		337,863
Delaware	1880		44,000	44,000				44,000		
	1890	545,400	73,000	618,400		600	600	617,800		32,193
Maryland	1880	1,240,368	160,787	1,401,095	23,770			1,377,325		
	1890	880,000	32,231	872,131	5,200	235,860	241,060	631,082		39,943
District of Columbia (a)	1880									
	1890									
TOTAL	1880	26,016,167	4,909,094	30,925,231	654,761			30,270,480		
	1890	23,856,668	1,513,617	25,360,185	1,378,806	2,640,941	4,019,747	21,349,438		1,106,128
Increase or decrease		-2,160,599	-3,395,477	-5,565,046	+724,055			-8,921,042		
SOUTHERN STATES.										
Virginia	1880	1,258,625	20,440	1,286,074	1,500			1,283,574		
	1890	1,665,934	35,500	1,691,434	141,883	106,028	247,911	1,443,523		100,000
West Virginia	1880	544,606	48,174	592,780				592,780		
	1890	895,162	128,725	1,023,887	14,197	133,362	147,559	876,328		60,875
North Carolina	1880	1,248,711	275,043	1,524,654				1,524,654		
	1890	1,319,860	201,220	1,521,080	8,000	63,854	72,454	1,448,632		93,106
South Carolina	1880	1,276,231	297,628	1,573,759				1,573,759		
	1890	1,117,650	23,900	1,141,550		177,914	177,914	963,636		75,375
Georgia	1880	122,600	59,190	181,790				181,790		
	1890	399,000	60,000	466,000	32,353	296,431	322,784	142,270		26,925
Florida	1880	259,097	176,896	435,993				435,993		
	1890	329,700	69,916	390,616	17,982	116,006	133,888	256,728		21,020
Alabama	1880	1,591,245	112,021	1,703,266				1,703,266		
	1890	1,332,100	59,920	1,392,020	5,200	409,200	414,400	977,611		86,200
Mississippi	1880	872,292	262,471	1,134,763				1,134,763		
	1890	1,153,938	84,136	1,238,124	5,000	260,760	271,700	966,364		80,635
Louisiana	1880	401,103	646,788	1,047,951				1,047,951		
	1890	46,590	110,415	156,915	15,740	166,430	182,170		25,255	4,637
Texas	1880	2,030,907	408,380	2,439,287				2,439,287		
	1890	6,166,072	512,491	6,678,563	344,078	784,262	1,128,340	5,549,223		417,145
Arkansas	1880	1,691,089	1,444,060	3,135,749				3,135,749		
	1890	1,030,631	591,051	1,592,582	22,697	642,760	665,327	927,265		64,868

a No county financial system.

TABLE XXXVIII.—SUMMARY OF COUNTY FINANCES BY GEOGRAPHICAL GROUPS—CONTINUED.

STATES.	Years.	Bonded debt.	Floating debt.	Gross debt.	Sinking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Net assets.	Annual interest charge.
Kentucky	1880	\$6,140,320	\$176,073	\$6,324,402	\$147,350			\$6,877,043		
Kentucky	1890	5,479,677	261,959	5,741,636	396,485	\$141,442	\$537,627	5,203,709		\$274,161
Tennessee	1880	2,659,348	501,197	3,060,545				3,060,545		
Tennessee	1890	2,066,791	170,868	2,237,659	56,282	400,328	456,610	1,781,049		113,322
TOTAL	1880	20,066,843	4,494,170	24,560,013	448,859			24,111,154		
TOTAL	1890	22,984,071	2,287,061	25,271,132	1,069,967	3,008,686	4,766,653	20,511,470	\$25,256	1,408,991
Increase or decrease		+2,918,228	-2,207,109	-1,711,119	-1,612,108			-3,599,675		
WESTERN STATES.										
Ohio	1880	2,067,871	4,778	2,062,610				2,062,610		
Ohio	1890	7,797,497	59,313	7,856,810	515,716	844,040	1,359,756	6,507,053		355,670
Idaho	1880		143,742	143,742				143,742		
Idaho	1890	858,700	462,095	1,320,795	103,687	332,603	436,290	884,505		82,407
Indiana	1880	2,886,567	1,187,887	4,074,454	26,400			4,048,054		
Indiana	1890	5,872,956	954,718	6,827,674	563,200	2,280,723	2,843,923	3,983,751		342,641
Illinois	1880	14,127,753	268,698	14,396,451	215,217			14,181,134		
Illinois	1890	11,467,850	292,740	11,760,590	309,763	822,336	1,124,099	10,636,497		353,307
Michigan	1880	870,392	26,398	896,790				896,790		
Michigan	1890	1,315,000	300,028	1,615,028	251,735	580,553	832,288	782,740		183,794
Wisconsin	1880	2,080,169	212,085	2,292,254				2,292,254		
Wisconsin	1890	1,615,178	66,078	1,681,256	54,407	563,631	618,038	1,062,210		97,316
Iowa	1880	2,690,467	302,106	2,992,573				2,992,573		
Iowa	1890	3,216,851	426,063	3,642,914	187,017	1,305,724	2,093,641	1,549,173		187,210
Minnesota	1880	798,727	115,069	913,796	12,384			901,412		
Minnesota	1890	3,124,438	148,049	3,272,487	84,271	1,316,492	1,400,763	1,874,921		197,290
Missouri	1880	11,760,493	424,910	12,185,403	112,001			12,073,312		
Missouri	1890	9,334,176	640,559	9,974,735	360,709	1,145,423	1,511,132	8,463,602		512,728
Kansas	1880	7,364,277	591,644	7,955,921	5,000			7,950,921		
Kansas	1890	14,229,675	588,105	14,817,780	156,753	817,105	973,948	13,843,832		878,736
Nebraska	1880	4,574,069	630,730	5,204,808	80,446			5,124,362		
Nebraska	1890	5,033,014	268,077	5,301,091	292,229	677,148	969,377	4,332,714		280,109
North Dakota (a)	1880	803,983	171,392	975,375	13,806			961,569		
North Dakota (a)	1890	944,806	437,777	1,382,583	49,534	620,698	670,232	803,351		80,363
South Dakota	1880									
South Dakota	1890	2,218,977	471,407	2,690,384	291,133	1,040,692	1,331,725	1,358,749		132,604
Colorado	1880	1,800,050	691,491	2,491,541				2,491,541		
Colorado	1890	1,834,421	1,355,837	3,190,258	156,891	440,087	606,978	2,583,700		66,760
Montana	1880	339,160	348,512	687,672	18,916			668,756		
Montana	1890	1,718,414	218,730	1,937,144	22,394	184,337	207,611	1,729,533		104,817
Nevada	1880	674,626	210,392	885,017				885,017		
Nevada	1890	651,840	205,438	857,278	68,128	211,722	270,850	577,428		27,897
Oregon	1880	16,000	195,767	211,767				211,767		
Oregon	1890	15,000	767,015	782,015	8,718	201,260	209,977	572,038		61,668
California	1880	5,493,514	1,818,976	7,312,490				7,312,490		
California	1890	5,329,051	287,399	5,616,450	153,443	2,429,839	2,583,282	3,024,168		392,474
Washington	1880	75,000	129,384	204,384				204,384		
Washington	1890	451,000	719,637	1,170,637	2,000	42,927	44,927	1,125,710		80,194
Wyoming	1880	32,600	136,777	169,377				169,377		
Wyoming	1890	655,000	420,482	1,075,482		183,156	183,156	892,326		72,419
TOTAL	1880	59,339,457	7,610,666	66,950,123	490,259			66,469,864		
TOTAL	1890	77,676,949	9,098,353	86,775,302	3,683,269	16,801,365	20,194,625	66,580,677		4,411,589
Increase or decrease		+18,337,492	+1,487,687	+19,815,179	+3,193,010			+1,110,813		
TERRITORIES.										
Arizona	1880	165,200	188,017	353,217				353,217		
Arizona	1890	1,050,500	499,197	1,549,697	1,832	336,270	337,112	1,212,585		162,510
New Mexico	1880	46,179	38,663	84,842				84,842		
New Mexico	1890	1,659,271	91,566	1,750,837	50,628	424,692	475,320	1,275,517		94,822
Utah	1880		15,132	15,132				15,132		
Utah	1890		74,110	74,110		166,192	166,192		91,992	4,652
Indian Territory (a)	1880									
Indian Territory (a)	1890									
Alaska (b)	1880									
Alaska (b)	1890									
Oklahoma (c)	1880									
Oklahoma (c)	1890									
TOTAL	1880	211,379	211,842	423,221				423,221		
TOTAL	1890	2,699,771	694,873	3,394,644	52,470	926,974	979,444	2,415,200	91,992	291,993
Increase or decrease		+2,488,392	+483,031	+2,971,423	+52,470	+926,974	+979,444	+1,991,979	+91,992	+291,993

a Includes South Dakota in 1880.

b No county financial system.

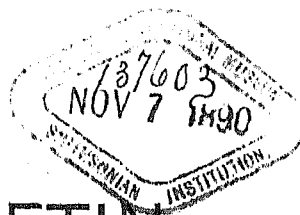
c No county organization.

XXXIX.—SUMMARY OF COUNTY INDEBTEDNESS BY GEOGRAPHICAL GROUPS.

GEOGRAPHICAL GROUPS.	Bonded debt.	Floating debt.	Gross debt.	Sinking fund.	Cash in treasury and other available resources.	Total available resources.	Net debt.	Net assets.	Annual interest charge.
1880.									
New England States.....	\$1, 135, 100	\$1, 591, 777	\$2, 726, 877				\$2, 726, 877		
Middle States.....	20, 016, 167	4, 009, 004	30, 925, 231	\$654, 751			30, 270, 480		
Southern States.....	20, 066, 843	4, 494, 170	24, 560, 013	448, 850			24, 111, 154		
Western States.....	50, 339, 487	7, 016, 056	66, 956, 113	400, 250			66, 465, 854		
The territories.....	211, 379	241, 842	453, 221				453, 221		
TOTAL	100, 767, 946	18, 853, 509	125, 621, 455	1, 503, 869			124, 027, 586		
1890.									
New England States.....	3, 608, 600	1, 394, 977	5, 003, 577	49, 356	\$467, 130	\$516, 486	4, 487, 091	\$2, 522	\$189, 709
Middle States.....	23, 855, 568	1, 513, 017	25, 369, 185	1, 378, 806	2, 640, 941	4, 019, 747	21, 349, 438		1, 106, 128
Southern States.....	22, 084, 071	2, 287, 061	25, 271, 132	1, 090, 967	3, 698, 686	4, 759, 653	20, 511, 479	25, 255	1, 408, 091
Western States.....	77, 076, 949	9, 098, 353	86, 775, 302	3, 633, 260	16, 561, 365	20, 194, 626	66, 580, 677		4, 411, 553
The territories.....	2, 009, 771	664, 873	3, 274, 644	52, 470	925, 074	978, 444	2, 296, 200	91, 992	201, 093
TOTAL	130, 734, 959	14, 958, 881	145, 693, 840	6, 174, 850	24, 294, 096	30, 468, 955	115, 224, 885	119, 769	7, 318, 374

[7-010]

CENSUS BULLETIN.



No. 7.

WASHINGTON, D. C.

August 6, 1890.

Indebtedness of States in 1880 and 1890.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., August 1, 1890.

Rapidity of publication ranks second to accuracy in all matters appertaining to a census. Especially is this true of a country advancing with such strides as the United States, and in which economic conditions are constantly changing. Every month, therefore, which can be saved in publication adds appreciably to the value of the returns. The publication from time to time of Census Bulletins will enable the Census Office to lay before the country the results of the census without any delay. The work of the divisions of the office having charge of state and local finance is well advanced, and will all be completed this year, ready for the final volumes. The preliminary report herewith printed relates to state debts, and presents a summary of the outstanding debts of the several states June 1, 1880, and June 1, 1890, or the dates nearest thereto for which reports are obtainable.

It is impossible, in dealing with state and local finance, to give all the returns as of June 1, 1890, and the act for taking the Eleventh and subsequent censuses, approved March 1, 1889, provides that returns shall be of and for the fiscal year having its termination nearest to the first of June, 1890. As this plan was substantially adopted ten years ago, the comparison of the total debt in 1880 with the total debt at the present time is both fair and accurate. From these returns it will be seen that in the decade ending 1890 state indebtedness has decreased in round numbers about \$58,000,000.

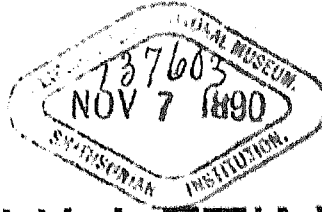
Superintendent of Census.

RECAPITULATION of the debts of the several states by geographical divisions.

DIVISION.	BONDED DEBT.		FLOATING DEBT.		CASH AND FUNDS ON HAND.		NET DEBT.		EXCESS OF ASSETS OVER DEBT.	
	1880.	1890.	1880.	1890.	1880.	1890.	1880.	1890.	1880.	1890.
Grand total.....	\$254,908,212 18	\$194,800,371 88	\$41,514,309 57	\$43,596,218 48	\$108,908,877 85	\$156,448,701 04	\$204,800,674 49	\$132,336,689 44	\$16,987,060 09	\$50,888,800 17
Eastern States:										
Maine.....	\$2,778,500 00	2,784,600 00	\$701,979 88	\$722,108 11	\$1,468,196 39	\$2,108,818 41	\$5,309,282 99	\$3,408,229 70		
New Hampshire.....	(a)	(a)	179,503 20	168,830 28	68,758 90	913,848 68	8,574,846 80	2,639,706 55	198,320 86	75,145 98
Vermont.....	2,834,800 00	1,283,000 00	151,019 96	148,416 37	349,340 82	228,562 30	1,276,894 28	1,299,782 11		57,874 81
Rhode Island.....	4,907,800 00	3,740,300 00	171,517 18	126,703 73	3,028,876 78	2,627,151 62	2,110,240 40	1,230,732 11		
Connecticut.....	33,020,464 00	28,251,287 88	(a)	(a)	18,360,954 62	30,099,974 59	14,650,609 88	1,817,786 74		
Massachusetts.....	49,957,164 00	38,807,887 85	1,221,454 56	1,183,613 28	24,546,166 07	34,684,619 75	26,889,773 85	7,287,688 86	168,320 86	1,080,806 98
Middle States:										
New York.....	8,999,800 00	6,652,100 00	122,694 87	122,694 87	11,056,718 73	17,415,812 17			1,984,663 86	10,640,057 80
New Jersey.....	2,006,800 00	1,196,800 00	(a)	400,000 00	4,968,790 25	4,829,724 83			2,897,490 25	3,233,484 88
Pennsylvania.....	21,448,169 07	13,742,164 70	113,850 58	113,806 38	10,621,801 52	12,068,945 19	10,940,488 18	1,788,026 09		
Delaware.....	824,750 00	899,750 00	(a)	(a)	47,461 13	87,988 04	777,298 87	811,761 96		
Maryland.....	11,280,800 09	10,870,856 56	(a)	(a)	4,480,466 80	7,616,413 00	6,820,824 39	2,724,123 56		
Total.....	44,648,379 76	32,861,911 26	236,515 45	636,501 45	31,109,987 98	49,046,868 23	18,548,111 89	5,332,911 61	4,882,154 11	13,874,392 13
Southern States:										
Virginia.....	31,118,938 30	28,687,603 79	4,075,120 96	7,521,651 88	3,925,445 06	4,085,720 38	31,268,614 20	31,525,335 24	256,300 82	1,020,249 51
West Virginia.....	15,422,045 00	7,611,600 00	(a)	(a)	85,569 56	73,032 21	15,325,475 44	7,538,567 79		
North Carolina.....	6,146,985 92	6,375,619 41	(a)	191,800 00	264,738 96	598,474 03	5,881,898 96	6,473,476 88		
South Carolina.....	9,951,500 00	8,406,905 00	(c)	225,000 00	1,912,674 09	668,084 14	8,098,625 91	8,065,220 86		
Georgia.....	1,250,000 00	1,275,000 00	91,303 55	(a)	650,939 01	1,121,008 81	711,864 54	153,361 19		
Florida.....	9,204,221 05	9,257,700 00	3,066,772 84	2,175,406 10	228,082 68	420,576 80	12,112,941 21	11,962,619 20		
Alabama.....	800,615 00	4,237,730 00	2,208,687 78	2,836,735 30	795,446 38	390,158 73	2,305,896 40	3,246,183 87		
Mississippi.....	29,430,800 00	12,014,050 00	1,006,840 00	2,797,123 02	512,440 07	2,287,985 10	22,925,199 98	12,513,214 92		
Louisiana.....	5,566,928 00	2,813,500 00	(c)	(a)	1,823,711 14	8,457,311 27	413,355 54	13,309 02		4,109,581 27
Texas.....	180,384 00	1,968,100 00	1,682,182 12	1,705,946 71	2,584,458 20	4,782,708 86	989,788 86		691,889 08	171,681 24
Arkansas.....	21,446,508 81	14,938,608 81	6,336,550 00	(c)	222,424 89	(c)	27,560,683 92	14,938,008 31		
Tennessee.....	126,462,545 88	96,686,727 81	18,884,497 28	20,786,687 96	18,464,770 82	26,354,744 91	127,560,414 91	96,460,125 58	948,182 90	5,381,456 02
Western States:										
Ohio.....	6,476,805 80	2,796,665 00	4,287,720 82	4,584,180 50	982,988 21	368,078 04	9,831,837 61	7,014,767 46		
Indiana.....	1,093,295 12	8,540,615 12	1,964,783 22	1,165,407 32	4,488,835 14	4,873,892 87	500,643 20	3,061,722 58		
Illinois.....	281,050 11	23,100 00	3,416,008 88	5,253,920 01	606,267 53	1,845,189 19	3,722,891 87	4,148,723 68	1,094,173 86	2,628,312 84
Michigan.....	913,149 97	239,892 88	(a)	2,205,300 54	4,755,091 47	5,629,767 78	4,683,857 88	2,248,642 04		3,380,377 24
Wisconsin.....	31,000 00	(a)	242,428 73	284,823 52	3,591,853 60	4,032,878 11	2,302,852 87	1,627,529 67		4,340,084 36
Iowa.....	300,000 00	4,265,000 00	(a)	3,674,000 00	5,880,526 07	4,017,250 80	16,382,329 49	8,439,749 20		
Minnesota.....	4,253,000 00	8,783,000 00	(b)	(a)	(b)	(b)	499,207 25	(b)	1,283,548 35	4,921,572 12
Missouri.....	1,181,975 00	499,297 85	(a)	(a)	(b)	(b)	213,484 76			
Kansas.....	(a)	(a)	213,484 76	1,367,603 82	845,210 28	1,444,540 38	408,810 28			25,158 44
Nebraska.....	436,400 00	522,000 00	(a)	(a)	294,840 98	1,842,682 83	402,291 06			879,940 38
Colorado.....	687,070 99	42,672 31	(a)	(a)	4,754,550 55	3,326,845 83				1,700,720 22
Nevada.....	713,000 00	389,500 00	2,600,000 00	2,364,000 00				1,351,350 55		2,823,365 83
Oregon.....	83,854,122 84	26,468,845 26	21,501,882 31	50,989,415 74	34,783,062 88	53,355,443 15	31,961,374 84	23,264,982 89	11,065,872 22	29,187,145 04
Total.....	83,854,122 84	26,468,845 26	21,501,882 31	50,989,415 74	34,783,062 88	53,355,443 15	31,961,374 84	23,264,982 89	11,065,872 22	29,187,145 04

a None. b No report. c Not stated.

17-010.1



CENSUS BULLETIN.

No. 8.

WASHINGTON, D. C.

August 8, 1890.

MINES AND MINING—SLATE.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., JULY 28, 1890.

Recognizing the value of prompt publication of statistics, the following report from the Division of Mines and Mining, under the charge of Dr. DAVID T. DAY, of the United States Geological Survey, is issued as a bulletin. It shows the product of slate during the calendar year 1889, as prepared by Dr. WILLIAM C. DAY, special agent in charge of stone. The bulletin shows also the value of slate, the number of men employed, the wages and other expenses, and the capital involved in this industry.

This statement is exact for the entire country, but is only a brief summary of the more important facts which will be published in detail in the complete report.

The investigation was principally pioneer work. When it was begun, eight months ago, there was not even a good list of the producers of slate, and no investigation so complete as even the brief results here presented had ever been successfully prosecuted.

Superintendent of Census.

PRODUCTION OF SLATE.

By WILLIAM C. DAY.

PRODUCTION.—The total value of all slate produced in the United States in 1889, as shown by the following table, is \$3,444,863. Of this amount, \$2,775,271 is the value of 828,990 squares of roofing slate, and \$669,592 is the value of slate for all other purposes besides roofing.

As compared with the statements of the Tenth Census report of 1880 on stone, the roofing slate product of 1889 is nearly twice as great in number of squares and in value. A consideration of the slate used for purposes other than roofing appears to have been omitted from the Tenth Census report. The total value of all slate produced in 1889 is more than twice as great as that considered in the Tenth Census.

According to "Mineral Resources of the United States, 1888," the total number of squares of roofing slate produced in that year is 662,400, valued at \$2,053,440.

DISTRIBUTION OF THE QUARRIES.—Twelve states at present produce slate. A line drawn on the map from Piscataquis county, Maine, to Polk county, Georgia, and approximately following the coast outline, passes through all the important slate-producing localities. According to amount and value of product, the most important states are, in the order named, Pennsylvania, Vermont, Maine, New York, Maryland, and Virginia. In the remaining six states productive operations are of limited extent, and in the case of Arkansas, California, and Utah of very recent date.

Inasmuch as in slate quarrying the initial operations are those of stripping and excavating, preliminary to actual output, some time must necessarily elapse before any returns for labor can be realized. This explains why the expenses incurred in Arkansas, California, and Utah exceed markedly the value of the output in those states.

The twelve states referred to do not include all those in which merchantable slate is known to exist, since discoveries promising good results for the future have been made in a number of other states, among which may be specially mentioned Tennessee, where operations of production are beginning.

PRODUCTION OF SLATE IN THE UNITED STATES FOR THE YEAR 1889.

BY STATES.

STATES.	Number of quarries.	Number of squares of roofing slate.	Total value of roofing slate.	Total value of slate for other purposes.	Total value of all slate produced.	Total wages paid for entire product.	All other expenses in addition to wages.	Total expenses of producing entire amount of slate.
Arkansas	1	00	\$240	(a)	\$240	\$1,055	\$3,240	\$4,295
California	2	2,504	13,880	(a)	13,880	10,027	12,160	32,087
Georgia	4	3,050	14,850	\$480	15,330	11,371	2,180	13,551
Maine	4	43,500	214,000	(a)	214,000	160,300	16,800	177,100
Maryland	5	23,100	105,745	4,263	110,008	65,207	20,177	85,444
Michigan	1	3,000	15,000	(a)	15,000	12,000	(a)	12,000
New Jersey	5	2,700	10,800	125	10,925	7,367	1,700	9,127
New York	16	17,167	85,796	44,877	130,603	85,797	14,242	100,039
Pennsylvania	104	474,002	1,036,045	374,831	2,011,776	1,283,530	445,633	1,729,163
Utah	1	(a)	(a)	(a)	(a)	1,700	(a)	1,700
Vermont	60	235,850	502,997	245,016	838,013	404,110	87,806	681,916
Virginia	3	23,457	85,070	(a)	85,070	66,020	10,325	77,216
TOTAL	206	828,990	\$2,775,271	\$669,592	\$3,444,863	\$2,209,344	\$614,324	\$2,823,668

a None.

PRODUCTION OF SLATE IN THE UNITED STATES FOR THE YEAR 1889.

BY STATES—CONTINUED.

STATES.	CAPITAL INVESTED.					AVERAGE NUMBER OF EMPLOYÉS.				
	In land.	In buildings and fixtures.	In tools, live stock, machinery, and supplies on hand.	In cash.	Total capital.	Foremen.	Quarrymen and millmen.	Mechanics.	Laborers.	Boys under 16 years.
Arkansas	\$600	\$10	\$25	\$75	\$610	1	2	1	3	(a)
California	57,200	3,000	2,000	7,800	70,000	2	15	(a)	10	(a)
Georgia	141,150	1,350	1,600	11,000	155,000	2	15	(a)	12	2
Maine	475,000	45,000	55,000	60,000	641,000	15	141	10	137	(a)
Maryland	257,550	15,500	47,950	53,000	374,000	6	109	10	44	13
Michigan	8,000	50,000	40,000	(a)	98,000	1	1	2	20	(a)
New Jersey	74,150	11,800	12,300	5,300	103,550	1	27	(a)	12	(a)
New York	185,200	20,830	49,350	40,800	296,180	13	154	2	37	2
Pennsylvania	5,049,137	268,282	716,873	788,690	6,823,002	134	1,725	200	1,243	245
Utah	18,000	150	200	1,550	20,000	(a)	(a)	(a)	4	(a)
Vermont	730,000	80,021	220,815	250,215	1,280,951	38	860	40	344	29
Virginia	37,684	12,595	23,925	65,796	170,000	6	94	2	59	25
TOTAL	\$7,034,491	\$668,538	\$1,178,938	\$1,320,326	\$10,042,293	219	3,143	273	1,955	336

a None.

PRODUCTION OF SLATE BY REGIONS.—The above table, by states, shows the geographical distribution of the quarries, but in order to conform to the custom observed by slate producers the following table, in which the figures are arranged by regions, is presented:

PRODUCTION OF SLATE IN THE UNITED STATES FOR THE YEAR 1889.

BY REGIONS.

REGIONS.	Number of quarries.	Number of squares of roofing slate.	Total value of roofing slate.	Total value of slate for other purposes.	Total value of all slate produced.	Total wages paid for entire product.	All other expenses in addition to wages.	Total expenses of producing entire amount of slate.
Arkansas	1	60	\$240	(a)	\$240	\$1,055	\$3,240	\$4,295
California	2	2,504	13,889	(a)	13,889	19,927	12,160	32,087
Maine	4	43,500	214,000	(a)	214,000	160,400	16,800	177,100
Peach Bottom region, comprising Harford Co., Maryland, and York Co., Pennsylvania.	9	31,068	142,255	\$4,310	146,565	81,085	23,959	169,544
Michigan	1	3,000	15,000	(a)	15,000	12,000	(a)	12,000
New Jersey	6	2,700	10,800	125	10,925	7,367	1,700	9,127
Butter region, Pennsylvania	20	165,582	588,258	118,004	706,262	446,978	207,935	914,213
Laligh region, Pennsylvania	45	142,104	477,801	212,631	690,432	390,575	116,752	807,227
Northampton Hard Vein region, Pennsylvania.	18	45,374	160,140	24,440	184,580	143,000	33,726	177,726
Pon Argyll region, Pennsylvania	17	112,614	374,227	18,803	393,030	286,015	83,378	379,393
Utah	1	(a)	(a)	(a)	1,700	(a)	(a)	1,700
Vermont and New York region, comprising Rutland Co., Vermont, and Washington Co., New York. (b)	76	253,017	678,723	284,893	963,616	570,907	102,048	672,955
Virginia	3	23,457	85,079	(a)	85,079	66,020	10,326	76,346
Georgia	4	3,050	14,850	480	15,330	11,371	2,180	13,551
TOTAL	206	828,000	\$2,775,271	\$669,592	\$3,444,863	\$2,209,344	\$614,324	\$2,823,668

a None.

b Included in the production of this region are 7,247 squares of red slate, valued at \$91,101, taken entirely from quarries in Washington county, New York, the only locality in the country producing red slate.

PRODUCTION OF SLATE IN THE UNITED STATES FOR THE YEAR 1889.

BY REGIONS—CONTINUED.

REGIONS.	CAPITAL INVESTED.				AVERAGE NUMBER OF EMPLOYÉS.					
	In land.	In buildings and fixtures.	In tools, live stock, machinery, and supplies on hand.	In cash.	Total capital.	Foremen.	Quarriesmen and millmen.	Mechanics.	Laborers.	Boys under 16 years.
Arkansas.....	\$500	\$10	\$25	\$75	\$610	1	2	1	3	(a)
California.....	57,200	3,000	2,000	7,800	70,000	2	15	(a)	10	(a)
Maine.....	475,000	45,000	55,000	60,000	611,000	15	141	16	137	(a)
Peach Bottom region, comprising Harford Co., Maryland, and York Co., Pennsylvania.	314,145	17,800	57,310	68,715	458,000	10	138	13	53	16
Michigan.....	8,000	50,000	40,000	(a)	98,000	1	1	2	20	(a)
New Jersey.....	71,150	11,800	12,300	5,300	103,550	1	27	(a)	12	(a)
Bangor region, Pennsylvania.....	1,331,350	53,200	208,525	195,500	1,888,575	28	578	53	432	98
Lehigh region, Pennsylvania.....	1,628,140	132,507	314,377	277,000	2,352,025	63	553	70	427	85
Northampton Hard Vein region, Pennsylvania.....	730,679	55,675	70,111	112,814	972,279	23	230	27	154	27
Pen Argyl region, Pennsylvania.....	1,106,393	27,600	114,110	186,692	1,524,825	17	345	38	231	52
Utah.....	18,000	150	200	1,050	20,000	(a)	(a)	(a)	4	(a)
Vermont and New York region, comprising Rutland Co., Vermont, and Washington Co., New York.	916,400	100,851	279,155	201,015	1,587,431	51	1,014	42	381	31
Virginia.....	37,681	12,505	23,925	95,700	170,000	6	91	2	89	25
Georgia.....	111,150	1,350	1,500	11,000	125,000	2	15	(a)	12	2
Total.....	\$7,631,491	\$508,538	\$1,478,938	\$1,320,320	\$10,942,293	219	3,143	274	1,955	336

(a) None.

It will be observed that these regions do not coincide exactly with states, nor, in the case of the Lehigh region, with counties, but in a number of instances they overlap the geographical boundaries of state and county; thus, the Peach Bottom region lies both in Maryland and Pennsylvania, and the Lehigh region in Lehigh, Carbon, Berks, and a small portion of Northampton counties.

As shown in the table, the Bangor region, which is entirely within Northampton county, Pennsylvania, is the most important. This region includes quarries at Bangor, East Bangor, and Mount Bethel, Pennsylvania. (The character of the slate produced at Mount Bethel is similar to that of the Northampton Hard Vein region.) Included in the Lehigh region, besides Lehigh county, Pennsylvania, are a few quarries in Berks and Carbon counties, and a small number in Northampton county, on the opposite side of the Lehigh river.

The Pen Argyl region embraces quarries at Pen Argyl and Wind Gap.

The Northampton Hard Vein region is specially distinguished on account of the extreme hardness of the slate as compared with that produced in other regions of the state. This region includes the following localities: Chapman's Quarries, Belfast, Edelman, Seemsville, and Treichlers, all in Northampton county.

Five of the nine quarries included in the Peach Bottom region are in Harford county, Maryland, the remaining four being in York county, Pennsylvania.

The Vermont and New York region includes an extensive slate formation occupying a part of the old Champlain Valley lying between the western base of the Green mountains of Vermont and the southern trend of the Adirondaeks, in New York. The area in which slate is actually produced at present is confined to a narrow strip in Washington county, New York, and a somewhat wider one lying next to it in Rutland county, Vermont. It extends from Castleton, Vermont, on the north, to Salem, New York, on the south, a distance of 35 or 40 miles, and has a maximum width of six miles, but the average is not more than a mile and a half. With the exception of red slate, the production of which is at present limited to Washington county, New York, the general character of the slate in Vermont and New York is the same.

It happens, however, that red slate is produced only in Washington county, New York, this being the only locality in the country producing this variety of slate.

LABOR AND WAGES.—The slate quarrymen of the country, and to a considerable extent the firms operating the quarries, are either Welsh or of Welsh descent, many of them having learned the methods of quarrying slate in the celebrated quarries of Wales.

The quarries are operated on an average of about 220 days in the year. The idle days are the result of rainy weather and holidays. The first day of every month is regarded as a holiday by the Welsh quarrymen, and no work is ever done by them on Saturday afternoons.

The average wages for the entire country paid to foremen or overseers is \$2.48 per day; for quarrymen and millmen, \$1.56; for mechanics, \$1.64; for laborers, \$1.27, and for boys, \$0.76. The highest wages are paid in California, while those paid in the most important regions naturally approximate more closely the figures above given as the averages. The following figures represent the average daily wages paid in Pennsylvania: foremen, \$2.25; quarrymen, \$1.88; mechanics, \$1.54; laborers, \$1.40, and boys, \$0.73. In the Vermont and New York region foremen receive an average of \$2.65; quarrymen and millmen, \$1.77; mechanics, \$1.97; laborers, \$1.57, and boys, \$0.89.

DIRECTORY OF FIRMS PRODUCING SLATE.

The following list comprises a directory of the firms at present producing slate in the United States. It is arranged alphabetically by states, giving post-office addresses of firms operating quarries, and also the location of the quarries. It will be observed that in many cases the post-office address of the headquarters of the firm is remote from the quarry.

CALIFORNIA.

Chili Bar Slate Co., Placerville, El Dorado Co. Quarry, three miles north of Placerville, El Dorado Co.
California Slate Co., 9 Mission St., San Francisco. Quarry, Chili Bar, South Fork of the American River, El Dorado Co.

DISTRICT OF COLUMBIA.

Washington Red Slate Co., 1305 F St., N. W., Washington. Quarry, one-half mile from Middle Granville, Washington Co., N. Y.

GEORGIA.

Georgia Slate Co., Rockmart. Quarry, Rockmart, Polk Co.
W. W. Jones & Co., Rockmart. Quarry, Rockmart, Polk Co.
Rockmart Slate Co., Rockmart. Quarry, Rockmart, Polk Co.
Southern Slate Co., Rockmart. Quarry, Rockmart, Polk Co.

MAINE.

Blanchard Slate Mining Co., Bangor, Penobscot Co. Quarry, Blanchard, Piscataquis Co.
H. A. Merrill, Bangor, Penobscot Co. Quarry, Brownville, Piscataquis Co.

MASSACHUSETTS.

Monson Maine Slate Co., 113 Devonshire St., Boston. Quarries, Monson, Piscataquis Co., Me.
Amillan Slate Trust, 9 Milk St., Boston. Quarries, Pawlet, Rutland Co., Vt.

MICHIGAN.

Michigan Slate Co., Arvon, Baraga Co. Quarries, Arvon, Baraga Co., and twelve miles from L'Ance, Baraga Co.

MISSOURI.

T. H. White, 812 South Seventh St., St. Louis. Quarry, Pulaski Co., Ark.

NEW JERSEY.

Wind Gap Slate Co., Belvidere, Warren Co. Quarry, one-half mile southwest of Wind Gap, Northampton Co., Pa.
Jones & Williams, La Fayette, Sussex Co. Quarry, one and one-half miles north of La Fayette, Sussex Co.
Owens & Rowland, La Fayette, Sussex Co. Quarry, two miles north of La Fayette, Sussex Co.
Linton & Jones, La Fayette, Sussex Co. Quarry, one and one-fourth miles north of La Fayette, Sussex Co.
Anthony Mutton & Co., Newton, Sussex Co. Quarry, one mile south of Newton, Sussex Co.
North Bangor Slate Co., 41 Camp St., Newark. Quarry, Bangor, Northampton Co., Pa.

NEW YORK.

- Brockway & Hughes, Granville, Washington Co. Quarry, Pawlet, Rutland Co., Vt.
 Alexander Clayton, Granville, Washington Co. Quarry, one-half mile north of Pawlet, Rutland Co., Vt.
 S. E. Culver & Co., Granville, Washington Co. Quarry, Rutland Co., Vt., one and one-half miles southeast of Granville, N. Y.
 Hugh W. Hughes & Son, Granville, Washington Co. Quarry, one and one-half miles west of Pawlet, Rutland Co., Vt.
 H. K. Kays & Co., Granville, Washington Co. Quarry, Rutland Co., Vt., two miles southeast of Granville, N. Y.
 Norton Bros., Granville, Washington Co. Quarry, Rutland Co., Vt., one and one-half miles southeast of Granville, N. Y.
 Owen W. Owens' Sons, Granville, Washington Co. Quarry, Rutland Co., Vt., two miles southeast of Granville, N. Y.
 William E. Roberts, Granville, Washington Co. Quarry, one mile north of Granville, Washington Co.
 Warren Slate Co., Granville, Washington Co. Quarry, Rutland Co., Vt., two and one-half miles south of Granville, N. Y.
 Mrs. Grace Williams, Granville, Washington Co. Quarry, one mile north of Granville, Washington Co.
 Hugh J. Williams, Granville, Washington Co. Quarry, Rutland Co., Vt., one and one-half miles from Granville, N. Y.
 Joseph W. Williams, Granville, Washington Co. Quarry, Rutland Co., Vt., two miles southeast of Granville, N. Y.
 Williams & Edwards, Granville, Washington Co. Quarry, Pawlet, Rutland Co., Vt.
 Hiram Ainsworth, Middle Granville, Washington Co. Quarries, near Fair Haven, Vt., and Whitehall, Washington Co., N. Y.
 R. R. Jones & Co., Middle Granville, Washington Co. Quarry, one mile north of Middle Granville, Washington Co.
 Mottowee Slate Co., Middle Granville, Washington Co. Quarry, Middle Granville, Washington Co.
 Mottowee Red Slate Co., Middle Granville, Washington Co. Quarries in Middle Granville and Janesville.
 McLeary & Roberts, Middle Granville, Washington Co. Quarry one-half mile from Middle Granville, Washington Co.
 New Boston Red Slate Co., Middle Granville, Washington Co. Quarry, one-half mile from Middle Granville, Washington Co.
 Robert B. Pritchard, Middle Granville, Washington Co. Quarry, one half mile east of Middle Granville, Washington Co.
 Bangor Central Slate Co., 18 Burling Slip, New York City. Quarry, one-half mile east of Bangor, Northampton Co., Pa.
 Columbia Slate Co., 202 Broadway, New York City. Quarry, Rutland Co., Vt., one mile from Granville, N. Y.
 Penrhyn Slate Co., 101 East Seventeenth St., New York City. Quarry, Middle Granville, Washington Co.
 White Oak Slate Co., 18 Burling Slip, New York City. Quarry, one half mile southwest of Edelman, Northampton Co., Pa.
 Irving S. Herbert, North Granville, Washington Co. Quarry, East Whitehall, Washington Co.
 C. H. Pierce, Salem, Washington Co. Quarry, one and one-half miles north of Salem.
 John M. Williams, Salem, Washington Co. Quarry, one mile north of Salem.
 Hatch Hill Red Slate Works, White Hall, Washington Co. Quarry, East White Hall, Washington Co.

OHIO.

- Auld & Conger, Cleveland, O. Quarry, Pawlet, Rutland Co., Vt.

PENNSYLVANIA.

- American Bangor Slate Co., Allentown, Lehigh Co. Quarry, one and one-half miles west of Bangor, Northampton Co.
 Star Slate Co., 1017 Hamilton St., Allentown, Lehigh Co. Quarry, one mile west of Slatington, Lehigh Co.
 Acme Slate Co., Bangor, Northampton Co. Quarry, one mile southeast of Wind Gap, Northampton Co.
 Albert & Reapeher, Bangor, Northampton Co. Quarry, one mile west of Johnsonville, Northampton Co.
 Auld, Conger & Co., Bangor, Northampton Co. Quarry, Bangor, Northampton Co.
 Bangor Superior Slate Co., Bangor, Northampton Co. Quarry, one mile east of Pen Argyl, Northampton Co.
 Columbia Bangor Slate Co., Bangor, Northampton Co. Quarry, one-half mile east of Bangor, Northampton Co.
 John Kent & Co., Bangor, Northampton Co. Quarry, one-half mile east of Bangor, Northampton Co.
 Monarch Slate Co., Bangor, Northampton Co. Quarry, one mile southeast of Wind Gap, Northampton Co.
 Neff & Hauck, Bangor, Northampton Co. Quarry, two miles north of Bangor, Northampton Co.
 New York Slate Co., Bangor, Northampton Co. Quarry, three miles west of Bangor, Northampton Co.
 Northampton Slate Co., Bangor, Northampton Co. Quarry, one and one-quarter miles north of Bangor, Northampton Co.
 Star Slate Co., Bangor, Northampton Co. Quarry, one mile east of Bangor, Northampton Co.
 United States Slate Co., Bangor, Northampton Co. Quarry, Pen Argyl, Northampton Co.
 West Bangor Slate Co., Bangor, Northampton Co. Quarry, one-half mile east of Pen Argyl, Northampton Co.
 W. A. Winsboro, Bangor, Northampton Co. Quarry, one-half mile east of Bangor, Northampton Co.
 Hughes Slate Co., Belfast, Northampton Co. Quarry, one-quarter mile west of Belfast, Northampton Co.
 Portland Slate Co., Belfast, Northampton Co. Quarry, one-half mile north of Belfast, Northampton Co.
 Beck, Shoemaker & Roberts, Berlinsville, Northampton Co. Quarry, two miles south of Walnutport, Northampton Co.
 J. T. Jeter & Co., Bethlehem, Northampton Co. Quarry, three-quarters mile west of Edelman.
 Old Bangor Slate Co., Bethlehem, Northampton Co. Quarry, Bangor, Northampton Co.
 Ryan Slate Co., Bethlehem, Northampton Co. Quarry, one-half mile northwest of Chapman's Quarries, Northampton Co.
 John Lewis, Brodbecks, York Co. Quarry, two miles northeast of Brodbecks, York Co.
 George Rower, Catsaugua, Northampton Co. Quarry, one mile north of Lynnport, Lehigh Co.
 Chapman's Slate Co., Chapman's Quarries, Northampton Co. Quarry, Chapman's Quarries, Northampton Co.
 Keystone Slate Co., Chapman's Quarries, Northampton Co. Quarry, Chapman's Quarries, Northampton Co.
 F. M. Hower, Cherryville, Northampton Co. Quarry, Howerton, Northampton Co.
 W. Griffith & Son, Danielsville, Northampton Co. Quarry, one and one-half miles east of Walnutport, Northampton Co.

- Henry Biechy & Co., Danielsville, Northampton Co. Quarry, one-half mile east of Danielsville, Northampton Co.
- Henry & Co., Danielsville, Northampton Co. Quarry, one-half mile east of Danielsville, Northampton Co.
- Eureka Peach Bottom Slate Mining Co., Delta, York Co. Quarry, one mile south of Delta, Harford Co., Md.
- H. L. Jones & Co., Delta, York Co. Quarry, West Bangor, York Co.
- Peach Bottom Slate Co. of Harford Co., Md., Delta, York Co. Quarry, one and one-half miles south of Delta, Harford Co., Md.
- Susquehanna Slate Co., Delta, York Co. Quarry, in Harford Co., Md., one mile south of Delta, Pa.
- J. Bray, East Bangor, Northampton Co. Quarry, Pen Argyl, Northampton Co.
- East Bangor Consolidated Slate Co., East Bangor, Northampton Co. Quarry, East Bangor, Northampton Co.
- East Bangor Slate Mining Co., East Bangor, Northampton Co. Quarry, East Bangor, Northampton Co.
- Seek No Farther Slate Co., East Bangor, Northampton Co. Quarry, East Bangor, Northampton Co.
- Standard Slate Co., East Bangor, Northampton Co. Quarry, East Bangor, Northampton Co.
- Bangor Excelsior Slate Co., Rooms 8 and 9, Drake's Building, Easton, Northampton Co. Quarry, Bangor, Northampton Co.
- Chester Slate Co., 700 Walnut St., Easton, Northampton Co. Quarry, two and one-half miles west of Bath, Northampton Co.
- Easton Slate Co., Easton, Northampton Co. Quarry, one mile north of Belfast, Northampton Co.
- Edelman Hard Vein Slate Co., corner Lehigh and Sitgreaves streets, Easton, Northampton Co. Quarry, Edelman, Northampton Co.
- Flory & Lehr Hard Vein Slate Co., Easton, Northampton Co. Quarry, one-eighth mile west of Edelman, Northampton Co.
- Henry Fulmer, Easton, Northampton Co. Quarry, Slatington, Lehigh Co.
- Northampton Hard Vein Slate Co., Easton, Northampton Co. Quarry, one-half mile south of Edelman, Northampton Co.
- Theo. Whitesell, 700 Walnut St., Easton, Northampton Co. Quarry, one-half mile south of Edelman, Northampton Co.
- Enterprise Slate Co., Lynnport, Lehigh Co. Quarry, one-half mile east of Lynnport, Lehigh Co.
- Jacob K. Henry, Lynnport, Lehigh Co. Quarry, one mile northwest of Lynnport, Lehigh Co.
- A. F. McHose, Lynnport, Lehigh Co. Quarry, one mile north of Lynnport, Lehigh Co.
- Mount Bethel Slate Co., Mount Bethel, Northampton Co. Quarry, Williamsburg, Northampton Co.
- Krauss & Sieger, New Tripoli, Lehigh Co. Quarry, one mile from New Tripoli, Lehigh Co.
- Bouney, Arthur & Co., Pen Argyl, Northampton Co. Quarry, Pen Argyl, Northampton Co.
- Excelsior Slate Co., Pen Argyl, Northampton Co. Quarry, Pen Argyl, Northampton Co.
- William Harding & Co., Pen Argyl, Northampton Co. Quarry, Pen Argyl, Northampton Co.
- Jackson Brothers, Pen Argyl, Northampton Co. Quarry, Pen Argyl, Northampton Co.
- Jackson Slate Co., Pen Argyl, Northampton Co. Quarry, Pen Argyl, Northampton Co.
- Kitto, Luxon & Co., Pen Argyl, Northampton Co. Quarry, one mile east of Pen Argyl, Northampton Co.
- William Lobb & Sons, Pen Argyl, Northampton Co. Quarry, Pen Argyl, Northampton Co.
- James H. Simpson & Son, Pen Argyl, Northampton Co. Quarry, Pen Argyl, Northampton Co.
- Stephens, Jackson & Co., Pen Argyl, Northampton Co. Quarry, Pen Argyl, Northampton Co.
- Guarantee Slate Co., 727 Walnut St., Philadelphia. Quarry, one mile northwest of Wanamaker's, Berks Co.
- Jesse B. Kimes, 1822 Filbert St., Philadelphia. Quarry, two and one-half miles west of Slatington, Lehigh Co.
- Central Slate Co., 1736 Cuthbert St., Philadelphia. Quarry, one-half mile east of Chapman's Quarries, Northampton Co.
- Old Lehigh Slate Co., 1026 Arch St., Philadelphia. Quarry, Slatington, Lehigh Co.
- Quaker City Slate Co., 906 Filbert St., Philadelphia. Quarry, one and one-half miles west of Wanamaker's, Berks Co.
- Peebles Slate Co., Pittsburgh, Allegheny Co. Quarry, one and one-half miles south of Delta, Harford Co., Md.
- Globe Hard Vein Slate Co., Portland, Northampton Co. Quarry, one-fourth mile south of Edelman, Northampton Co.
- Jones Slate Co., Pottstown, Montgomery Co. Quarry, one-half mile west of Wind Gap, Northampton Co.
- Hallet Slate Co., Scranton, Lackawanna Co. Quarry, near Polkville, Warren Co., N. J.
- Ziegenfuss Slate Co., Seemsville, Northampton Co. Quarry, one-half mile southeast of Seemsville, Northampton Co.
- Snowden Slate Co., Slatford, Northampton Co. Quarry, one mile north of Slatford, Northampton Co.
- Paul E. Balliet, Slatington, Lehigh Co. Quarry, one-fourth mile north of Slatington, Lehigh Co.
- Blue Diamond Slate and Roofing Co., Limited, Slatington, Lehigh Co. Quarry, one-half mile northwest of Slatington, Lehigh Co.
- Carbon Slate Co., Slatington, Lehigh Co. Quarry, one-half mile west of Slatington, Lehigh Co.
- Samuel Caskie, Slatington, Lehigh Co. Quarry, one and one-half miles east of Walnutport, Northampton Co.
- Columbia Slate Co., Slatington, Lehigh Co. Quarry, one and one-half miles west of Slatington, Lehigh Co.
- Griffith R. Davies, Slatington, Lehigh Co. Quarry, five miles northeast of Slatington, Lehigh Co.
- Ellis Slate Co., Slatington, Lehigh Co. Quarry, one mile east of Walnutport, Northampton Co.
- Evaas & Bros., Slatington, Lehigh Co. Quarry, one-half mile north of Slatington, Lehigh Co.
- Gap Slate Co., Slatington, Lehigh Co. Quarry, one mile north of Slatington, Lehigh Co.
- F. Herlacher, Slatington, Lehigh Co. Quarry, one-eighth mile west of Slatington, Lehigh Co.
- Robert R. Jones & Co., Slatington, Lehigh Co. Quarry, one-half mile west of Slatington, Lehigh Co.
- Kern & Fuller, Slatington, Lehigh Co. Quarry, one-fourth mile north of Slatington, Lehigh Co.
- Kuntz & Smith, Slatington, Lehigh Co. Quarry, one-half mile west of Slatington, Lehigh Co.
- Luzerne Slate Co., Slatington, Lehigh Co. Quarry, one-fourth mile west of Slatedale, Lehigh Co.
- George McDowell & Co., Slatington, Lehigh Co. Quarry, one mile west of Slatington, Lehigh Co.
- Meadow Brook Slate Co., Slatington, Lehigh Co. Quarry, one-half mile west of Slatington, Lehigh Co.
- Metropolitan Slate Co., Slatington, Lehigh Co. Quarry, three miles west of Slatington, Lehigh Co.
- E. B. Neff & Son, Slatington, Lehigh Co. Quarry, one mile west of Slatedale, Lehigh Co.

Joel Neff & Son, Slatington, Lehigh Co. Quarry, one mile northwest of Slatington, Lehigh Co.
 E. D. Peters & Co., Slatington, Lehigh Co. Quarry, one mile east of Walnutport, Northampton Co.
 Saegersville Slate Quarry and Manufacturing Co., Slatington, Lehigh Co. Quarry, four miles west of Slatington, Lehigh Co.
 Slatington Slate Co., Slatington, Lehigh Co. Quarry, Slatington, Lehigh Co.
 Unger & Steckel, Slatington, Lehigh Co. Quarry, Slatington, Lehigh Co.
 Washington Slate Co., Slatington, Lehigh Co. Quarry, one-fourth mile west of Slatington, Lehigh Co.
 David Williams, Slatington, Lehigh Co. Quarry, one mile east of Walnutport, Northampton Co.
 Morris E. Williams, Slatington, Lehigh Co. Quarry, one-half mile west of Slatington, Lehigh Co.
 O. T. Williams & Son, Slatington, Lehigh Co. Quarry, one mile west of Slatington, Lehigh Co.
 Auer & Beck, Treichlers, Northampton Co. Quarry, one mile west of Treichlers', Northampton Co.
 Boyer, Beck & Son, Treichlers, Northampton Co. Quarry, near Treichlers' station, Northampton Co.
 R. Raymond Jones, Walnutport, Northampton Co. Quarry, one mile east of Walnutport, Northampton Co.
 Sterling Slate Co., Walnutport, Northampton Co. Quarry, one mile east of Walnutport, Northampton Co.
 Griffith G. Williams & Co., Walnutport, Northampton Co. Quarry, one mile east of Walnutport, Northampton Co.
 Allentown Slate Co., Wanamaker's, Berks Co. Quarry, one and one-half miles northwest of Wanamaker's, Berks Co.
 Big Red Slate Co., Wanamaker's, Lehigh Co. Quarry, two miles northwest of Wanamaker's, Berks Co.
 E. W. Evans & Co., West Bangor, York Co. Quarry, West Bangor, York Co.
 John E. Williams & Co., West Bangor, York Co. Quarry, West Bangor, York Co.
 Harding, Reimel & Co., Wind Gap, Northampton Co. Quarry, one-half mile west of Wind Gap, Northampton Co.
 York and Peach Bottom Slate Mfg Co., York, York Co. Quarry, three-quarter mile south of Delta, Harford Co., Md.

RHODE ISLAND.

A. Deslauriers, Sabine St., Providence. Quarry, Blanchard, Piscataquis Co., Me.

UTAH.

F. W. C. Hathenbuck, Provo City, Utah Co. Quarry, one and one-quarter miles east of Provo City, Utah Co.

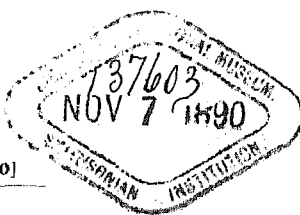
VERMONT.

J. J. Jones, Castleton, Rutland Co. Quarry, two and one-half miles north of Castleton, Rutland Co.
 Coulman & Westcott, Fair Haven, Rutland Co. Quarry, one-quarter mile northeast of Fair Haven, Rutland Co.
 Eureka Slate Quarries, Fair Haven, Rutland Co. Quarry, Poultney, three miles south of Fair Haven, Rutland Co.
 Fair Haven Marble and Marbleized Slate Co., Fair Haven, Rutland Co. Quarry, Fair Haven, Rutland Co.
 Francis & Thomas, Fair Haven, Rutland Co. Quarry, south of Fair Haven, Rutland Co.
 Goodwin, Metcalf & Co., Fair Haven, Rutland Co. Quarry, two miles east of Fair Haven, Rutland Co.
 Hazard Slate Co., Fair Haven, Rutland Co. Quarry, two miles north of Fair Haven, Rutland Co.
 Hughes, Evans & Co., Fair Haven, Rutland Co. Quarry, North Poultney, three miles from Poultney Village, Rutland Co.
 Benjamin Lewis & Co., Fair Haven, Rutland Co. Quarry, one mile southeast of Fair Haven, Rutland Co.
 Lloyd & Jones, Fair Haven, Rutland Co. Quarry, North Poultney, two and one-half miles south of Fair Haven, Rutland Co.
 Richard E. Lloyd, Fair Haven, Rutland Co. Quarry, North Poultney, two and one-half miles south of Fair Haven, Rutland Co.
 William E. Lloyd Slate Co., Fair Haven, Rutland Co. Quarry, North Poultney, three miles north of Poultney, Rutland Co.
 Minogue & Greer, Fair Haven, Rutland Co. Quarry, Poultney, two and one-half miles north of Fair Haven, Rutland Co.
 Jones, Owens & Co., Fair Haven, Rutland Co. Quarry, one mile southeast of Fair Haven, Rutland Co.
 Owen J. Pierce & Co., Fair Haven, Rutland Co. Quarry, Castleton, two miles east of Fair Haven, Rutland Co.
 Roberts & Owens, Fair Haven, Rutland Co. Quarry, one-half mile southeast of Fair Haven, Rutland Co.
 Hatch Hill Slate Works, Fair Haven, Rutland Co. Quarry, two miles north of Fair Haven, Rutland Co.
 M. H. Vail, Fair Haven, Rutland Co. Quarry, Poultney, one and one-half miles from Fair Haven, Rutland Co.
 Welsh Slate Co., Fair Haven, Rutland Co. Quarry, North Poultney, three miles from Poultney, Rutland Co.
 J. W. Williams & Co., Fair Haven, Rutland Co. Quarry, two miles north of Fair Haven, Rutland Co.
 Billings Slate and Marble Co., Hydeville, Rutland Co. Quarry, two miles north of Hydeville, Rutland Co.
 Bolger Bros., Hydeville, Rutland Co. Quarry, Castleton, one mile south of Hydeville, Rutland Co.
 Eastern Slate Co., Hydeville, Rutland Co. Quarry, North Poultney, Rutland Co.
 R. Hanger Slate Works, Hydeville, Rutland Co. Quarry, Hydeville, Rutland Co.
 Lake Bomoseen Slate Co., Hydeville, Rutland Co. Quarry, Hydeville, Rutland Co.
 N. A. Litchfield, Hydeville, Rutland Co. Quarry, Coosville, Rutland Co.
 Thomas Quinn, Hydeville, Rutland Co. Quarry, Blissville, one mile south of Hydeville, Rutland Co.
 Richard W. Rowland, Hydeville, Rutland Co. Quarry, Blissville, one mile south of Hydeville, Rutland Co.
 Trojan Slate Co., Hydeville, Rutland Co. Quarry, one mile south of Castleton, Rutland Co.
 Adams Slate and Tile Co., Northfield, Washington Co. Quarry, Northfield, Washington Co.
 Buckeye Slate Co., Poultney, Rutland Co. Quarry, two and one-half miles southeast of Poultney, Rutland Co.
 J. W. D. Deane, Poultney, Rutland Co. Quarry, two and one-half miles south of Poultney, Rutland Co.
 Edwards & Williams, Poultney, Rutland Co. Quarry, three miles south of Poultney, Rutland Co.
 Evans & Thomas, Poultney, Rutland Co. Quarry, two miles southeast of Poultney, Rutland Co.

Griffith & Nathaniel, Poultney, Rutland Co. Quarry, three miles southeast of Poultney, Rutland Co.
 Jones, Griffith & Williams, Poultney, Rutland Co. Quarry, one mile southeast of Poultney, Rutland Co.
 New Empire Slate Co., Poultney, Rutland Co. Quarry, two miles south of Poultney, Rutland Co.
 John J. Owens, Poultney, Rutland Co. Quarry, three miles south of Poultney, Rutland Co.
 G. Parker & Son, Poultney, Rutland Co. Quarry, two miles west of Poultney, Rutland Co.
 Parry & Jones, Poultney, Rutland Co. Quarry, three miles south of Poultney, Rutland Co.
 Poultney Slate Co., Poultney, Rutland Co. Quarry, three miles south of Poultney, Rutland Co.
 John W. Roberts & Co., Poultney, Rutland Co. Quarry, three miles south of Poultney, Rutland Co.
 S. C. Dennison, West Pawlet, Rutland Co. Quarry, one-quarter mile north of West Pawlet, Rutland Co.
 Thomas R. Griffith, West Pawlet, Rutland Co. Quarries, one-quarter mile northeast of West Pawlet, Rutland Co., and
 two miles north of West Pawlet.
 Owen R. Jones & Co., West Pawlet, Rutland Co. Quarry, two miles north of West Pawlet, Rutland Co.
 Rising & Nelson, West Pawlet, Rutland Co. Quarry, West Pawlet, Rutland Co.

VIRGINIA.

John B. Williams & Co., Arvonnia, Buckingham Co. Quarry, Arvonnia, Buckingham Co.
 J. J. Roberts & Co., Ore Banks, Buckingham Co. Quarry, Ore Banks, Buckingham Co.
 Virginia Slate Co., Lynchburg, Campbell Co. Quarry, three miles north of Rope Ferry, Amherst Co.



[7-010]

CENSUS BULLETIN.

No. 9.

WASHINGTON, D. C.

August 20, 1890.

MANUFACTURES.—PRODUCTION OF PIG-IRON.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., August 20, 1890.

Under the act entitled "An act to provide for taking the Eleventh and subsequent censuses," approved March 1, 1889, the collection of statistics of iron and steel was intrusted to Dr. WILLIAM M. SWEET, of Philadelphia, Pennsylvania. In the issuing of this bulletin, which presents the full returns of the production of pig-iron during the year ended June 30, 1890, the Division of Manufactures, in charge of Mr. FRANK R. WILLIAMS, shows commendable promptitude.

The production of pig-iron during the year named aggregated 9,579,779 tons (of 2,000 pounds to the ton), as compared with 3,781,021 tons produced during the census year of 1880 and 2,052,821 tons during the census year of 1870.

It will be gratifying to notice the great strides which the southern states have made in the manufacture of pig-iron since 1880, the total product in that year being 350,436 tons, as against 1,780,909 tons in 1890. The decade has brought about the most marked change in rank in this industry in the state of Alabama, which in 1880 occupied tenth place, with an output of 62,336 tons, and which now, in 1890, obtains third place, with an output of 890,432 tons, an increase of more than 1,328 per cent over the production of 1880.

The development of the manufacture of pig-iron in the United States during the ten years from 1880 to 1890 has been phenomenal, and at the present rate of increase in production this country is destined soon to become the leading producer of pig-iron in the world, possibly reaching this distinction in the calendar year 1890. During the calendar year 1889 the production of pig-iron by Great Britain, which has annually produced more pig-iron than any other country, is shown by official statistics to have been 9,321,563 tons of 2,000 pounds. It will be seen from these figures that the quantity of pig-iron produced by the United States during the census year 1890 was 258,216 tons in excess of the production of Great Britain during the calendar year 1889. No statistics are available for the output of pig-iron by Great Britain during the twelve months ended June 30, 1890, so that comparisons can not be made for the same period as that covered by the census statistics.

Superintendent of Census.

MANUFACTURES.—PRODUCTION OF PIG-IRON.

BY DR. WILLIAM M. SWEET.

The production of pig-iron during the year ended June 30, 1890, was the largest in the history of the iron industry of this country, amounting to 9,579,779 tons of 2,000 pounds, as compared with 3,781,021 tons produced during the census year 1880 and 2,052,821 tons during the census year 1870. From 1870 to 1880 the increase in production amounted to 1,728,200 tons, or nearly 85 per cent, while from 1880 to 1890 the increase was 5,798,758 tons, or over 153 per cent. The following table shows the production of pig-iron in the various sections of the country in the census years 1870, 1880, and 1890, in tons of 2,000 pounds, including castings made direct from the furnace. The statistics for 1870 and 1880 are for the census years ended May 31, but for 1890 they cover the year ended June 30.

DISTRICTS.	TONS OF 2,000 POUNDS.		
	Year ended May 31, 1870.	Year ended May 31, 1880.	Year ended June 30, 1890.
New England States	34,471	30,957	33,781
Middle States	1,311,649	2,401,093	5,216,591
Southern States	184,540	350,436	1,780,909
Western States	522,161	995,335	2,522,351
Far Western States		3,200	20,147
Total	2,052,821	3,781,021	9,579,779

From the above it will be seen that the pig-iron industry of New England has been practically stationary during the past twenty years, while during the same period, and especially since 1880, there has been a wonderful development of the manufacture of pig-iron in all other sections of the country.

In the census year 1880 the pig-iron industry was located in 24 states and 1 territory, but pig-iron was produced in only 22 states, the furnaces in Minnesota, North Carolina, and Utah being idle in that year. In the census year 1890 there were 25 states which contained completed blast furnaces, and pig-iron was made in that year in each of these states, except Minnesota. Since 1880 the manufacture of pig-iron has been abandoned in Vermont and Utah, and during the same period 2 states, viz., Colorado and Washington, have engaged in its production. In the census year 1880 Minnesota contained one charcoal furnace, but it was not in operation in that year, and was abandoned in 1888. In the census year 1890 a large coke furnace was under construction in that state, but it was not completed until near the close of the year, and consequently had no product to report. California does not appear among the pig-iron producing states in either 1880 or 1890. A charcoal furnace was completed and put in operation in that state in 1881, but it has made no pig-iron since 1886, and is practically abandoned.

The relative rank of the various states is seen to have undergone many changes since 1880.

Pennsylvania still retains its leadership as the producer of about one-half of the pig-iron that is annually made in the United States, producing 51 per cent of the total production in the census year 1880 and over 49 per cent in 1890. Ohio was second in rank in both 1880 and 1890, the output of pig-iron in the former year being over 14 per cent of the total production in the United States, and in the latter year over 13 per cent. Alabama, which occupied tenth place in 1880, with an output of 62,336 tons, is now the third largest producer of pig-iron, the production of this state in 1890 amounting to 890,432 tons, an increase of more than 1,328 per cent over the production of 1880. Illinois, which was seventh in rank in 1880, is fourth in 1890; and New York, which was third in 1880, occupies fifth place in 1890. Virginia, which was seventeenth in rank in 1880, is now sixth; while Tennessee has gone from thirteenth to seventh place.

The following table gives the production of pig-iron by states, in tons of 2,000 pounds, including castings made direct from the furnace, during the census years 1880 and 1890, with the number of completed furnace stacks at the close of each year, the relative rank of each state, and its percentage of the total production:

RANK.	STATES AND TERRITORIES.	YEAR ENDED MAY 31, 1880.			RANK.	STATES.	YEAR ENDED JUNE 30, 1890.		
		Completed furnace stacks.	Production of pig-iron in tons.	Percentage of total production.			Completed furnace stacks.	Production of pig-iron in tons.	Percentage of total production.
1	Pennsylvania.....	269	1,930,311	51.05	1	Pennsylvania.....	224	4,712,511	49.19
2	Ohio.....	103	548,712	14.51	2	Ohio.....	71	1,802,209	13.59
3	New York.....	57	313,368	8.29	3	Alabama.....	48	890,432	9.29
4	New Jersey.....	20	157,414	4.16	4	Illinois.....	15	674,506	7.04
5	Michigan.....	27	119,586	3.16	5	New York.....	37	359,040	3.75
6	Wisconsin.....	14	118,282	3.13	6	Virginia.....	31	302,447	3.16
7	Illinois.....	10	95,468	2.52	7	Tennessee.....	19	290,747	3.04
8	Missouri.....	17	95,050	2.51	8	Michigan.....	26	224,908	2.35
9	West Virginia.....	11	80,050	2.12	9	Wisconsin.....	10	210,037	2.19
10	Alabama.....	15	62,336	1.65	10	New Jersey.....	18	145,040	1.51
11	Maryland.....	22	59,664	1.58	11	West Virginia.....	5	108,764	1.14
12	Kentucky.....	22	53,108	1.54	12	Missouri.....	8	99,131	1.04
13	Tennessee.....	21	47,873	1.27	13	Maryland.....	14	96,246	1.00
14	Georgia.....	10	23,099		14	Kentucky.....	6	44,199	
15	Connecticut.....	8	18,779		15	Georgia.....	5	35,747	
16	Indiana.....	4	18,237		16	Connecticut.....	8	21,700	
17	Virginia.....	31	17,906		17	Colorado.....	2	12,949	
18	Massachusetts.....	6	9,543	2.51	18	Indiana.....	2	11,470	
19	Oregon.....	1	3,200		19	Texas.....	4	8,950	1.71
20	Maine.....	1	2,015		20	Oregon.....	1	8,411	
21	Texas.....	1	1,400		21	Massachusetts.....	4	8,381	
22	Vermont.....	1	620		22	Washington.....	1	4,787	
23	Minnesota.....	1			23	Maine.....	1	3,700	
24	North Carolina.....	7			24	North Carolina.....	1	3,377	
25	Utah.....	2			25	Minnesota.....	1		
	Total.....	681	3,781,021	100.00		Total.....	562	9,579,779	100.00

a Includes 4,229 tons of castings made direct from furnace.

b Includes 9,929 tons of castings made direct from furnace.

Notwithstanding the fact that the production of pig-iron has increased from 3,781,021 tons of 2,000 pounds in 1880 to 9,579,779 tons in 1890, the total number of completed furnaces has decreased during the ten years from 681 to 562. Many furnaces which were in the active list in 1880 have since been abandoned, owing to their inability to profitably compete with the larger, better located, and more modern furnaces of the present day. The majority of these abandoned furnaces were of small capacity, and were able to produce and market pig-iron only during periods of great demand and consequent high prices, while the large number of new and improved furnaces which have been built during recent years, and which are favorably located for the supply of materials at low cost and within easy access to market, have now made the operation of these antiquated furnaces unremunerative even in periods of great activity.

Pennsylvania shows a decrease of 45 furnaces from 1880 to 1890, and during the same period the total number of furnaces in Ohio has decreased by 32. These figures, however, merely exhibit the net decrease in the number of furnaces, as many large bituminous coal and coke furnaces have been erected during this period in these as well as in other states to take the place of small stacks abandoned. Since 1880 there have been 282 furnaces abandoned in the United States, owing either to unfavorable location or to give place to larger and more modern plants, while during the same period 163 new furnaces have been built, in addition to a large number of plants that have been remodeled and new machinery added.

At the close of the census year 1890 the total number of blast furnaces which were active or likely to be some day active was 562, of which 169 were anthracite or anthracite and coke furnaces, 253 coke and bituminous coal furnaces, and 140 charcoal furnaces. Of the total number of furnaces at the close of 1880 there were 229 anthracite or anthracite and coke furnaces, 195 coke and bituminous coal furnaces, and 257 charcoal furnaces. In the decade from 1880 to 1890 there is seen to have been a decrease of 60 in the number of anthracite or anthracite and coke furnaces, a decrease of 117 in the number of charcoal furnaces, and an increase of 58 in the number of coke and bituminous coal furnaces.

Of the 562 completed furnaces at the close of the census year 1890 there were 338 in blast, of which 110 were anthracite or anthracite and coke furnaces, 165 coke and bituminous coal furnaces, and 63 charcoal furnaces. The number of furnaces building at the date mentioned was 39, of which 9 were in Virginia, 7 in Alabama, 5 in Pennsylvania, 4 in Illinois, 3 each in Kentucky, Tennessee, and Michigan, 2 in Maryland, and 1 each in Georgia, Ohio, and Wisconsin.

One of the most noticeable features in the growth of the manufacture of pig-iron in this country during the past decade is the development of the blast-furnace industry of the southern states. In 1880 the South had already commenced to appreciate the value of the extensive deposits of iron ore and coal within her borders and to realize the superior advantages which she possessed for the cheap production of pig-iron, owing to the close proximity to each other of these materials, and a number of large coke furnaces were built in that year and the few succeeding years. The greatest activity, however, in undertaking new furnace plants was in 1887, during which year 5 new furnaces were blown in and 25 others were under construction. There has been but little abatement in this activity to the present time.

The following table shows the production of pig-iron in the southern states during the census years 1880 and 1890 in tons of 2,000 pounds, with the percentage of increase or decrease of each state since 1880 :

STATES.	Year ended	Year ended	Percentage	Percentage
	May 31, 1880.	June 30, 1890.			of increase	of decrease
	<i>Tons.</i>	<i>Tons.</i>	in 1890.	in 1890.
Alabama	62,336	890,432	1,328.44	.....
Georgia.....	23,099	35,747	54.76	.....
Kentucky.....	58,108	44,199	.....	23.94
Maryland.....	59,664	96,246	61.31	.....
North Carolina.....	.....	3,377	.....	.....
Tennessee.....	47,873	290,747	507.33	.....
Texas.....	1,400	8,950	539.29	.....
Virginia.....	17,906	302,447	1,589.03	.....
West Virginia.....	80,050	108,764	35.87	.....
Total	350,436	1,780,609	408.20	.....

The greatest activity in the development of the southern pig-iron industry during the past decade is seen to have been in Alabama. This state produced in the census year 1890 one-half of all the pig-iron made in the South, and was only exceeded in production in the United States by Pennsylvania and Ohio. Virginia and Tennessee now occupy, respectively, second and third places among the pig-iron producing states of the South. Prior to the census year 1890 Tennessee was the second leading manufacturer of pig-iron in that section, but the activity which has been noticeable during the past few years in Virginia in the erection of new furnaces has placed this state next to Alabama among southern states in the quantity of pig-iron produced. In 1880 West Virginia was the leading producer of pig-iron in the South, but in 1890 it was fourth in rank. The manufacture of pig-iron in Kentucky

and Georgia has been practically stationary during the past decade, and prior to the census year 1890 but little progress had been made by Texas. Two charcoal furnaces were building in that state in the census year 1890, both of which were completed but not blown in at the close of that year. All of the furnaces in North Carolina, seven in number, were idle in 1880, and since that year very little activity has been shown in the erection of new works, while the seven furnaces referred to have either been abandoned or are now classed as long-inactive furnaces. The only active furnace in that state at the present time was built at Cranberry in 1884 to smelt the ores of the Cranberry district, using charcoal as fuel; but during the latter part of the census year 1890 this furnace used coke as fuel. With the exception of West Virginia and Maryland, nearly all the pig-iron made in the South is produced from southern ores, and of the quantity produced by the use of mineral fuel much the larger part is made from southern coke. Most of the pig-iron made in West Virginia is produced from Lake Superior ores. In Maryland the recent building of four large coke furnaces by the Pennsylvania Steel Company at Sparrow's Point, near Baltimore, to smelt iron ores from Cuba, has suddenly brought this state more prominently forward as a manufacturer of pig-iron. Two of the furnaces were blown in during the census year 1890, and of the other two one is completed and ready for operation.

In the six western states which produced pig-iron in the census years 1880 and 1890 there is also seen to have been a large increase in the production. The following table gives the quantity of pig-iron, in tons of 2,000 pounds, made by each of these states in the years named, with the percentage of increase or decrease in 1890:

STATES.	Year ended May 31, 1880.	Year ended June 30, 1890.	Percentage of increase in 1890.	Percentage of decrease in 1890.
	<i>Tons.</i>	<i>Tons.</i>		
Illinois.....	95,468	674,506	606.53	
Indiana.....	18,237	11,470		37.11
Michigan.....	119,586	224,008	88.07	
Missouri.....	95,050	99,131	4.20	
Ohio.....	548,712	1,302,299	137.34	
Wisconsin.....	118,282	210,037	77.57	
Total.....	995,335	2,522,351	153.42	

The following table shows the production of pig-iron in the United States, in tons of 2,000 pounds, in the census years 1880 and 1890, arranged according to the fuel used, with the percentage of increase or decrease in production in 1890:

FUEL USED.	Year ended May 31, 1880.	Year ended June 30, 1890.	Percentage of increase in 1890.	Percentage of decrease in 1890.
	<i>Tons.</i>	<i>Tons.</i>		
Anthracite alone.....	1,112,735	323,258		70.95
Mixed anthracite coal and coke.....	713,932	1,379,098	163.20	
Coke and bituminous coal.....	1,515,107	6,711,974	343.00	
Charcoal.....	435,018	655,520	50.69	
Castings direct from furnace.....	4,229	9,929	134.78	
Total.....	3,781,021	9,579,779	153.36	

The foregoing figures clearly exhibit the important part that bituminous coal and coke have taken in the growth of the pig-iron industry since 1880. The larger proportion of the production of pig-iron credited to these fuels is made from coke alone. A few furnaces use raw bituminous coal only, and their production is included in the total for coke and bituminous coal. In the use of anthracite coal alone as a blast-furnace fuel there is seen to have been a marked decrease since 1880, while the production of pig-iron with mixed anthracite coal and coke has more than doubled.

The following table gives the production of pig-iron, in tons of 2,000 pounds, exclusive of castings

made direct from the furnace, in each pig-iron producing state during the census year ended May 31, 1880, and for the year ended June 30, 1890, according to the kind of fuel used:

STATES AND TERRITORIES.	ANTHRACITE AND MIXED ANTHRACITE COAL AND COKE PIG-IRON.		COKE AND BITUMINOUS COAL PIG-IRON.		CHARCOAL PIG-IRON.		TOTAL PRODUCTION OF PIG-IRON (EXCLUSIVE OF FURNACE CASTINGS).	
	Year ended May 31, 1880.	Year ended June 30, 1890.	Year ended May 31, 1880.	Year ended June 30, 1890.	Year ended May 31, 1880.	Year ended June 30, 1890.	Year ended May 31, 1880.	Year ended June 30, 1890.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Alabama.....			27,212	786,396	35,124	103,964	62,336	890,360
Colorado.....				12,949				12,949
Connecticut.....					18,779	21,700	18,779	21,700
Georgia.....			16,300	23,072	6,799	10,675	23,099	33,747
Illinois.....	56,850		38,618	674,506			95,468	674,506
Indiana.....			17,737	11,470	500		18,237	11,470
Kentucky.....			39,240	33,139	18,775	6,060	58,015	44,199
Maine.....					2,015	3,700	2,015	3,700
Maryland.....	28,600		3,490	82,186	27,554	14,060	59,614	96,246
Massachusetts.....	4,403				5,140	8,381	9,543	8,381
Michigan.....					119,500	224,817	119,500	224,817
Minnesota.....								
Missouri.....			75,936	63,781	19,114	35,267	95,050	99,048
New Jersey.....	157,334	144,910					157,334	144,910
New York.....	291,829	215,253		128,079	21,477	15,698	313,306	359,030
North Carolina.....				577		2,800		3,377
Ohio.....			494,727	1,280,254	52,974	21,807	547,701	1,302,061
Oregon.....					3,200	8,411	3,200	8,411
Pennsylvania.....	1,220,113	1,842,193	673,836	2,847,362	31,145	17,886	1,928,004	4,707,441
Tennessee.....			41,258	239,281	6,475	51,413	47,733	290,697
Texas.....					1,400	7,150	1,400	7,150
Utah.....								
Vermont.....					620		620	
Virginia.....			8,326	294,246	9,459	7,906	17,785	302,152
Washington.....						4,787		4,787
West Virginia.....			78,427	108,734	1,316		79,743	108,734
Wisconsin.....	67,538			120,939	50,652	89,038	118,190	209,977
Total.....	a1,826,667	b2,202,356	1,515,107	6,711,974	435,018	655,520	3,776,792	9,569,850

a Includes 1,112,735 tons of pig-iron produced with anthracite coal. b Includes 823,258 tons of pig-iron produced with anthracite coal.

The following statement gives the production of pig-iron, including furnace castings, in the various districts of Pennsylvania and Ohio during the census year 1890, in tons of 2,000 pounds:

DISTRICT.	Kind of fuel used.	Pig-iron produced.
Pennsylvania:		Tons.
Lehigh Valley.....	Anthracite and mixed anthracite coal and coke.	726,995
Schuylkill Valley.....		a499,914
Upper Susquehanna Valley.....		200,979
Lower Susquehanna Valley.....		b640,717
Juniata Valley.....	Coke and bituminous coal.....	c185,395
Shenango Valley.....	Coke and bituminous coal.....	624,529
Allegheny county.....	Coke only.....	1,438,840
Miscellaneous.....	Coke only.....	377,235
All furnaces in the state using.....	Charcoal.....	17,907
	Total.....	4,712,511
Ohio:		
Hanging Rock.....	Charcoal.....	21,812
Hanging Rock.....	Coke and bituminous coal.....	87,994
Mahoning Valley.....	Coke and bituminous coal.....	527,164
Hooking Valley.....	Coke and bituminous coal.....	78,326
Miscellaneous.....	Coke and bituminous coal.....	587,003
	Total.....	1,302,299

a Includes 67,190 tons of pig-iron produced with coke. c Includes 15,177 tons of pig-iron produced with mixed anthracite coal and coke.

In Pennsylvania the Lehigh Valley includes the counties of Lehigh, Northampton, Bucks, and Carbon; the Schuylkill Valley the counties of Schuylkill, Berks, Montgomery, Chester, Delaware, and that part of Lebanon county which immediately adjoins Berks county; the Upper Susquehanna Valley the counties of Columbia, Northumberland, Lackawanna, Montour, Union, and that part of Perry county lying along the Susquehanna river; the Lower Susquehanna Valley the counties of York, Dauphin, Lancaster, Cumberland, and all that part of Lebanon county not included in the Schuylkill Valley; the Juniata Valley the counties of Centre, Blair, Mifflin, Bedford, Huntingdon, and that part of Perry county drained by the Juniata river; the Shenango Valley the counties of Mercer and Lawrence; and the miscellaneous district the furnaces in Cambria, Cameron, Westmoreland, Fayette, Armstrong, and Clarion counties.

In Ohio the Hanging Rock district embraces the counties of Scioto, Jackson, and Lawrence; the Mahoning Valley the counties of Mahoning and Trumbull; the Hocking Valley the counties of Hocking, Perry, and Athens; and the miscellaneous district the counties of Belmont, Columbiana, Cuyahoga, Tuscarawas, Franklin, Jefferson, and Muskingum.

The production of Bessemer pig-iron in the United States during the census year 1890, which is included in the figures of total production of pig-iron, amounted to 4,233,372 tons. Of this quantity Pennsylvania made 2,567,813 tons; Illinois, 616,659 tons; Ohio, 526,654 tons; New York, 174,574 tons; West Virginia, 101,178 tons; Maryland, 77,754 tons; Missouri, 68,629 tons; Wisconsin, 43,728 tons; New Jersey, 41,479 tons, and all other states a total of 14,904 tons. Of the total production of Bessemer pig-iron in Pennsylvania in the census year 1890 the Lehigh Valley produced 257,844 tons; the Schuylkill Valley, 148,026 tons; the Upper Susquehanna Valley, 132,886 tons; the Lower Susquehanna Valley, 493,288 tons; the Juniata Valley, 23,378 tons; the Shenango Valley, 298,792 tons; Allegheny county, 995,721 tons, and the remainder of the state, 217,848 tons. Of the total production of Bessemer pig-iron in Ohio in the census year 1890 the Mahoning Valley produced 96,605 tons; the Hocking Valley, 29,453 tons, and the remainder of the state, 400,596 tons.

The production of spiegeleisen in the census year 1890, which is included in the figures of total production of pig-iron, amounted to 149,959 tons, as compared with 12,875 tons produced in the census year 1880. Four states made spiegeleisen in 1890, viz., New Jersey, Pennsylvania, Illinois, and Colorado, while in 1880 only New Jersey and Pennsylvania were engaged in its manufacture.



CENSUS BULLETIN.

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MINES AND MINING—QUICKSILVER.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., August 1, 1890.

Recognizing the value of prompt publication of statistics, the following bulletin is issued, showing the statistics of quicksilver at the Eleventh Census, as prepared by Hon. J. B. RANDOL, special agent in charge of that subject, under the supervision of Dr. DAVID T. DAY, of the United States Geological Survey, and special census agent in charge of mines and mining. The bulletin also shows the value of the quicksilver, the wages and other expenses, and the capital required for this product. This statement is only a brief summary of the more important facts which will be published in the complete report.

No similar statement concerning quicksilver was published at the Tenth Census; therefore comparisons can not be made. A table is given, however, showing the total product of quicksilver of the world, and also the product of the United States in each year since the industry was first established.

Superintendent of Census.

QUICKSILVER MINES AND REDUCTION WORKS.

BY J. B. RANDOL.

During the calendar year 1889 there were 26,464 flasks, or 2,024,496 pounds, or 1,012 short tons of quicksilver produced in California. About 20 flasks, less than \$1,000 in value, were produced in Oregon. The product is notably less than the usual yield. In 1888, 33,250 flasks were produced.

ESTABLISHMENTS.—In the following table, under the heading of productive mines and furnaces, is included every establishment in the United States where cinnabar ore is known to have been mined and quicksilver produced therefrom to the amount of \$1,000 or more during the period under review. The unproductive mines and furnaces include establishments the stoppage of which was caused, among other reasons, by litigation, by low prices for quicksilver and the consequent unprofitable results for the time being, or by lack of sufficient capital and experience to pursue a hazardous industry. It is considered probable that all of those establishments now closed and unproductive will resume work when higher and more remunerative prices for quicksilver can be obtained.

The productive mines and furnaces, with few exceptions, were operated continuously throughout the year, omitting holidays and Sundays.

LOCATION AND NUMBER OF ALL THE QUICKSILVER ESTABLISHMENTS—BY STATES AND COUNTIES.

STATES.	COUNTIES.	PRODUCTIVE.		NON-PRODUCTIVE.	
		Mines.	Furnaces.	Mines.	Furnaces.
California	Lake	3	12		
"	Merced	1	(a)		
"	Napa	4	12		
"	San Benito	1	3		
"	Santa Clara	1	7	1	4
"	Sonoma	1	2		
"	Siskiyou			1	(a)
"	Trinity			1	
Oregon	Douglas			3	3
Total		11	36	6	7

a One retort.

The productive mines and active furnaces employed 937 operatives, of whom 416 were

engaged on surface work and 521 were employed underground. The other mines and furnaces employed 24 men, making a total of 961 employes, as shown in the following table :

NUMBER OF EMPLOYÉS.

EMPLOYÉS.	Productive mines and furnaces.	Non-productive mines and furnaces.	Total.
Men	932	24	956
Women	1		1
Boys	4		4
Total	937	24	961
Total on surface	416	18	434
Total underground	521	6	527
Total	937	24	961

PRODUCTION STATISTICS.—Of 95,714 tons (2,000 pounds each) of cinnabar ore mined, 92,964 tons were roasted, producing 26,464 flasks of quicksilver, each containing a standard quantity of 76½ pounds avoirdupois. Of the eleven establishments working ore, one reported only 200 tons produced and worked in retorts, with an average yield of 2.295 per cent, the highest percentage returned. The lowest average yield was 0.286 per cent, and the average percentage yield in quicksilver for all the ore roasted was 1.088. The largest quantities of ore produced and roasted were respectively 28,007 and 28,887 tons, and the quantity of quicksilver produced at the several works ranged from 120 up to 13,100 flasks. The following table exhibits the quantity of ore produced and roasted in 1889, the number of flasks of quicksilver produced, and the percentage of yield :

YIELD OF QUICKSILVER FROM ORES ROASTED IN 1889.

NUMBER OF ESTABLISHMENTS.	Ore produced.	Ore roasted.	Quicksilver produced.	Yield.
	Short tons.	Short tons.	Flasks	Per cent.
1	7,168	7,168	1,874	1.000
1	9,880	9,880	2,283	0.884
1	7,440	7,440	566	0.280
1	200	200	120	2.295
1	4,742	3,992	812	0.778
1	23,500	23,500	4,590	0.746
1	3,400	3,400	804	0.905
1	3,377	3,377	980	1.110
1	28,007	28,887	13,100	1.734
1	7,000	5,120	1,345	1.000
1	1,000			
11	95,714	92,964	26,464	1.088

* One mine in Oregon produced 20 flasks, the total product in that state. They are not included, being less than \$1,000 in value.

EXPENDITURES.—The following table shows the value of supplies of all kinds consumed during the year 1889; "the aggregate of all wages paid;" total of all other expenditures for

mines and works, including rent, taxes, etc.; number of flasks of quicksilver produced, and average cost per flask:

EXPENDITURES IN THE PRODUCTION OF QUICKSILVER IN 1889.

NUMBER OF ESTABLISHMENTS.	Value of all supplies.	Aggregate of all wages.	Total of all other expenditures.	Number of flasks quicksilver produced.	Average cost per flask.
1	\$53,587	\$104,603	\$700	4,590	\$24.63
1	5,975	8,060			(b)
1	44,000	20,936	750	804	31.95
1	4,000	12,591	1,000	812	21.66
1	9,564	43,241	1,042	1,874	28.73
1	21,973	47,208	2,507	2,283	31.40
1	9,084	25,352	2,167	556	65.74
1	1,569	2,250		120	31.25
1	3,114	27,546	79	980	31.36
1	36,428	304,341	20,826	13,100	31.87
1	20,437	30,156	359	1,345	37.90
11	219,622	620,289	35,490	26,464	33.31

a Estimated; correct amount unobtainable.

b Ore mined, but none roasted, and therefore omitted in average cost per flask.

From the above table it will be seen that at eleven active establishments there were expended \$219,622 for supplies, \$626,289 for wages, and \$35,490 for other expenses, embracing taxes, rent, interest, etc., making a total of \$881,401, showing that 71 per cent was paid for wages, 25 per cent for supplies, and 4 per cent for all other expenses. Of the amount paid for wages the office force absorbed \$34,966, and there were paid to foremen, mechanics, miners, furnace hands, and laborers \$591,323.

PRICES.—The cost per flask of quicksilver produced ranged from \$65.74 to \$21.66, the average cost for all being \$33.31. The following table gives the highest and lowest price monthly for quicksilver in San Francisco during 1889:

PRICES OF QUICKSILVER IN SAN FRANCISCO DURING 1889.

MONTHS.	Highest.	Lowest.	MONTHS.	Highest.	Lowest.
January	\$43.00	\$41.50	July	\$47.50	\$46.00
February	42.00	41.50	August	47.50	46.00
March	41.00	40.00	September	47.50	47.00
April	41.00	40.00	October	47.00	46.50
May	45.00	41.00	November	48.00	46.00
June	50.00	46.50	December	47.50	47.00

For the year the highest price was \$50 and the lowest \$40, giving an average of \$45, which for the year's production, 26,464 flasks, would make a total valuation of \$1,190,500. The difference between the cost, \$881,401, and value, \$1,190,500, is \$309,099, which may be regarded as the profit on the year's work, based on the returns collected. The difference between average cost and average sale price was \$11.69 per flask.

The one establishment producing quicksilver at a cost of \$65.74 per flask met with a serious loss on its output, and no establishment made a profit commensurate with the risks attending the mining of cinnabar, its manufacture into quicksilver, and finding for it a market in competition with rich and important establishments carried on by foreign governments.

WAGES.—The wages in the table appended show considerable variations, depending largely upon the locality of the work, its importance, and the degree of skill required for its performance. On work at surface, foremen were reported to earn daily wages ranging from \$10.33 to \$2.66;

mechanics, \$3.60 to \$2.05; laborers, \$2 to \$1.18, the last-named rate being for Chinamen. Boys under 16 years of age, of whom only four were employed, none underground, earned \$1 and 75 cents.

The following table gives the number and classification of employes on surface (excepting the office force), daily wages, and number of days' work for the year:

WAGES OF EMPLOYÉS ABOVE GROUND.

NUMBER OF ESTABLISHMENTS.	FOREMEN.			MECHANICS.		
	Average number employed daily.	Average wages per day.	Average number of days' work for year.	Average number employed daily.	Average wages per day.	Average number of days' work for year.
1	1	\$2.90	305	a5	\$2.80	301
1	2	10.32	360	5	2.60	360
1	1	2.81	187	2½	3.20	90
1				1	3.60	300
1	4	2.86	349	b42½	2.38	308
1	1	2.75	340	5	3.00	340
1				2	2.05	320
1	2	2.66	305			
8	11	c10.33	c305	63	c3.60	c360
		d2.66	d157		d2.05	d90
NUMBER OF ESTABLISHMENTS.	LABORERS.			BOYS UNDER 16.		
	Average number employed daily.	Average wages per day.	Average number of days' work for year.	Average number employed daily.	Average wages per day.	Average number of days' work for year.
1	e11	\$1.38	300			
1	15	1.75	380			
1	6	2.00	300			
1	17	1.73	265			
1	f87	1.18	284			
1	g38	1.04	281			
1	38	2.00	340	1	\$0.75	187
1	h12	1.30	300	1	1.00	310
1	i2	1.37	308			
9	186	e2.00	e360	4	e1.00	e310
		d1.18	d265		d0.75	d187

a Mechanics comprise engineers, \$2.90; blacksmiths, \$2.90; and furnace men, \$2.65 per day.

b Mechanics comprise carpenters, \$3; masons, \$3; blacksmiths, \$2.10; helpers, \$1.03; engine drivers, \$2.30; machinists and helpers, \$3.67 as their average earnings per day.

c Highest wages.

d Lowest wages.

e Laborers embrace men sorting ore, \$1.25; teamsters, \$1.65 per day.

f Chinese.

g Laborers comprise furnace hands earning \$2 to \$2.25 per day; ordinary laborers, earning \$2 per day; and ore cleaners, earning \$1.75 per day.

One establishment reported 42 men employed on surface and underground work without classification or number of days employed, miners at \$2.10 and laborers at \$1.75 per day. Another establishment reported 11 white men on surface without classification, at \$2.80 per day for 352 days. These establishments were not included in the tables.

The following tables exhibit the number and classification of workers underground, their

daily wages, and the number of days' work for the year. For foremen at underground work the average wages ranged from \$4.68 to \$2.75 daily. Miners earned an average of \$2.67 to \$1.25, the lowest rate being for Chinamen, of whom a few were employed at small establishments.

WAGES OF FOREMEN AND MINERS UNDERGROUND.

NUMBER OF ESTABLISHMENTS.	FOREMEN.			MINERS.		
	Average number employed daily.	Average wages per day.	Average number of days' work for year.	Average number employed daily.	Average wages per day.	Average number of days' work for year.
1	1	\$2.90	340	a6	\$2.40	300
1	1	4.00	350	20	2.67	360
1				22	2.45	263
1	1	2.75	110	b5	1.22	40
1	2	4.68	306	c233	2.05	279
1	3	3.06	340	b30	1.25	340
1	1	4.50	316	6	2.05	284
1				6	1.50	336
8	9	d4.68	d360	378	d2.67	d360
		e2.75	e110		e1.22	e40

a Miners embrace timbermen and machine drill men.

b Chinese.

c Miners comprise tributers, \$2.41; drillers per foot on contract, \$2.33; drifting on contract, \$2.80; timbermen, \$3; blasters, \$2.75 per day.

d Highest wages.

e Lowest wages.

WAGES OF LABORERS UNDERGROUND.

NUMBER OF ESTABLISHMENTS.	LABORERS.		
	Average number employed daily.	Average wages per day.	Average number days' work for year.
1	a24	\$1.90	290
1	5	2.17	300
1	1	2.00	300
1	19	2.09	267
1	a25	1.50	340
1	3	1.65	315
1	4	1.35	356
7	81	b2.17	b360
		c1.35	c267

a Laborers embrace helpers and hand drillers at \$1.90 per day.

b Highest.

c Lowest.

TOTAL NUMBER EMPLOYÉS UNDERGROUND.

Foremen.	Miners.	Laborers.
9	378	81
		a53 unclassified.
9	378	134

a Of which 32 were reported as Chinese, without classification, 362 days, at \$1.17 per day.

The following table gives the number of office force, total pay of same, total wages of all other employes, and the aggregate wages paid to all employes:

TOTAL WAGES.

NUMBER OF ESTABLISHMENTS.	Number employed.	Total pay.	All other wages.	Total wages.
1			\$25,352	\$25,352
1			2,250	2,250
1			20,936	20,936
1	1	\$800	29,356	30,156
1	3	2,520	140,721	43,241
1	2	3,900	23,646	27,546
1	2	3,366	43,842	47,208
1	7	17,560	286,781	304,341
1	3	5,260	99,408	104,668
1	1	1,260	11,391	12,651
1	1	420	7,640	8,060
11	29	34,966	591,323	626,289

a Only one woman employed in all the establishments.

b \$300 paid to contractors included.

c \$10,500 paid to contractors included.

d \$375 paid to contractors included.

During the census decade, 1880-1889, there were no strikes or labor troubles of any kind in any of the mines and works, and fair wages for good work was the rule for employers and employes.

Power.—The active establishments employed 62 steam motors, with a capacity of 2,190 horse-power, 54 boilers of 2,438 horse-power, one electric dynamo and motor of 4 horse-power, and one water-wheel of 3 horse-power—a total of 2,197 horse-power in motors. Two hundred and forty-seven animals were also reported as employed, but it is probable a greater number were in use. The details for the respective establishments are shown in the following table:

POWER USED IN QUICKSILVER MINING AND REDUCTION.

NUMBER OF ESTABLISHMENTS.	STEAM MOTORS.		BOILERS.		OTHER MOTORS.		Number of animals.
	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.	
1	2	50	2	30			4
1	5	230	5	140			4
1	3	90	2	125			4
1	2	150	5	155			12
1	2	50	4	100			12
1	7	185	5	400			15
1	23	1,000	23	1,088	2	a7	114
1	5	170	3	200			52
1	7	265	5	200			20
1							10
10	62	2,190	54	2,438	2	7	247

a One water-wheel of 3 horse-power, and one dynamo and motor of 4 horse-power.

The following statement gives an estimated valuation of the active mines and works as nearly as the same could be ascertained:

VALUE OF QUICKSILVER ESTABLISHMENTS.

NUMBER OF ESTABLISHMENTS.	Mines and real estate.	Furnaces, houses, and other surface improvements.	Machinery, supplies, tools, and live stock.	Quicksilver unsold.	Bills and accounts receivable.	Other assets.	Estimated total capital.
1	\$276,530	\$50,000	58,850	\$96,600		\$108,513	\$580,553
1	30,000	13,300	2,000	4,700			50,000
1	65,000	25,000	10,000	6,460		2,000	108,460
1	6,940	14,000	3,300	95			24,335
1	20,000	5,000	5,000	2,500			32,500
1	100,000	25,000	30,000				155,000
1	12,000	5,000	10,000				27,000
1	20,000	10,000	5,000	850	\$2,664	4,943	50,466
1	50,000	25,000	10,000	2,500	25,000	10,000	122,900
1	25,000	15,000	10,000	9,000			59,000
a6	75,000	35,000	2,000				112,000
16	680,470	222,300	146,150	124,074	34,664	125,456	1,331,114

a Non-productive.

Some mine owners placed a higher valuation on their mines and improvements than is given in the foregoing statement; but it is preferred to take what may be considered a conservative opinion of the values as of December 31, 1889. Undoubtedly the original investments in the properties were many times the amounts of present estimates, but it must be remembered that mines are generally decreased in value by the extraction of ore for a long period of continuous work, which has been the case with the quicksilver establishments of the United States.

STATISTICS FOR EARLIER PERIODS.—The earliest records relating to production of quicksilver in California are for 1850, cinnabar having been first discovered there in 1845, and but very little quicksilver was produced prior to 1850, when active work was commenced at New Almaden. Outside of California quicksilver has been produced in two localities in the United States: in Oregon, to the extent of 2,000 flasks, and in Utah, where about 200 flasks were reported.

In closing this brief report two tables are submitted. The first gives the production of quicksilver at the principal mines of the world for the last ten years. The last gives, in periods of ten years, the production in California, the average yearly price per flask in San Francisco, and a valuation, at the average sale price, for each census decade.

THE WORLD'S PRODUCTION OF QUICKSILVER FOR TEN YEARS.

YEAR.	Total of all mines, United States.	Almaden mine, Spain.	Idria mine, Austria.	Italian mines.	Total foreign mines.	Grand total, yearly.
	Flasks.	Flasks.	Flasks.	Flasks.	Flasks.	Flasks.
1880.....	59,926	45,323	10,510	3,410	59,242	119,168
1881.....	60,851	44,989	11,333	3,760	60,082	120,933
1882.....	52,732	46,716	11,663	4,110	62,489	115,221
1883.....	46,725	40,177	13,152	6,065	68,394	115,119
1884.....	31,913	48,068	13,987	7,850	69,915	101,828
1885.....	32,073	45,813	13,503	6,965	66,281	98,354
1886.....	29,981	51,109	14,495	7,375	73,070	103,051
1887.....	33,760	53,276	14,676	7,075	75,027	108,787
1888.....	33,250	51,872	14,662	9,830	76,604	109,914
1889.....	26,464	40,477	15,295	10,000	74,772	101,236
Total.....	407,075	485,939	133,557	66,440	685,836	1,093,611

RECAPITULATION.

	<i>Flasks.</i>
Almaden mine, Spain.....	485,939
Idria mine, Austria.....	133,557
Italian mines.....	66,440
Total.....	685,936
Total of all mines in the United States (a).....	407,675
Foreign mines, excess.....	278,261

a All from California mines. About 2,000 flasks from Oregon and 200 flasks from Utah are not included in the above, as no yearly details were obtainable.

QUICKSILVER PRODUCT IN THE UNITED STATES.

YEAR.	Yield in California.	Average price for decade.	Approximate valuation.	YEAR.	Yield in California.	Average price for decade.	Approximate valuation.
	<i>Flasks.</i>				<i>Flasks.</i>		
1850.....	7,723	\$99.45	\$768,000	1870.....	30,077	\$67.37	\$1,725,500
1851.....	27,779	66.92	1,859,000	1871.....	31,686	63.10	1,999,500
1852.....	20,000	58.32	1,166,500	1872.....	31,621	66.97	2,086,000
1853.....	22,284	55.45	1,235,500	1873.....	27,642	80.32	2,226,500
1854.....	30,004	55.45	1,685,500	1874.....	27,756	105.17	2,919,000
1855.....	33,000	53.55	1,788,000	1875.....	50,250	84.15	2,721,000
1856.....	30,000	51.65	1,549,500	1876.....	75,074	44.00	3,303,000
1857.....	28,204	49.72	1,402,000	1877.....	79,396	38.30	3,041,000
1858.....	31,000	47.82	1,482,500	1878.....	63,880	32.90	2,101,500
1859.....	13,000	63.72	820,500	1879.....	73,684	29.85	2,199,500
	242,994	56.45	13,717,000		491,066	40.53	24,322,500
1860.....	19,000	53.55	535,500	1880.....	59,926	31.00	1,860,000
1861.....	23,000	42.70	1,473,500	1881.....	60,851	29.80	1,810,000
1862.....	42,000	36.35	1,526,500	1882.....	52,732	28.25	1,500,000
1863.....	40,531	42.67	1,705,000	1883.....	46,725	27.25	1,275,000
1864.....	47,489	45.90	1,761,800	1884.....	31,913	30.50	975,000
1865.....	53,000	45.90	2,433,000	1885.....	32,073	30.25	970,000
1866.....	46,550	51.62	2,403,000	1886.....	29,981	35.50	1,060,000
1867.....	47,000	45.90	2,157,000	1887.....	33,760	42.25	1,425,000
1868.....	47,728	45.90	2,191,000	1888.....	33,250	42.50	1,415,000
1869.....	23,811	45.90	1,552,000	1889.....	26,494	45.00	1,190,500
	408,109	44.00	17,738,000		407,075	33.07	13,480,500

RECAPITULATION.

DECADE.	Flasks.	Value.
1850-'59.....	242,994	\$13,717,000
1860-'69.....	408,109	17,738,000
1870-'79.....	491,066	24,322,500
1880-'89.....	407,675	13,480,500
	1,544,844	69,258,000



[7-010.]



CENSUS BULLETIN.

No. 11.

WASHINGTON, D. C.

August 23, 1890.

TRANSPORTATION—RAPID TRANSIT IN CITIES.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., August 6, 1890.

The growth of rapid transit facilities from 1880 to 1889, inclusive, in cities having over 50,000 inhabitants is given in this bulletin, the statistics being prepared by Mr. CHARLES H. COOLEY, special agent for rapid transit facilities in cities, under the direction of Mr. HENRY C. ADAMS, special agent for transportation. The selection of cities is based upon an estimate of population made at the time the compilation of the tables was begun. The explanations given by Mr. ADAMS are necessary to insure a proper understanding of the facts submitted.

Statistics of the equipment of all roads furnishing rapid transit facilities and of their operations for the fiscal year ending in 1890 are now being collected and will be presented in future exhibits.

Superintendent of Census.

TRANSPORTATION.

GROWTH OF RAPID TRANSIT FACILITIES FROM 1880 TO 1889, INCLUSIVE, IN CITIES HAVING OVER 50,000 INHABITANTS.

BY HENRY C. ADAMS.

Street railways have never before been brought within the scope of the census statistics of transportation, and some peculiar difficulties were met with in collecting the facts presented in these tables. The chief of these difficulties arose from the ambiguity of such terms as "length of line," "length of single track," and "length of double track" when applied to street railways. For example, in the statistics of street railways collected by the railway commissioners of New York "length of line" means length of road-bed, or, what is usually the same thing, length of street occupied, while in the reports of the railway commissioners of Massachusetts the same term denotes length of all tracks except sidings. Accordingly, in the case of a road having 10 miles of double track, the "length of line" in New York would be 10 miles, and in Massachusetts 20 miles. On account of such ambiguities as this it was necessary to fix upon some definite nomenclature, and to attempt, by careful explanations, to secure returns in accordance with it. Great pains have been taken in this matter, and, it is believed, with a high degree of success. It is not unlikely, however, that some mistakes, particularly in Exhibit V, may be detected by close scrutiny. If any are discovered, it would be of great assistance should they be reported to the Census Office, in order that the statistics as finally published may be correct.

As used in these tables the term "length of line" means length of road-bed, or, in case of a railway running entirely upon streets, length of street occupied. "Length of single track" means length of that portion of the road-bed or street laid with one track only. "Length of double track" means length of that portion of the road-bed or street laid with two tracks. In determining "total length of tracks" switches and sidings are included, and double track is reckoned as two tracks. Where the word "length" alone is used, length of line is to be understood.

Of the 286 street railroads to which these statistics relate, having a total length of 3,150.93 miles, 13, having a total length of 135.75 miles, have as yet made no reports, and the information in regard to them was obtained with approximate correctness from other sources. In the case of 6 others the returns received were so imperfect that it was necessary to supplement them, and approximations amounting to 112.64 miles were resorted to. In the case of cities in the states of New York, Pennsylvania, and Massachusetts, where annual reports to railway commissioners are accessible, these outside sources of information have an official character.

Suburban lines tributary to large cities, but without their corporate limits, as well as those actually within the cities, are included. Where cities situated close together have a common street railway system, it has not been thought best to attempt a separation in these tables. Accordingly, Pittsburgh and Allegheny, in Pennsylvania, are treated in the tables as one city, as is also Newark and Elizabeth, in New Jersey. The street railway lines assigned to Boston traverse also Lynn, Cambridge, and several smaller places.

Exhibit I, on the following page, shows the number of miles of line operated in each city during the years from 1880 to 1889, inclusive. The total increase and per cent of increase during this period are shown separately for every city. The aggregate mileage of the fifty-six cities for each year is also shown.

EXHIBIT I.—INCREASE OF STREET RAILWAY MILEAGE, 1880-1889, FOR FIFTY-SIX PRINCIPAL CITIES.

CITIES,	LENGTH OF LINE OPERATED, 1880-1889—(MILES).										INCREASE FROM 1880 TO 1889.	
	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	Miles.	Per cent.
Albany, N. Y.	18.50	18.50	18.50	17.97	17.97	17.97	18.46	20.86	20.86	20.44	1.04	10.49
Atlanta, Ga.	15.48	15.48	22.98	23.58	24.78	24.78	24.78	26.98	26.98	28.03	13.45	86.80
Baltimore, Md.	61.97	61.97	85.01	88.23	90.26	92.81	92.81	102.80	104.00	105.81	43.84	70.74
Birmingham, Ala.					3.00	9.84	25.76	53.36	53.36	76.04	76.04	.....
Boston, Mass.	109.00	112.01	127.32	131.43	138.71	149.10	153.93	172.07	191.79	200.86	100.86	100.86
Brooklyn, N. Y.	121.10	128.56	129.46	129.86	129.86	140.94	144.86	147.00	157.15	164.44	40.34	32.51
Buffalo, N. Y.	25.44	25.95	27.56	29.10	29.16	29.90	33.42	36.80	39.71	42.80	16.86	66.27
Charleston, S. C.	15.14	15.14	15.14	15.14	15.14	15.14	17.14	19.19	19.19	19.19	4.05	26.75
Chicago, Ill.	86.47	83.14	87.39	91.14	101.84	118.87	129.76	151.74	173.14	184.78	104.31	120.63
Cincinnati, Ohio	51.93	50.13	50.13	50.13	50.13	61.69	61.69	67.22	71.73	71.73	19.80	38.13
Cleveland, Ohio	26.41	26.41	26.73	32.84	37.40	40.43	41.18	46.43	51.95	58.70	32.29	122.26
Columbus, Ohio	18.50	18.50	18.50	18.50	19.25	19.25	19.25	19.75	19.75	20.65	2.15	11.62
Dallas, Tex.	4.00	4.00	4.00	4.00	4.25	8.75	8.75	12.75	15.00	20.07	16.07	401.75
Dayton, Ohio	9.75	13.25	13.25	13.25	13.25	13.25	13.25	13.25	13.25	18.16	8.41	86.26
Denver, Colo.	8.00	8.00	8.00	10.00	12.50	14.50	18.00	27.25	45.50	71.40	63.46	793.25
Detroit, Mich.	26.56	26.84	26.84	26.84	30.02	31.22	39.16	46.71	48.81	61.20	34.70	180.63
Fall River, Mass.	4.05	6.17	6.17	6.17	8.19	8.76	11.64	11.84	11.94	11.94	7.89	194.81
Galveston, Tex.	22.09	22.09	22.09	22.09	22.09	22.09	27.40	32.96	32.96	32.96	10.87	49.21
Grand Rapids, Mich.	16.75	10.75	10.75	10.75	10.75	10.75	11.75	19.35	21.25	24.70	13.95	129.77
Hartford, Conn.	9.25	10.80	12.05	12.05	12.05	12.05	12.05	12.05	12.05	16.80	7.55	81.62
Indianapolis, Ind.	15.00	18.00	22.00	23.00	25.00	27.00	28.00	29.00	33.00	41.99	26.99	175.03
Jersey City, N. J.	15.40	15.40	15.40	15.40	15.50	17.05	21.21	21.21	21.84	24.99	8.99	58.32
Kansas City, Mo.	9.50	9.50	9.50	9.50	9.50	11.50	21.18	40.56	68.90	84.97	75.47	794.42
Los Angeles, Cal.	11.03	11.03	11.03	13.75	13.75	17.33	18.86	41.18	71.99	82.89	71.86	646.96
Louisville, Ky.	39.25	41.50	50.00	51.00	58.25	62.75	66.63	74.33	76.33	82.31	43.06	109.71
Lowell, Mass.	5.28	5.28	5.28	5.78	6.46	6.46	7.07	20.50	22.06	22.03	17.05	324.28
Memphis, Tenn.	15.00	17.50	20.00	22.50	25.00	27.50	30.00	47.64	50.14	52.20	37.20	248.00
Milwaukee, Wis.	19.37	19.57	26.58	27.03	27.96	27.83	27.99	34.00	44.96	45.78	26.16	133.67
Minneapolis, Minn.	9.00	11.70	30.03	32.73	35.43	38.13	40.83	45.90	48.60	51.50	42.50	472.22
Nashville, Tenn.	9.63	9.63	9.63	9.63	9.63	9.63	9.63	27.83	37.83	45.93	36.30	376.05
Newark and Elizabeth, N. J.	37.54	37.54	37.54	37.54	37.54	37.54	38.32	45.91	48.19	51.67	14.03	37.37
New Haven, Conn.	16.75	16.75	17.25	17.60	17.60	17.60	17.60	17.60	19.85	20.65	3.80	23.28
New Orleans, La.	85.57	91.07	91.32	101.07	101.07	101.07	101.07	104.32	104.32	104.32	18.75	21.91
New York, N. Y.	130.55	130.55	130.55	130.67	134.57	154.01	160.60	173.70	174.80	177.10	46.55	35.66
Oakland, Cal.	17.04	18.24	18.24	18.24	18.24	19.74	22.09	22.09	22.09	24.00	6.96	40.85
Omaha, Nebr.	4.50	4.50	4.50	7.00	10.00	11.00	15.00	20.50	25.50	40.42	44.92	998.22
Paterson, N. J.	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	15.50	16.00	2.50	18.52
Philadelphia, Pa.	249.19	258.19	258.19	260.99	276.42	276.92	278.42	278.42	278.92	283.47	34.28	13.76
Pittsburgh and Allegheny, Pa.	38.50	41.46	43.86	45.21	45.21	46.21	46.63	50.58	58.23	67.78	29.19	75.64
Providence, R. I.	35.30	35.30	35.40	39.30	43.76	44.62	46.08	46.02	46.66	50.48	15.18	43.00
Reading, Pa.	4.30	4.30	4.30	4.30	4.30	4.70	8.80	10.10	14.33	15.43	11.13	258.84
Richmond, Va.	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	12.02	14.37	11.37	379.00
Rochester, N. Y.	13.02	16.16	19.29	19.29	21.74	25.09	26.40	28.03	33.98	37.29	24.27	186.41
Saint Joseph, Mo.	4.75	6.25	6.25	6.25	6.25	6.25	6.25	6.75	7.55	18.10	13.44	282.95
Saint Louis, Mo.	85.20	90.88	94.24	94.24	97.31	100.65	113.75	114.75	115.75	118.75	33.55	39.38
Saint Paul, Minn.	6.00	7.00	8.00	9.00	11.00	13.00	18.00	20.33	23.00	32.00	26.00	433.83
San Francisco, Cal.	57.08	57.08	56.65	61.51	65.46	65.46	66.80	74.80	70.21	87.92	30.84	54.03
Savannah, Ga.	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	12.42	12.42	6.40	106.31
Seranton, Pa.	10.50	10.50	10.50	10.50	10.50	10.50	12.75	14.75	19.00	23.32	13.32	126.86
Syracuse, N. Y.	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	27.45	34.69	17.91	106.73
Toledo, Ohio	15.00	18.00	21.75	23.11	25.11	25.11	26.64	26.64	27.64	30.82	15.82	105.47
Trenton, N. J.	4.63	4.63	4.63	4.63	4.63	4.63	8.63	11.63	11.63	15.50	10.87	234.77
Troy, N. Y.	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	.....	.....
Washington, D. C.	29.47	29.47	29.47	32.52	32.52	32.52	32.52	32.52	34.22	38.77	9.30	31.56
Wilmington, Del.	3.73	5.50	5.50	5.50	5.50	5.50	5.50	5.50	7.44	8.97	5.24	140.48
Worcester, Mass.	4.00	4.00	4.57	4.85	4.85	5.00	5.75	5.75	12.55	14.86	10.86	271.50
Total	1,689.54	1,765.95	1,875.10	1,941.49	2,031.84	2,149.66	2,289.91	2,597.16	2,854.94	3,150.93	1,461.39	86.50

In order to complete the statistics of the cities included in the foregoing table use has been made in some cases of sources of information other than the census returns. The number of miles of line in the various cities regarding which information has been obtained in this manner is as follows: In Baltimore, 7 miles; in Boston, 42.08 miles; in Brooklyn, 17.25 miles; in Chicago, 49.5 miles, from 1880 to 1887, inclusive; in Denver, 8 miles; in Los Angeles, 6 miles; in Memphis, 43.06 miles; in Milwaukee, 13 miles; in Nashville, 17 miles; in New York, 13.5 miles; in Philadelphia, 10 miles; in Richmond, 3 miles; in Syracuse, 4 miles; in Toledo, 5 miles; in Trenton, 10 miles.

Exhibit II shows the increase and per cent of increase in the aggregate mileage of the roads in fifty-six cities for each of the years 1881 to 1889, inclusive.

EXHIBIT II.—INCREASE AND PER CENT OF INCREASE IN THE TOTAL MILEAGE OF FIFTY-SIX PRINCIPAL CITIES—1880-1889.

YEAR.	Total mileage.	INCREASE.	
		Miles.	Per cent.
1880.....	1,689.54		
1881.....	1,765.95	76.41	4.52
1882.....	1,876.10	109.15	6.18
1883.....	1,941.49	66.39	3.54
1884.....	2,031.84	90.35	4.65
1885.....	2,149.66	117.82	5.80
1886.....	2,289.91	140.25	6.52
1887.....	2,597.10	307.25	13.42
1888.....	2,854.94	257.78	9.93
1889.....	3,150.93	295.99	10.37
Total.....		1,461.99	86.50

In Exhibit III, on the following page, the total mileage operated in each city on December 31, 1889, is subdivided so as to show the number of miles operated by each of the various kinds of motive power.

EXHIBIT III.—LENGTH OF LINE, SHOWING MILES OPERATED BY VARIOUS KINDS OF MOTIVE POWER,
DECEMBER 31, 1889.

CITIES.	Animal power.	Elec- tricity.	Cable.	STEAM.		Total.
				Elevated roads.	Surface roads.	
Albany, N. Y.	13.19	7.25				20.44
Atlanta, Ga.	19.48	1.95			7.50	28.93
Baltimore, Md.	105.81					105.81
Birmingham, Ala.	10.90				60.04	78.94
Boston, Mass.	151.15	49.71				200.86
Brooklyn, N. Y.	122.95	6.50		24.10	1.00	164.44
Buffalo, N. Y.	42.30					42.30
Cincinnati, Ohio.	49.72	9.50	12.51			71.73
Charleston, S. C.	19.19					19.19
Chicago, Ill.	160.77		24.01			184.78
Cleveland, Ohio.	40.88	17.82				58.70
Columbus, Ohio.	19.90	0.75				20.65
Dallas, Tex.	16.07				4.00	20.07
Dayton, Ohio.	14.00	4.16				18.16
Denver, Colo.	28.99	4.35	29.02		8.50	71.46
Detroit, Mich.	48.96	12.30				61.26
Fall River, Mass.	11.94					11.94
Galveston, Tex.	32.96					32.96
Grand Rapids, Mich.	20.57		4.13			24.70
Hartford, Conn.	16.80					16.80
Indianapolis, Ind.	41.39					41.39
Jersey City, N. J.	20.74		1.40		2.25	24.39
Kansas City, Mo.	10.06	7.50	38.06	5.20	23.40	84.97
Los Angeles, Cal.	34.53	7.50	14.00		25.75	82.89
Louisville, Ky.	60.50	4.00			8.81	82.31
Lowell, Mass.	22.93					22.93
Memphis, Tenn.	52.20					52.20
Milwaukee, Wis.	40.38				5.35	45.73
Minneapolis, Minn.	33.50				18.00	51.50
Nashville, Tenn.	14.63	11.10			20.20	45.93
Newark and Elizabeth, N. J.	51.57					51.57
New Haven, Conn.	20.65					20.65
New Orleans, La.	91.62				12.70	104.32
New York, N. Y.	133.53		6.87	32.40	4.30	177.10
Oakland, Cal.	18.96		2.72		2.32	24.00
Omaha, Nebr.	21.17	23.79	4.46			49.42
Paterson, N. J.	16.00					16.00
Philadelphia, Pa.	260.47		23.00			283.47
Pittsburgh and Allegheny, Pa.	34.61	20.30	12.07			67.78
Providence, R. I.	47.48		3.00			50.48
Reading, Pa.	14.10	1.33				15.43
Richmond, Va.	5.65	8.72				14.37
Rochester, N. Y.	32.59	4.70				37.29
Saint Joseph, Mo.	1.00	17.19				18.19
Saint Louis, Mo.	97.05	1.00	20.70			118.75
Saint Paul, Minn.	22.00		10.00			32.00
San Francisco, Cal.	27.33		47.22		13.37	87.92
Savannah, Ga.	8.17				4.25	12.42
Scranton, Pa.		23.82				23.82
Syracuse, N. Y.	30.81	3.88				34.69
Toledo, Ohio.	28.32	2.00				30.32
Trenton, N. J.	15.50					15.50
Troy, N. Y.	13.48	3.00				16.48
Washington, D. C.	35.27	3.50				38.77
Wilmington, Del.	6.12	2.85				8.97
Worcester, Mass.	14.86					14.86
Total	2,351.10	260.36	255.87	61.79	221.81	3,160.93

Exhibit IV shows the per cent of total mileage of the fifty-six cities operated by each kind of motive power on December 31, 1889.

EXHIBIT IV.—PER CENT OF TOTAL MILEAGE OF FIFTY-SIX PRINCIPAL CITIES OPERATED BY VARIOUS KINDS OF MOTIVE POWER.

MOTIVE POWER.	Miles.	Per cent.
Animal power.....	2,351.10	74.02
Electricity.....	260.86	8.26
Cable.....	255.87	8.12
Steam (elevated roads).....	61.70	1.96
Steam (surface roads).....	221.81	7.04
Total.....	3,150.83	100.00

Exhibit V, on the following page, shows not only the total length of line in each city on December 31, 1889, but also how much of this line is laid with single and how much with double track. The length of all tracks, including sidings, is also given.

Among other comparisons which these tables make possible, that between Exhibits I and V will be found especially significant. In Exhibit I the column giving the length of line in 1889 shows Philadelphia far ahead of all other cities. The length assigned to each of the five leading cities is as follows: Philadelphia, 283.47 miles; Boston, 200.86; Chicago, 184.78; New York, 177.10; Brooklyn, 164.44.

On turning to the last column in Exhibit V, which gives the length of all tracks, we find that as regards the position of Philadelphia the table is reversed, and that New York rises from fourth to first place. The number of miles assigned to each city in that column is as follows: New York, 368.62; Chicago, 365.50; Boston, 329.47; Brooklyn, 324.63; Philadelphia, 324.21.

The reason of these changes will be clearly seen upon examining the column in Exhibit V which gives the length of double track. The length of double track in each of the five cities is as follows: Chicago, 176.05; New York, 161.90; Brooklyn, 138.84; Boston, 104.54; Philadelphia, 39.99.

From this comparison it is seen to be a peculiarity of the Philadelphia roads, and to some extent of the Boston roads, that the tracks usually occupy different streets in going to and from a terminus instead of being laid upon the same street. The result of this is that roads in the cities named traverse a greater length of street in proportion to track length than in New York, Brooklyn, and Chicago.

On December 31, 1889, 476 cities and towns in the United States possessed rapid transit facilities, and the total number of street railways in independent operation was 807.

EXHIBIT V. LENGTH OF STREET RAILWAYS IN FIFTY-SIX PRINCIPAL CITIES ON DECEMBER 31, 1889,
SHOWING LENGTH AND PER CENT OF DOUBLE TRACK, ETC.

CITIES.	LENGTH OF LINE.				Length of all tracks, including sidings.
	Single track.	Double track.		Total length of line.	
		Miles.	Per cent.		
Albany, N. Y.	9.89	10.55	51.01	20.44	31.67
Atlanta, Ga.	27.38	1.55	5.80	28.93	34.78
Baltimore, Md.	42.73	63.08	59.02	105.81	171.74
Birmingham, Ala.	70.79	6.15	7.99	76.94	90.81
Boston, Mass.	98.82	104.54	52.05	200.88	329.47
Brooklyn, N. Y.	25.60	138.84	84.43	164.44	324.63
Buffalo, N. Y.	21.74	20.56	43.61	42.30	63.75
Cincinnati, Ohio	12.64	59.09	82.38	71.78	130.82
Charleston, S. C.	13.50	5.09	29.65	19.19	25.38
Chicago, Ill.	8.73	175.05	95.28	184.78	365.50
Cleveland, Ohio	8.64	50.06	85.23	53.70	108.77
Columbus, Ohio	9.00	11.65	56.42	20.65	34.10
Dallas, Tex.	16.37	3.70	18.44	20.07	25.04
Dayton, Ohio	7.75	10.41	57.32	18.16	28.57
Denver, Colo.	42.03	29.43	41.18	71.46	101.69
Detroit, Mich.	43.93	17.33	28.29	61.20	85.15
Fall River, Mass.	7.69	4.55	88.11	11.94	16.49
Galveston, Tex.	25.96	7.00	21.24	32.96	39.96
Grand Rapids, Mich.	16.57	8.13	32.92	24.70	36.83
Hartford, Conn.	13.80			16.80	17.24
Indianapolis, Ind.	17.78	23.81	57.04	41.39	65.00
Jersey City, N. J.	5.50	18.89	77.45	24.39	45.78
Kansas City, Mo.	28.53	55.44	66.42	84.97	143.24
Los Angeles, Cal.	61.02	21.37	25.94	82.39	105.30
Louisville, Ky.	69.92	12.39	15.05	82.31	90.75
Lowell, Mass.	22.93			22.93	25.48
Memphis, Tenn.	52.20			52.20	52.20
Milwaukee, Wis.	14.87	30.80	67.48	45.73	76.94
Minneapolis, Minn.	13.04	38.40	74.08	51.50	91.31
Nashville, Tenn.	37.73	8.20	17.85	45.98	55.47
Newark and Elizabeth, N. J.	16.05	35.52	68.88	51.57	90.19
New Haven, Conn.	17.00	3.65	17.68	20.65	25.05
New Orleans, La.	49.57	54.75	52.48	104.32	159.32
New York, N. Y.	15.20	161.90	91.42	177.10	308.02
Oakland, Cal.	17.43	6.52	27.17	24.00	31.09
Omaha, Nebr.		49.42	100.00	49.42	98.84
Paterson, N. J.	15.00	1.00	6.25	16.00	17.00
Philadelphia, Pa.	243.43	30.09	14.11	283.47	324.21
Pittsburgh and Allegheny, Pa.	18.72	49.06	72.38	67.78	117.70
Providence, R. I.	44.35	6.13	12.14	50.48	58.34
Reading, Pa.	13.93	1.50	9.72	15.43	17.22
Richmond, Va.	10.84	3.53	24.57	14.37	18.18
Rochester, N. Y.	20.69	13.60	44.52	37.29	53.89
Saint Joseph, Mo.	4.57	13.62	74.88	18.19	31.81
Saint Louis, Mo.	72.49	46.26	33.96	118.75	165.26
Saint Paul, Minn.	1.30	30.70	95.94	32.00	64.70
San Francisco, Cal.	36.40	51.52	58.60	87.92	140.18
Savannah, Ga.	12.42			12.42	13.55
Scranton, Pa.	23.22			23.22	25.67
Syracuse, N. Y.	23.64	6.05	17.44	34.69	44.13
Toledo, Ohio	21.79	9.03	29.30	30.82	44.03
Trenton, N. J.	13.50	2.00	12.90	15.50	18.25
Troy, N. Y.	7.02	9.40	57.40	16.48	26.10
Washington, D. C.	9.83	28.91	74.57	38.77	67.68
Wilmington, Del.	7.10	1.87	20.85	8.97	11.27
Worcester, Mass.	11.74	3.12	21.00	14.86	17.98
Total	1,580.24	1,570.69	49.85	3,150.93	4,371.21

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CENSUS BULLETIN.

No. 12.

WASHINGTON, D. C.

Oct. 30, 1890.

Population of the United States by States and Territories: 1890.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., October 28, 1890.

SIR:

I have the honor to submit herewith a statement showing the population of the United States according to the Eleventh Census. The large clerical force and improved methods have allowed a very rapid progress in the compilation and tabulation of results, and this report will be followed within a short time by other bulletins relating to the population. The special work of the census is so far advanced that bulletins relating thereto will now be issued at frequent intervals during the next few months. The field-work of the census is nearing completion, and by the end of this year will be practically finished. The work of tabulation is being rapidly pressed forward, in order to begin the publication of the volumes as soon as possible.

The population of the United States on June 1, 1890, as shown by the first count of persons and families, exclusive of white persons in Indian Territory, Indians on reservations, and Alaska, was 62,480,540. These figures may be slightly changed by later and more exact compilations, but such changes will not be material. In 1880 the population was 50,155,783. The absolute increase of the population in the ten years intervening was 12,324,757, and the percentage of increase was 24.57. In 1870 the population was stated as 38,558,371. According to these figures the absolute increase in the decade between 1870 and 1880 was 11,597,412, and the percentage of increase was 30.08.

Upon their face these figures show that the population has increased between 1880 and 1890 only 727,345 more than between 1870 and 1880, while the rate of increase has apparently diminished from 30.08 to 24.57 per cent. If these figures were derived from correct data, they would be indeed disappointing. Such a reduction in the rate of increase in the face of the enormous immigration during the past ten years would argue a great diminution in the fecundity of the population or a corresponding increase in its death rate. These figures are, however, easily explained when the character of the data used is understood. It is well known, the fact having been *demonstrated* by extensive and thorough investigation, that the census of 1870 was grossly deficient in the southern states, so much so as not only to give an exaggerated rate of increase of the population between 1870 and 1880 in these states, but to affect very materially the rate of increase in the country at large.

These omissions were not the fault nor were they within the control of the Census Office. The census of 1870 was taken under a law which the Superintendent, General Francis A. Walker, characterized as "clumsy, antiquated, and barbarous." The Census Office had no power over its enumerators save a barren protest, and this right was even questioned in some quarters. In referring to these omissions the Superintendent of the Tenth Census said in his report in relation to the taking of the census in South Carolina: "It follows, as a conclusion of the highest authority, either that the census of 1870 was grossly defective in regard to the whole of the state or some considerable parts thereof, or else that the census of 1880 was fraudulent." Those, therefore, who believe in the accuracy and honesty of the Tenth Census—and that was thoroughly established—must accept the other

alternative offered by General Walker, namely, that the Ninth Census was "grossly defective." What was true of South Carolina was also true, in greater or less degree, of all the southern states.

There is, of course, no means of ascertaining accurately the extent of these omissions, but in all probability they amounted to not less than 1,500,000. There is but little question that the population of the United States in 1870 was at least 40,000,000, instead of 38,558,371, as stated. If this estimate of the extent of the omissions in 1870 be correct, the absolute increase between 1870 and 1880 was only about 10,000,000, and the rate of increase was not far from 25 per cent. These figures compare much more reasonably with similar deductions from the population in 1880 and 1890.

Omitting from consideration those states in which the census of 1870 is known or is presumed to have been faulty, the rate of increase between 1870 and 1880 in the remaining states has been very nearly maintained in the decade between 1880 and 1890. Referring to the principal table of the bulletin, the census of 1870 is known or is presumed to have been deficient in nearly all the states of the South Atlantic and Southern Central divisions, while in the North Atlantic, Northern Central, and Western divisions no evidence of incompleteness has been detected.

The population of these three last-named divisions in 1870, 1880, and 1890, the absolute increase for the two decades, and the rate of increase, is set forth in the following table:

YEAR.	Population.	Increase in population.	Percentage of increase.
1870.....	28,270,351		
1880.....	33,689,215	7,968,864	28.1
1890.....	42,893,882	9,054,467	26.9

It will be seen that the absolute increase between 1880 and 1890 exceeded that between 1870 and 1880 by 1,885,603, and that the proportional increase was but 1.2 per cent less.

POPULATION OF THE UNITED STATES IN 1890, AS COMPARED WITH 1880 AND 1870, BY STATES AND TERRITORIES, SHOWING THE INCREASE BY NUMBER AND PERCENTAGES FROM 1880 TO 1890, FROM 1870 TO 1880, AND FROM 1860 TO 1870.

[The figures for 1890 in this table are not final, but are subject to revision.]

STATES AND TERRITORIES.	POPULATION.			INCREASE FROM 1880 TO 1890.		INCREASE FROM 1870 TO 1880.		INCREASE FROM 1860 TO 1870.	
	1890.	1880.	1870.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
The United States.....	62,480,540	50,155,788	38,558,371	12,324,767	24.57	11,597,412	30.08	7,115,050	22.68
North Atlantic division.....	17,364,429	14,807,407	12,268,780	2,557,022	19.69	2,208,677	17.96	1,704,462	16.09
Maine.....	660,261	648,936	626,915	11,325	1.75	22,021	3.51	a1,304	a0.22
New Hampshire.....	375,827	346,991	318,300	28,836	8.31	28,691	9.01	a7,778	a2.88
Vermont.....	332,205	332,296	330,551	a81	a0.02	1,735	0.52	15,453	4.90
Massachusetts.....	2,233,407	1,783,085	1,457,351	450,322	25.26	325,734	22.35	226,285	18.38
Rhode Island.....	345,843	276,531	217,353	68,312	24.88	59,178	27.23	42,733	24.47
Connecticut.....	745,861	622,700	537,454	123,161	19.78	85,246	15.86	77,307	16.80
New York.....	5,981,934	5,082,871	4,382,759	899,063	17.69	700,112	15.97	502,024	12.94
New Jersey.....	1,441,017	1,181,116	906,096	309,901	27.40	225,020	24.83	234,061	34.83
Pennsylvania.....	5,248,574	4,282,891	3,521,951	965,683	22.55	760,940	21.61	615,736	21.19
South Atlantic division.....	8,886,769	7,697,197	5,858,610	1,239,562	16.33	1,743,587	29.79	488,907	9.11
Delaware.....	167,871	146,608	126,015	21,263	14.50	21,593	17.27	12,799	11.41
Maryland.....	1,040,431	984,943	780,894	105,488	11.23	154,049	19.73	98,845	13.66
District of Columbia.....	229,796	177,624	181,700	52,172	29.37	45,924	34.87	56,620	75.41
Virginia.....	1,648,911	1,512,585	1,225,163	136,346	9.01	287,402	23.46	370,859	34.44
West Virginia.....	760,448	618,457	442,014	141,991	22.96	176,448	39.92	.....	.....
North Carolina.....	1,617,340	1,399,750	1,071,361	217,590	15.54	323,389	30.65	78,739	7.93
South Carolina.....	1,147,161	995,577	705,606	151,584	15.23	289,971	41.10	1,898	0.27
Georgia.....	1,634,366	1,542,180	1,184,109	292,186	18.95	358,071	30.24	126,823	12.00
Florida.....	890,435	269,493	187,748	120,942	44.88	81,745	43.54	47,324	33.70

a Decrease.

b Of Virginia and West Virginia together.

POPULATION OF THE UNITED STATES IN 1890, ETC.—CONTINUED.

STATES AND TERRITORIES.	POPULATION.			INCREASE FROM 1880 TO 1890.		INCREASE FROM 1870 TO 1880.		INCREASE FROM 1860 TO 1870.	
	1890.	1880.	1870.	Number.	Percent- age.	Number.	Percent- age.	Number.	Percent- age.
Northern Central division ...	22,322,151	17,864,111	12,981,111	4,958,040	28.55	4,383,000	33.76	3,884,395	42.70
Ohio.....	3,666,719	3,198,062	2,665,260	468,657	14.65	532,802	19.99	325,749	13.92
Indiana.....	2,189,030	1,978,301	1,680,637	210,729	10.65	297,664	17.71	330,209	24.45
Illinois.....	3,818,536	3,077,871	2,539,891	740,665	24.06	537,980	21.13	827,940	48.36
Michigan.....	2,089,792	1,636,937	1,184,059	452,855	27.66	452,878	38.25	434,946	58.06
Wisconsin.....	1,683,697	1,315,497	1,054,670	368,200	27.99	260,827	24.73	278,789	35.93
Minnesota.....	1,300,017	780,773	439,706	519,244	66.50	341,067	77.57	267,683	155.61
Iowa.....	1,906,729	1,624,615	1,194,020	282,114	17.36	430,595	36.06	519,107	76.91
Missouri.....	2,677,080	2,168,380	1,721,295	508,700	23.46	447,065	25.97	539,283	45.62
North Dakota.....	182,425	36,909	14,181	145,516	394.26	120,996	853.23	9,344	198.18
South Dakota.....	327,848	98,268	14,181	239,580	233.63	120,996	853.23	9,344	198.18
Nebraska.....	1,056,793	452,402	122,993	604,391	133.60	329,409	267.83	94,182	326.45
Kansas.....	1,423,485	996,056	364,399	437,389	42.91	631,697	173.35	237,198	239.91
Southern Central division ...	10,948,253	8,919,371	6,434,410	2,028,832	22.75	2,484,961	38.62	665,752	11.54
Kentucky.....	1,855,436	1,648,690	1,321,011	206,746	12.54	327,679	24.81	165,327	14.31
Tennessee.....	1,763,723	1,542,359	1,258,520	221,364	14.35	283,839	22.55	148,719	13.40
Alabama.....	1,503,073	1,262,505	996,992	245,568	19.45	265,513	26.63	32,791	3.40
Mississippi.....	1,234,837	1,131,597	827,922	153,290	13.55	303,675	36.68	36,617	4.63
Louisiana.....	1,116,828	939,946	726,015	176,832	18.82	213,031	29.31	18,913	2.67
Texas.....	2,232,220	1,591,749	818,579	640,471	40.24	773,170	94.45	214,364	35.48
Indian Territory (b).....	61,701			61,701					
Oklahoma.....	61,701			61,701					
Arkansas.....	1,125,385	802,525	484,471	322,360	40.23	318,054	65.65	49,021	11.26
Western division.....	3,008,948	1,767,697	990,510	1,241,251	70.22	777,187	78.46	371,534	60.02
Montana.....	131,769	39,159	20,595	92,610	236.50	18,564	90.14	20,595	.....
Wyoming.....	60,589	20,789	9,118	39,300	191.45	11,671	128.00	9,118	.....
Colorado.....	410,975	194,327	39,864	216,648	111.49	154,463	387.47	5,587	16.30
New Mexico.....	144,862	119,565	91,874	25,297	21.16	27,691	30.14	21,642	21.76
Arizona.....	59,691	40,440	9,658	19,251	47.60	30,782	318.72	9,658	.....
Utah.....	206,493	143,963	85,786	62,535	43.44	57,177	65.88	46,513	115.49
Nevada.....	44,327	62,266	42,491	217,939	228.81	19,775	46.54	35,634	519.67
Idaho.....	84,229	32,610	14,999	51,619	158.29	17,611	117.41	14,999	.....
Alaska (d).....									
Washington.....	349,516	75,116	23,955	274,400	365.30	51,161	213.57	12,361	106.62
Oregon.....	312,490	174,763	90,923	137,722	78.80	83,845	92.22	38,458	73.30
California.....	1,204,002	864,694	560,247	339,303	39.24	304,447	54.34	180,253	47.44

a Decrease.

b The number of white persons in the Indian Territory is not included in this table, as the census of Indians and other persons on Indian reservations, which was made a subject of special investigation by law, has not yet been completed.

c Including 5,337 persons in Greer county (in Indian Territory), claimed by Texas.

d The number of white persons in Alaska is not included in this table, as the census of Alaska, which was made a subject of special investigation by law, has not yet been completed.

RECAPITULATION BY GROUPS.

GEOGRAPHICAL DIVISIONS.	POPULATION.			INCREASE FROM 1880 TO 1890.		INCREASE FROM 1870 TO 1880.		INCREASE FROM 1860 TO 1870.	
	1890.	1880.	1870.	Number.	Percent- age.	Number.	Percent- age.	Number.	Percent- age.
The United States.....	62,480,540	50,155,783	38,553,371	12,324,757	24.57	11,597,412	30.08	7,115,050	22.63
North Atlantic division.....	17,364,429	14,507,407	12,298,730	2,857,022	19.69	2,208,677	17.96	1,704,462	16.09
South Atlantic division.....	3,836,769	7,597,197	5,853,610	1,239,562	16.32	1,743,587	29.79	483,907	9.11
Northern Central division.....	22,322,151	17,864,111	12,981,111	4,958,040	28.55	4,383,000	33.76	3,884,395	42.70
Southern Central division.....	10,948,253	8,919,371	6,434,410	2,028,832	22.75	2,484,961	38.62	665,752	11.54
Western division.....	3,008,948	1,767,697	990,510	1,241,251	70.22	777,187	78.46	371,534	60.02

The general law governing the increase of population is, that when not disturbed by extraneous causes, such as wars, pestilences, immigration, emigration, etc., increase of population goes on at a continually diminishing rate. The operation of this law in this country has been interfered with in recent years by the late war, which, besides the destruction of a vast number of lives, decreased the birth rate very materially during its progress. It was followed by an increased birth rate, as is invariably the case under similar circumstances. The normal rate of increase has been, and is, greatly interfered with also by immigration, and it is difficult to estimate the effect of this upon our rate of increase. Approximation to it may, however, be reached by the following process: Between 1880 and 1890, 5,246,613 immigrants entered this country. Of these a part have returned to their homes or migrated elsewhere. A considerable proportion, probably about one-eighth, have died. On the other hand, children have been born to them, and it is probable that the births have counterbalanced the deaths and the emigration, so that the net influence which immigration has exerted upon our population is approximately expressed by the number of immigrants. Subtracting this number from the numerical increase during the past decade, there remains a trifle over 7,000,000 to represent the actual increase of the inhabitants of this country in 1880. The rate of natural increase is therefore not far from 14 per cent.

Similar calculations for the population in 1880 and the decade preceding would, of course, be valueless on account of the imperfections of the census of 1870.

The table herewith submitted shows the population by states and territories in 1890, 1880, and 1870, the numerical increase in each state between 1860 and 1870, between 1870 and 1880, and between 1880 and 1890, and the corresponding percentages of increase. This table, which gives the population only at ten-year intervals, is supplemented in the case of a few states by the following table, in which is given, in addition to the results of the federal censuses of 1880 and 1890, the result of state censuses taken, with the exception of Michigan, in 1885, the census of that state having been taken in 1884. Comparing the results of these state censuses with those of the federal censuses, it must be understood that the state censuses were taken under different authority, by different machinery, and by different methods from those employed in the federal census.

STATES.	POPULATION.			INCREASE.		PERCENTAGE OF INCREASE.	
	1890.	1885.	1880.	1880 to 1885.	1885 to 1890.	1880 to 1885.	1885 to 1890.
Colorado	410,978	248,910	194,827	49,583	167,065	25.5	68.5
Dakota	510,373	415,610	185,177	280,433	94,668	207.5	22.8
Florida	360,489	842,551	969,493	78,058	47,884	27.1	14.0
Iowa	1,906,729	1,758,980	1,624,615	129,865	182,740	8.0	8.7
Kansas	1,423,485	1,268,580	996,096	972,494	154,965	27.4	12.2
Massachusetts	2,232,407	1,942,141	1,738,065	159,056	201,266	8.9	15.0
Michigan	2,089,792	1,853,658	1,680,937	216,721	236,184	13.2	12.7
Minnesota	1,300,017	1,117,798	780,773	887,025	182,219	48.2	16.3
Nebraska	1,056,798	740,645	452,402	288,243	316,148	63.7	42.7
New Jersey	1,441,017	1,278,033	1,131,116	146,917	162,984	13.0	12.8
New Mexico	144,862	134,141	119,565	14,576	10,721	12.2	8.0
Oregon	312,490	194,150	174,768	19,382	118,340	11.1	61.0
Rhode Island	345,343	304,284	276,681	27,753	41,059	10.0	13.5
Washington	349,516	129,438	75,116	54,322	220,078	72.3	170.0
Wisconsin	1,683,697	1,563,423	1,315,497	247,926	120,274	18.8	7.7

In the state of Kansas the course of the population can be traced even more closely than in the other states represented in the above table. Since 1885 this state has taken a census each year, the results of which are shown in the accompanying table, together with the federal censuses of 1880 and 1890:

1880. Federal census.....	996,096
1885. State census.....	1,268,530
1886. State census.....	1,406,738
1887. State census.....	1,514,578
1888. State census.....	1,518,552
1889. State census.....	1,464,914
1890. Federal census.....	1,423,485

In the principal table of this bulletin the states are grouped as North Atlantic, South Atlantic, Northern Central, Southern Central, and Western. This grouping is a natural one, and by the aid of it certain characteristic features in the development of the states are brought out. The North Atlantic section is primarily a manufacturing section. As a necessary result of the predominance of manufacturing there is a great development of urban population. Indeed, more than half of the inhabitants are grouped in cities.

The predominant industry of the Northern Central states is agriculture, although in many of these states manufactures are now acquiring prominence. The industries of the South Atlantic and Southern Central sections are still almost entirely agricultural, while in the Western states and territories the leading industries are agriculture, mining, and grazing.

In the course of the settlement and development of a country the industries commonly follow one another in a certain order. After the hunter, trapper, and prospector, who are commonly the pioneers, the herdsman follows, and for a time the raising of cattle is the leading industry. As settlement becomes less sparse, this is followed by agriculture, which in its turn, as the population becomes more dense, is succeeded by manufactures, and, as a consequence, the aggregation of the people in cities. We see in this country all stages of this progress.

In Maine, New Hampshire, and Vermont the rate of increase between 1870 and 1880 has not quite been maintained; indeed, in the last-named state there has been a trifling absolute decrease of population. In these states agriculture is in a very low condition, the soil is as a rule infertile, and markets are not especially easy of access; consequently the farming population has continued to migrate to the far west. On the other hand, manufactures have not yet assumed sufficient prominence to retain population.

In the other states of this subdivision, with the exception of Rhode Island, viz, Massachusetts, Connecticut, New York, New Jersey, and Pennsylvania, while farming is at quite as low an ebb as in Maine, New Hampshire, and Vermont, manufactures have assumed so great prominence that they have not only sufficed to maintain the former rate of increase, but even to increase it. The rate in Massachusetts has increased from 22 to 25 per cent, in Connecticut from 16 to 20, in New York from 16 to 18, in New Jersey from 25 to 27, and in Pennsylvania from 22 to 23. It will be seen, furthermore, that this augmentation of the rate of increase is greater in the more easterly states than in the three western ones above mentioned, owing to the fuller development of manufacturing industries.

Turning to the table showing the results of the state censuses, it appears that during the first half of the last decade the rate of increase in Massachusetts was below the average of the decade, while in the last half it was much greater, a fact which indicates either that the rate of increase declined materially in the first half of the decade, or that the state enumeration was much less complete than that of the federal enumeration in 1890. The case is somewhat similar in Rhode Island, although not in so marked a degree, the rates of increase between 1880 and 1885 and between 1885 and 1890 being respectively 10 and 13.5 per cent. In New Jersey the rate of increase seems to have been maintained quite uniformly throughout the decade.

In the Northern Central group of states various conditions prevail. In Ohio, Indiana, Iowa, and Missouri, and in Illinois if the city of Chicago be dropped from consideration, the rate of increase has declined very decidedly. In Ohio it has fallen from 20 to 15 per cent; in Indiana from 18 to 11; in Iowa from 36 to 17; in Missouri from 26 to 23 per cent, in spite of the rapid growth of Saint Louis and Kansas City, and in Illinois, dropping Chicago from consideration, from 14.9 to 5.6 per cent. In these states the agricultural industry, which is still the prominent one, has begun to decline, owing to the sharp competition of western farms. The farming population has migrated westward, and the growth of manufactures is not yet sufficiently rapid to repair these losses. The southern portions of Michigan, Wisconsin, and Minnesota are under similar conditions, but the northern parts of these states, lying upon the frontier of settlement, have filled up with sufficient rapidity to repair either wholly or in part the losses of the southern parts. Michigan increased at the rate of 38 per cent between 1870 and 1880, while between 1880 and 1890 the rate was but 28 per cent. The increase between 1880 and 1890 was cut into unequal parts by the state census taken in 1884. In the first four years of the decade the increase was 13.2 per cent, while in the last six years it was 12.7 per cent. As the rate of increase in this state is declining, the state census taken in 1884 corroborates the federal census of 1890. In Wisconsin the last decade shows an increase of 28 per cent, as against an increase of 25 per cent in

the decade between 1870 and 1880. The state census of Wisconsin, taken in 1885, cuts the decade into two equal parts, and shows an increase during the first half of 18.8 per cent and during the second half of but 7.7 per cent.

Minnesota increased 78 per cent between 1870 and 1880 and 67 per cent between 1880 and 1890, the numerical increase being over half a million in the past decade. The state census, taken in 1885, shows that the bulk of this increase occurred between 1880 and 1885. The numerical increase during the first five years was 337,025, and the rate of increase 43 per cent, while during the last half of the decade the numerical increase was 182,219, and the rate of increase 16.3 per cent.

During the past ten years the population of Dakota, considering the two states of North Dakota and South Dakota together, has increased from 135,177 to 510,273, or 277 per cent; Nebraska from 452,402 to 1,056,793, or 134 per cent, and Kansas from 996,096 to 1,423,485, or 43 per cent. This increase has not, however, continued uniformly throughout the decade. In 1885 Dakota contained 415,610 inhabitants, or more than four-fifths of its present population. Nebraska contained 740,645 inhabitants in the same year, thus dividing the numerical increase quite equally between the two halves of the decade, but leaving the greater percentage of increase in the first half. In the same year Kansas by its state census had 1,268,530 inhabitants, showing that nearly two-thirds of the numerical gain was acquired during the first half of the decade. The industries of these states are almost purely agricultural, and are dependent on the supply of moisture, either in the form of rain or by irrigation. Through these states passes what is known as the sub-humid belt, a strip of country several degrees in width, in which during rainy years there is an abundance of moisture for the needs of crops, while in the years when the rainfall is below the average the supply is deficient. In this region little provision has been made for artificial irrigation, the settlers having thus far been content to depend upon rainfall. Into this region the settlers flocked in large numbers in the early years of the decade, drawn thither by the fertility of the land and by the fact that for a few years the rainfall had been sufficient for the needs of agriculture. During the past two or three years, however, the conditions of rainfall have materially changed. It has fallen decidedly below the normal, and the settlers have thereby been forced to emigrate. Thousands of families have abandoned this region and gone to Oklahoma and the Rocky Mountain region. This migration is well shown in the progress of Kansas, as indicated by its annual censuses. These censuses show a rapid increase in population from 1880 up to 1887; 1888 shows but a slight increase over 1887, while 1889 shows a reduction in the population, leading up to the further reduction shown by the federal census in 1890.

Throughout the South Atlantic and Southern Central states the rate of increase has diminished, and in most of these states it has diminished very materially. A certain reduction in the percentage of increase, especially in the eastern part of this region, was to be expected, due not only to the operation of general laws, but also to the fact that there has been considerable migration from the states east of the Mississippi river to the westward and but little immigration. Taken together, however, these two causes by no means account for the reduction in the rate of increase in these states. The real cause is to be found, as was stated early in this discussion, in the imperfections of the census of 1870. These imperfections resulted in giving a comparatively low rate of increase between 1860 and 1870 and an exaggerated increase between 1870 and 1880. The following table, showing the rates of increase during the last three decades in these states, illustrates the imperfections of the census of 1870 in a somewhat startling manner:

STATES,	PER CENT OF INCREASE.		
	1860 to 1870.	1870 to 1880.	1880 to 1890.
Virginia.....	4.4	23.5	9.0
North Carolina.....	7.9	30.6	15.5
South Carolina.....	0.3	41.7	15.2
Georgia.....	12.0	30.2	18.9
Alabama.....	3.4	26.6	19.4
Mississippi.....	4.6	36.7	18.5
Louisiana.....	2.7	29.3	18.8
Kentucky.....	14.3	24.8	12.5
Tennessee.....	13.4	22.5	14.4

a Of Virginia and West Virginia together.

It is but reasonable to suppose that in these states, which were ravaged by war from 1861 to 1865, the rate of increase in the decade which includes the war period should be less than a normal one. Of all these states Virginia, whose soil was the principal theater of the war, must have suffered most severely, and during the period in question it increased at the rate of but 4.4 per cent. Next to Virginia, Kentucky and Tennessee suffered the most severely, and yet they increased, respectively, 14 and 13 per cent. On the other hand, North Carolina, which suffered less severely, gained but 8 per cent, and South Carolina, which suffered less in comparison with Virginia, apparently remained at a standstill as regards population. Georgia gained 12 per cent, while Alabama and Louisiana gained but 3 per cent and Mississippi but 5, although they were comparatively remote from active operations, and suffered relatively little from the ravages of war. On the other hand, those states which suffered the most severely from the war have made during the decade between 1870 and 1880 the smallest proportion of gain of the southern states, whereas the reverse should have been the case. Thus Virginia gained 23 per cent, Kentucky 25, and Tennessee 23, while the states that were farther removed from active operations were North Carolina, which gained 31; South Carolina, 41; Georgia, 30; Alabama, 27; Mississippi, 37, and Louisiana, 29 per cent. These startling discrepancies can be due only to the imperfections of the census of 1870, which were, as has been demonstrated, greatest in South Carolina, Mississippi, Louisiana, Alabama, Georgia, and North Carolina, although they were not by any means wanting in Virginia, Kentucky, and Tennessee.

The industries of these two sections are almost purely agricultural. During the past ten years manufactures have obtained a slight footing and mining has made considerable growth in the mountain regions, but these causes have thus far produced but a comparatively trifling movement of population. The urban population, although great in proportion to that which existed formerly, is very small in proportion to the rural population of the region.

During the first half of the last decade Florida had a rapid growth. The population between 1880 and 1885 increased 73,058, or at the rate of 27 per cent. This rapid growth, however, received a serious check in 1887 and 1888 by an epidemic of yellow fever and by severe frosts. The growth since 1885 has, therefore, been comparatively slow.

Arkansas has continued to grow at a rapid rate, having increased 40 per cent in the last ten years. Texas also has increased with great rapidity, the numerical increase of its population being 640,471, or over 40 per cent.

In the Western section the conditions of growth have been very varied. In the earlier years of the decade the discovery of valuable silver and copper mines in the mountains of Montana in the neighborhood of Butte have drawn to that state a large immigration, which is engaged not only in mining, but in developing the rich agricultural resources. Wyoming has continued to grow with accelerated rapidity.

The census of Colorado in 1880 was taken on the top wave of a mining excitement, which had filled its mountains with miners, prospectors, and speculators, increasing its population enormously, especially in the mountainous country. The census of the state taken in 1885 was, on a superficial view, very surprising. It showed that most of the mining counties had lost population during the five years preceding. This loss was, however, more than made up by the growth of its cities and its agricultural counties. The census of 1890 shows still further reduction of population in the mining regions of the state and an extraordinary development of its urban population and its farming element. New Mexico, Arizona, and Utah show rates of increase which are small when the sparsely settled condition of these territories is considered, while Nevada shows an absolute diminution of population of 17,939, or nearly 29 per cent, leaving it the smallest of all the states. This condition of things is a natural result of the failure of the Comstock and other mines, work upon which has practically ceased. Idaho has increased its population two and a half times. Its prosperity is mainly due to its mines, although people are now turning to agriculture in considerable numbers.

The growth of Washington has been phenomenal, the population in 1890 being nearly five times that of 1880. As is shown by the state census taken in 1885, this growth has been almost entirely during the last five years of the decade. The inducements which have attracted settlers are in the main its fertile soil and ample rainfall, which enable farming to be carried on without irrigation

over almost the entire state. The growth of Oregon, though less rapid, has been at a rate of nearly 80 per cent during the past decade. The numerical increase has been 137,722, of which over four-fifths has been acquired during the past five years. The additions to its population are mainly in the valleys of the Columbia and Willamette rivers.

California, which increased 54 per cent during the decade between 1870 and 1880, has maintained during the past decade a rate of increase of 89 per cent. This increase, though widespread throughout the state, has been most marked in its great cities and in the southern part.

The following table shows the relative rank in population of the states and territories in 1890 and in 1880:

RELATIVE RANK OF STATES AND TERRITORIES IN POPULATION.

1890.	1880.	1890.	1880.
1 New York.	1 New York.	26 Nebraska.	26 Minnesota.
2 Pennsylvania.	2 Pennsylvania.	27 Maryland.	27 Maine.
3 Illinois.	3 Ohio.	28 West Virginia.	28 Connecticut.
4 Ohio.	4 Illinois.	29 Connecticut.	29 West Virginia.
5 Missouri.	5 Missouri.	30 Maine.	30 Nebraska.
6 Massachusetts.	6 Indiana.	31 Colorado.	31 New Hampshire.
7 Texas.	7 Massachusetts.	32 Florida.	32 Vermont.
8 Indiana.	8 Kentucky.	33 New Hampshire.	33 Rhode Island.
9 Michigan.	9 Michigan.	34 Washington.	34 Florida.
10 Iowa.	10 Iowa.	35 Rhode Island.	35 Colorado.
11 Kentucky.	11 Texas.	36 Vermont.	36 District of Columbia.
12 Georgia.	12 Tennessee.	37 South Dakota.	37 Oregon.
13 Tennessee.	13 Georgia.	38 Oregon.	38 Delaware.
14 Wisconsin.	14 Virginia.	39 District of Columbia.	39 Utah.
15 Virginia.	15 North Carolina.	40 Utah.	40 Dakota.
16 North Carolina.	16 Wisconsin.	41 North Dakota.	41 New Mexico.
17 Alabama.	17 Alabama.	42 Delaware.	42 Washington.
18 New Jersey.	18 Mississippi.	43 New Mexico.	43 Nevada.
19 Kansas.	19 New Jersey.	44 Montana.	44 Arizona.
20 Minnesota.	20 Kansas.	45 Idaho.	45 Montana.
21 Mississippi.	21 South Carolina.	46 Oklahoma.	46 Idaho.
22 California.	22 Louisiana.	47 Wyoming.	47 Wyoming.
23 South Carolina.	23 Maryland.	48 Arizona.	
24 Arkansas.	24 California.	49 Nevada.	
25 Louisiana.	25 Arkansas.		

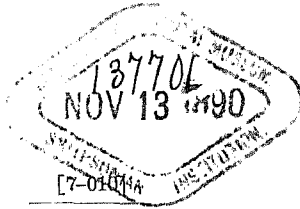
It will be seen that, as in 1880, New York still heads the list, and is followed by Pennsylvania. Ohio and Illinois have exchanged places. Of the other changes in the list the most marked are those of Texas, which rises from No. 11 to No. 7; Kentucky, which drops from 8 to 11; Minnesota, which rises from 26 to 20; Nebraska, which rises from 30 to 26; Maryland, which drops from 23 to 27; Colorado, which rises from 35 to 31; Vermont, which drops from 32 to 36; Washington, which rises from 42 to 34; Delaware, which drops from 38 to 42; Nevada, which drops from 43 to 49, and Arizona, which drops from 44 to 48. The average change in rank is 2.2 places.

I have the honor to be, sir, respectfully, yours,

Robert P. Porter

Superintendent of Census.

Hon. JOHN W. NOBLE,
Secretary of the Interior.



CENSUS BULLETIN.

No. 13.

WASHINGTON, D. C.

Oct. 31, 1890.

MANUFACTURES.—PRODUCTION OF STEEL.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., October 29, 1890.

Herewith is presented a preliminary report on the production of steel in the United States during the year ended June 30, 1890, prepared by Dr. WILLIAM M. SWEET, special agent, under the direction of Mr. FRANK R. WILLIAMS, expert special agent of the Division of Manufactures of this office.

The tables presented show an aggregate production of steel of all kinds by states.

The total production of steel in the form of ingots and direct castings aggregates 4,466,926 tons of 2,000 pounds, an increase of 290 per cent over the production of the census year 1880, at which time steel was made in fourteen states in the Union, as against nineteen states engaged in that industry at the present time. The production of Bessemer steel rails has shown a remarkable growth, increasing from 741,475 tons in 1880 to 2,036,654 tons in 1890.

It is gratifying to note the great increase which has taken place in this industry in the decade just past.

Superintendent of Census.

PRODUCTION OF STEEL.

BY DR. WILLIAM M. SWEET.

The total production of steel in the United States in the form of ingots or direct castings during the year ended June 30, 1890, amounted to 4,466,926 tons of 2,000 pounds, as compared with 1,145,711 tons produced during the year ended May 31, 1880; an increase of 3,321,215 tons, or 290 per cent.

The following table gives the production of the various kinds of steel in the form of ingots or direct castings in 1880 and 1890. The statistics for 1880 are for the census year ended May 31, 1880, but for 1890 they cover the fiscal year ended June 30, 1890. A few steel works produce blister, cemented, and other miscellaneous steel, but the quantity made annually is very small, and the statistics thereof for 1880 and 1890 are not included in the table below.

KINDS OF STEEL. (Ingots or direct castings.)	TONS OF 2,000 POUNDS.	
	Year ended May 31, 1880.	Year ended June 30, 1890.
Bessemer steel	985,208	3,788,572
Open-hearth steel.....	84,302	504,351
Crucible steel	76,201	85,536
Clapp-Griffiths steel.....		83,963
Robert-Bessemer steel.....		4,504
Total.....	1,145,711	4,466,926.

During 1880 fourteen states contained steel-making establishments, and steel was produced in that year in each of these states except Rhode Island and Maryland. In 1890 steel works were located in nineteen states, and steel was made in that year in each of these states except Kentucky, Missouri, and Virginia.

Pennsylvania continues to occupy the position of the leading producer of steel in the United States, producing 57 per cent of the total production in 1880 and 62 per cent in 1890. Illinois was second in rank in both years, and Ohio was third. From 1880 to 1890 the increase in production in Pennsylvania was 324 per cent, in Illinois 241 per cent, and in Ohio 314 per cent. Since 1880 the manufacture of steel has been abandoned in two states, viz, Rhode Island, and Vermont, and seven states have engaged in its production, viz, Alabama, California, Colorado, Indiana, Michigan, Virginia, and West Virginia.

The following table gives, in tons of 2,000 pounds, the total production, by states, of Bessemer, Clapp-Griffiths, Robert-Bessemer, open-hearth, and crucible steel, in the form of ingots or direct castings,

during 1880 and 1890, with the number of completed steel works at the close of each year, the relative rank of each state, and the percentage of the total production :

Rank.	STATES.	YEAR ENDED MAY 31, 1890.			Rank.	STATES.	YEAR ENDED JUNE 30, 1890.		
		No. of steel works. (a)	Production of steel of all kinds. (Tons of 2,000 pounds.)	Percentage of total production.			No. of steel works. (a)	Production of steel of all kinds. (Tons of 2,000 pounds.)	Percentage of total production.
1	Pennsylvania.....	35	653,561	57.04	1	Pennsylvania.....	70	2,788,253	61.97
2	Illinois.....	6	254,509	22.22	2	Illinois.....	14	868,250	19.44
3	Ohio.....	7	107,883	9.42	3	Ohio.....	18	440,808	10.00
4	New York.....	5	86,745	7.57	4	West Virginia.....	2	183,225	4.10
5	New Jersey.....	6	10,942		5	New York.....	8	113,499	2.54
6	Massachusetts.....	3	9,615		6	Massachusetts.....	6	30,252	
7	Missouri.....	1	8,409		7	New Jersey.....	3	17,999	
8	New Hampshire.....	1	4,521	3.75	8	Colorado.....	1	17,952	
9	Tennessee.....	1	4,000		9	California.....	1	6,904	
10	Vermont.....	1	3,000		10	Michigan.....	2	5,600	
11	Connecticut.....	3	2,116		11	New Hampshire.....	1	3,700	1.95
12	Kentucky.....	2	350		12	Connecticut.....	3	1,734	
13	Maryland.....	1			13	Indiana.....	5	1,850	
14	Rhode Island.....	1			14	Maryland.....	1	1,000	
					15	Alabama.....	1	300	
					16	Tennessee.....	4	100	
					17	Virginia.....	1		
					18	Kentucky.....	1		
					19	Missouri.....	1		
	Total.....	73	1,145,711	100.00		Total.....	158	4,466,926	100.00

a Each Bessemer, open-hearth, and crucible steel plant is counted as separate works, although two or more of these plants are frequently embraced in a single establishment.

BESSEMER STEEL.

The production of Bessemer steel ingots or direct castings in the United States during 1890, including steel made by the Clapp-Griffiths and Robert-Bessemer processes, amounted to 3,877,039 tons of 2,000 pounds, an increase of 294 per cent over the production of 985,208 tons in 1880. In 1880 there were 11 completed works in this country for the production of Bessemer steel ingots or direct castings, which were located in Illinois, Missouri, New York, Ohio, and Pennsylvania, while at the close of 1890 the number of establishments containing Bessemer converters, including the works prepared to manufacture Clapp-Griffiths and Robert-Bessemer steel, had increased to 53, located in Colorado, Illinois, Indiana, Massachusetts, Michigan, Missouri, New York, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

Of the production of 985,208 tons of Bessemer steel ingots or direct castings in 1880 Pennsylvania produced 56 per cent, Illinois 26 per cent, and New York and Ohio each over 8 per cent. Of the production of 3,877,039 tons of Bessemer steel ingots or direct castings in 1890, including that made by the Clapp-Griffiths and Robert-Bessemer steel works, Pennsylvania produced 59 per cent, Illinois 22 per cent, Ohio nearly 10 per cent, West Virginia 5 per cent, New York over 2 per cent, and Colorado, Massachusetts, and Michigan each less than 1 per cent.

The Clapp-Griffiths and Robert-Bessemer processes were introduced into the United States during the past decade, the former from Great Britain in 1834, and the latter from France in 1838. Both processes are modifications of the ordinary Bessemer method, but the converters employed are nearly all of small capacity. The first steel made in this country by the Clapp-Griffiths process was produced at Pittsburgh, Pennsylvania, March 25, 1834. During 1890 seven works contained converters for the production of steel by this process, five of which were in operation in that year, producing 83,963 tons of steel ingots or direct castings. No new plants have been erected since 1837, and none are now under construction. The first steel produced in this country by the Robert-Bessemer process was made at experimental works at Springfield, Ohio, in September, 1838. During 1890 there were six completed

works containing converters for the production of steel by this process, and one plant was in course of erection. The process may be said to be still in an experimental stage, but the results that have so far been obtained by its use are reported to be encouraging. During 1890 there were 4,504 tons of Robert-Bessemer steel produced in this country, principally in the form of castings.

The following table gives in tons of 2,000 pounds the production of Bessemer steel ingots or direct castings (the figures for 1890 including the quantity of steel made by the Clapp-Griffiths and Robert-Bessemer processes) and Bessemer steel rails in the United States in 1880 and 1890:

STATES.	BESSEMER STEEL INGOTS OR DIRECT CASTINGS. (Including Clapp-Griffiths and Robert-Bessemer steel.)		BESSEMER STEEL RAILS.	
	Year ended May 31, 1880.	Year ended June 30, 1890.	Year ended May 31, 1880.	Year ended June 30, 1890.
California.....				5,654
Colorado.....		17,952		14,286
Illinois.....	253,514	867,805	201,186	622,260
Indiana.....				
Massachusetts.....		15,753		
Michigan.....		3,600		
Missouri.....	8,409		5,100	
New York.....	84,160	105,402	57,870	
Ohio.....	82,811	385,576	66,480	17,335
Pennsylvania.....	556,314	2,297,726	409,339	1,377,110
Tennessee.....				
Virginia.....				
Vermont.....			1,500	
West Virginia.....		183,225		
Total.....	985,208	3,877,039	741,475	2,036,654

The remarkable growth that has taken place in the Bessemer steel industry of this country during the past ten years is well shown by the above figures. The increase in the number of establishments producing Bessemer steel has been the result almost entirely of the demand for steel in forms other than rails. All of the eleven Bessemer steel plants that were completed in 1880 had been built to manufacture steel for rails, many of them being added to previously existing iron rail mills. Of the fifty-three Bessemer steel plants at the close of 1890 only fourteen made steel rails during that year, and of the total quantity of rails produced over 90 per cent was made by ten of these works. Thus, while the production of steel rails has nearly trebled in amount since 1880, the number of establishments engaged in their manufacture has shown but little change in the ten years, although many of these works have greatly increased in size and efficiency. The competition in the manufacture of Bessemer steel rails has compelled many of the rail mills to convert a large part of the steel produced by them into forms other than rails, the production of rails to any considerable extent at the present time being possible only in works favorably located for the supply of cheap raw materials and operated under the latest and most improved methods of manufacture. Included in the total production of Bessemer steel rails during 1890 were 65,273 tons rolled in iron rolling mills from purchased Bessemer steel blooms.

While the demand for steel rails has shown a remarkable growth since 1880, thereby forcing a practical discontinuance of the manufacture of iron rails, there has also been a rapidly increasing use of steel for nails, bars, rods, wire, and other miscellaneous forms. The growth of the Bessemer steel industry in this direction is clearly shown in the number of plants that have been added to iron rolling mills during the past ten years for the purpose of manufacturing steel in forms other than rails. The increased quantity of Bessemer steel manufactured in these miscellaneous forms is approximately shown by a comparison of the ingots and rails produced, over 75 per cent of the ingots made in 1880 being converted into rails, while in 1890 the percentage of rails made to ingots produced was only 53 per cent.

OPEN-HEARTH AND CRUCIBLE STEEL.

The production of open-hearth steel in the form of ingots or direct castings during 1890 amounted to 504,351 tons of 2,000 pounds, as compared with 84,302 tons made during 1880. In 1880 there were 25 establishments containing open-hearth steel plants, located in ten states, and in 1890 there were 58 establishments containing open-hearth steel plants, located in twelve states. Since 1880 the manufacture of open-hearth steel has been abandoned in two states, Vermont and Rhode Island, and four states have engaged in its manufacture, New York, Alabama, Indiana, and California. During the past few years great activity has taken place in the erection of open-hearth steel plants, and indications point to a still larger production of this kind of steel during the next few years.

The following table gives, by states, the production of open-hearth and crucible steel in the form of ingots or direct castings, in 1880 and 1890, in tons of 2,000 pounds:

STATES.	OPEN-HEARTH STEEL INGOTS OR DIRECT CASTINGS. (Tons of 2,000 pounds.)		CRUCIBLE STEEL INGOTS OR DIRECT CASTINGS. (Tons of 2,000 pounds.)	
	Year ended May 31, 1880.	Year ended June 30, 1890.	Year ended May 31, 1880.	Year ended June 30, 1890.
Alabama.....		300		
California.....		6,904		
Connecticut.....			2,116	1,784
Illinois.....	925		180	445
Indiana.....		1,000		350
Kentucky.....	275		75	
Maryland.....				1,000
Massachusetts.....	9,475	13,967	140	582
Michigan.....				2,000
New Hampshire.....	4,521	3,700		
New Jersey.....	450	9,656	10,492	8,343
New York.....		1,300	2,585	6,797
Ohio.....	24,712	61,232	360	
Pennsylvania.....	36,944	406,292	60,303	64,235
Tennessee.....	4,000			100
Vermont.....	3,000			
Total.....	84,302	504,351	76,201	85,536

The crucible steel industry has shown but little progress since 1880, the production in that year amounting to 76,201 tons of 2,000 pounds, as compared with 85,536 tons produced in 1890. In 1880 there were 36 establishments containing crucible steel plants, located in nine states, while in 1890 the number of establishments had increased to 47, located in eleven states. For purposes requiring special grades of steel the product of the crucible process will be always in demand, but the high cost of manufacture prevents it in many instances from successfully competing in price with the other processes mentioned.

THE BASIC PROCESS.

The first basic steel made in the United States was produced experimentally at Steelton, Pennsylvania, by the Pennsylvania Steel Company on May 24, 1884, in a Bessemer converter. The beginning of the manufacture of basic steel in this country as a commercial product, however, dates from 1888, on the 28th of March of which year the first basic open-hearth steel was produced at the Homestead Steel Works of Carnegie, Phipps & Company, Limited, at Homestead, near Pittsburgh, Pennsylvania. Since that date the manufacture of basic open-hearth steel has been continued at these works, and during 1890 this firm commenced the erection of eight additional open-hearth furnaces for the manufacture of basic steel, of which number four are now in operation and the remaining four furnaces are expected to be ready for working in a short time. When completed these works will contain 16 open-hearth furnaces prepared to manufacture basic steel. The manufacture of basic

steel is now also regularly carried on at the Steelton works of the Pennsylvania Steel Company, where a combination of the Bessemer and open-hearth processes is used. During 1890 the Henderson Steel and Manufacturing Company, at Birmingham, Alabama, produced steel experimentally by the basic process. Since the close of the year the Southern Iron Company has successfully commenced the manufacture of basic open-hearth steel at its works at Chattanooga, Tennessee. The Pottstown Iron Company, at Pottstown, Pennsylvania, has also produced steel by the basic process.

In Great Britain and on the Continent the basic process has been received with great favor, and large quantities of basic steel are made annually by all the leading iron and steel producing countries abroad. The wonderful growth of the steel industry of Germany and Luxemburg during recent years has followed the introduction of this process, the iron ores of these countries being especially suited to the manufacture of basic steel.

While the basic process is applicable to either the Bessemer or open-hearth process, its use in this country in connection with the open-hearth furnace is most promising of successful results, and the indications are that the growth of the basic steel industry of the United States will be largely in this direction. The total production of basic steel in the United States during 1890 amounted to 62,173 tons of 2,000 pounds, nearly all of which was made by the basic open-hearth method, a small part being produced by the duplex process, a combination of the Bessemer and open-hearth methods.