as to practical and scientific husbandry is disseminated among the farmers by means of an agricultural bureau, with numerous branches throughout the country\*. A journal is published conjointly by the departments of agriculture and industry, containing reports of the proceedings of the bureaus and articles by government experts, together with industrial topics and matters of interest to artisans, and also particulars furnished by the labour bureau as to prospects of employment in various districts. (J. A. Co.)

**SOUTH BEND,** a city and the county-seat of St Joseph county, Indiana, U.S.A., at the head of navigation and on the southern bend (hence the name) of the St Joseph river of Michigan, and (by rail) 86 m. E. by S. of Chicago. Pop. (1900), 35,999,of whom 8601 were foreign-born (including 3053 Poles and 2402 Germans); (1910, census), 53,684. Land area (1906), 6∙2 sq. m. It is served by the Grand Trunk, the Lake Shore & Michigan Southern, the Michigan Central, the New Jersey Indiana & Illinois, the Chicago, Indiana & Southern, and the Vandalia railways, and by four inter-urban electric lines. Among the principal buildings are the city-hall, the county court-house, the public library, and the Oliver Hotel. In Notre Dame, a suburb, are St Mary’s College and Academy (Roman Catholic, chartered 1855) for girls, and the university of Notre Dame du Lac (Roman Catholic, first opened in 1842, and chartered in 1844). In 1910 the university had 87 instructors, 1005 students, and a library of 60,000 volumes. It is the headquarters of the order of the Holy Cross, whose sisters have charge of St Mary’s College and Academy. South Bend ranked fourth among the manufacturing cities of the state in 1905. Its industrial establishments include carriage and wagon works (those of the Studebaker Bros. Manufacturing Company being the largest in the world), plough and agricultural machine works—the Oliver Chilled Plow Works, founded by James Oliver (1823-1909), being particularly well known— the wood-working department of the Singer Sewing Machine Company, iron and steel foundries, flour-mills, and paper and pulp mills. The water-supply is obtained from 122 artesian wells, with a daily capacity of about 24,000,000 gallons. South Bend was the site of an Indian village and of a French trading post. It was settled about 1820, laid out about 1831 (when it became the county-seat of St Joseph county), incorporated as a village in 1835, and chartered as a city in 1865.

**SOUTH BETHLEHEM,** a borough of Northampton county, Pennsylvania, U.S.A., on the Lehigh river, about 57 m. N.W. of Philadelphia, and opposite Bethlehem, with which it is con- nected by bridges. Pop. (1900), 13,241, of whom 3322 were foreign-born and 115 were negroes; (1910 census), 19,973. It is served by the Lehigh Valley, the Philadelphia & Reading, the Central of New Jersey and the Lehigh & New England railways. The borough is the seat of Lehigh University. This institution was founded in 1865 by Asa Packer, who then gave $500,000 and 60 acres (afterwards increased to 115 acres) of land in the borough, and by his will left to the university library $500,000, and to the university an endowment of $1,500,000 and a large interest (about one-third) in his estate. The university was chartered in 1866; it embraces a school of technology, with courses in civil, mechanical, metallurgical, mining, electrical and chemical engineering, electrometallurgy and chemistry, and a school of general literature (1878), with classical and Latin-scientific courses. In 1908-1909 it had 68 instructors, 1720 students, and a library of 127,000 volumes. The principal buildings of the university are Packer Hall (1869), largely taken up by the department of civil engineering, the chemical and metallurgical laboratory, the physical and elec­trical engineering laboratory, the steam engineering laboratory, Williams Hall for mechanical engineering, &c., Saucon Hall for the English department, Christmas Hall, with drawing-rooms and the offices of the Y.M.C.A., the Sayre astronomical observatory, the Packer Memorial Church, the university library (1897), dormitories (1907) given by Andrew Carnegie, Drown Memorial Hall, a students’ club, the college commons, and a gymnasium.

South Bethlehem is the see of a Protestant Episcopal bishop. The Bethlehem Steel Company manufactures here iron and steel, including Bessemer steels, armour plate, steel rails, government ordnance, drop forgings, iron and steel castings, stationary engines, gas engines, hydraulic pumps, projectiles, steel shaft and pig iron; zinc is smelted and refined; and there are large hosiery and knitting mills, and silk mills and cigar factories. The total value of the borough’s factory products increased from $9,964,054 in 1900 to $15,275,411 in 1905, or 53∙3%.

In 1846 a water-cure was established where St Luke’s hospital now stands, in the adjoining borough of Fountain Hill (pop. in 1900, 1214), and for a few years this attracted a considerable number of visitors during the summer season. In 1853 works were established for the manufacture of white oxide of zinc from a calamine found here, in the next year metallic zinc was produced, and in 1865 the first sheet zinc made in America was rolled here. The borough was incor- porated in 1865.

**SOUTHBRIDGE,** a township of Worcester county, Massachusetts, U.S.A., on the Quinabaug river (which here falls 165 ft.), about 20 m. S.S.W. of Worcester. Pop. (1900), 10,025, of whom 3468 were foreign-born; (1910 census), 12,592. Area, about 20 sq. m. The township is served by the New York, New Haven & Hartford railway, and by inter-urban (electric) lines to Worcester and Springfield. The Southbridge public library (1870) contained 22,000 volumes in 1910. Optical goods, cotton, woollen and print goods, cutlery and shuttles are the principal manufactures; in 1905 the value of the total factory product was $4,201,853. The factory of the American Optical Company here is probably the largest of its kind in the world.

In 1801 a poll parish, named the Second Religious Society of Charlton, and popularly called Honest Town, was formed from the west part of Dudley, the south-west part of Charlton and the south-east part of Sturbridge; and in 1816 this parish became the township of Southbridge.

See the *Leaflets* published (1901 sqq.) by the Quinabaug Historical Society of Southbridge.

**SOUTH CAROLINA,** a South Atlantic state of the United States of America, and one of the original thirteen, lying between latitudes 32° 2' and 35° 17' N. and between longitudes 78° 30' and 83° 20' W. It is bounded N. by North Carolina, E. by North Carolina and the Atlantic Ocean, S.E. by the Atlantic Ocean, S.W. and W. by the Savannah, Tugaloo and Chattooga rivers, which separate it from Georgia. Its total area is 30,989 sq. m., and of this 494 sq. m. are water surface.

*Surface Features.—*South Carolina is mainly in the Coastal Plain and Piedmont Plateau regions, but in the north-west it extends slightly into the Appalachian Mountain region. Locally the Coastal Plain region is known as the low country, and the Piedmont Plateau and Appalachian Mountain regions are known as the up-country. The coast, about 200 m. in length, is generally low. For 60 m. south-west of the North Carolina border it is un­broken and lined with a smooth, hard beach of light-coloured sand, but below this it becomes increasingly broken by estuaries and is lined with flat and low sea-islands that increase in size and number toward the Georgia border. For about 10 m. back from the coast the Coastal Plain region is occupied very largely by salt marshes. Then, although still continuing flat, the surface rises at the rate of about 2½ ft. per mile for 40 m. or more; beyond this it rises more rapidly, reaches a maximum elevation in Lexington county of about 700 ft. above the sea, and becomes increasingly broken into rolling plateaus and deep valleys to the Fall Line, which marks the boundary between the Coastal Plain and the Piedmont Plateau. This fine, at which the south-east flowing rivers fall from higher levels in the crystalline rocks of the Piedmont Plateau down to somewhat lower levels in the softer rocks of the Coastal Plain, passes in a general south-west direction from the North Carolina border north-east of Cheraw through Camden and Columbia to the Savannah river opposite Augusta, Georgia. The Piedmont Plateau region, rising gradually from an elevation of about 500 ft. along the Fall Line to 1000 ft. or more in the north-west, is a plateau broken into undulating ridges and deeply cut valleys. In the small section of South Carolina which is traversed by the Appalachian Mountain region a few mountains of the Blue Ridge rise abruptly from the foot-hills to 3413 ft. in Mt Pinnacle, 3218 ft, in Caesars Head, and 3157 ft. in Table Rock. The highest point in the state is Sassafras Mountain (3548 ft.) in the Blue Ridge and on the North Carolina state line. The mean elevation of the entire state is about 350 ft. The principal rivers rise in the Appalachian Mountains