the Thomas mine it is about 60 feet in thickness, with 20 feet of good marketable coal developed. The vein at this point is faulted, and the upthrow shows a transverse section of the seam, the dip of which is about 25 per cent. The development consists of a drift entry driven across the dip; length of drift, about 350 feet; natural ventilation. Number of days mine was operated, 80; number of men employed underground, 1; output for fiscal year, 400 tons; estimated value at mine at \$1.50 per ton, \$600. The product is sold to the farmers of the La Plata Valley and vicinity and at Aztec, N. Mex.

#### RECORD OF INSPECTION.

October 19, 1905.—Inspected Thomas mine. Found operation of mine temporarily suspended; found that second opening into mine has not yet been made, as I heretofore instructed, but W. H. Thomas assured me that the second opening would be constructed as soon as possible when operation of mine is resumed.

#### SIERRA COUNTY.

Coal is known to occur at several places in Sierra County, in the locality of the plains on the eastern slope of the Caballo range of mountains. Several prospect shafts and one or two diamond drill holes were sunk to prove the value of the field, but it was found so much disturbed and broken that development work was soon stopt in every instance. Two seams of coal are tilted and exposed by the uplift of Caballo range, the outcrop of these seams being quite conspicuous a few miles west of Ash Spring and about 14 miles west of Cutter station, on the Atchison, Topeka and Santa Fe Railroad. At this point the Southwestern Lead and Coal Company has sunk a shaft 172 feet upon the coal seam, which is titled to an angle of about 70 degrees from the horizontal.

When inspected March 6, 1906, a drift had been run 90 feet from the bottom of the shaft, exposing 33 inches of clean coal, with bands of slate and coal extending about 18 inches above the clean coal.

The mine is called the Southwestern coal mine; it will be operated to furnish fuel to the boilers to generate power for the electric plant of the Southwestern Lead and Coal Company, which plant is located near the mouth of the shaft on the coal seam. The power generated will be transmitted by electric line to the concentrating plant, which is located at the lead mines 6 miles to the south. No report of production from this mine has been made.

#### RECORD OF INSPECTION.

March 6, 1906.—Inspected Southwestern coal mine. Main slope 172 feet in depth; drift, 90 feet. Ventilation by small blower; ventilating current weak. Found no second opening into the mine as required by United States statute. Instructed that a second opening be constructed without delay and before operation of the mine for production of coal. Found operation of the mine temporarily suspended.

# SOCORRO COUNTY.

Socorro County ranked fifth among the coal mining counties of New Mexico during the past fiscal year. The gross production being 20,223 tons; net product shipped, 19,903 tons, being only 1.1 per cent of the total net product of the Territory.

There is no doubt that the production of coal from this county will be largely increased during the ensuing fiscal year, as efficient equipment of the mines and railroad transportation facilities have recently been installed. The capped by having to the nearest railroad po Santa Fe Railroad. than the average price mines of the Territory N. Mex., to El Paso a continue mining even the railroad. But thi the output of the mine During the past fis been completed from and coal is now being a most desirable qua domestic purposes. early days of coal mi operated at San Ant mines. Considerable was suspended and th

Eighteen small coaness, have been disc vein of workable this Upon this seam are tyre, and Emerson m

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The Hilton mine is Mexico principal ba southeast from San Railroad, to which the New Mexico Mi Carthage coal seam, ness; class of coal, b system of working, main slope, 700 feet. 50-horsepower steam the coul from the p power engine runs number of men em Spanish-speaking n Americans. All en tures to vouchers. 190; total output f operating mine, 300 estimated value of in El Paso, Tex., a

Rebruary 26, 1906. minute; 20 men empl Investigated circumsta killed in this mine on report to be correct.

The Hilton, Carthage Fuel W. L. Weber, was given in a

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was by slopes, tion, Hilton mi mine, furnace. engines, with Sergeant air o Ingersoll mini capacity on be ber of men em number of boy employed outs number of day put, 68,414 to 63,866 tons; e

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tributed, but n employed unde undermined be shot firer, are taken to prohi May 4, 1908 Traversed all

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September underground. found that 3 return air w January 2 underground proved. Fo moved as fo holes; no si the hole. I January

structed by cumstances the 23d ins killed, abou which he w

The following data are estimated by the mine inspector, no returns being available: Kind of coal, bituminous; thickness of coal seam 4 feet; dip of seam, 11 per cent; system of working, slope, single entry, room and pillar; depth of slope, 350 feet; ventilation by air shaft; haulage by horse whim; average number of men employed underground, 3; average number employed outside, 1; number of days mine was operated during year, 160; net product, 1,000 tons; estimated value at mine, at \$1.25 per ton, \$1,750.

#### RECORD OF INSPECTION.

March 12, 1908.—Air intake gave no register on anemometer, but air good at working faces; mine operated intermittently as market demands; 3 men employed underground. Found mine opened at new place and second opening by connection with old slope; mine dry and dusty and insufficiently timbered; gave necessary instructions to man found in charge, and sent written instruction to A. B. Case, general manager.

# SIERRA COUNTY.

### SOUTHWESTERN COAL MINE.

Coal is known to occur at several places in Sierra County on the plains on the eastern slope of the Caballo Mountains. Several prospect shafts and one or two diamond-drill holes were sunk to prove the value of the field, but the strata are so much disturbed and broken that development work was soon stopped in every instance. The outcrop of one of these seams is conspicuous a few miles west of Ash Spring and about 14 miles west of Cutter station, on the Atchison, Topeka and Santa Fe Railway. At this point the Southwestern Lead and Coal Company has sunk a shaft 172 feet upon the coal seam, which is tilted at an angle of about 80° from the horizontal. A drift run 145 feet from the bottom of the shaft has exposed 33 inches of clean coal, with bands of slate and coal extending about 18 inches above the clean coal. The mine is called the Southwestern coal mine. It is owned by E. S. Jones and operated by the Southwestern Lead and Coal Company. The product of the mine will be used to furnish fuel to the electric plant of the Southwestern Lead and Coal Company.

A transverse section of the seam, commencing at the bottom, is as follows: Shale bottom; coal 18 inches, with band of pure white fire clay 1 to 8 inches in thickness in pockets in middle of the coal seam; highly carbonaceous shale, 12 to 18 inches; sandstone hang-

ing wall. There was no response to a request made of the general manager of the company for data in regard to the operation of the mine during the year.

#### SOCORRO COUNTY.

Socorro County ranked third among the coal-mining counties of New Mexico during the past fiscal year. The gross production was 80,112.5 tons and the net product shipped was 75,384.5 tons, which is 3.014 + per cent of the total net production of the Territory. The general conditions in this field were described in a former annual report.

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and cross drift, need by atmos-Found mine very dusty and stumps of blown-out shots. Instructed that miners cut or mine the coal, or that dust be removed and mine sprinkled; also that timbers be set closer.

The mine is operated by contract under supervision of Mr. A. H. Case, general manager of the company which owns the property. I gave necessary instructions to Mr. Case, who ordered the contractor, Neoberto S. Torres, to follow the instructions given.

#### SIERRA COUNTY.

Coal is known to occur at several places in Sierra County on the plains on the eastern slope of the Caballo Mountains. Several prospect shafts and one or two diamond-drill holes were sunk to prove the value of the field, but the strata are so much disturbed and broken that in every instance development work was soon stopped.

#### SOUTHWESTERN MINE.

At a point a few miles west of Ash Spring and about 14 miles west of Cutter station, on the Atchison, Topeka and Santa Fe Railway, the Southwestern Lead and Coal Company has sunk a shaft 172 feet upon a coal seam which dips about 80°. A drift run 145 feet from the bottom of the shaft has exposed 33 inches of clean coal, with bands of slate and coal extending about 18 inches above the clean coal. The mine is owned by E. S. Jones, and is operated by the Southwestern Lead and Coal Company. The product will be used to furnish fuel to the electric plant of the Southwestern Lead and Coal Company.

A transverse section of the seam, commencing at the bottom, is as follows: Shale bottom; coal 18 inches, with band of pure white fire clay, 1 to 8 inches in thickness, in pockets in middle of the coal seam; highly carbonaceous shale, 12 to 18 inches; sandstone hanging wall.

There was no response to a request made of the general manager of the company for data in regard to the operation of the mine during the year.

#### SOCORRO COUNTY.

Socorro County ranked third among the coal-mining counties of New Mexico during the past fiscal year. The gross production was 65,756.45 tons, and the net product shipped was 65,516.45 tons, which is 2.418 per cent of the total net production of the territory. The general conditions in this field were described in the annual report for 1906.

# CARTHAGE FUEL COMPANY'S MINES.

General statement.—The Hilton, Bernal, and Government mines are operated by the Carthage Fuel Company, Powell Stackhouse, ir., general manager, and W. L. Weber, superintendent. A brief description of these mines was given in the annual report for 1906.

Depth of main slopes: Hilton, 1,200 feet; Government, 1,950 feet; Bernal, old slope, 1,160 feet; Bernal, new slope, 960 feet; working was by slopes, cross entry, room and pillar, and block system. Ventilation: Hilton mine, exhaust fan; Government mine, force fan; Bernal mine, furnace. Shot-firing systems are in force at each mine, the shots being inspected by competent shot firers, who condemn any holes that are improperly piaced. If the holes pass examina-

A horse whim is used for haulage from the mine; ventilation natural, through second opening. System of working, single entry, room and pillar. Average number of men employed underground, 5; average number of day men, including drivers and all others working underground not digging coal, 2; 1 man employed outside. All employed are natives of New Mexico of Spanish-speaking descent, and could write, as shown by signatures to vouchers. The mine was operated two hundred and twenty days; production 3,638.7 tons, a decrease of 863.3 tons from the preceding year; price per ton at the mine, \$1.50; total value of product, \$5,458.05.

#### SIERRA COUNTY.

Coal is known at several places in Sierra County on the plains on the eastern slope of the Caballo Mountains. Several prospect shafts and one or two diamond-drill holes were sunk to prove the value of the field, but the coal bearing rock strata are so much disturbed, broken, or eroded that in every instance development work was soon stopped.

#### SOUTHWESTERN MINE.

At a point a few miles west of Ash Spring, and about 14 miles west of Cutter station, on the Atchison, Topeka and Santa Fe Railway, the Southwestern Lead and Coal Company has sunk a shaft 172 feet upon a coal seam which dips about 80°. A drift run 145 feet from the bottom of the shaft has exposed 33 inches of clean coal, with bands of slate and coal extending about 18 inches above the clean coal. The mine is owned by E. S. Jones and is operated by the Southwestern Lead and Coal Company. The mine was not operated during the past fiscal year.

A transverse section of the seam, commencing at the bottom, is as 'llows: Shale bottom; coal 18 inches, with band of pure white fire clay, 1 to 8 inches thick, in lenses in middle of the coal seam; highly carbonaceous shale, 1 to 8 inches thick; sandstone top.

There was no response to a request made of the general manager of the company for data in regard to the operation of the mine during the year.

#### SOCORRO COUNTY.

Coal mining in Socorro County was not as prosperous during the fiscal year as the capacity of the mines would warrant. Total output, 60,185.71 tons, a decrease of 5,570.74 tons from the production of the preceding fiscal year.

#### CARTHAGE FUEL COMPANY'S MINES.

The Hilton, Bernal, and Government mines are operated by the Carthage Fuel Company, Powell Stackhouse, jr., general manager, and W. L. Weber, superintendent. A brief description of these mines was given in the annual report for 1906.

Depth of main slopes: Hilton, 1,260 feet; average angle of dip, 10°; Government, 2,000 feet; angle of dip, 12°; Bernal, old slope, 1,160 feet, new slope, 1,260 feet; angle of dip, 12°. System of work-

ing: Cross entries about 200 feet; frare driven approximation cross entries 60 feet square. in this manner in dition of the fie proven by experidistrict, a modification of the fiether than the

Ventilation: If fan; Bernal min mine, the shots demn any holes amination, the spersons have left and by whom the drilling danger centage of the cound in the mines have linflammable, and

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above which is another seam of coal 5 feet thick. The lower foot of this coal seam is bony, with 4 feet of clean coal above; strong sandstone roof. The principal development has been on the upper seam. A horse whim is used for haulage from the mine; ventilation natural, through second opening. System of working single entry, room and II OF STERRA COUNTY.

Coal is known at several places in Sierra County on the plains on the eastern slope of the Caballo Mountains. Several prospect shafts and one or two diamond-drill holes were sunk to prove the value of the field, but the coal-bearing rock strata are so much disturbed, broken, or eroded that in every instance development work was soon stopped.

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# SOCOBRO COUNTY.

During the earlier part of the fiscal year the demand for coal was greater than the capacity of the mines for production, the production being restricted by lack of efficient equipment upon the mines of the Carthage Fuel Co., from which mines the major part of the production of the county is mined.

The revolution in Mexico curtailed the demand for coal from this field during the last half of the fiscal year. The gross production of the county for the fiscal year was 54,595.07 tons, a decrease of

5,690.64 tons from the preceding year.

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# CARTHAGE FUEL CO.'S MINES.

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given in the annual report for 1906.

Depth of main slopes: Hilton, 1,255 feet; average angle of dip, 10°. Government, 1,935 feet; angle of dip, 12°. Bernal, old slope, 1,165 feet; new slope, 1,520 feet; angle of dip, 12°. System of working: Cross entries are driven from the main slopes at intervals of about 200 feet; from these cross entries rooms from 8 to 10 feet wide are driven approximately 60 feet apart; these pillars are again crosscut by rooms or cross entries 60 feet apart and parallel to the main cross entries, thus blocking the coal out in pillare approximately 60 feet square. The disturbed condition of the field renders this the better plan of development as proved by experiments. When these blocks are to be pulled from any district a modified long-wall system is employed.