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BIENNIAL REPORT
INSPECTOR OF COAL MINES
COLORADO

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NINTH BIENNIAL REPORT

OF THE

Inspector of Coal Mines

Compliments of

HENRY DENMAN

Inspector of Coal Mines

TO THE GOVERNOR

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LETTER OF TRANSMITTAL.

Denver, Colorado, December 29, 1900.

TO THE HONORABLE

CHARLES S. THOMAS,

GOVERNOR OF COLORADO.

Dear Sir—In compliance with section 17 of an act entitled "Coal Mines," I submit to you the ninth biennial report from this department.

It is pleasing to note at this date that Colorado has a greater tonnage and less loss of life from accidents in her coal mines, for 1900, than in any previous year.

Our present coal mining law is inadequate, which I hope our next general assembly will revise, not forgetting the heartrending disaster our neighbor state west of us has to record for this year.

Trusting my efforts will meet with your approval, I am,

Your obedient servant,

HENRY DENMAN.



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Fred'k H. Randall,
Attorney at Law,
Denver, Colo.

BIENNIAL REPORT
OF THE
INSPECTOR OF COAL MINES

BRIEF STATISTICS FOR 1899 AND 1900.

	1899.	1900.
Number of mines in operation.....	110	120
Tons of lignite coal produced.....	695,750	822,916
Tons of semi-bituminous coal produced.....	793,245	891,916
Tons of bituminous coal produced.....	3,278,877	3,697,020
Tons of anthracite coal produced.....	59,067	59,244
Tons of coal estimated from mines not reporting.....		25,000
Total tonnage of coal produced.....	4,826,939	5,495,734
Tons of coke produced.....	464,232	575,447
Number of employes in and at mines.....	7,321	7,271
Number of employes at coke ovens.....		597
Number of fatal accidents at mines.....	42	29
Number of non-fatal accidents.....	108	70
Number of employes for each life lost.....	174	251
Number of employes for each non-fatal accident.....	68	104
Tons of coal mined for each life lost.....	114,927	189,508
Tons of coal mined for each non-fatal accident.....	44,694	78,510

RECOMMENDED CHANGES IN THE COAL MINING
LAW.

Since 1883, when our present law on coal mining was enacted, the coal mining industry of this state has made rapid

strides. Colorado is now the ninth largest coal producing state in the Union. There is no industry known to the commercial world of so great an importance as coal mining. All other great industries are dependent on coal. The world's production for 1899, in tons of 2,000 pounds, was 797,062,775, of which the United States produced 253,739,992 tons, or over one-third of the entire production. This year the world's total production will exceed 900,000,000.

When electricity was first used as a motive power, it was predicted that the demand for coal would decrease, but we find the consumption increases. In view of these facts, it is astonishing what little interest is taken by the people of our state in one of her greatest resources. The coal mining industry is second to none, and Colorado is destined to become the Pennsylvania of the West.

The coal miners of this state should have more consideration and protection from our legislative bodies. The present coal mining law should be amended as follows:

First—Divide the state into three districts. The inspector to have his office in the state house, and attend to the northern district, or district No. 1, or any other part of the state when necessary.

To be allowed two deputies. Said deputies to have charge of the southern and western districts, or Nos. 2 and 3, and to reside therein. To report all accidents, the condition of mines, etc., to the inspector, and to be subject to his orders. Districts to be known as follows: District No. 1 comprising all counties north of Pueblo and east of the range, including Pueblo county. District No. 2, all counties south of Pueblo county and east of the range. District No. 3 to include all counties west of the range, known as the Western slope, including La Plata county.

Second—Provision should be made to compel the use of what is known as the "split air system." If this system had been in practice at Schofield, Utah, prior to the explosion, probably not more than one-sixth of the men would have been killed and the property protected in proportion.

Third—All coal mines should be subject to the law regardless of the number of men employed. The provision demanding the filing of maps every three months should read six months or semi-annually.

Fourth—There should be some special provision made to prevent and punish a certain class of miners for criminal negligence; failing to prop their places and use sprags, etc., when they know that their lives and the lives of others are endangered; and to prevent riding on trips in the mines and tramways outside of the mines.

Fifth—All mines known to give off CH_4 should be compelled to use safety lamps exclusively.

Sixth—There should be a law enacted to compel the employment of certified superintendents, mine foremen and fire bosses. We are far behind other states in this respect. There is no inducement in Colorado to young miners, who desire to study the science of coal mining. If we had such a law in force, the miners would be better protected and capital would be more remunerative. The young men would have something to strive for, and we would rise to a higher plane.

COMMENTARY.

In offering the foregoing change to our present coal mining law, I do not expect it to meet an unanimous approval. But since the first coal mine enactment was established, this department has outgrown itself. Coal mining has become the leading industry of the state. Our gold mines would lie dormant, railroads would be at a standstill, and all manufacturing industries would be practically stagnant without the use of coal. In 1873 we produced 66,977 tons; this year we have produced \$5,495,734 tons. There are more mines opened every year, the industry takes in a larger area, the interior of the deposits are being pierced; and the provisions made in 1993 and amended in 1885 are inadequate to maintain this department as it should be. There were two men then to do the work and only two now. The work has increased in proportion to the tonnage, which is 350 per cent. The officials can not do justice to the miners, to the state, nor to themselves.

By dividing the state into districts, it will incur an extra expense of four thousand dollars for this department, but this is a very small item when compared to some of the other departments and the duties thereof.

Too little attention is paid to the ventilation of mines. The common practice is to air the haulage ways and not the working faces, and I regret to state that this is more often the fault of the local than the general management. I have recommended the "split air system," because it is the best known method up to date. A mine of any proportion adopting this system can be operated cheaper and safer than with the one-circuit method.

The use of safety lamps exclusively in mines known to produce CH_4 , or fire damp, would save many lives. The Colorado Fuel and Iron Company is using safety lamps exclusively in Crested Butte, Placita and Coal Basin mines. There are other dangers encountered in some of the mines, especially on the Western slope, which makes it absolutely necessary to use safeties, viz., coal dust.

All coal mines, whether they work one man or one hundred, should be subject to the law. Maps should be filed every six months, or semi-annually, and when a mine is abandoned a complete survey should be made, showing all the working faces.

Miners, unless restrained, will often commit suicide and endanger their fellow workmen; also bring a stigma on their employers. Thirty per cent. of the fatalities that have occurred during my term of office were caused by gross negligence on the part of the deceased.

Coal and Coke Production for 1899.

PRODUCTION OF ARAPAHOE COUNTY, 1899.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine	Scranton	Total Tonnage
Average number of men employed	2	
Kind of opening	Slope	
Thickness of seam	7 ft.	
Character of coal	Lignite	
Yearly report	439	439

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Simpson	Rex No. 1	Rex No. 2
Number of men employed.....	135	150	40
Kind of opening.....	Shaft	Shaft	Shaft
Thickness of seam.....	14 ft.	11 ft.	7 ft.
Character of coal	Lignite	Lignite	Lignite
January	15,806	9,200	3,200
February.....	17,512	15,444	4,050
March.....	12,283	9,600	2,985
April.....	11,574	5,175	1,650
May.....	10,660	7,425	1,545
June.....	8,986	5,500	975
July.....	8,387	3,279	750
August.....	10,819	3,832	990
September.....	12,155	6,230	2,255
October.....	15,261	12,238	3,676
November.....	15,000	12,430	4,012
December.....	25,000	14,000	4,000
Total tonnage.....	163,443	104,353	30,088

BOULDER COUNTY, 1899.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Mitchell	Hecla	Gladstone	Industrial	Gorham	Lister
75	70	50	50	58	32
Shaft	Shaft	Shaft	Shaft	Slope	Shaft
14 ft.	6 to 9 ft.	14 ft.	6 ft.	10 ft.	5½ ft.
Lignite	Lignite	Lignite	Lignite	Lignite	Lignite
4,500	3,130	4,070	3,925	2,980	2,493
5,731	4,173	6,223	3,449	3,887	1,857
3,307	3,447	3,286	3,554	2,377	2,036
2,700	1,657	3,365	1,649	2,796	1,184
2,500	1,532	2,612	1,218	2,342	750
2,300	1,382	1,948	1,071	1,736	507
800	1,200	1,575	1,089	1,810	637
2,760	2,012	2,145	731	1,332	750
2 671	3,132	750	1,869	2,252	1,018
5,160	5,159	2,305	2,857	4,782	1,774
6,725	6,275	3,110	2,830	5,866	1,616
7,000	6,500	3,000	3,000	3,500	2,500
46,154	39,599	34,389	27,242	35,660	17,122

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine.....	Long's Peak	Shanahan	Caryl
Number of men employed.....	60	20	30
Kind of opening.....	Shaft	Slope	Shaft
Thickness of seam.....	6 ft.	11 ft.	4 to 6 ft.
Character of coal.....	Lignite	Lignite	Lignite
January.....	2,620	1,950	.....
February.....	3,858	2,200	.....
March.....	2,840	1,350	500
April.....	2,200	750	600
May.....	1,900	1 000	950
June.....	1,500	750	800
July.....	1,700	700	700
August.....	1,300	680	1,150
September.....	3,171	750	650
October.....	2,550	848	1,060
November.....	3,950	938	2,019
December.....	4,000	1,200	2,000
Total tonnage.....	31,589	13,116	10,429

BOULDER COUNTY, 1899—Concluded.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Haywood	Excelsior	Leader	Vaughn	Marshall No. 6	Total Tonnage
35	-----	-----	75	-----	
Shaft	Shaft	Shaft	Slope	Slope	
6 ft.	14 ft.	6 ft.	4½ ft.	9 ft.	
Lignite	Lignite	Lignite	Lignite	Lignite	
1,203	400	3,629	-----	2,739	61,845
1,562	325	-----	-----	4,059	74,330
734	250	-----	-----	56	48,605
726	250	-----	-----	-----	36,276
-----	-----	-----	-----	-----	34,434
-----	-----	-----	-----	-----	27,455
-----	-----	-----	-----	-----	22,627
-----	-----	-----	-----	-----	28,501
-----	-----	-----	-----	-----	36,903
-----	-----	-----	-----	-----	57,670
4,995	-----	-----	-----	-----	69,766
4,995	-----	-----	3,555	-----	84,250
14,215	1,225	3,629	3,555	6,854	582,662

PRODUCTION OF EL PASO COUNTY, 1899.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine.....	Danville	Curtis	Williamsville	Carlton	Total Tonnage
Number of men employed	23	25	26	19	
Kind of opening.....	Slope	Shaft	Slope	Shaft	
Thickness of seam.....	8 ft.	20 ft.	9 ft.	7 ft. 6 in.	
Character of coal.....	Lignite	Lignite	Lignite	Lignite	
January.....	2,383	2,071	2,461	1,478	8,393
February.....	2,166	2,431	2,181	1,619	8,397
March.....	1,464	1,255	1,327	562	4,608
April.....	838	837	1,582	315	3,572
May.....	593	423	1,166	166	2,348
June.....	242	294	1,421	1,476	3,433
July.....	214	326	1,124	1,476	3,140
August.....	194	523	1,626	1,476	3,819
September.....	428	750	1,227	1,476	3,881
October.....	1,819	1,675	3,526	1,476	8,496
November.....	2,000	2,448	3,099	1,476	9,023
December.....	2,000	1,915	2,657	1,480	8,052
Total tonnage.....	14,341	14,948	23,397	14,476	67,162

PRODUCTION OF FREMONT COUNTY, 1899.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF 2,000 POUNDS.

Name of mine	Coal Creek	Fremont	Rockvale	Brookside	Chandler	Brewster	Price	Hays	Totals
Number of men employed	125	180	400	250	149	25	5	7	
Kind of opening.....	Slope	Shaft	Shaft	Slope	Shaft	Slope	Slope	Slope	
Thickness of seam.....	3½ ft.	4 ft.	3½ ft.	5½ & 6½ ft.	4 to 5 ft.	2 ft. 10 in.	2 veins 4 ft. & 3½ ft.	2 veins 3 ft. 8 in. & 4 ft.	
Character of coal	Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.	
January	6,288	10,424	20,757	24,264	8,891	778	---	---	71,402
February.....	5,672	10,509	19,260	22,418	6,168	738	---	---	64,765
March.....	6,652	11,632	21,019	23,135	8,615	669	---	---	71,722
April.....	4,848	5,193	8,864	18,992	3,770	558	---	---	42,225
May.....	2,917	4,780	2,065	14,931	4,184	608	---	---	29,485
June.....	3,131	4,870	3,546	15,419	4,811	606	---	---	32,383
July.....	2,817	1,986	1,809	5,558	2,892	553	---	---	15,615
August.....	1,743	3,491	5,192	10,113	3,551	658	---	---	24,748
September.....	4,097	5,780	14,077	14,940	4,210	793	Yearly Report	Yearly Report	43,897
October.....	6,937	9,777	21,924	23,897	6,689	685	---	---	69,909
November.....	9,316	7,594	22,924	26,466	9,759	944	---	---	77,003
December.....	8,800	9,016	24,672	26,503	10,535	725	---	---	86,171
Totals.....	63,218	83,052	166,109	223,636	74,075	8,315	3,000	2,920	629,325

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Newcastle	Sunshine	Midland	Diamond
Number of men employed....	105	30	32	60
Kind of opening.....	Shaft	Slope	Drift	Tunnel
Thickness of seam	4 seams 96 ft.	9 ft.	3 veins 6 ft. 6½ ft. and 8½ ft.	4 veins 4, 8, 10 and 16 ft.
Character of coal	Semi-bitum.	Semi-bitum.	Semi-bitum.	
January	7,475	1,699	1,850	2,275
February.....		27		625
March		751		575
April	628	251	978	1,050
May	8,419	184	2,200	3,300
June	13,652		3,000	3,375
July		363	3,000	1,692
August		1,602	3,600	850
September		1,289	3,008	3,500
October		275	2,185	2,806
November.....		159	3,009	4,364
December.....			4,000	4,000
Totals.....	30,174	6,600	26,830	28,412

GARFIELD COUNTY, 1899.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Coryell	Pocahontas	Rifle	Keystone	Central	Total Tonnage
40	15	10	5	6	
Slope	Tunnel	Tunnel	Tunnel	Slope	
27 ft. *	3 veins 8, 10 and 16 ft.	6½ ft.	3 ft.	3 veins 8, 28 and 60 ft.	
Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.	
950	New mine	-----	-----	-----	14,249
800		-----	-----	-----	1,452
2,107		-----	-----	-----	3,683
1,225		-----	-----	-----	5,030
2,275		New mine	Yearly report	New mine	17,275
2,150					23,092
3,785					9,166
3,450					9,828
4,100		-----	-----	-----	11,897
3,630	Idle	-----	-----	-----	8,896
4,386		-----	-----	-----	12,018
5,500		310	2,976	1,000	19,476
34,608	5,462	310	2,976	1,000	136,062

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Crested Butte
Number of men employed	312
Kind of opening	Slope
Thickness of seam	10 ft. 6 in.
Character of coal	Bituminous
January	25,431
February	10,892
March	21,806
April	21,942
May	13,320
June	
July	13,338
August	20,626
September	23,031
October	24,339
November	21,019
December	21,005
Total	216,743

GUNNISON COUNTY, 1899.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Anthracite	Ruby	Alpine No. 2	Union	Total Tonnage
60	60	50	-----	
Drift	Drift	Shaft	Drift	
5 ft.	3 ft.	6 ft.	5 ft.	
Anthracite	Anthracite	Semi-bitum.	Semi-bitum.	Total Tonnage
6,006	-----	1,146	28	
1,727	-----	720	-----	
2,771	-----	1,248	-----	
1,149	Idle	1,677	-----	
-----	-----	1,443	-----	
-----	-----	Strike	-----	
1,811	-----	593	-----	
6,121	1,500	5,937	Closed down	
5,719	3,157	2,796	-----	
6,416	4,196	1,548	-----	
5,839	3,655	5,172	-----	
6,000	3,000	5,550	-----	
43,559	15,508	27,830	28	

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Pictou	Robinson	Walsen	Rouse (old)	Rouse No. 4 (new)
Number of men employed	127	92	150	89	180
Kind of opening	Slope	Slope	Slope	Slope	Slope
Thickness of seam	3 seams — 4 ft. 2 in., 3¼ ft. and 5 ft. 10 in.	7 ft.	8 ft.	6 to 7 ft.	5 ft. 6 in.
Character of coal	Bituminous	Bituminous	Bituminous	Bituminous	Bitumin.
January	13,596	5,095	10,843	13,944	..
February	11,903	3,967	10,256	10,026	..
March	12,721	4,684	10,465	7,821	..
April	9,651	2,594	10,293	5,973	..
May	6,010	2,132	8,694	5,505	..
June	7,494	1,383	9,603	4,053	..
July	7,744	.....	8,447	.....	4,583
August	9,142	3,599	8,799	.....	9,719
September	8,358	3,806	7,438	.....	10,412
October	9,953	4,969	9,329	.....	13,201
November	9,857	5,536	9,683	.....	14,933
December	11,300	5,500	10,000	.....	15,600
Totals	117,729	43,265	113,853	47,322	68,448

New mine

Closed down

HUERFANO COUNTY, 1899.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Maitland	Sunshine	Pryor	Toltec	Champion	Midway	Total Tonnage
100	45	95	125	24	34	
Slope	Slope	Slope	Slope	Slope	Drift and slope	
5 ft.	2 veins, 5 ft. and 4 ft.	2 veins, 5 ft. and 7 ft.	4 ft.	2 veins, 4 ft. 4 in. and 4 ft. 8 in.	5 ft. to 6½ ft.	
Bituminous	Bituminous	Bituminous	Bitum'ous	Bituminous	Bituminous	
8,178	3,755	5,825	4,500	---	---	65,736
8,169	2,810	3,764	5,900	---	---	56,795
9,445	2,780	6,415	5,900	---	---	60,231
3,474	781	5,550	4,100	---	---	42,419
1,637	312	4,695	2,900	---	---	31,885
2,345	-----	7,293	3,130	New mine	New mine	35,301
2,609	821	4,755	4,200			33,159
5,631	1,960	6,557	4,100			49,507
5,721	1,951	7,084	5,100			49,870
9,491	2,764	7,180	5,300	---	---	62,187
4,516	2,752	7,067	6,500	---	394	61,238
6,018	3,000	8,400	11 000	2,560	3,856	77,234
67,234	23,686	74,585	62,630	2,560	4,250	625,562

PRODUCTION OF JEFFERSON COUNTY, 1899.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine.. .. .	Mt. Carbon	North White Ash	Independence	Total Tonnage
Number of men employed....	3	8	5	
Kind of opening	Drift	Shaft	Shaft	
Thickness of seam	3 to 4 ft.	7 ft.	7 ft.	
Character of coal	Lignite	Lignite	Lignite	
Yearly report	1,400	2,471	4,680	
Total	1,400	2,471	4,680	8,551

PRODUCTION OF LARIMER COUNTY, 1899.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine	Indian Springs	Total Tonnage
Number of men employed	6	
Kind of opening.....	Slope	
Thickness of seam.....	6 to 8 ft.	
Character of coal	Lignite	
Yearly report	5,500	5,500
Total.....	5,500	

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Starkville	Sopris	Engle	Berwind
Number of men employed	502	485	372	237
Kind of opening	Drift	Stope	Drift	Drift
Thickness of seam	6 ft.	4 to 7 ft.	3½ to 7 ft.	Average 5 ft. 4 in.
Character of coal	Bituminous	Bituminous	Bituminous	Bituminous
January	49,100	26,049	37,327	16,315
February	45,207	24,761	34,683	11,406
March	48,688	29,248	41,524	17,783
April	39,018	27,481	34,116	16,742
May	44,400	29,835	38,074	17,629
June	38,806	27,889	30,346	16,122
July	37,001	26,760	25,873	15,214
August	40,449	27,450	38,446	12,668
September	40,369	26,446	40,369	15,018
October	40,180	25,855	37,993	13,049
November	42,397	23,768	33,031	15,248
December	42,000	26,000	41,000	15,000
Totals	507,615	321,542	432,782	182,164

LAS ANIMAS COUNTY, 1899.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Hastings Nos. 1 and 2	Gray Creek	Peerless	Rowland	Blooms	Bunker Hill
408	184	150	9	19	24
Drift and Slope	3 Drifts	Slope	Drift	Drift	Drift
Both 7 ft.	6 to 14 ft.	6 ft.	8 ft.	7 ft.	5 ft. 10 in.
Bituminous	Bituminous	Bituminous	Bituminous	Bituminous	Bituminous
33,000	14,065	7,639	1,095	1,607	4,400
28,800	13,044	7,081	607	1,827	3,000
31,000	10,867	10,132	498	1,094	3,500
25,500	9,346	8,090	350	658	3,180
30,900	16,414	8,979	210	521	1,115
25,880	13,780	8,500	202	474	380
28,312	10,896	7,082	285	567	725
23,829	4,703	7,280	300	2,066	800
22,131	6,885	10,140	360	2,219	2,600
27,988	14,489	9,594	900	2,561	3,906
29,979	19,975	9,594	900	1,516	1,211
31,718	19,029	15,000	900	2,000	1,987
339,037	153,493	109,111	6,607	17,110	26,804

PRODUCTION, LAS ANIMAS COUNTY, 1899—Concluded.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF 2,000 POUNDS.

Name of mine	Rugby	Forbes No. 1	Bowen	Gonzales	Total Tonnage
Number of men employed	10	8	95	6	
Kind of opening	Drift	Drift	Drift	Shaft	
Thickness of seam	4½ ft.	6 ft.	9 ft.	5 ft.	
Character of coal	Bituminous	Bituminous	Bituminous	Bituminous	
January	1,371	Old mine reopened, yearly report	---	---	191,968
February	1,705		---	---	172,131
March	1,490		---	---	195,824
April	555		New mine	Yearly report	165,036
May	920				188,997
June	600				162,979
July	600				153,315
August	600				158,591
September	600				167,137
October	1,230		989	---	178,734
November	1,329		1,811	---	180,729
December	1,525	4,000	3,500	3,500	207,159
Totals	12,535	4,000	6,300	3,500	2,122,600

PRODUCTION OF LA PLATA COUNTY, 1899.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF 2,000 POUNDS.

Name of mine	Ute	City	Hesperus	Porter	San Juan	Total Tonnage
Number of men employed	12	30	32	62	15	
Kind of opening	Drift	Drift	Drift	Drift	Drift	
Thickness of seam	5 ft.	4 ft.	5½ ft.	4 ft.	3¾ ft.	
Character of coal	Semi-bitum.	Bituminous	Semi-bitum.	Bituminous	Bituminous	
January	955	2,950	2,814	5,826	642	13,187
February	456	3,365	2,549	5,829	594	12,793
March	615	2,130	2,120	5,094	388	10,347
April	579	2,150	1,898	3,048	183	7,858
May	528	1,860	2,006	3,720	86	8,200
June	375	1,695	1,068	2,127	-----	5,265
July	875	1,740	-----	-----	-----	2,615
August	702	680	2,402	1,861	319	5,964
September	700	1,355	1,907	3,951	503	8,416
October	1,100	1,605	2,802	5,519	853	11,879
November	-----	1,833	3,095	5,985	1,260	12,173
December	1,500	2,000	3,906	6,320	1,260	14,986
Totals	8,385	23,363	26,567	49,280	6,088	113,683

PRODUCTION OF MESA COUNTY, 1899.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine	Book Cliff	Mt. Lincoln	Palisade	Cameo	Total Tonnage
Number of men employed	15	8	9	10	
Kind of opening	Drift	Drift	Drift	Drift	
Thickness of seam	4¼ ft.	3½ ft.	4 ft.	6½ ft.	
Character of coal	Bitum.	Bitum.	Bitum.	Bitum.	
January	1,121	450	750	---	2,321
February	1,070	450	760	---	2,280
March	775	750	571	---	2,096
April	1,113	-----	414	New mine	1,527
May	483	300	224		1,007
June	1,212	225	215		1,652
July	678	-----	400		1,078
August	469	-----	390		859
September	431	-----	420	---	851
October	1,147	1,067	648	---	2,862
November	1,100	1,067	1,144	600	3,911
December	1,472	1,067	500	700	3,739
Totals	11,071	5,376	6,436	1,300	24,183

PRODUCTION OF PITKIN COUNTY, 1899.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine.....	Placita	Spring Gulch	Union	Total Tonnage
Number of men employed....	35	120	19	
Kind of opening.....	Tunnel	Slope	Tunnel	
Thickness of seam.....	3 ft. 8 in.	5 ft.	5 ft. 8 in.	
Character of coal.....	Bituminous	Bituminous	Bituminous	Closed down
January	---	16,316	1,194	
February.....	---	10,167	---	
March.....	---	13,885	---	
April.....	---	13,976	---	
May.....	---	16,113	---	
June.....	---	11,950	---	
July.....	---	13,064	---	
August.....	---	12,838	---	
September.....	---	13,603	---	
October.....	768	14,500	---	
November.....	2,732	16,000	---	
December.....	3,000	16,000	---	
Totals	6,500	168,412	1,194	176,106

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Garfield No. 2	Lincoln
Number of men employed	35	4
Kind of opening.....	Shaft	Shaft
Thickness of seam.....	6 ft.	Average, 5 ft., 2 in.
Character of coal.....	Lignite	Lignite
January.....		
February.....		
March.....	229	
April.....	962	
May.....	1,171	
June.....	1,046	
July.....		
August.....	698	
September.....	777	
October.....	2,012	
November.....	5,105	
December.....	3,500	2,892
Totals.....	15,500	2,892

WELD COUNTY, 1899.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Emerson	White House	Washington	Black Prince	Total Tonnage
8	12	6	3	
Shaft	Shaft	Shaft	Shaft	
6 ft.	2 seams, both 6 ft.	4 ft. 10 in.	2 ft. 10 in.	
Lignite	Lignite	Lignite	Lignite	

-----				229
-----				962
-----				1,171
-----				1,046

-----				698
-----				777
-----				2,012
-----				5,105
942	7,559	3,343	1,200	19,436
942	7,559	3,343	1,200	31,436

COAL PRODUCTION

SHOWING MONTHLY AND YEARLY

ALL YEARLY REPORTS GROUPED

COUNTY	January	February	March	April
Arapahoe				
Boulder	61,845	74,330	48,605	36,276
El Paso	8,393	8,397	4,608	3,572
Fremont	71,402	64,765	71,722	42,225
Garfield	14,249	1,452	3,683	5,030
Gunnison	32,611	13,339	25,819	24,768
Huerfano	65,736	56,795	60,231	42,419
Jefferson				
Larimer				
Las Animas	191,968	172,131	195,824	165,036
La Plata	13,187	12,793	10,347	7,858
Mesa	2,321	2,280	2,096	1,527
Pitkin	17,510	10,167	13,885	13,976
Weld			229	962
Totals	479,222	416,449	437,049	343,649

FOR THE YEAR 1899.

PRODUCTION OF EACH COUNTY.

IN THE MONTH OF DECEMBER.

May	June	July	August	September
34,434	27,455	22,627	28,501	36,903
2,348	3,433	3,140	3,819	3,881
29,485	32,383	15,615	24,748	43,897
17,275	23,092	9,166	9,828	11,897
14,763	Strike	15,742	34,184	34,703
31,885	35,301	33,159	49,507	49,870
188,997	162,979	153,315	158,591	167,137
8,200	5,265	2,615	5,964	8,416
1,007	1,652	1,078	859	851
16,113	11,950	13,064	12,838	13,603
1,171	1,046		698	777
345,678	304,556	269,521	329,537	371,935

COAL PRODUCTION FOR THE YEAR 1899—Concluded.

MONTHLY AND YEARLY PRODUCTION OF EACH COUNTY.

ALL YEARLY REPORTS GROUPED IN THE MONTH OF DECEMBER.

COUNTY	October	November	December	Total tonnage
Arapahoe	-----	-----	439	439
Boulder	57,670	69,766	84,250	582,662
El Paso	8,496	9,023	8,052	67,162
Fremont	69,909	77,003	86,171	629,325
Garfield	8,896	12,018	19,476	136,062
Gunnison	36,499	35,685	35,555	303,668
Huerfano	62,187	61,238	77,234	625,562
Jefferson	-----	-----	8,551	8,551
Larimer	-----	-----	5,500	5,500
Las Animas	178,734	180,729	207,159	2,122,600
La Plata	11,879	12,173	14,986	113,683
Mesa	2,862	3,911	3,739	24,183
Pitkin	15,268	18,732	19,000	176,106
Weld	2,012	5,105	19,436	31,436
Totals	454,412	485,383	589,548	4,826,939

PRODUCTION BY COUNTIES.

SHOWING INCREASE AND DECREASE.

COUNTIES	1898	1899	Increase	Decrease
Arapahoe	514	439	-----	75
Boulder	491,503	582,662	91,159	-----
El Paso	48,388	67,162	18,774	-----
Fremont	437,086	629,325	192,239	-----
Garfield	240,981	136,062	-----	104,919
Gunnison	361,113	303,668	-----	57,445
Huerfano	553,196	625,562	72,366	-----
Jefferson	11,925	8,551	-----	3,374
Larimer	2,843	5,500	2,657	-----
Las Animas	1,684,183	2,122,600	438,417	-----
La Plata	107,705	113,683	5,978	-----
Mesa	19,167	24,183	5,016	-----
Pitkin	182,927	176,106	-----	6,821
Weld	22,506	31,436	8,930	-----
Total tonnage	4,164,037	4,826,939	-----	-----

Increase for 1899, 662,902 tons.

COAL PRODUCTION

SHOWING MONTHLY AND YEARLY

	January	February	March	April
Lignite.....	70,238	82,727	53 442	40 810
Semi-bituminous	86,797	66,935	76,653	48,932
Bituminous	316,181	265,060	304,183	252,758
Anthracite.....	6,006	1,727	2 771	1,149
Totals	479,222	416,449	437,049	343 649

FOR THE YEAR 1899.

PRODUCTION OF THE DIFFERENT VARIETIES.

May	June	July	August	September
37,953	31,934	25,767	33,018	41,561
48,205	55,475	25,374	40,513	58,590
259,520	217,147	216,569	248,385	262,903
Idle	Idle	1,811	7,621	8,876
345,678	304,556	269,521	329,537	371,935

COAL PRODUCTION FOR THE YEAR 1899—Concluded.

MONTHLY AND YEARLY PRODUCTION OF THE DIFFERENT VARIETIES.

	October	November	December	Total Tonnage
Lignite	68,178	83,894	126,228	695,750
Semi-bituminous	80,353	94,193	111,225	793,245
Bituminous	295,269	297,802	343,095	3,278,877
Anthracite	10,612	9,494	9,000	59,067
Totals	454,412	485,383	589,548	4,826,939

COKE PRODUCTION FOR 1899.

NAME OF OPERATOR	Location of Ovens	County	Number of Ovens	Tonnage	Remarks
Colorado Fuel and Iron Co.....	Starkville.....	Las Animas.	134	56,177	-----
Colorado Fuel and Iron Co.....	Sopris.....	Las Animas.	221	105,376	-----
Colorado Fuel and Iron Co.....	El Moro.....	Las Animas.	230	121,657	-----
Colorado Fuel and Iron Co.....	Cardiff.....	Garfield....	199	68,458	-----
Colorado Fuel and Iron Co.....	Crested Butte.....	Gunnison....	154	54,178	-----
Victor Fuel Co.....	Hastings.....	Las Animas.	100	30,908	-----
Victor Fuel Co.....	Gray Creek.....	Las Animas.	78	19,029	-----
Omaha and Grant Smelting Co.....	Durango.....	La Plata....	28	8,449	-----
Totals.....	-----	-----	1,144	404,232	-----

COKE PRODUCTION BY COMPANIES AND COUNTIES, 1899.

COMPANIES	Total Number of Ovens	Total Tonnage	Counties	Number of Ovens	Tonnage	Remarks
Colorado Fuel and Iron Co.....	938	403,846	Las Animas.....	763	333,147	
Victor Fuel Co.....	178	49,937	Garfield.....	199	68,458	
Omaha and Grant Smelting Co.....	28	8,449	Gunnison.....	154	54,178	
			La Plata.....	28	8,449	
Totals.....	1,144	464,232		1,144	464,232	

TABLE.

SHOWING THE TOTAL PRODUCTION OF DIFFERENT COMPANIES OPERATING TWO OR MORE MINES, FOR THE YEAR 1899.

NAME OF COMPANY	CHARACTER OF COAL AND NUMBER OF MINES								Total in Tons of 2,000 Pounds
	Number of Mines	Bitum. or Coking	Number of Mines	Semi-bitum. or Non- Coking	Number of Mines	Lignite	Number of Mines	Anthracite	
Colorado Fuel and Iron Co.	12	2,226,375	6	577,783	-----	-----	2	59,067	2,863,225
Victor Fuel Co.	4	559,764	1	74,075	-----	-----	-----	-----	633,839
Northern Coal and Coke Co.	3	200,153	-----	-----	9	512,517	-----	-----	712,670
Union Coal and Coke Co.	4	84,093	-----	-----	-----	-----	-----	-----	84,093
Porter Fuel Co.	1	49,281	1	26,567	-----	-----	-----	-----	75,848
H. C. Nicholls & Co.	2	31,054	-----	-----	-----	-----	-----	-----	31,054
Pike's Peak Consolidated Coal Co.	-----	-----	-----	-----	2	37,873	-----	-----	37,873
Alpine Coal Co.	-----	-----	2	27,830	-----	-----	-----	-----	27,830

List of Fatal Accidents for 1899.

January 3—Report of fatal accident to Pat Logan, miner, by a fall of rock at the face of the main air course, Rugby mine, January 3, 1899:

I reached the place at 7:15 p. m., January 5, accompanied by Messrs. Pat Brennan, Supt. Harry Mallot and Thomas Mathews, driver. On the day of the accident Logan was working alone, his partner, Alex. Tennant, being sick.

Harry O'Neil, who was working in a newly turned room, in close proximity to the face of the entry, was the first to enter the place after the accident occurred there. He said that about 8:30 a. m. he heard a fall, and immediately went into the entry and found Logan under the rock between the car and the face.

Logan was aware of the dangerous condition of the rock, as he tried to pull it down the day before, but unfortunately failed in his attempt. The rock was of a conical shape, about four feet in diameter at the base and about two and one-half feet high, completely surrounded by a smooth slip. According to all probabilities, at the time of the accident, he was engaged in digging out the coal under the inside edge of the rock. He was killed instantly. The coal was about four feet two inches thick. County coroner investigated the cause, but held no inquest.

Logan was born in England, age 58 years, leaving a widow and six children.

(Signed) JNO. D. JONES.

January 4—Report of fatal accident, which occurred to George Valke, a boy, by a fall of rock at the face of room 9, off third east entry, Maitland mine, at 1:30 p. m., January 4, 1899:

Arrived at the scene of the accident at 11 a. m., January 5, accompanied by Supt. A. F. Pollock and Foreman William Tweeddale.

Through information obtained from the deceased's father, Michael Valke, I found that George was not employed by any of the company's officials, and that he voluntarily went into the mine with his father, unaware to the officials, who had repeatedly sent him home from the mine. At the time of the accident he was engaged in loading a car, and was located directly between the car and the face, when a large rock fell, which completely covered and killed him instantly. The roof was of an avenaceous nature and very strong, but the piece that fell was nearly surrounded by a well defined slip and would weigh about 1,200 pounds.

Upon being questioned, his father stated, also, that the boy could read and write the English language fluently. Age, 12 years and 8 months, and he was the oldest of five children. His parents are Slavs.

The county coroner held an inquest the same day. See copy of jury's verdict.

(Signed) JNO. D. JONES.

Jury's verdict:

That George Valke came to his death by an accident; that the company or corporation is not to blame, as he was not employed by the company.

J. B. WRIGHT,
Coroner.

Jurors—Jno. Hardy, foreman; Oscar Bowers, Thos. Tweeddale, Morgan Webster, John Arriano.

January 17—Report of fatal accident to Mat Luba, miner, who was killed by a fall of coal at the face of room No. 7, in the tenth east entry of the Sopris mine, Las Animas county, January 17, 1899:

We investigated the cause of the accident on the 19th and found room in good condition. The deceased was engaged with Mike McClosky in the aforesaid room, and was at the time of the accident undermining a piece of coal, when suddenly a large chunk fell on his skull, crushing it severely, and he died a few hours after the occurrence.

The county coroner investigated the cause of the accident and deemed it unnecessary to hold an inquest.

Deceased was a single man, nationality Polish, age 24 years.

(Signed) DAVID GRIFFITHS.

January 18—Report of fatal accident to Nicol Glavianno, miner, by a fall of rock at the face of pillar, in room No. 22, seventh east entry, Berwind mine, January 18, 1899:

I arrived at the scene of the accident on January 24, at 2 p. m., accompanied by Wm. Gorden, superintendent, and James Morro, deceased's partner. From information obtained, I found that deceased, James Morro and Dematre Glavianno, were working together in the above stated place, and about 4 p. m., while the deceased was engaged in picking out the bottom coal near the center of the pillar, a large piece of the roof (15 to 20 tons) fell near the face of the pillar, the outer edge of which, striking the deceased on his head, killed him instantly.

James Morro, on being questioned, stated that they were always supplied with propping material.

Coroner Sipe investigated the cause of the accident, but held no inquest.

Deceased was an Italian, leaving wife and three children, who live in the old country.

(Signed) JNO. D. JONES.

January 25—Report of fatal accident, which occurred to Jake Pollock, by a fall of roof at the face of the first east entry, No. 2 vein, Toltec mine, at 9:45 p. m., January 25, 1899:

I examined the place of accident at 10:45 a. m., January 27, accompanied by Jno. Campbell, foreman.

From information obtained, I found that Pollock and his partner, N. Kanzlarick, were working night shift, and at the above stated time, while deceased was engaged shoveling coal from the lower side of the entry towards the road end, a massive piece of roof (which was nearly surrounded by a slip) fell on his head and body, killing him instantly.

Coroner investigated the cause, but deemed it unnecessary to hold an inquest.

Deceased was 35 years of age, Italian, and had a wife and five children living in the old country.

(Signed) JNO. D. JONES.

January 26—Report of the fatal accident which occurred to John Maloney, miner, by a fall of rock at the face of room No. 1, off the first cross entry, City mine, Durango, January 26, 1899:

The workings of this entry are in close proximity to the mouth of the mine; therefore, the miners were always coming to the surface to eat their lunch at noon, and on the date stated above, Wm. Mason, miner, who was working in room No. 2, noticed the deceased's absence during dinner hour, and he immediately went into the mine to see what caused his delay, and upon his arrival at the face of the room he found him dead under a large rock, which had fallen from the roof and killed him instantly.

James Hawkins and Joe Granton assisted Mason in breaking and removing the rock, and the three worked about twenty-five minutes before he was extricated.

The county coroner investigated the cause of the accident, but deemed it unnecessary to hold an inquest.

Maloney was 35 years of age, single, nationality American.

March 13, 1899.

(Signed) JNO. D. JONES.

January 28—Report of fatal accident to John Freedolph, miner, by a fall of top coal in the pillar of room No. 27, off the first west entry, south side, Simpson mine, January 28, 1899:

I investigated the cause of the accident at 10:30 a. m., January 29, accompanied by E. Nesbit, foreman. From Felix Guy's (deceased's partner) evidence, I found that they were both engaged in loading a car, when several tons of top coal fell, killing Freedolph instantly, Guy escaping uninjured. Guy stated, also, that he wanted to set a prop under the top coal before they commenced to coal, but Freedolph objected; hence the result.

Coroner was immediately notified, but held no inquest. Freedolph was a Swede, 30 years old, single.

(Signed) JNO. D. JONES.

February 9—Report of fatal accident to John D. Carter, miner, by being crushed by a loaded pit car near the mouth of room No. 10, off the second south entry, No. 1 mine. Pictou, February 9, 1899:

Carter and his partner, Henry Brant, were working the top coal in the above stated room. The road from the entry to the outer edge of the top coal plateau is about seventy-five feet long, with an average inclination of about fifteen inches. At the time of the accident they were engaged in taking two loaded cars from the room down to the entry, to be exchanged for empties furnished by the driver. After running the first car out they followed it down the grade, Brant in the lead, and when about thirty feet from the top the other car (which they thought was properly secured) unexpectedly rushed down the grade after them, and overcoming deceased in a narrow place, crushing him between it and the rib, caused such injuries that he died in a few hours after.

Brant escaped uninjured by fortunately running forward into the entry. Brant could not definitely state whether the car went over the deceased, or was caught between the car and rib, as the car did not stop until it reached the entry.

Coroner investigated the cause of the accident, but held no inquest.

Deceased was 51 years old; was married, with five children; nationality American.

(Signed) JNO. D. JONES.

February 15—Report of the fatal accident which occurred to Howard Reed, driver, by a fall of rock in room No. 35, off the tenth east entry, Engle mine, February 15, 1899:

From the various evidence obtained I found that Howard Reed was a miner, working with his father, but for five days previous to the accident he acted as a driver, filling a vacancy, and about 10 a. m. on the aforesaid date he was fol-

lowing a mule into the thirty-fifth room, when an exfoliated slab of the roof fell, which struck him on the side of his body and forced him against the rail on the other side, causing such injuries that he died from their effects at 5:30 p. m. the same day. The two Mexicans, D. Cordova and L. Cordova, who were working in room 35, heard the rock fall and immediately went to his rescue. They called on Polito Praitto, who was working in room 32, and Alfred Jones, driver, who assisted in lifting the rock off the deceased, while John Charter, roadmaster, pulled him out.

The county coroner investigated the cause of the accident, but held no inquest.

The deceased was an American, born of English parents, age 18 years.

(Signed) JNO. D. JONES.

February 21, 1899.

Jno. Charter, roadmaster, testified that he made a thorough examination of the roof at a recent date previous to the accident, and found it in a safe condition.

February 21—Report of fatal accident to James Jenkins, miner, by a fall of rock at the face of room 18, off the eighth east entry, Peerless mine, Aguilar, February 21, 1899:

John Summers and Mathew Brunton, who were working in the entry and room adjacent, testified, upon being questioned, that they heard a fall and immediately went to the place and found him under a large pile of rock. Deceased was soon extricated, and he died in about five minutes after. He was engaged in setting a prop under the piece that fell, when the accident occurred.

Coroner made a thorough investigation as to the cause of the accident, but held no inquest.

Jenkins, a negro, 35 years old, leaving a widow and one child, who reside at Gardner, N. M.

February 22, 1899.

(Signed) JNO. D. JONES.

February 22—Report of fatal accident to John Cutro, miner, by a fall of rock and bony at the face of room No. 22, off the third east entry, Berwind mine, February 22, 1899:

From evidence obtained, I found that John Cutro (deceased), Salvatore Pucci and Pete Cutro were working together in the above stated place, and while deceased was engaged in shoveling coal from the face to road head, a large piece of the roof, which consisted of rock and bony, fell on his back, forcing him to the floor and killing him instantly. Previous to the accident Pucci wanted to timber it, but the deceased objected, as he thought it unnecessary.

Thos. Johnson, foreman, visited the place an hour before the accident and ordered them to put up more props to secure the roof.

Coroner investigated, but held no inquest.

Deceased was an Italian, age 25 years, single.

February 25, 1899.

(Signed) JNO D. JONES.

March 7—Report of fatal accident to Louis Paris, at Spring Gulch mine, March 7, 1899:

We were notified of the accident on the 8th, and investigated the cause thereof on the 11th.

Louis Paris and Vincent Fallor were working together in room 66, south B entry, on the 7th. They had been ordered to come down the room about twenty feet from the face, to cut across the pillar into room 65, and while making preparations to start at this point a small slab of rock fell on deceased, causing him to roll down the pitch for about 100 feet, and it is difficult to say whether the injuries received from the rock or in tumbling down the room were the cause of his death. He died in about twelve hours after the accident from a fracture of the skull. The room was well timbered from the neck to the face, and Louis Paris was an old miner, had been working at the Gulch for many years.

Coroner was notified, but could not attend, and the local justice of the peace held an inquest.

Deceased was an Austrian, age 35, leaving a family in Austria.

(Signed) DAVID GRIFFITHS.

March 23—Report of fatal accident to John Dichelles, laborer, by being crushed under a railroad car near the chutes of No. 2 Victor mine, Hastings, March 23, 1899:

The deceased was working at the coke ovens, and about 12:30 p. m. on the above stated date, while returning to his work after having his dinner at home, he boarded a train of empty railroad cars that was conducted by Philip Wheeton and was moving towards the chutes for the purpose of being filled, and in some mysterious manner he fell under the wheels of the last car, which ran over his body, killing him instantly.

Coroner made investigation, but held no inquest.

Dichelles was an Italian, single, and about 23 years of age.

March 27, 1899.

(Signed) JNO. D. JONES.

March 24—Report of fatal accident to Biagio Savarino by a fall of rock in room 23, off tenth east entry, Victor No. 1 mine, Hastings, Las Animas county, March 24, 1899:

The deceased with another Italian, Rosario Cucci, were drawing a pillar, and while they were engaged in moving a car back from the face a large piece of the roof fell and struck Savarino on his head and body, killing him instantly.

Coroner investigated cause, but held no inquest.

Deceased was an Italian, age 35 years, leaves wife and several children in Italy.

April 3—Report of fatal accident at the Peerless mine, Las Animas county, on April 3, 1899:

March 31, about 11:30 a. m., William Emerson, aged 34 years, unmarried, was instantly killed by a fall of top rock in room No. 31, sixth east entry of the Peerless mine.

Investigated the cause of the accident on the first day of April, and found the place in the same condition as it was after extricating and removing the body. In this case the deceased was trimming some coal off the rib or pillar near the face, at the end of the roadway, when a large fall of rock, estimated at about five tons, which rocks were very massive, killed him instantly.

The cavity in the roof from which the rock fell was shaped like the inside of a dome, about five feet at its highest point, the sides showing water slips on every side. The

fact of the fallen rock being so thick would give it a ring of safety when sounded by being struck with a pick, and the fact that the deceased was crippled, having only one leg, tended to prevent him springing out of the way in case the rock gave him slight warning.

His partner was on the other side of the room, and was unaware of the danger until the rock fell, crushing the deceased. The room was well timbered, stringers being placed over the roadway when it was found necessary.

Adam Turner, mine foreman, stated that he was up in the room and had told deceased not to gouge into rib, as his place was a little wide; had tested the roof by sticking it with a pick, and that it had sounded strong and safe. Could not see any slips on the surface of roof; had they come to the surface, would have seen them.

Coroner investigated; no inquest held.

Deceased had worked in the mines for fifteen years; was a native of Durham county, England; no known relatives in the United States, but a brother in England.

(Signed) O. M. HOPKINS.

April 7—Fatal accident to Peter Nuchi, Italian, 42 years, married.

The deceased was injured on April 7, at Engle mine, while attempting to get off a loaded trip of cars at the mouth of the mine, on which trip he had been riding, in violation of the statute and rules of the company for which he was at work. In jumping off the moving loaded trip, at a point ten feet outside of the mine, deceased struck the tail rope with his head. This made him stumble and he fell between the cars, and was dragged a distance of about fifty feet before he was noticed and the trip could be brought to a standstill.

He was taken to the hospital at Pueblo, where he died on April 10, as a result of the injuries received.

(Signed) D. M. SIMPSON.

April 10—Engle mine; fatal accident to Pauli Bria on April 10; inspected, April 11, 1899.

Paul Bria, Italian, 45 years old, no relatives, was killed on the main haulage way in this mine at or near a point 630

feet outside of the parting, near to the tenth and eleventh entries. From the statement of parties who were close to the scene of the accident, I have deduced the following:

Paul Bria and M. Dezutti had got through with their day's work and were making their way out of the mine. As they reached the parting above described a trip of loaded cars was being made up, preparatory to be hauled to the tippie. These men boarded the trip of loaded cars, but were put off by Richard Ablett, the trip runner, who notified these men that they could not ride on a loaded trip. Bria and Dezutti then started to walk out, Dezutti leading and Bria being about six feet behind. The trip runner started his trip out when made up, and when he reached a point 630 feet from the switch, on the parting, he saw Dezutti lying alongside of the road (the trip runner rides on the last or rear car). The trip runner immediately got off and signaled the engineer to stop the trip, which was done. Dezutti then told the trip runner that his partner, Bria, was under the cars, and Bria was found dead under the fourth car, at a point 600 feet further out the entry.

Dezutti states they were walking out the entry, he being in the lead and looking for the empty trip of cars coming in, and the first he knew of the danger they were in was when the trip struck him.

These two men had been put off a loaded trip by the runner, and started to walk out, knowing that the loaded trip would follow in a few minutes, and it hardly seems possible that they mistook the noise of the loaded trip behind them for the noise of the empty trip in front of them.

At the point where they were found there is enough room for a person to stand aside and let a trip pass him without any danger.

There is a traveling way provided in this mine for the use of the miners going to and from their work, and the writer, who has gone through it on various occasions, can say that it is a much more comfortable road to walk in than the rope road, and there is probably no difference in their lengths.

At the mouth of this mine the owners have a notice posted, warning men of the statute and dangers liable to be incurred in their riding on a loaded trip of cars, which is hauled by machinery, and threatening men with dismissal

for violating the same. I suggested to the superintendent that he enforce the notice to the letter, and have his written promise that in the future he will send to the mine a trip of empty cars at 6:45 a. m. and another at 6 p. m., thus enabling the miners to ride in and out of the mine to and from their work. These trips are to be run at a speed not to exceed four miles per hour, and any employe found riding on a loaded trip to be discharged instantly.

(Signed) D. M. SIMPSON,
Inspector.

April 11—Jose Gonzales, Mexican, single, was injured by a fall of rock at 2 p. m., at Price mine, April 11, 1899, and died at 9 p. m., same day.

Deceased was working in room 2, in the third lift, at the face, digging coal alone. He had fired a short in the rib and had not given the smoke time enough to be carried out. He undoubtedly was sounding the roof with his pick, when a feather-edge slab of rock, measuring six feet long, five feet wide and six inches thick in the center and tapering to nothing on the sides, fell and caught him under a part of it. When this rock fell one side of it struck a prop and rested on it about twenty-four inches from the floor, thus leaving quite a space between the center of the rock and the floor. The room is fairly well timbered.

This mine is one which does not come under the statute, and from daylight to the face is in a deplorable condition, being nothing more than a man-trap. I have written the owners, making suggestions whereby they can reduce the dangers existing, and calling their attention to the statute.

(Signed) D. M. SIMPSON,
Inspector.

April 24—William Clark, married, 54 years old, wife and son, a native of Scotland. He was was employed as a miner in room 31, sixth east entry, Walsen mine, and engaged in drawing the room pillar between thirty and thirty-one at the time of the accident.

Deceased and his partner were taking a skip of the pillar to enable them to get their track closer to the coal, and

at the time of the accident were fourteen feet apart. Deceased was in the act of shoveling coal into the pit car, and was standing below a piece of top coal, which he had left up and had not timbered. There were props in his room within ten feet of where he was standing, and there was not to exceed 150 pounds of coal that fell. One piece, however, weighed 100 pounds, which struck him on the back, fracturing three ribs. This occurred at 4:30 on the 24th, and he died at 12 p. m. on the 25th.

(Signed) D. M. SIMPSON,
Inspector.

May 13—Report of an investigation of a fatal accident in the Crested Butte mine, Gunnison county, on the 13th day of May, 1899, whereby Joe Dorsey, aged 23 years, a native of Austria, single, lost his life. Deceased was working as a miner, together with Tony Pelousa and Chris. Whalan, as partners in the second south air course, which place was running alongside of a fault or "pinch" on the 13th day of May, 1899. Deceased was working on the side of the air course nearest the fault, where the coal was only about three and a half feet thick, whereas on the other side the coal was ten feet thick. Deceased was on his knees digging out coal from about 7 a. m. until 9 a. m., when a large slab of top rock about seven feet square and eighteen inches through in its thickest part, weighing about four tons, fell on him, without previous warning, killing him instantly.

Chris. Whalan, being examined by the undersigned, stated as follows:

"I was working in the same place as Joe Dorsey on Saturday last, May 13, up to the time he was killed, about 9 a. m. He was not my regular partner, but was sent in to fill the place of one of the men who usually worked there and was not working those two days. I had told Joe Dorsey, deceased, that the part of place he was working in needed timbering, and that he had better set some props there, and he set some (I believe two or three) that day. The roof was not tried or tested by any of us to my knowledge on Saturday morning, nor did I notice the slab of rock that fell had not given from the roof, showing a crack."

Deceased was digging the coal from near the fault and throwing it near the track. One two-car trip had been loaded

and deceased was digging coal and throwing near the track to load the second trip, when, about 9 a. m., the large slab of rock fell upon him, doubling him up and killing him instantly.

There was room for two props under the rock, but coal being thin there it would not give him much room to work in.

Upon examination of the place and inquiries of these men near by when the accident occurred, I found the foregoing statements substantially corroborated. There seemed to be sufficient timber of proper length near the working face, and there was a half dozen props of about the right lengths very near the place of accident, if deceased had felt disposed to set them, and there was sufficient room for at least two props under the rock that fell.

The rock showed a water slip only on one side, was of tough texture, and on one side broke fifteen inches thick, which showed that it must have given considerably before falling, and had deceased or one of his partners examined the roof for cracks or loose rocks, and tested it with a pick, they would probably have found the rock in a dangerous condition and the accident would have been avoided.

The coroner was notified and called a jury on the 14th day of May, consisting of John Perry, James Levesy, Joe Block, Chas. Williams, Tim Dowling and John Kozick, who rendered a verdict that said Joe Dorsey came to his death accidentally, without blame upon anybody.

(Signed) O. M. HOPKINS.

May 13—Maitland mine, May 15, 1899. Fatal accident to Albert Raspplia, Slav, single, age 35, at 11:30 a. m., May 13, 1899.

Deceased and his partner, John Viller, were working as miners in room 18, in the third south entry of this mine; had just started that morning in this room (the room having been idle for a month). Deceased was at the face digging coal. His partner warned him of the dangerous condition of the room, and asked him to take the drill bits to the blacksmith shop and get them sharpened, and he (Viller) would set up some props to secure the roof. Deceased waited too long digging, and while so engaged two large rocks fell,

weighing nearly three tons. One of the rocks caught the deceased, and although no bones were broken, yet the rock was bearing on him in such a position that he could not breathe, death being due to suffocation.

Attached herewith copy of verdict of coroner's jury.

(Signed) D. M. SIMPSON.

State of Colorado, County of Huerfano:

At the inquisition holden at Maitland, in Huerfano county, on the 13th day of May, 1899, before B. A. Arnold, justice of the peace and acting coroner of said county, on the dead body of Albert Raspplia, lying there dead, by the jurors whose names are hereto subscribed, the said jurors upon their oath do say:

That the said Albert Raspplia came to his death by his own negligence in not putting up timbers to make his place safe; and we further find that the Victor Coal and Coke Company are in no way to blame for his death, and we exonerate them from the same, as there were plenty of timbers at hand for him to put up.

(Signed) A. FELLOWS, Foreman.
PETER FOLEY (x his mark)
ROBERT LEISHMAN.
HERBERT CAPPS.
ED. BOWLDEX.
JOHN SCOPENICH.

Subscribed and sworn to before me this 13th day of May, 1899.

B. A. ARNOLD,
Justice of the Peace and Acting Coroner.

(Copy.)

June 21—Fatal accident to John Haynes in the Mitchell mine, Lafayette, at 11 a. m.

I arrived at room 1, fifth west entry of this mine, at 10 a. m., 23d of June, and in company with Robert Scott and Wm. McLaughlin (who removed the body from under the fall), and John Hutchinson, pit boss. We found the room at the place where deceased was killed to be caved tight, and access impossible. I questioned Joseph Hale, deceased's partner, and McLaughlin, and found the following:

First, that the pit boss had sent in timber, and men had set up props immediately outside of the place where Haynes and Hale were to start drawing top coal. These two men had loaded some cars of coal that they had let down, and Haynes was in the act of drawing more props to let more down. Hale was standing six feet behind Haynes, when Haynes threw a tie at a prop. Instantaneously with hitting the prop the top coal fell and brought three more props down with the coal they were holding. Deceased jumped towards the rib, but either fell or was knocked down, and when taken from under the fall was lying on his face, with his face toward the cross-cut, which was ten feet from where he stood when he threw the tie. Hale jumped into the cross-cut and was not injured. An hour and fifteen minutes were consumed in getting the body out, owing to the roof caving and the shape of the fall. Undoubtedly the case was caused from the "creep" which is on this portion of the mine, and the lack of sufficient timbering to hold the top coal up under which the men had to work while drawing the same.

Deceased was 25 years old, single, and an American by birth.

The coroner was notified, examined the place and decided that no inquest was necessary.

(Signed) D. M. SIMPSON.

July 8—David Stebba, miner, was killed at the Pictou mine, Huerfano county, in room 59, cross entry, off room 54.

We investigated the cause of the accident on the 10th and found a fall of rock at the face of the room.

Deceased was engaged in loading a car at the time of the accident, the roof caving and part of the falling rock striking him. The fall was caused by a pot hole, and one side was held in place by a crossbar, but when deceased advanced his excavation in taking out the coal at the face, this loosened the other side and let it down. The place was well timbered and a number of props were in the room ready for future use.

Deceased was working alone at the time of the accident.

The coroner was notified but did not investigate.

Deceased was a married man, leaving a widow. Nationality, German. Age, 45 years.

(Signed) D. M. SIMPSON.

August 8—Fatal accident at Bowen mine, Union Coal and Coke Company, to J. L. Spencer, American, age 57 years, married; leaves a widow and eight of a family.

Deceased, in company with Elijah Spencer, his son, George Pritchard, Joseph Bray, Jr., and N. C. Garner, under the direction of J. M. Bray, foreman, were engaged at the entrance of the mine making room to set a gravity plane down. At 11:30 a. m., August 8, 1899, the party were putting in place the thirteenth and last set of timbers. The east leg of the set would not slip into place, and deceased was engaged in pinching the leg into place, when a mass of loose rock at the face, which had the prop supporting it, fell out, and one piece weighing 120 pounds fell or rolled a distance of nine feet, striking deceased on the neck, death being instantaneous. The roof and part of the face is a soft, massive sandstone and very treacherous.

(Signed) D. M. SIMPSON.

August 22—Thos. and Jas. Taylor (brothers), miners, were instantly killed by a fall of rock in the second south entry of the Pictou mine, Huerfano county.

I visited the scene of the accident and investigated the cause thereof on the 25th.

The Taylor brothers are practical miners, and were engaged in drawing pillars between the second south and the back entry. On the morning of the accident, Lewis Owens, fire boss, told them previous to entering their working place, that it was in bad condition and that they must put up some timber to support the roof.

Thos. Taylor answered that it would be attended to before they would start work.

About 11 o'clock the accident occurred, and from the condition of the place it is evident that they neglected to put up any timber as instructed by the fire boss. A few minutes previous to the accident a fellow workman (Henry Brandt) told them they should secure the roof and not be too risky.

From evidence obtained from the fire boss and others, they were experienced miners, but were inclined to be careless in timbering their working place on other occasions.

There was a supply of timber close at hand for their use.

The county coroner investigated the cause of the accident and decided an inquest unnecessary.

(Signed) DAVID GRIFFITHS.

August 25—Jos. Lamela, miner, was killed by a fall of bony coal in room six off the second south entry, Berwind mine, Las Animas county.

I investigated the cause and visited the scene of the accident on the 1st of September.

Deceased was engaged in drawing the pillars in the aforesaid room, and on the whole the working place was well timbered. A few minutes previous to the accident, Guiseppi Cardinelli helped deceased to push up a car to the face, and on passing through he observed and called attention to a bad piece of loose, bony coal, and told him that he should secure it before filling the car, and he answered that he knew of its condition and would secure it after loading the car, and while he was loading the bony fell on his body, causing serious internal injuries, from which he died in a few hours after the accident.

There was a supply of timber in the place for use.

The county coroner visited the scene of the accident and examined several witnesses on the matter, and decided an inquest unnecessary.

Deceased was Italian by birth; age 29; had been married about a month previous to his death.

(Signed) DAVID GRIFFITHS.

September 15—Fatal accident at Hasting's No. 2 mine, to Gregoria Tofollo, Mexican, age 30; married, leaves a wife and two children.

Deceased, in company with William Ware and Julian Gomez, had been engaged for some time drawing pillars between rooms one and two in the second cross, off the fifth north entry, and at 9:15 a. m., on September 15, 1899, deceased was setting a prop under a bad piece of roof, and while so engaged, the rock he was trying to secure, weighing nearly one ton, fell on him.

From statements of the parties who extricated the body, death must have been instantaneous.

The time consumed in extricating the body was fifteen minutes.

(Signed) D. M. SIMPSON.

September 28—Investigation of fatal accident at Rockvale mine, Fremont county, to Gaspar Palic, age 33 years; married, leaves a wife and two children; nationality, Austrian.

Deceased, John Dremick and Frank Strubel, his partners, were at work at the face of L entry, on the morning of September 28, 1899. They were engaged brushing the roof in this entry, and while so engaged, deceased being evidently anxious to get a little coal which was laying between the face of the entry and the point where they were engaged taking down the roof, or draw slate, which was about five feet. A prop was set under the brushing at a point four feet from the face, when a piece of rock sixteen feet in length, twenty inches in thickness and fourteen inches in depth, fell on him at 8:30 a. m., killing him.

Deceased partners warned him of the danger, but he paid no attention to this warning.

The entry was securely built on either side, and propped at the face as securely as it was practical to do so.

(Signed) D. M. SIMPSON.

October 28—Peter Di Giacomo, miner, died at the hospital in Pueblo from injuries received on the 26th, at the face of No. 22 room, in the fifth east of the Brookside mine, Fremont county.

I investigated the cause of the accident, on November 1, and found that deceased undertook to mine off a standing shot at the face of the room.

Tony Fabricio, his partner, had cautioned him to sprag it, but he failed to do so, and the mass of coal fell on his body, causing internal injuries from which he died.

The county coroner was not notified of the accident, from the fact that the officials did not think that his injuries would prove fatal.

Deceased was a single man, age 19; nationality, Italian.

(Signed) DAVID GRIFFITHS.

October 27—F. F. Sippe, miner, was instantly killed at the face of No. 31 room in the fifth east of the Gray Creek mine, Las Animas county.

I investigated the cause of the accident on the 29th, and found that the deceased was engaged in drawing back the pillar and top coal in the aforesaid room. The room was exceptionally well timbered and, to all appearance, in a safe condition, but the top coal at this point was thinner than usual, and much softer, and the weight crushed through the props, falling on deceased, causing instant death.

Deceased was a practical miner and had worked several years at Gray Creek mine.

The county coroner was notified of the accident and investigated the cause thereof, and deemed it unnecessary to hold an inquest.

Deceased was a married man, leaving a widow and full grown family. Age 54; nationality, Austrian.

DAVID GRIFFITHS.

October 31—Fatal accident to E. Garcia, about 20 years of age, single, Mexican, at the Peerless mine, on the morning of October 31, 1899.

Deceased and P. Garcia, his partner, were working in room 4 in the second cross entry off the ninth east entry, and at 9:30 a. m. a rock fell on deceased while he was engaged shoveling coal into the pit car. The rock measured four feet long, two feet at one end and eight inches at the other, and an average inches in thickness.

When deceased was taken from under the rock, one arm, one leg and two ribs over the heart were broken, and the right side of his face bruised. He lived two hours.

The room was only fairly well propped, though at the point where accident occurred no more props could have been placed without interfering with their work materially.

A copy of coroner's investigation is annexed.

(Signed) D. M. SIMPSON.

November 4—Fatal accident to Zatti Guiseppi, aged 45 years, married, leaves one son in Genoa, Italy, and one daugh-

ter in Bergamo, Italy; nationality, Italian; in room 63 second north entry No. 2 Pictou mine, Huerfano county, between 8:30 and 9:45 a. m., November 4, 1899.

Deceased was engaged in filling a car at the face of the room, when a rock fell, measuring six feet in length, four feet in width and tapering from six inches in thickness at one end to a feather edge at the other. Deceased's back was broken. He was injured internally and both legs broken below the knees. Death must have been instantaneous.

In this section of the mine a new method of mining coal by machines has been introduced. The rooms are worked forty feet in width with a track laid on each rib, two men being employed to load the coal into the cars. The coal is first undercut by a machine, then it is shot down by a man hired by the day for this purpose.

Andrew Judisack is engaged as timberman and brusher, his duty being to take down all loose rock and prop the roof, and lift fifteen inches of floor rock in the roads to make height for the car.

On the night of the 3d instant, Judisack took down a loose rock at the roadhead of this room, which measured 8x5 feet, by 3x6 feet, about ten feet distant from the face of the coal. At 8:30 a. m. on the 4th instant, Peter Westwater states that he (Westwater) sounded the roof between this fallen rock and the face and found the same safe. He started into another room to get a sledge to break the rock taken down the night before by Judisack, which was lying between the car, and while looking for a sledge notice was brought to him that a rock had fallen and killed deceased.

Westwater immediately repaired to the scene of the accident, the time of his arrival being 9:30 a. m., and, in company with Peter Miller, extracted the body from under the rock.

Harry Westwater is machine foreman, his duties being to look after machine runners, coal loaders and the propping and necessarily the safety of places.

The point where the accident occurred was 300 feet up the room from the entry.

Annexed herewith find result of coroner's inquest.

(Signed) D. M. SIMPSON.

State of Colorado, County of Huerfano, ss.

In the matter of the death of Zatta Guiseppe, deceased.
Before B. A. Arnold, J. P., and acting coroner for Huerfano
county, Colorado.

VERDICT.

We, the jury, regularly empaneled and sworn upon our
oath, find that the deceased, whose body is now lying before
us, is the body of Zatta Guiseppe, and that the said Zatta
Guiseppe came to his death by a fall of rock in the Pictou
(Colorado) mine, and exonerate the company of all blame.

(Signed) W. C. HUNT,
Foreman.

LORETO RODRIGUEZ.

MAX TRUJILLO.

URVAN ATENCIO.

THOMAS ESCOBEDO.

FRANK S. McHARG.

B. A. Arnold, justice of the peace and acting coroner in
Huerfano county and state of Colorado. November 4, 1899.

State of Colorado, County of Huerfano, ss.

I, Fred O. Roof, clerk of the district court within and
for the said county, in the state aforesaid, by Frank Day,
deputy, do hereby certify the above and foregoing to be a
true and correct copy of the verdict of the coroner's jury in
the matter of the death of Zatta Guiseppe, as appears from
the files in said case of record in my office.

Given under my hand and official seal this 9th day of
November, A. D. 1899.

(Seal.)

FRED O. ROOF,
Clerk.

By Frank Day, Deputy.

November 9—Fatal accident at Pryor mine, Huerfano
county, Union Coal and Coke Company, on November 9,
1899, to John Bisherd, age 45, native, married; leaves widow
and four children.

Deceased and John Johnson, his partner, were engaged in baling water at the face of the slope (which is being driven from the Walsen vein to the Cameron vein) into barrels in a mine car, on this day, about 1:30 p. m.

The trip or rope runner brought down four loaded cars and hitched the two with the trip. When this trip (which is hauled by a steam hoist) reached a point on the surface landing where the rope runner usually pulled the hitching pin for a four-car trip, he pulled it for this six-car trip. Immediately the six cars started back, ran down the incline, and caught the deceased at a point about twenty-five feet from the face, killing him instantly.

The coroner investigated and held an inquest.

(Signed) D. M. SIMPSON.

November 11—Adolph Lucero, miner, died from injuries received on the 9th by a fall of slate at the face of No. 1 room of the fourth east entry, in Engle mine, Las Animas county.

I investigated the cause and visited the scene of the accident on the 12th, and found that the deceased was working in the aforesaid room, and that he was injured by a small piece of slate which is underlying the top bench of coal. The slate was hanging about six feet across the room without any props to sustain it. Generally it is very difficult to get down, and for this reason the miners let it "draw." The room was well timbered and in good conditions.

The officials and the physician did not think his injuries serious, so the county coroner was not notified of the accident.

Deceased was a single man, nationality Mexican, age 20.

DAVID GRIFFITHS.

November 18—Fred Wride, miner, was instantly killed by a small fall of slate at the face of No. 5 room, in the first north entry of the City mine, La Plata county.

In a few days after the accident I investigated and visited the scene.

Deceased was working alone in the aforesaid room, and there was no eye witness to the accident. The rock falling

on deceased was not over 100 pounds in weight, and the distance it had to fall was small, as the vein is only about three feet two inches in thickness. Chas. McFadden, driver, was the last man to see him alive and the first man to get him out under the rock. The driver, after taking the loaded car out of the deceased's room, returned in about five minutes and found Wride dead under the rock.

The roof overlying the seam of coal is very treacherous, and requires much attention on part of the miners to keep it secure.

Wride was an old miner, and his room was timbered from switch to face, and at the time of the accident he was making preparations to set a prop to sustain the piece of rock that fell on him.

Deceased was a married man, leaving a widow without children; nationality English, age 40 years.

The county coroner held an inquest over the remains. Attached see copy of jury's verdict.

(Signed) DAVID GRIFFITHS.

VERDICT OF JURY.

State of Colorado, County of La Plata.

An inquisition holden at Durango, in La Plata county, state of Colorado, on the 18th day of November, 1899, before T. E. Peterson, coroner of said county, upon the body of Fred Wride, there lying dead, by the jurors whose names are hereto subscribed; said jurors upon their oath do say:

That the said Fred Wride came to his death from a rock falling on him in a room from which the coal had been removed, and which he was timbering and in which he was placing props at the time, in the City coal mine.

In testimony whereof, the said jurors have hereunto set their hands, the day and year aforesaid.

J. H. ALEXANDER.

J. L. MICKEL.

L. W. RUSSEL.

JOE GRANTHAM.

W. W. JAMES.

J. E. HANNON.

Attest: T. E. PETERSON,

Coroner of La Plata County.

November 30—Mark Markovitch, miner, was injured by a shot at the face of his working place in the Ruby mine, Gunnison county.

From the evidence obtained the deceased was turning No. 36 room, near the face of the main west entry, and about noon had fired a shot with a squib. He, thinking that the squib had missed fire, went forward to the shot with the intention of putting in another squib, and when he was within ten feet of the shot it went off, causing severe bruises on his arms and abdomen.

The officials and the physician did not consider his injuries serious, but peritonitis set in, and he died on the 3d of December. Coroner was notified of the accident.

Deceased was a single man, nationality Austrian, age 28 years.

(Signed) DAVID GRIFFITHS.

December 2—Fatal accident to William Baxter, 40 years of age; married; leaves a son, native citizen.

The deceased was working alone in room 13 of the Vaughn mine on the morning of December 2, 1899, and at 10 a. m. was engaged underrunning the coal at the face of the room, when a piece of slate four feet long, two feet wide and eighteen inches in thickness, fell on him, striking his shoulder a glancing blow and catching him in the small of his back, breaking two right ribs and one left rib, and injuring his loin. His injuries were such that he died at 5:45 p. m. on the same date. The rock which struck deceased is in the nature of a parting between the two benches of coal, and varies considerable in thickness. The bottom coal is about four feet six inches thick. This is usually undermined and shot down, then the parting is taken down if it does not fall of its own accord, and the top bench of coal, about seven feet in thickness, is left up for the roof. The parting is fire clay and full of slips and very treacherous.

The coroner investigated but held no inquest.

(Signed) D. M. SIMPSON.

December 6—John Reese, parting tender, was instantly killed by a runaway trip of cars at the bottom of the Spring

Gulch slope, Pitkin county. I visited the scene and investigated the cause of the accident, and found that the runaway trip was due to the gear wheel of the hoisting engine being shattered while the engineer was dropping an empty trip to the bottom of the slope. The gear-wheel had only been put in about ten days previous to the accident. Neither the superintendent nor the engineer knew of any defect in the machinery, and no flaw could be detected in the broken pieces. The engineer, Alexander Allen, on seeing the gear-wheel breaking, made an attempt to apply the brake, but some of the broken pieces of the gear-wheel broke the brake connections and the trip went down the slope uncontrolled, and the cars caught the deceased and killed him instantly.

The county coroner and the district attorney investigated the cause of the accident and deemed it unnecessary to hold an inquest.

Deceased was a married man, leaving a widow and one child. Nationality, Welsh; age, 27 years.

(Signed) DAVID GRIFFITHS.

December 18—Thomas Birch, box car loader, was severely injured by the north cage at the Curtis mine, El Paso county, and died in about four hours after the accident.

I investigated and visited the scene of the accident and found that the deceased came to the top of the shaft for the purpose of having the carpenter, A. Hempstead, cut him a piece of timber, and while waiting for the carpenter he pushed his head in through the protecting barriers of the shaft, and the cage descending through the compartment caught his left shoulder, crushing it so severely that he died a few hours later.

Deceased was a married man, leaving a wife and three children. Nationality, American; age, 30 years.

The county coroner held an inquest. Attached see copy of jury's verdict.

(Signed) DAVID GRIFFITHS.

December 19—Fatal accident at Walsen mine (Colorado Fuel and Iron Company) to James Lucas, single, aged 30.

The deceased was leaving the mine on December 19, 1899, about 6 p. m., and used the haulage road to travel out

on. At a point 150 feet inside the mouth of the mine he met a trip of fifteen empty cars and was struck by them and dragged down the slope 310 feet to a point where the cars jumped the track. When the employees started to put the cars on the track they found the deceased under the third car, dead. This was the first intimation of any accident. Notices are posted at the mouth of the mine and at the entrance to the mainway notifying all persons not to use the haulage road as a traveling way, but to use the mainway. Deceased had been working in the mine about one week. From the statement of miners who saw him last alive he was warned not to use the haulage road.

Herewith attached coroner's verdict.

(Signed) D. M. SIMPSON,

Inspector.

(Copy.)

Jurors—A. J. Steck, Henry Chestin, Gus Chanler, I. C. Hanna, I. P. Farrington, Geo. Phipps.

D. M. Mathews, M. D., being duly sworn, said:

I saw the deceased on the night of December 19 and found him dead, the cause of his death resulting from a broken back and internal injury. I am a regular practicing physician.

(Signed) D. M. MATHEWS.

Alexander Marshall, being sworn, says:

I am pit boss at the Walsen mine and was on duty at the time of the accident. I saw Jos. Lucas two hours before death, and saw him first after the accident lying under the trip dead. He was about 600 feet down the main slope when found. The main slope is not the regular exit for miners, and notices are forbidding same. He had been working four or five days, and had an opportunity to see notices, and he was violating notices when he met his death, as he should have traveled on the mainway. I was on the trip going down the mine that killed him. There were fifteen cars in the trip and I was on the end car going down. The trip jumped the track, and when I went to find the cause found man under the third car from end. Saw no light going down.

(Signed) ALEX. MARSHALL.

Chas. Stewart, being sworn, says:

I work in the Walsen mine and was working yesterday. I know Jos. Lucas, and that body lying dead is Jos. Lucas.

I saw him about two minutes before he was killed. I was with him at entrance at mainway and turned off into manway. The pumpman was also there, and he told deceased to go the other way, but his being hard of hearing did not follow me, as I thought he was. There was a sign posted on the door of manway warning persons not to go on the slope, but he passed the same. (Signed) C. STEWART.

John Madden, being duly sworn, says:

Am employed as engineer at the Walsen mine. Saw the deceased after death. I went down the slope to assist in getting trip on track, and saw deceased under cars and helped to get him out.

(Signed) JOHN MADDEN.

Alexander Marshall, being recalled, says:

The lamp on the cap was found about 150 feet from the mouth of the slope. He had been seen going to spring to get a drink.

(Signed) A. MARSHALL.

County of Huerfano, State of Colorado:

Walsen Mine, December 20, 1899.

We, the undersigned jurors empanelled to inquire into the death of one Jos. Lucas, here lying dead, do find as follows:

That the said Jos. Lucas came to his death by being run over by descending trip or train of mine cars striking and killing him on the 19th day of December, 1899.

We further find that the said Jos. Lucas came to his death through his own carelessness, and that when he came to his death he was violating the rules of the company.

We further find that the death of the said Jos. Lucas was not caused through the neglect of the Colorado Fuel and Iron Company or any of its employes.

(Signed) I. P. FARRINGTON,
Foreman.

A. J. STECK.
T. C. HANNA.
GUS CHANLER.
HENRY CHESTIN.
GEO. PHIPPS.

B. A. ARNOLD,
Justice of the Peace and Acting Coroner.

December 30—M. R. Phillipi, miner, was seriously injured by a pit car running over his body near the mouth of the Placita mine, Pitkin county. He succumbed to his injuries about two hours after the accident.

I visited the scene of the accident and investigated the cause thereof, January 3, 1900.

From the evidence obtained, the deceased had been outside after some tools. On returning into the mine he was in a stooping position and could not see the driver coming out with a trip of cars. Furthermore, the deceased was hard of hearing, so he did not hear the trip coming in time to turn out of the way. The accident occurred at a point about 110 feet from the mouth of the drift. At this point the miners usually stop to get their eyesight, and there is ample place on the left side for men to stand and the trip to pass, but it appears that the deceased got confused and instead of turning to the left side he tried to get out of the way on the right side, and by so doing the driver had no time to stop the trip until the front car had run over his body.

The deceased was a practical miner, but had not worked very long at Placita.

The county coroner investigated the cause of the accident and deemed it unnecessary to hold an inquest.

Deceased was an American by birth, leaving a wife and four children at Placita; age 45.

(Signed) DAVID GRIFFITHS.

List of Non-Fatal Accidents, 1899.

NON-FATAL ACCIDENTS, 1899.

January 10—Adam Metzodak, miner, Pryor mine, Union Coal and Coke Company, Huerfano county; body bruised by a fall of rock.

January 10—Mike Cahcheck, miner, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; eye injured by a piece of coal from pick.

January 13—B. Prettie, miner, Union mine, Union Coal and Coke Company, Pitkin county; shoulder hurt by a fall of rock.

January 17—Frank Butts, miner, Robinson mine, Colorado Fuel and Iron Company, Huerfano county; head cut and back bruised by a fall of rock.

January 24—Thomas Jones, miner, Engle mine, Colorado Fuel and Iron Company, Las Animas county; foot bruised by a fall of rock.

January 25—J. I. Merrill, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas; leg broken by a fall of rock.

January 25—Andrew Georgerick, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; laceration of left hand, caused by a pressure between a sprag and a post.

January 30—Joe Montero, miner, Engle mine, Colorado Fuel and Iron Company, Las Animas county; leg broken by a fall of rock.

February 4—Henry Callotti, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; finger cut off by a pick falling on it.

February 7—Redit Peden, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; internal injury, caused by a fall of rock.

February 19—J. H. Furder, breaker boss, Anthracite mine, Colorado Fuel and Iron Company, Gunnison county; arm broken; while cleaning belt his arm was drawn into the pulley.

February 22—B. Zacoviell, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; head and leg bruised by a fall of rock.

March 1—Thomas Dawe, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; body bruised by a fall of rock.

March 6—Joe O. Emmer, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; left collar bone broken by a fall of rock.

March 7—Peter Bartelli, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; leg broken by a fall of rock.

March 12—Thos. McNulty, miner, Coal Creek mine, Colorado Fuel and Iron Company, Fremont county; hand bruised by a fall of rock.

March 16—Henry Mason, dumper, No. 1 Rex mine, Northern Coal Company, Boulder county; toe crushed, caught under a wheel.

March 16—Chratic Evans, loader, No. 2 Rex mine, Northern Coal Company, Boulder county; right ankle dislocated by a fall of rock.

March 22—Jack Urbancia, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; foot lacerated by a fall of rock.

March 26—Joseph Gellinck, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; thumb severely lacerated while coupling cars.

March 27—Dan Morgan, miner, Chandler mine, Victor Coal and Coke Company, Fremont county; leg broken by fall of rock.

March 27—William Crowley, engineer, Santa Clara mine, Union Coal and Coke Company, Huerfano county; leg hurt by loose rail.

March 31—Martin Evitz, car loader, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; thumb bruised while coupling cars.

March 31—Dominico Mundi, miner, Victor No. 2 mine, Victor Coal and Coke Company, Las Animas county; hip bruised by a fall of rock.

April 10—Wm. Brenton, miner, Chandler mine, Victor Coal and Coke Company, Fremont county; leg broken by a fall of rock.

April 10—M. Desulte, miner, Engle mine, Colorado Fuel and Iron Company, Las Animas county; hip sprained by cars on rope trip.

April 12—E. Carson, miner, Walsen mine, Colorado Fuel and Iron Company, Huerfano county; burned by an explosion of powder.

April 15—Desire Meiran, miner, Starkville mine, Colorado Fuel and Iron Company, Las Animas county; back bruised by a fall of rock.

April 19—Carl Johnson, machine man, Walsen mine, Colorado Fuel and Iron Company, Huerfano county; hand lacerated, caught in a machine.

April 21—Thos. Kekish, loader, Walsen mine, Colorado Fuel and Iron Company, Huerfano county; burned by a gas explosion; cause unknown.

April 21—John Wells, fire boss, and Wm. Harris, assistant, Newcastle mine, Colorado Fuel and Iron Company, Garfield county; both burned on face, neck and hands by an explosion of gas.

April 27—Andrew Hogberg, miner, Starkville mine, Colorado Fuel and Iron Company, Las Animas county; hands and arms burned by an explosion of gas.

May 4—John Reed, machine man, Walsen mine, Colorado Fuel and Iron Company, Huerfano county; back and ankle sprained by a fall of rock.

May 10—Albert Ross, weigh boss, Walsen mine, Colorado Fuel and Iron Company, Huerfano county; foot crushed, caught between drawheads.

May 13—Richard O. Hara, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; hip sprained by a fall of rock.

May 16—Doreto Gurulee, miner, and Tidal Gurulee, miner, Engle mine, Colorado Fuel and Iron Company, Las Animas county; both were burned and bruised by a premature shot, that accidentally went off while tamping a hole.

May 16—Dominic Nigro, miner, Walsen mine, Colorado Fuel and Iron Company, Huerfano county; burned by a premature explosion.

May 18—Miguel Sandoval, driver, Sopris mine, Colorado mine, Las Animas county; bruises on leg, squeezed between two cars.

May 18—Thomas Jolly, engineer, Walsen mine, Colorado Fuel and Iron Company, Huerfano county; skull fractured and tooth broken from cog wheel.

May 20—Breeno Benedix, carpenter, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; elbow dislocated; caught in elevator.

May 20—Blas Premusic, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; leg broken by a fall of rock.

May 21—Joe Tatler, miner, Spring Gulch mine, Colorado Fuel and Iron Company, Pitkin county; cuts and bruises around head and back by a fall of rock.

May 23—John Pauli, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; paralysis of spinal chord, caused by a fall of rock.

May 24—Edward Ralsin, miner, Long's Peak mine, Long's Peak Coal Company, Boulder county; leg broken by a fall of rock.

May 29—Pietro Clauser, miner, Sopris mine, Colorado Fuel and Iron Company; Las Animas county; face and hands burned, caused by a premature explosion.

May 29—Juan Rival, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; wrist broken by being caught between two pit cars.

May 29—Joe Ossemer, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; face burned and chest lacerated by a premature explosion.

June 2—Anton Poline, miner, Fremont mine, Colorado Fuel and Iron Company, Fremont county; chest bruised by a fall of coal.

June 3—I. H. Webster, miner, Ute mine, Ute Coal and Coke company, La Plata county; hand crushed.

June 16—John D. Cornish, driver, Engle mine, Colorado Fuel and Iron Company, Las Animas county; right foot bruised by a pit car running over it.

June 24—Lorenzo Bernal, miner, Starkville mine, Colorado Fuel and Iron Company, Las Animas county; leg broken by a fall of slate.

July 5—W. E. Rice, driver, Pryor mine, Union Coal and Coke Company, Huerfano county; shoulder hurt by falling off a car.

July 10—A. N. Hanna, machine man, Walsen mine, Colorado Fuel and Iron Company, Huerfano county; punctured wound; hurt by a machine.

July 10—Pete Tilk, miner, Spring Gulch mine, Colorado Fuel and Iron Company, Pitkin county; leg broken by a fall of rock.

July 11—Stehan Antonocci, miner, Victor No. 2, Victor Coal and Coke Company, Las Animas county; left leg broken by a fall of rock.

July 12—Wm. Palmer, driver, Rex No. 1, Northern Coal Company, Boulder county; face and head badly bruised by falling and being run over by a car.

July 12—Victor Gregoria, tippelman, Coryell mine, P. C. Coryell, Garfield county; fell while at work and broke his kneecap.

July 12—Edward Door, driver, Berwind mine, Colorado Fuel and Iron Company, Las Animas; foot bruised by being caught in car wheel.

July 14—Marcus Myerle, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; right leg fractured and bruised by a fall of coal.

July 19—John Baldasar, driver, Starkville mine, Colorado Fuel and Iron Company, Las Animas county; hip dislocated.

July 20—John Tweedle, fire boss, Engle mine, Colorado Fuel and Iron Company, Las Animas county; leg injured by being struck by tail rope.

July 26—Henry C. Montega, driver, Engle mine, Colorado Fuel and Iron Company, Las Animas county; leg injured by falling off his trip.

July 31—William Smith, fireman, Starkville mine, Colorado Fuel and Iron Company, Las Animas county; calf of leg cut and bruised.

August 2—Eugene Villoto, miner, Spring Gulch mine, Colorado Fuel and Iron Company, Pitkin county; bone fractured in right leg by a fall of coal.

August 6—Alexander Moxley, miner, Bowen mine, Union Coal and Coke Company, Las Animas county; head cut and bruised by a fall of rock.

August 12—Andrew Stendihart, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; contusion of soft parts of leg and fracture of middle bone, caused by a fall of rock.

August 27—James May, driver, Anthracite mine, Colorado Fuel and Iron Company, Gunnison county; injured across the hip.

August 29—Barney McGarvey, driver, Berwind mine, Colorado Fuel and Iron Company, Las Animas county; arm and leg fractured.

September 4—John Proffitt, driver, Sunshine mine, Sunshine Fuel Company, Huerfano county; foot bruised by mule stepping on it.

September 15—William Hardy, day hand, Danville mine, Danville Coal Company, El Paso county; hand cut and slightly injured by machine.

September 18—Joe Gioni, miner, Gray Creek mine, Victor Coal and Coke Company, Las Animas county; head bruised by a fall of top coal.

October 1—Robert Stokes, driver; Peter Guam, timberer, Berwind mine, Colorado Fuel and Iron Company, Las Animas county; both received burns, cause unknown.

October 5—Peter Motore, miner, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; left groin bruised by fall.

October 5—Joe D. Rogers, miner, Spring Gulch mine, Colorado Fuel and Iron Company, Pitkin county; rib broken and back bruised by a fall of coal.

October 9—John Salvi, miner, Coal Creek mine, Colorado Fuel and Iron Company, Fremont county; arm and chest bruised by a fall of coal.

October 19—Pete Cosnar, machine keeper, Brookside mine, Colorado Fuel and Iron Company, Fremont county; internal injuries by a fall of coal.

October 19—Romaldo Mandini, miner, Soper mine, Colorado Fuel and Iron Company, Las Animas county; leg fractured by a fall of coal.

October 27—John C. Beatty, miner, Gray Creek mine, Victor Coal and Coke Company, Las Animas county; leg broken by fall of coal.

November 1—Edwin Steven, driver, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; ankle dislocated by a fall and a mule stepping on it.

November 8—Joe Flarin, miner, Spring Gulch mine, Colorado Fuel and Iron Company, Pitkin county; thumb cut by machine.

November 8—W. M. Williams, driver, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; part of finger cut off by machine.

November 9—Mike Riley, miner, Alpine mine, Alpine Coal Company, Gunnison county; back bruised and leg sprained by a fall of rock.

November 9—Adolph Lucero, miner, Engle mine, Colorado Fuel and Iron Company, Las Animas county; back and head injured by a fall of slate.

November 11—Harry Gregor, miner, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; foot hurt by a fall of rock.

November 12—Jim Varsolino, miner, Coryell mine, P. C. Coryell, Garfield county; slightly burned on face and hands by an explosion of gas.

November 14—Jondutto Cornetto, miner, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; back hurt by a fall of rock.

November 16—Thomas Stewart, miner, Gorham mine, Northern Coal Company, Boulder county; ankle dislocated by a fall of slate.

November 17—Mike Spraitza, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; contusions on ankle by a fall of rock.

November 17—John April, miner, Coal Creek mine, Colorado Fuel and Iron Company, Fremont county; foot cut and bruised by fall of coal.

November 23—Angelo Harris, miner, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; head and shoulders hurt by a fall of coal.

November 24—Anton Baldazar and John Pozzo, miners, Ruby mine, Colorado Fuel and Iron Company, Gunnison county; burned by a gas explosion.

November 27—Joe Baca, miner, Spring Gulch mine, Colorado Fuel and Iron Company, Pitkin county; wrist cut by machine.

November 27—James Cumming, miner, Rex No. 1 mine, Northern Coal Company, Boulder county; leg broken and crushed; fell under a car while on a trip.

November 28—Leguie De Gacimo, miner, Berwind mine, Colorado Fuel and Iron Company, Las Animas county; back and head injured by a fall of slate.

November 28—Peter De Jacomo, miner, Berwind mine, Colorado Fuel and Iron Company, Las Animas county; leg broken by a fall of coal.

December 1—John Sandberg, miner, Sopris mine, Colorado Fuel and Iron Company, Las Animas county; collar bone fractured by a fall of face coal.

December 2—Mike Phillipp, miner, Gorham mine, Northern Coal Company, Boulder county; contusions on face by a fall of coal.

December 5—Wm. Colona, miner, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; face and neck bruised by a fall of rock.

December 5—Wm. James, driver, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; finger cut off at first joint by being caught between edge of wall and a lump of coal.

December 7—D. M. Lee, trapper, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; right leg broken by being caught in a shaft, to which a mule was attached.

December 7—Philip Davis, miner, Sunshine mine, Colorado Fuel and Iron Company, Garfield county; foot and ankle lacerated by a fall of rock.

December 14—Anton Merkerich, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; ankle sprained and bruised by a fall of rock.

December 17—Anton Benedetto, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; scalp and back bruised by a fall of rock.

December 21—John Antonick, driver, Sunshine mine, Sunshine Fuel Company, Huerfano county; arm bruised by a fall of coal.

December 26—Chas. Plones, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; foot and ankle lacerated by a fall of rock.

December 30—Joseph Gall, miner, Crested Butte mine, Colorado Fuel and Iron Company, Gunnison county; laceration of large toe by a fall of coal.

Description of the Principal Mines; also New Mines Opened in 1900.

PRINCIPAL MINES.

The Starkville, Engle, Sopris and Berwind mines are among the largest producers of the state. These mines are situated in the Raton field, Las Animas county. The character of the coal is bituminous and coking. The aggregate capacity of these four properties is 6,800 tons daily. Within the last year washers have been erected at El Moro and Starkville, which greatly facilitates the manufacture of coke, making it equal to any produced in the states.

These mines are equipped with all the latest modern appliances, are owned and operated by the Colorado Fuel and Iron Company, and in charge of Wm. J. Murray, division superintendent.

Rockvale and Brookside mines are situated in the Canon City fraction, Fremont county. The product from these mines is famous as a superior domestic coal, and during the winter the demand exceeds the production. These properties are owned and operated by the Colorado Fuel and Iron Company.

The Crested Butte mine is situated in the Grand River field, Gunnison county. The capacity of the mine daily is 1,500 tons. The seam is eleven feet thick and makes an excellent coke without washing. The property is owned and

operated by the Colorado Fuel and Iron Company, and is connected with the Rio Grande railroad at Gunnison by a spur.

Hastings and Gray Creek mines are situated in the Raton field, Las Animas county. The daily capacity of these properties will aggregate 3,000 tons. The Hastings mines are equipped with the latest modern appliances, having electric mining haulage and lighting system, also washer and coking plant. The quality of coke compares favorably with that produced by the Colorado Fuel and Iron Company in the same district.

The Chandler mine is situated in the Canon City fraction, Fremont county. The character of the coal is semi-bituminous and a first-class domestic fuel. These mines are among the leading producers of the state. They are owned and operated by the Victor Fuel Company, and have been successfully managed for several years by Dundas M. Simpson.

The Alpine mine is situated in the Grand River field, Gunnison county. The seam is six feet thick, clean coal, of semi-bituminous character, and is of superior quality. This mine was opened about three years ago. The management exercised considerable foresight in the ventilation of this mine by adopting the "split air system." There is not a door in the mine, and, strange to relate, it is the only company in the state that has adopted this great and economical improvement.

This property is owned and operated by the Alpine Coal Company and is reached by the Colorado & Southern Railroad. It is in charge of Joe Watson, superintendent.

The Simpson mine is situated in the South Platte field, Boulder county. The seam is fourteen feet thick of clean coal, the character of which is lignite. The capacity of the mine is 2,000 tons daily. It is the best equipped mine in the

state. It has an electric mining haulage, lighting system, shaking screens and box car loader, machine shops and every appliance to make it a modern mine. It is connected with the Colorado & Southern and Burlington & Missouri River railroads.

Other mines in this county which will become large producers are Rex No. 2 at Louisville, the Industrial at Superior and the Gorham at Gorham. The Rex No. 2 is opened on the Kerr estate. The thickness of the seam is six and a half feet of clean coal, and much harder than some of the other coal that is mined in the district. The mine was opened about six years ago at a cost of thirty thousand dollars. It has not been worked extensively. The management intends driving the entries to the boundary and then work the seam back. This method will enable the company to win more coal at a less cost. The output from this mine will be 1,000 tons per day.

The Industrial mine is situated at Superior. The seam is eight feet thick and compares favorably with Rex No. 2 in quality and hardness. This mine is also undergoing development work resembling that of Rex No. 2, with the same object in view. It is also being equipped with electric mining haulage and lighting system, and will have a capacity of 1,200 tons daily.

The Gorham mine is situated at Gorham. The seam is seven feet thick of clean coal, with a better roof than is usually found in this field. The coal compares favorably with that of the Industrial and Rex No. 2 mines in quality. The present owners have had control of this property but a short time. The original system of working it has been changed to a considerable advantage. This mine will have a daily capacity of 800 tons. There is a great demand for the coal product of this county, owing to its convenience to the Denver market and its peculiar character as a non-smoke producing coal. The increase for Boulder county for 1900 over 1899 is 95,352 tons. These properties are owned and operated by the Northern Coal and Coke Company, connected with the Colorado & Southern railroad, and are in charge of J. C. Williams, division superintendent.

NEW MINES.

Coalbasin mine is situated in the Grand river field, Pitkin county, about eight miles from Redstone. The mine is now being developed. The first shipment was made in December, 1900. There are three seams cut at this mine, viz., 1, 2 and 3. No. 1 is eight feet, No. 2 is six feet, and No. 3 is eight feet in thickness, making an aggregate of twenty-two feet.

The management intends to work No. 3, which is perfectly clean and free from impurities, making an excellent coke without washing. The mine is opened by a rock tunnel 1,200 feet in length. It is driven at an angle of 12 degrees across the underlying measures of the coal strata. At the face of the tunnel the seams mentioned above were cut. It is now ventilated with a twenty-foot fan, but will be equipped in the near future with a Capell fan, of which the capacity will be 300,000 cubic feet per minute. This property is reached by a narrow gauge railroad about twelve miles in length, with an average gradient of 4 per cent., connecting it with the main line at Redstone.

Redstone is located on the Crystal river. It is a very desirable location, with an abundance of good water to supply the town and coking plant. There are now one hundred ovens in operation, with more under construction. This will become in the near future one of the largest coking plants in the West.

These properties are owned and managed by the Colorado Fuel and Iron Company, and are in charge of David Griffiths, superintendent.

Majestic Mine.—This mine is owned and operated by the Southern Coal Company. It is situated in Chicosa canon, about ten miles north of Trinidad. This company owns a valuable tract of six hundred acres, containing three veins of coal with a good sand rock roof, making it favorable to machine mining. These veins are four, five and seven feet in thickness and are comparatively flat, which is another feature in favor of machine work. Considerable wisdom was

displayed in the selection of this land, not only on account of the valuable coal deposits, but on account of its geographical location, it being the key to several thousand acres extending westward up Chicosa canon, taking in the upper series. The property is located on both Colorado & Southern and Denver & Rio Grande railroads, thus avoiding discrimination to which mines located on one railroad are frequently subjected.

In a very short time this enterprising company has equipped and developed this mine, so that now its capacity is 500 tons daily, and can be increased to 1,000 tons per day or 250,000 tons per year. The company has built a small-sized village, established a postoffice, and is operating a general store. In short, the property is a most attractive one, having all the resources to make a successful camp.

Excellent steam and coking coal, good roof, a small amount of timber is necessary, consequently a cheap producer. The property is ably managed by John Connell, president of the company. The analysis of the seven-foot vein is as follows:

Moisture	1.00%
Volatile matter.....	24.00%
Fixed carbon.....	68.00%
Ash	6.50%
Sulphur	trace

The Primrose mine is situated in the Raton field, about thirty miles north of Trinidad, Las Animas county. The mine is opened by a slope on the pitch of the seam, it having a uniform grade of 7 degrees. The seam is known as the Primrose, is four feet thick and free from impurities. The mine is situated on the Colorado & Southern railroad. Its product will be conveyed to the railroad by a tramway 1,500 feet in length. The coal is bituminous, of superior quality both for steam and domestic use. The mine has an excellent sand rock roof, which makes it favorable to machine mining. The tract consists of 2,000 acres and contains several workable seams, varying from four to seven feet in thickness.

This mine, when equipped with modern appliances, will rank among the largest producers of the state. Active operations commenced October 1, 1900. It is owned and operated

by the Primrose Coal Company, Harry S. Nash, manager, and W. H. Brown, superintendent.

The Broadhead mine is situated in the Raton field, near Aguilar, Las Animas county. This mine is opened in the upper series. There are several seams of workable size, varying from four to six feet in thickness. This coal is remarkable for its steam and domestic purposes. The natural conditions present more favorable advantages than some other properties, viz.: A sand rock roof of tenacious character, which enables the company to use the long wall mining machines. The Mitchell machine is now used at this mine, and has proved a decided success. Owing to the favorable condition of the roof a working face can be maintained from 250 to 300 feet in length, enabling a low cost of production.

This property is equipped with the latest modern improvements known in coal mining, viz.: Electric haulage, electric mining and lighting system, and will become a large producer. It is owned and operated by the Northern Coal and Coke Company, and is in charge of Archie Craig, superintendent.

The Mitchell mine No. 2 is situated near Gorham, Boulder county. The seam is seven feet thick of clean coal, which is a superior quality of lignite, comparing favorably in hardness to the Industrial coal. The mine has been recently opened and has not commenced to ship yet. It is owned and managed by Joseph Mitchell of Erie.

The John McNeil mine is a recently opened mine at Lafayette, Boulder county. It is opened by a 14x7-foot shaft and 114 feet in depth. The seam is eleven feet thick and is much harder than the other coals produced in that district, which is a peculiar and uncommon feature. This property is located on the Colorado & Southern railroad branch which runs to Lafayette. It is owned and managed by the Hon. John McNeil, and under his efficient management will become in the near future a great producer.

ESTIMATED AREA OF COLORADO COAL FIELDS.

	Square Miles.
Grand river field (Colorado portion).....	5,950
Yampa field, including part of Wyoming field in Routt county.....	1,100
La Plata field (Colorado portion).....	1,250
Raton field (Colorado portion).....	1,300
Northern Colorado field.....	6,800
North Park field.....	300
South Park, Canon City and Tongue Mesa district.....	100
Dakota measures (Southwestern Colorado).....	300
<hr/>	
Total area (square miles).....	18,100

ESTIMATED QUANTITY OF AVAILABLE COAL IN
COLORADO FIELDS.

Location.	Square Miles Accessible Area.	Available Gross Tonnage.
Grand river field (in Colorado).....	1,116	26,384,800,000
Yampa field.....	440	5,961,500,000
La Plata field (in Colorado).....	300	3,387,200,000
Raton field (in Colorado).....	473	4,490,200,000
Northern Colorado field.....	405	2,568,600,000
North Park field.....	80	1,806,500,000
Canon City, South Park and Tongue Mesa districts.....	49	429,000,000
Dakota cretaceous measures.....	50	169,300,000
<hr/>		
Total	2,319	45,197,100,000
Total net tonnage or 75 per cent. of gross estimate.....		33,897,800,000

ROUTT COUNTY.

The amount of wealth contained in the Colorado coal deposits that is undeveloped is beyond the comprehension of the casual observer. The area of the Yampa field is esti-

mated to be 440 square miles. The coal deposits of Routt county are classed in this field, which is intact. Eighteen miles northwest of Steamboat Springs there are four workable seams, viz., 1, 2, 3 and 4. No. 1 is seven feet thick and free from any impurities; character is bituminous. No. 2 is eleven feet in thickness; also bituminous. No. 3 is eight feet thick, and semi-anthracite. No. 4, which is the bottom seam, is fourteen feet in thickness and a first-class anthracite.

These deposits are situated in what is known as the Crawford tract, which contains 1,200 acres. Assuming that three-fourths of this property is underlaid with a fourteen-foot anthracite seam, 17,424,000 tons could be extracted, at three dollars per ton at the mine, it would net \$52,272,000 for one seam. The aggregate thickness of the four seams is forty feet. The intervening strata between No. 1 and No. 4 is about 160 feet. The seams have a uniform pitch of 20 degrees, with good roof.

This property can be reached by railroad from Deep Creek or Morgan Creek.

The analyses for Nos. 1 and 4 are as follows:

No. 1.

Moisture	1.91%
Volatile matter.....	21.92%
Fixed carbon.....	67.04%
Ash	9.10%

No. 4.

Moisture	2.41%
Volatile matter.....	7.78%
Fixed carbon.....	84.61%
Ash	5.20%

Coal and Coke Production for 1900.

PRODUCTION OF ARAPAHOE COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine	Scranton	Total Tonnage
Thickness of seam	7 ft.	
Kind of opening	Slope	
Character of coal	Lignite	
Yearly report	40	40 ^a

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Simpson	Gladstone	Mitchell	Hecla	Rex No. 1
Thickness of vein ...	14 ft.	14 ft.	14 ft.	11 ft.	6 to 11 ft.
Kind of opening.....	Shaft	Shaft	Shaft	Shaft	Shaft
Character of coal	Lignite	Lignite	Lignite	Lignite	Lignite
January.....	19,304	2,840	3,777	5,500	8,303
February.....	14,024	3,400	4,500	5,585	9,222
March.....	14,561	3,900	3,270	4,050	5,750
April	16,671	3 980	4,770	5,860	4,920
May	10,060	2,433	3,700	2,065	4,350
June.....	12,400	2,170	3,898	1,069	1,769
July	12,711	2,560	3,685	1,227	3,352
August.....	14,443	2,984	3,799	1,433	5,027
September.....	11,184	2,954	5,285	3,284	7,164
October	17,726	2,601	5,849	7,988	12,613
November.....	21,464	3,370	5,590	9,092	11,810
December.....	25,000	4,000	7,000	10,000	12,500
Totals.....	189,548	37,192	55,123	57,153	86,780

BOULDER COUNTY, 1900.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Rex No. 2	Gorham	Industrial	Long's Peak	Shanahan	Fox
6½ ft.	7 to 12 ft.	7 ft.	6 ft.	11 ft.	9 ft.
Shaft	Slope	Shaft	Shaft	Slope	Slope
Lignite	Lignite	Lignite	Lignite	Lignite	Lignite
6,875	3,133	2,918	3,600	----	3,366
4,146	2,914	3,013	2,000	----	3,230
2,715	1,687	2,500	2,200	----	2,482
1,350	2,412	1,993	2,445	----	2,075
2,123	1,440	1,670	1,400	Yearly report ----	2,154
1,758	1,520	1,218	1,300	----	1,630
1,644	1,198	2,240	1,200	----	2,252
899	1,690	2,240	2,445	----	2,458
2,545	1,618	2,240	3,000	----	2,098
3,826	2,739	2,240	4,500	----	3,379
3,890	3,196	4,443	4,800	----	3,480
4,200	4,000	4,500	3,600	11,200	4,000
35,971	27,547	31,215	32,490	11,200	32,604

PRODUCTION OF SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Caryl	Lister	Clark No. 8	Rosser No. 1
Thickness of vein	10 ft.	5 ft.	8 ft. 4 in.	5½ ft.
Kind of opening	Shaft	Shaft	Slope	Drift
Character of coal	Lignite	Lignite	Lignite	Lignite
January	1,500	Yearly report	New mine	Yearly report
February	1,250			
March	1,464			
April	1,373			
May	1,450			
June	1,130			
July	1,553			
August	1,653			
September	1,653			
October	1,517			
November	1,557			
December	2,000	13,650	4,443	3,398
Totals	18 100	13,650	4,443	3,398

BOULDER COUNTY, 1900—Concluded.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Boulder Valley	Sunnyside	Haywood	Vaughn	Tynan	Total Tonnage
8 ft.	4 ft.	5 ft. to 10 ft.	13 ft.	5 ft.	
Slope	Shaft	Shaft	Slope	Shaft	
Lignite	Lignite	Lignite	Lignite	Lignite	
---	---	---	---	---	61,116
---	---	---	---	---	53,284
---	---	---	---	---	44,579
---	---	---	---	---	47,849
---	---	---	---	---	32,845
---	---	---	---	---	29,862
---	---	---	---	---	33,622
---	---	---	---	---	39,071
---	---	---	---	---	43,025
---	---	---	---	---	64,978
---	---	---	---	---	72,692
1,100	2,600	21,500	6,000	10,400	155,091
1,100	2,600	21,500	6,000	10,400	678,014

NINTH BIENNIAL REPORT

PRODUCTION OF DOUGLAS COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine.....	White Ash	Total Tonnage
Thickness of vein.....	7½ to 8½ ft.	
Kind of opening.....	Shaft .	
Character of coal.....	Lignite	
December	1,250	1,250
Yearly report	New mine	

PRODUCTION OF EL PASO COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF 2 000 POUNDS.

Name of mine.....	Curtis	Danville	* Pikeview	Williamsville No. 1	Mathews	Williamsville No. 2	Total Tonnage
Thickness of vein.....	Average 20 ft.	10 ft.	8 ft.	8 ft.	5 ft.	5 ft.	
Kind of opening	Shaft	Slope	Shaft	Slope	Slope	Slope	
Character of coal.....	Lignite	Lignite	Lignite	Lignite	Lignite	Lignite	
January	3,340	1,325	1,570	---	---	---	6,235
February.....	4,043	1,512	1,570	---	---	---	7,125
March.....	3,013	1,512	1,570	---	---	---	6,085
April.....	3,929	1,512	1,570	---	---	---	7,011
May.....	2,279	1,512	1,570	---	---	---	5,361
June.....	1,438	1,000	1,570	---	---	---	4,008
July.....	1,613	1,000	1,570	---	---	---	4,188
August.....	1,977	1,512	1,570	---	---	---	5,059
September.....	3,620	1,512	1,570	---	---	---	6,702
October.....	5,266	2,024	1,570	---	---	---	8,860
November.....	6,400	2,024	1,576	---	---	---	10,000
December.....	6,400	2,920	4,000	9,319	500	500	23,639
Totals	43,318	19,365	21,276	9,319	500	500	94,278

* The Pikeview mine was formerly known as the Carlton.

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine.....	Brookside	Rockvale	Coal Creek	Fremont	Chandler
Thickness of vein....	5 to 5½ ft.	3½ ft.	3½ ft.	3 to 4½ ft.	4 ft.
Kind of opening.....	Slope	Shaft	Slope	Shaft	Shaft
Character of coa	Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.
January.....	26,403	23,199	10,018	10,454	8,288
February.....	22,849	21,137	7,622	9,463	6,940
March.....	15,276	10,026	6,137	8,479	6,018
April.....	9,178	5,347	5,304	8,171	3,525
May.....	6,234	4,945	4,408	8,472	1,735
June.....	14,376	4,061	2,737	6,940	3,824
July.....	13,876	10,810	3,160	6,141	4,908
August.....	18,858	16,338	6,243	8,494	5,163
September.....	12,902	15,982	9,124	6,596	5,192
October.....	21,362	25,045	10,610	Idle	7,723
November.....	20,531	22,043	9,741	Idle	7,588
December.....	20,500	25,000	9,700	Idle	9,000
Totals.....	202,345	183,933	84,744	73,210	69,904

FREMONT COUNTY, 1900.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Brewster	South Canon	S. Smith	Smith & Cowan	Bluff Springs	Price
2 ft. 8 in.	-----	4 ft.	4 ft.	3 ft. 3 in.	3 to 4 ft.
Slope	Slope	Shaft	Shaft	Slope	Slope
Semi-bitum	Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.	Semi-bitum.
1,117	--- ---	-----	---	---	---
1,057	---	-----	---	---	---
1,708	---	400	---	---	---
384	---	295	---	---	---
500	---	415	---	---	---
138	---	203	---	---	---
---	Estimate	325	Yearly report	Estimated	Estimated
---	---	332	---	---	---
Idle	---	680	---	---	---
---	---	300	---	---	---
---	---	550	---	---	---
---	600	400	1,200	7,000	2,000
4,904	600	3,900	1,200	7,000	2,000

PRODUCTION OF FREMONT COUNTY, 1900—Concluded.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine	Hays	Williams	Tom Williams	Total Tonnage
Thickness of seam	3 ft. and 4 ft.			
Kind of opening	Slope			
Character of coal	Semi-bitum.	Semi-bitum.	Semi-bitum.	
January				79,479
February				69,068
March				48,014
April				32,204
May	Estimated	Estimated	Estimated	26,709
June				32,279
July				39,160
August				55,428
September				50,476
October				65,070
November				60,423
December	3,000	3,000	5,000	86,400
Totals	3,000	3,000	5,000	644,740

PRODUCTION OF GARFIELD COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF 2,000 POUNDS.

Name of mine	Coryell	Midland	Sunshine	Diamond	Pocahontas	Rifle	C. F. & I.	Central	Total Tonnage
Thickness of vein	24 ft.	7 ft.	9 ft.	10 ft.	4 veins, 3, 8, 10 and 16 ft.	7 ft.	6 ft.	3 veins, 28, 60 and 8 ft.	
Kind of opening	Slope	Drift	Slope	Drift	Tunnel	Tunnel	Drift	Slope	
Character of coal	Bituminous	Bituminous	Semi-bitum.	Semi-bitum.	Bituminous	Semi-bitum.	Bituminous	Semi-bitum.	
January	7,735	5,500	---	---	---	---	---	---	13,235
February	4,323	4,000	---	---	---	---	---	---	8,323
March	3,081	5,200	---	---	---	---	---	---	8,281
April	4,794	4,000	Reopened	---	---	---	---	---	8,794
May	4,175	3,750	---	Yearly report	---	Yearly report	Yearly report	---	7,925
June	5,380	4,300	---	---	---	Yearly report	---	---	9,680
July	3,706	4,200	---	---	---	---	---	---	7,906
August	3,879	5,177	---	---	---	---	---	---	9,056
September	5,311	4,066	---	---	---	---	---	---	9,377
October	5,939	6,900	280	---	---	---	---	---	13,099
November	2,466	6,000	1,952	---	---	---	---	---	10,418
December	5,939	7,300	3,300	7,014	7,500	4,146	11,491	600	47,290
Totals	56,728	60,393	5,512	7,014	7,500	4,146	11,491	600	153,384

PRODUCTION OF GUNNISON COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF 2,000 POUNDS.

Name of mine	Crested Butte	Alpine	Anthracite	Ruby	Union	Total Tonnage
Thickness of vein	10½ ft.	6 ft.	5 ft.	3 ft.	5½ ft.	
Kind of opening	Slope	Shaft	Drift	Drift	Drift	
Character of coal	Bituminous	Semi-bitum.	Anthracite	Anthracite	Semi-bitum	
January	25,866	7,897	5,557			39,230
February	20,640	3,231	1,400			25,271
March	22,750	6,285	Idle			29,035
April	22,609	1,612	Idle			24,221
May	24,286	5,426	1,687			31,399
June	24,158	4,800	5,888	3,374		38,220
July	26,072	7,532	4,515	4,155		42,274
August	24,333	7,159	5,565	4,219		41,296
September	23,265	6,067	5,033	2,210		36,575
October	25,767	7,811	5,595	941		40,111
November	23,123	7,800	4,877	228		36,028
December	23,070	7,900	4,000	Idle	20,000	54,900
Totals	285,889	73,430	44,117	15,127	20,000	438,563

PRODUCTION OF HUERFANO COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine	Pictou	Robinson	Walsen
Thickness of vein	3 veins 3½, 5 and 6 ft.	7 ft.	7 ft.
Kind of opening	Slope	Slope	Slope
Character of coal	Bituminous	Bituminous	Bituminous
January	11,227	6,534	12,303
February	10,509	5,239	10,538
March	8,776	3,828	12,518
April	9,412	5,589	11,625
May	6,239	5,939	13,117
June	8,637	5,757	11,736
July	5,216	6,098	11,159
August	6,862	6,417	14,723
September	6,555	7,424	13,162
October	7,530	8,064	14,079
November	8,293	8,620	11,795
December	7,300	9,000	12,000
Totals	96,556	78,509	148,755

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Rouse No. 4	Maitland	Sunshine
Thickness of vein	5½ ft.	3½ ft.	4½ ft.
Kind of opening.....	Drift	Slope	Slope
Character of coal	Bituminous	Bituminous	Bituminous
January.....	17,464	6,408	3,875
February.....	17,118	5,608	3,185
March.....	19,412	4,734	3,003
April.....	14,179	1,151	1,535
May.....	19,152	1,377	2,137
June.....	18,233	1,047	1,959
July.....	19,534	1,569	1,628
August.....	22,804	5,233	1,512
September.....	20,758	6,674	1,294
October.....	23,112	5,225	2,507
November.....	20,588	5,277	4,021
December.....	22,500	6,000	5,000
Totals.....	234,854	50,303	31,656

HUERFANO COUNTY, 1900—Concluded.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Pryor	Champion	Toltec	Midway	Total Tonnage
2 veins 5 ft. and 7 ft.	5 ft.	4½ ft.	5 ft. to 6½ ft.	
Slope	Slope	Slope	Slope	
Bituminous	Bituminous	Bituminous	Bituminous	
8,756	1,160	8,000	4,941	80,668
7,170	1,250	6,100	4,445	71,162
7,800	1,061	5,000	5,570	71,702
4,528	602	3,000	3,740	55,361
7,937	1,129	1,865	2,524	61,416
9,513	Idle	2,500	5,207	64,589
8,387	Idle	4,400	4,005	61,996
6,848	184	6,344	4,185	75,112
8,064	267	6,344	4,444	74,986
10,273	1,345	6,344	5,410	83,889
7,427	2,674	6,347	5,160	80,202
10,000	3,100	7,125	5,000	87,025
96,703	12,772	63,369	54,631	868,108

PRODUCTION OF JEFFERSON COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine	Mt Carbon	Independence	Total Tonnage
Thickness of vein	3½ ft.	9 ft.	
Kind of opening	Drift	Shaft	
Character of coal	Lignite	Lignite	
December	600	5,000	
Yearly report	600	5,000	5,600

PRODUCTION OF LARIMER COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF
2,000 POUNDS.

Name of mine	Indian Springs	Total Tonnage
Thickness of vein	5 to 7 ft.	
Kind of opening	Slope	
Character of coal	Lignite	
December	2,000	
Yearly report	2,000	2 000

PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Starkville	Sopris	Engle	Berwind
Thickness of vein	6 ft.	4 ft.	5½ ft.	5 to 6 ft.
Kind of opening	Drift	Drift	Slope	Drift
Character of coal	Bituminous	Bituminous	Bituminous	Bituminous
January	45,089	26,111	38,928	17,398
February	35,247	22,146	34,888	18,709
March	44,318	23,611	38,817	20,264
April	34,766	21,543	34,107	18,106
May	39,149	18,507	37,085	21,957
June	35,145	17,999	30,558	20,810
July	34,552	16,101	30,439	18,785
August	38,096	15,644	29,895	23,316
September	35,418	13,830	29,635	21,894
October	38,653	14,375	27,014	21,461
November	35,302	13,756	26,432	23,724
December	40,000	14,000	30,000	24,000
Totals	455,735	217,623	387,798	253,424

LAS ANIMAS COUNTY, 1900.

OF EACH MINE IN TONS OF 2,000 POUNDS.

Hastings No. 1	Hastings No. 2	Gray Creek	Bunker Hill	Blooms	Peerless
6 ft.	6 ft.	6 ft.	6 ft.	7 ft.	6 ft.
Drift	Slope	Drift	Drift	Drift	Slope
Bituminous	Bituminous	Bituminous	Bituminous	Bituminous	Bituminous
8,600	23,799	19,857	2,642	3,921	7,894
12,418	19,856	16,880	2,574	3,015	3,236
14,331	22,290	19,818	2,654	2,807	3,774
10,500	17,495	10,480	165	924	3,277
17,038	17,450	13,306	1,422	780	6,507
17,011	18,541	13,332	1,710	376	4,825
15,761	18,374	8,480	1,313	592	2,228
15,417	20,774	13,905	1,165	1,293	3,845
13,867	18,734	14,397	1,730	1,294	1,307
16,683	25,579	8,591	1,937	1,296	2,591
12,500	25,287	13,547	2,085	1,295	2,896
18,000	27,000	18,000	2,000	2,107	2,921
172,126	255,179	170,593	21,397	19,700	44,301

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PRODUCTION OF

SHOWING MONTHLY AND YEARLY PRODUCTION

Name of mine	Bowen	Rugby	Forbes No. 1	La Belle	Majestic
Thickness of vein.	7 ft.	4 ft.	6 ft.	5 ft.	6 to 7 ft.
Kind of opening	Slope	Drift	Drift	Drift	Drift
Character of coal	Bituminous	Bituminous	Bituminous	Bituminous	Bituminous
January	20	340	.....	1,700	2,656
February	No output	1,170	.....	1,440	3,997
March	593	1,951	.....	1,440	4,540
April	1,487	875	.....	1,440	2,162
May	4,394	2,650	217	2,440	4,488
June	5,658	1,709	1,798	2,440	5,402
July	5,151	1,974	1,500	2,800	4,723
August	7,254	2,697	1,300	3,400	6,337
September	6,528	2,142	1,427	3,500	3,930
October	5,141	1,642	1,450	3,100	1,919
November	7,000	2,750	1,200	3,300	6,126
December	8,000	4,010	1,500	3,500	9,000
Totals	51,226	23,910	10,392	30,500	55,280

LAS ANIMAS COUNTY, 1900—Concluded.

OF EACH MINE IN TONS OF 2,000 POUNDS.

*Butler	Rapson	Primrose	Stock Canon	Broadhead	Total Tonnage
6 ft.	4 ft.	4 ft. 4 in.	6½ ft.	4 ft. 6 in.	
Drift	Slope	Slope	-----	Slope	
Bituminous	Bituminous	Bituminous	Bituminous	Bituminous	
1,435	----	----	----	2,218	202,608
1,545	----	----	----	2,960	180,081
600	----	----	----	3,050	203,858
400	----	----	----	1,396	159,123
303	New mine	New mine	New mine	1,958	189,651
360				1,783	179,457
310				1,707	164,790
475				1,309	186,122
360				1,801	171,794
750	----	----	----	2,201	177,383
840	----	----	----	1,590	179,630
1,000	1,570	1,942	400	1,737	210,687
8,378	1,570	1,942	400	23,710	2,205,184

*Butler was formerly known as the Rowland.

PRODUCTION OF LA PLATA COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF 2,000 POUNDS.

Name of mine	Porter	Hesperus	San Juan	Ute	City	La Plata	Total Tonnage
Thickness of vein	3½ ft.	5½ ft.	2½ ft. to 4½ ft.	5 ft.	3 ft.	5 ft.	
Kind of opening	Drift	Drift	Drift	Drift	Drift	Slope	
Character of coal	Bituminous	Semi-bitum.	Bituminous	Bituminous	Bituminous	Bituminous	
January	6,180	3,098	---	1,070	1,000	---	11,348
February	3,622	2,420	---	939	1,717	---	8,698
March	3,686	2,045	---	706	1,809	---	8,246
April	4,400	1,500	---	400	810	---	7,110
May	3,968	1,761	---	500	811	---	7,040
June	3,619	1,379	---	800	811	---	6,609
July	3,622	1,281	---	800	1,518	---	7,221
August	3,592	1,986	---	898	2,063	---	8,539
September	3,453	1,979	---	900	1,865	---	8,197
October	5,313	3,600	---	1,645	2,406	---	12,964
November	5,313	3,506	---	1,300	1,961	---	12,080
December	5,200	4,250	8,718	1,700	2,000	2,350	24,218
Totals	51,968	28,805	8,718	11,658	18,771	2,350	122,270

PRODUCTION OF MESA COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF 2,000 POUNDS.

Name of mine	Book Cliff	Palisade	Cameo	Mt Lincoln	Larimer	Total Tonnage
Thickness of vein	5 ft.	4 ft.	6 ft.	3 ft.	3 ft.	
Kind of opening	Drift	Drift	Drift	Drift	.....
Character of coal	Bituminous	Bituminous	Bituminous	Bituminous	Bituminous	
January	2,190	.....	.....	.....	.....	2,190
February	1,172	.....	.....	.....	.....	1,172
March	829	.....	.....	.....	.....	829
April	1,149	.....	.....	.....	.....	1,149
May	1,113	.....	.....	.....	.....	1,113
June	992	.....	.....	.....	.....	992
July	1,044	.....	.....	.....	.....	1,044
August	1,278	.....	.....	.....	.....	1,278
September	1,231	.....	.....	.....	.....	1,231
October	2,173	.....	.....	.....	.....	2,173
November	2,155	.....	.....	.....	.....	2,155
December	2,185	.....	.....	.....	.....	2,185
Totals	17,511	5,950	15,000	1,530	100	40,091

PRODUCTION OF PITKIN COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF 2,000 POUNDS.

Name of mine	Spring Gulch	Placita	Union	Coalbasin	Total Tonnage
Thickness of vein	2 veins, 5 and 10½ ft.	3 ft. 8 in.	5 ft.	3 veins, 8 ft. each	
Kind of opening	Drift	Drift	Slope	Slope	
Character of coal	Bituminous	Bituminous	Bituminous	Bituminous	
January	18,604	4,673			23,277
February	13,035	4,459	Reopened		17,494
March		7,216			7,216
April		6,792			6,792
May		5,406			5,406
June	Sealed on acre count of ore	5,322	2,416	New mine	7,738
July	1,340	7,090	4,144		12,574
August	4,475	5,527	3,678		13,680
September	6,449	5,865	4,748		17,062
October	8,707	7,574	3,268		19,849
November	11,111	6,614	2,065		19,790
December	14,000	8,000	1,600	1,000	24,600
Totals	77,721	74,838	21,919	1,000	175,478

PRODUCTION OF WELD COUNTY, 1900.

SHOWING MONTHLY AND YEARLY PRODUCTION OF EACH MINE IN TONS OF 2,000 POUNDS.

Name of mine	Garfield No. 2	Washington	Emerson	White House	Eureka	White Ash	Davis	Lincoln	Total Tonnage
Thickness of vein	6 ft.	5 ft.	6 ft.	6 ft.	4½ ft.	2 ft. 8 in	5 ft	5 ft. 2 in.	
Kind of opening	Shaft	Shaft	Shaft	Shaft	Shaft	-----	Shaft	Shaft	
Character of coal	Lignite	Lignite	Lignite	Lignite	Lignite	Lignite	Lignite	Lignite	
January	1,647	---	---	---	---	---	---	---	1,647
February	1,647	---	---	---	---	---	---	---	1,647
March	1,649	---	---	---	---	---	---	---	1,649
April	1,886	---	---	---	---	---	---	---	1,886
May	1,330	---	---	---	---	---	---	---	1,330
June	1,104	---	---	---	---	---	---	---	1,104
July	1,790	---	---	---	---	---	---	---	1,790
August	1,482	Yearly report	Yearly report	Yearly report	Yearly report	Yearly report	Yearly report	Yearly report	1,482
September	1,561	---	---	---	---	---	---	---	1,561
October	2,459	---	---	---	---	---	---	---	2,459
November	2,545	---	---	---	---	---	---	---	2,545
December	2,900	4,556	1,000	5,503	2,025	600	3,025	3,025	22,634
Totals	22,000	4,556	1,000	5,503	2,025	600	3,025	3,025	41,734

COAL PRODUCTION OF
SHOWING MONTHLY AND YEARLY
ALL YEARLY REPORTS GROUPED

	Arapahoe	Boulder	Douglas	El Paso	Fremont
January.....	-----	61,116	-----	6,235	79,479
February.....	-----	53,284	-----	7,125	69,068
March.....	-----	44,579	-----	6,095	48,044
April.....	-----	47,849	-----	7,011	32,204
May.....	-----	32,845	-----	5,361	26,709
June.....	-----	29,862	-----	4,008	32,279
July.....	-----	33,622	-----	4,183	39,160
August.....	-----	39,071	-----	5,059	55,428
September.....	-----	43,025	-----	6,702	50,476
October.....	-----	64,978	-----	8,860	65,070
November.....	-----	72,692	-----	10,000	60,423
December.....	40	155,091	1,250	23,639	86,400
Totals.....	40	678,014	1,250	94,278	644,740

COLORADO FOR 1900.

PRODUCTION OF EACH COUNTY.

IN THE MONTH OF DECEMBER.

Garfield	Gunnison	Huerfano	Jefferson	Larimer	Las Animas
13,235	39,230	80,663	-----	-----	202,608
8,323	25,271	71,162	-----	-----	180,081
8,281	29,035	71,702	-----	-----	203,858
8,794	24,221	55,361	-----	-----	159,123
7,925	31,399	61,416	-----	-----	189,651
9,680	33,220	64,589	-----	-----	179,457
7,906	42,274	61,996	-----	-----	164,790
9,056	41,296	75,112	-----	-----	186,122
9,377	36,575	74,986	-----	-----	171,794
13,099	40,114	83,889	-----	-----	177,383
10,418	36,028	80,202	-----	-----	179,630
47,290	54,900	87,025	5,600	2,000	210,687
153,384	438,563	868,108	5,600	2,000	2,205,184

COAL PRODUCTION OF COLORADO FOR 1900—Concluded.

MONTHLY AND YEARLY PRODUCTION OF EACH COUNTY.

ALL YEARLY REPORTS GROUPED IN THE MONTH OF DECEMBER.

	La Plata	Mesa	Pitkin	Weld	Totals
January	11,348	2,190	23,277	1,647	521,033
February	8,698	1,172	17,494	1,647	443,325
March	8,246	829	7,216	1,649	429,534
April	7,110	1,149	6,792	1,886	351,500
May	7,040	1,113	5,406	1,330	370,195
June	6,609	992	7,738	1,104	374,538
July	7,221	1,044	12,574	1,790	376,500
August	8,539	1,278	13,680	1,482	436,123
September	8,197	1,231	17,062	1,561	420,986
October	12,964	2,173	19,849	2,459	490,838
November	12,080	2,155	19,790	2,545	485,963
December	24,218	24,765	24,000	22,634	770,139
Totals	122,270	40,091	175,478	41,734	5,470,734

PRODUCTION BY COUNTIES.

SHOWING INCREASE AND DECREASE.

COUNTIES	1899	1900	Increase	Decrease
Arapahoe	439	40	-----	399
Boulder	582,662	678,014	95,352	-----
Douglas	-----	1,250	1,250	-----
El Paso	67,162	94,278	27,116	-----
Fremont	629,325	644,740	15,415	-----
Garfield	136,062	153,384	17,322	-----
Gunnison	303,668	438,563	134,895	-----
Huerfano	625,562	868,108	242,546	-----
Jefferson	8,551	5,600	-----	2,951
Larimer	5,500	2,000	-----	3,500
Las Animas	2,122,600	2,205,184	82,584	-----
La Plata	113,683	122,270	8,587	-----
Mesa	24,183	40,091	15,908	-----
Pitkin	176,106	175,478	-----	628
Weld	31,436	41,734	10,298	-----
Small mines, estimated	-----	25,000	25,000	-----
Total tonnage	4,826,939	5,495,734	-----	-----

Increase for 1900, 668,795 tons.

PRODUCTION FOR 1900.
SHOWING MONTHLY AND YEARLY PRODUCTION OF DIFFERENT VARIETIES.

Character of Coal	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Tonnage
Lignite	68,998	62,056	52,323	56,746	39,536	34,974	39,595	45,612	51,288	76,297	85,237	210,254	822,916
Semi-bituminous....	100,521	80,622	62,640	42,610	40,060	46,759	54,598	71,613	65,920	85,980	78,641	161,590	894,554
Bituminous	345,957	298,247	314,601	272,144	288,912	283,543	273,697	309,084	296,535	322,025	316,980	384,295	3,697,020
Anthracite	5,557	1,400	.....	.....	1,087	9,262	8,670	9,784	7,243	6,536	5,105	4 000	59,244
Total tonnage....	521,033	443,325	429,534	351,500	370,195	374,538	376,560	436,123	420,986	490,838	485,963	770,139	5,470,734

COKE PRODUCTION, 1900.

Name of Operators	Location of Ovens	County	Number of Ovens	Tonnage	Remarks
Colorado Fuel and Iron Co.....	Cardiff	Garfield	204	62,947	..... Coal supplied by Spring Gulch mine
Colorado Fuel and Iron Co.....	Crested Butte	Gunnison	154	84,157	.....
Colorado Fuel and Iron Co.....	Starkville	Las Animas	190	90,493	.....
Colorado Fuel and Iron Co.....	Sopris	Las Animas	272	106,772	.....
Colorado Fuel and Iron Co.....	El Moro	Las Animas	244	131,024	..... Coal supplied by Engle mine
Colorado Fuel and Iron Co.....	Redstone	Pitkin	100	9,063	..... Began to coke in May; coal supplied by Placita
Victor Fuel Co.....	Hastings	Las Animas	100	43,438	.....
Victor Fuel Co.....	Gray Creek	Las Animas	100	33,163	.....
Omaha and Grant Smelting Co	Durango	La Plata	28	11,730	..... Coal supplied by Porter mine
Union Coal and Coke Co.....	Gulch	Pitkin	20	2,600	..... Began to coke in June; coal supplied by Union mine
Totals.....	.....	.....	1,412	575,447	.....

COKE PRODUCTION, 1900.
BY COMPANIES AND COUNTIES.

COMPANIES	Total Number of Ovens	Total Tonnage	COUNTIES	Number of Ovens	Tonnage
Colorado Fuel and Iron Co	1,164	484,456	Las Animas	906	404,950
Victor Fuel Co	200	76,661	Garfield	204	62,947
Omaha and Grant Smelting Co	28	11,730	Gunnison	154	84,157
Union Coal and Coke Co	20	2,600	Pitkin	120	11,663
			La Plata	28	11,730
Totals	1,412	575,447	.....	1,412	575,447

TABLE.
SHOWING THE TOTAL PRODUCTION OF THE DIFFERENT COMPANIES OPERATING TWO OR MORE MINES.

NAME OF COMPANY	Number of Mines	Bituminous or Coking	Number of Mines	Semi-bitum. or Non- Coking	Number of Mines	Lignite	Number of Mines	Anthracite	Total in Tons of 2,000 Pounds
Colorado Fuel and Iron Co	13	2,343,102	5	549,744				59,244	2,922,060
Victor Fuel Co	5	679,857	1	69,904					749,761
Northern Coal and Coke Co	3	131,380	1	7,014	10	566,669			705,063
Union Coal and Coke Co	4	182,620							182,620
Pike's Peak Consolidated Coal Co					4	50,400			50,400
Porter Fuel Co	1	51,968	1	28,805					80,773
H. C. Nicholls & Co	2	76,028							76,028

SUMMARY OF COAL PRODUCTION.

FROM 1873 TO 1900, INCLUSIVE.

YEAR	Tons	YEAR	Tons
1873	69,977	1887	1,791,735
1874	87,372	1888	2,185,477
1875	98,838	1889	2,400,529
1876	117,666	1890	3,075,781
1877	160,000	1891	3,512,632
1878	200,630	1892	3,771,234
1879	322,732	1893	3,947,056
1880	375,000	1894	3,021,028
1881	706,744	1895	3,339,495
1882	1,161,479	1896	3,371,633
1883	1,220,593	1897	3,565,660
1884	1,130,024	1898	4,174,037
1885	1,398,796	1899	4,826,939
1886	1,436,211	1900	5,495,734

List of Fatal Accidents for 1900.

FATALITIES.

Denver, Colorado, December 29, 1900.

Twenty-seven fatal accidents have occurred in the mines during my term of office up to this date. I found two recorded in the office. Three occurred outside of mines, one at Starkville, one near the Haywood mine by the railroad cars, and one near the Midland mine, in Garfield county. I understand there were some accidents before I went into office, of which no record has been made.

January 8—Jacob Cross was instantly killed by a fall of rock in the Morgan mine, Deep Creek, Routt county.

I visited the scene of the accident, January 19, accompanied by G. D. Herwig and C. W. Cantouwine.

The mine is opened on a small scale for the purpose of supplying the neighboring farmers with coal. From time to time several persons have been operating the property, and the general appearance of the mine is sufficient evidence that operations have been carried on in a careless, haphazard manner by inexperienced miners. The mine consists of one opening driven on the strike of the seam, irregular in width, and sparsely timbered.

A few days previous to the accident the deceased and Clarence Wyatt took charge of the mine, and, previous to starting operations at the face, they put up several props in the background, leaving a space of about ten feet near the face unsupported. About a foot inside of the props a smooth slip running at right angles to the working place penetrated

the roof. The unsupported space being wide and the overhanging roof massive and heavy, broke off at the edge of the coal, with the aforesaid result.

Clarence Wyatt (who was slightly injured at the same time) stated: He was not an experienced miner and was engaged by the deceased to work for him. On the day of the accident he had several times called the deceased's attention to the dangerous condition of the roof, adding that he could push his hand into the opening, but the deceased did not heed his warning and worked along, encouraging him to do likewise. There were no timbers in the working place, but they could have been gotten from the forest close by. Mr. Wyatt thought the accident could have been avoided if the deceased had taken time to timber the face of the working place properly.

Deceased was a single man, nationality American, age 38.

DAVID GRIFFITHS.

January 9—Mike Cuccio, miner, was instantly killed by a fall of rock at the face of No. 5 room, in the first north entry No. 1 Hastings mine, Las Animas county.

I visited the scene of the accident on the 11th and found that the deceased and Carlo Campesi (who had his leg broken at the same time) were working together in the aforesaid room. The room is about eleven feet wide at the point the accident occurred, and the distance from the timber to face about seven feet. The deceased and Campesi were aware of the roof being in a dangerous condition, and they were both engaged at the time of the accident in securing the same. Timber for their use was close at hand.

County coroner investigated the cause of the accident and deemed it unnecessary to hold an inquest.

Deceased was a married man, leaving wife in Italy; age 42 years.

DAVID GRIFFITHS.

March 13—Report of the fatal accident which occurred to Henry Kelley, miner, in room 29, off the fourth east entry, Brookside mine, Fremont county, about 12:30 p. m., March 13, 1900.

The deceased, Henry Kelley, and his colleague, Tom Kavanagh, were mining together in the aforesaid place, and, from the latter's testimony, I find that during dinner hour they fired two shots in the face of the room. Having an empty car and being desirous of loading the same and avoid working in the powder smoke, created by the newly fired shots, they, after a short discussion, mutually agreed on retreating and load the car from a pillar at a point about 130 feet from the face where the coal was slightly crushed and partly loose from the weight of the overlaying strata, thus obtainable without much labor. Kavanagh took to the pillar on the east side of the room, while the deceased engaged in the pillar on the side opposite, and immediately after he commenced disturbing the coal a piece of the roof fell on his head and shoulders, forcing him to the floor and killing him instantly.

The rock was about six feet in length by five in width, and varying in thickness from a feather edge to a maximum of nine inches. The seam at this point is about five and one-half feet thick.

Deceased was Irish, 45 years of age and single; had no relatives in this community. Thomas Maddon and others assisted in extricating the body from under the rock.

Coroner Dr. W. T. Little, of Canon City, investigated the cause, but deemed it unnecessary to hold an inquest.

The only visible contusions were a slight cut on the back of the head and a small depression on the left side of the forehead, where the skull had been fractured.

I arrived at the scene of the accident March 15.

(Signed) JNO. J. JONES.

April 14—Augustino Diaz, Mexican, age 24 years, was killed in the Peerless mine, Las Animas county, on the 14th of April, 1900, by a fall of roof.

Deceased and his brother had commenced work in No. 47 room on the 13th. At the time of the accident Augustino's brother was working at the face of their room, and deceased was killed at the corner of a cross-cut between the main sixth entry and the back entry, about thirty feet from his working place. There was a car standing on the entry partly loaded, opposite the place where deceased was killed. It is presumed,

from evidence, that deceased was robbing the corner of the entry pillar between the main entry and the back entry. He had a pick in his hands and was crushed lifeless. The roof that fell on him was in the nature of a pot, and it was presumed that he released it by the excavation of the coal.

Acting Coroner W. S. Bayles held an inquest, which is as follows.

(Signed) HENRY DENMAN.

VERDICT OF JURY.

State of Colorado, County of Las Animas, ss.

An inquisition holden at Aguilar, in Las Animas county, state of Colorado, on the 18th day of April, A. D. 1900, before W. S. Bayles, justice of the peace, acting coroner, upon the body of Augustino Diaz, by the jurors whose names are hereto attached. Said jurors upon their oath do say:

We find by the evidence that said Augustino Diaz came, by a fall of roof, to his death on the 14th day of April, A. D. 1900, by an unforeseen accident in a cross-cut between the southwest main entry and back entry, in the Peerless mine of the Northern Coal Company, at Aguilar, Colorado; and we, the said jurors, find no blame attached to the Northern Coal Company whatever for said accident.

In testimony whereof the said jurors have hereunto set their hands the day and year aforesaid.

(Signed) JOSHUA MUSGRAVE.
WM. SIMPSON.
ADAM TURNER.
GRANT DAWNLY.
CRUZ GONZALES.
DAROTO MARTINEZ.

Attest:

W. S. BAYLES,

Justice of Peace, Acting Coroner, Las
Animas County, Colo.

April 23—Report of fatal accident to John Brumon, miner, by a fall of rock at the face of room No. 11, off the first north entry, Crested Butte mine, at 9:30 a. m., April 23, 1900.

John Brumon and four men, Matt Molack, George Mollock, John Muncija and Nick Gusick, were working together in the aforesaid place. The room was about eighteen feet wide and the seam eight feet thick. The coal at this place is overlaid with eighteen inches of "draw" slate, which is usually very fragile and easily worked out, and in order to carry out their work in the safest manner, they established a rule to remove the slate before digging out the coal beneath, thus avoiding the danger of its falling. The roof overlying the slate is strong and tenacious. At the time of the accident they neglected to follow the same procedure, and as a result the slate was permitted to hang over to such an extent that the force of gravity acting upon the rock, exceeded its adhesive power, and in consequence, while loading a car, a piece weighing about 500 pounds fell and struck the deceased on his back, dislocating his spine and causing severe internal injuries, from the effects of which he died thirty-six hours after. The room is well timbered to within close proximity of the face, and a supply of suitable props stored at a convenient point for use.

Brumon was a native of Austria, 28 years of age, and single. The above is taken from the statement given by Matt Molack, deceased's partner. Coroner England of Gunnison examined the scene and made a thorough investigation into the cause of the accident on April 25, and decided that an inquest was unnecessary. I investigated the accident April 27, 1900.

JOHN D. JONES.

April 27—Paulo Carbonato was killed in the Cameron mine (Rouse No. 4), Santa Clara, Huerfano county, April 27, 1900.

Deceased was working alone in No. 33 room, second east entry. It is presumed he was robbing the pillar about fourteen feet from the face, on the "gob" side, and released a piece of the roof, which killed him instantly. The coroner held an inquest and rendered the following verdict:

We, the jury, find the deceased, Paulo Carbonato, met his death in the Cameron mine, second east entry, room No.

33, by a fall of rock through his own fault, working where he should not have been, fourteen feet back from the face of his room on the "gob side," under a loose rock, knowing it to be dangerous.

ANDREW DICK,
CHAS. BRUNELLI,
DAN MITCHELL,
TONY URANIO,
JOHN PIPER,
GEO. TONELLI,

Jurors.

A. M. RICE,
Coroner of Huerfano County.

May 4—Matteo Segarich, age 35, Austrian, married, was killed on May 4, 1900, at the Sopris mine, Las Animas county, in room 23, twelfth east entry.

Deceased and his partner had been mining a part of the room and were preparing to shoot the coal down. Deceased was about to set the post of the drilling machine directly in front of the coal already mined, when a slab of coal fell, striking deceased on the head, killing him instantly.

His partner was about thirty feet from the face getting some part of the machine. The coal was not secured by sprag or otherwise. The coroner made an investigation and deemed an inquest unnecessary.

HENRY DENMAN.

May 19—Bert Billings, American, came to his death on May 19, 1900, at the Palisade mine, Mesa county, in the third west entry and No. 2 room.

Deceased and Hugh Salsbury entered the mine at 7:40 p. m. They were engaged by the mine foreman to go to the face of No. 1 room and drive a narrow chamber from the face of No. 1 room across the face of room No. 2 in order to isolate a fire which existed in room 2. After working about twenty minutes they felt the effects of the gas given off by the fire and decided to go home. The mine not having any ventilating system, they both became asphyxiated at the entrance of No. 1 room. Deceased took the wrong direction,

went into room No. 2 and fell, and presumably never recovered consciousness. He may have expired from suffocation or poison given off by the fire. Salsbury kept the direction towards the entrance of the mine for about 300 feet. He, too, fell and lay in a comatose condition until 3:30 a. m. of the 20th inst. He went home and inquired if his partner had come home. A rescuing party went into the mine in search of deceased and found him at the place mentioned, lying face down, lifeless, at about 8 a. m. This mine is a drift and operated under lease. The foreman exemplified gross negligence and incompetency by allowing those two men to enter the mine and work under such circumstances.

The coroner's inquisition is as follows:

HENRY DENMAN.

VERDICT OF JURY.

State of Colorado, County of Mesa:

An inquisition holden at Grand Junction, in Mesa county, state of Colorado, on the 29th day of May, A. D. 1900, before L. F. Ingersoll, coroner of said county, upon the body of Bert Billings, there lying dead, by the jurors whose names are hereto subscribed, said jurors upon their oaths do say:

That Bert Billings came to his death by suffocation by foul air by fire in the Palisade mine, and we believe from the evidence produced after examination of the mine, that there has been carelessness on the part of Bert Billings on entering into the mine at that time, and also on the part of the management in not providing for pure air.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

L. M. MILLER,
J. H. ACKERMAN,
E. L. WADE,
WM. ORDONNELL,
M. J. O'NEIL,
T. M. JONES,
Jurors.

Attest:

L. F. INGERSOLL,
Coroner of Mesa County.

May 28—Celestio Flaine, Austrian, age 35 years, married, was killed in the Gray Creek mine, Las Animas county, May 28, 1900.

Deceased and his partner were engaged drawing entry pillars in No. 3 mine, back entry. Deceased was working on one side of the entry and his partner on the other. There was a triangular shaped piece of roof reaching across their working face and cornering on the side Flaine was working. One slip ran nearly parallel with the entry and the other crossed the face. The slips were invisible. The accident might have been averted by a proper system of timbering, but owing to the soundings being solid it was impossible to detect any danger. The piece of roof, several tons heavy, that fell, crushed Flaine dead. His partner was not injured.

The coroner made an investigation, but deemed an inquest unnecessary.

(Signed) HENRY DENMAN.

June 5—Simon Tosolini was killed in room No. 1 off the eleventh right entry, Engle mine, 3 p. m., June 5, 1900, by a fall of rock. Tosolini was an Austrian, 22 years of age, and single.

I arrived at the place at 10 a. m., June 7, and found it in the same condition as it was after the deceased had been extricated from under the fall. Tosolini and three others, Louis Reghens, Matte Carche and Joe Graiff, were working together extricating the pillar on the south side, room No. 1, which had been drawn within about 130 feet of the mouth.

A few minutes previous to the accident, the driver, Dave Arguello, went into the room for a trip of three cars, which they had newly loaded, and while hauling the trip out, the front cart got derailed, resulting from a defective joint, and in order to replace the car on the track, with haste and as little labor as possible, the driver passed his mule to the other end of the trip and pulled it back, which was accomplished with successful results. Immediately after the cars were removed, Tosolini and his partner, Reghens, undertook to repair the deteriorated road, so as to get the cars out and to release the driver with as little delay as possible. Both were in a kneeling position replacing the rail which had been loosened by the car, when a piece of the roof fell on the deceased's back and shoulders with such force that he died in

forty minutes. The thin edge of the rock struck Reghens on the right leg, causing a fracture of the bone below the knee and severely bruising his foot.

Nature of the injury was the organs of chest and abdomen crushed, the left hip dislocated and a cut appeared on right side of face parallel with the nose, about three inches long and barely penetrating the skin. The rock was about six feet long and three feet wide, and varied in thickness from an inch at one end to ten inches at the other, and was of arenaceous slate.

The rock was released by two well-defined slips, forming a right angle, one of which was invisible before it fell, and the props which they thought were supporting the rock were, unfortunately, set outside of the above stated slips. With this exception the entire room was safely timbered and section 4 of the mining law, regarding a supply of suitable props, was strictly complied with by the mine officials.

Coroner Sipe of Trinidad investigated the cause, but held no inquest.

(Signed) JNO. D. JONES.

June 8—Report of fatal accident which occurred to Florine Germanik, miner, by a fall of coal in room 6, off third north entry, Fremont mine, June 8, 1900, at 4 p. m.

Germanik and his partner, Joe Papish, were taking out the pillar between rooms 5 and 6. This part of the workings had been idle for some time and both rooms had caved, consequently the pillar was inaccessible from the old roads, and had to be extracted on the advancing method, which was carried on very systematically without any difficulty from squeeze, etc.

About forty feet of the pillar had been taken out and some time before the accident occurred they fired a shot at the northeast corner, and the charge being a little too light to overcome the resisting nature of the coal and the heavy load assigned to it, the result was a "standing shot," which the deceased was engaged in undermining and was in a lying position, when it fell on his body and legs, causing such injuries from the effects of which he died in about four hours afterward.

Coal miners working partnership usually have a very kind brotherly feeling for each other, and, as a rule, one will

do everything within the scope of his ability for the safety and comfort of the other, and if an accident occurs to one from falling coal or roof, or through any of the various causes to which miners are exposed, his partner will rush eagerly to his rescue, even at the risk of his own life, and many a miner's life has been saved through the heroism of his partner.

This was not the case with Papish, who instantly fled. Instead of removing the coal under which Germanik was held tight (the chunk weighing several hundred pounds), he hastened to the bottom of the shaft and demanded a cage to go to the surface, which was given him after a few minutes of delay. He made no mention of the misfortune that had befallen his partner, although on his way to the cage he passed four men, but waited until he arrived at the company's office outside, where he notified one of the mine officials, who immediately went to the scene of the accident and found Germanik still under the coal, although he had managed to work his body out from under the weight, yet one leg was held, which Mr. David Miller, the foreman, released.

The place was well timbered and perfectly free from any danger of falls from the roof. The coal was about four and one-half feet thick, and if they had taken the precaution to "sprag" the coal the accident would have been avoided.

Deceased had worked in coal mines for twenty years. He was a native of Austria, 50 years of age, and single.

County Coroner W. T. Little, of Canon City, investigated the cause, but held no inquest.

I arrived at the scene of the accident at 8 a. m., June 11.
(Signed) JNO. D. JONES.

June 22—George Smales, aged 17, American, received injuries at the Toltic mine, Huerfano county, on June 22, 1900, at 3:30 p. m., which caused his death.

Deceased was working with E. Larkins, in the second east entry room 3, first cross cut. At the time of the accident their face was being mined with mining machine, deceased was kneeling or in a sitting position near the back part of the mining machine, in about the middle of the cross cut, when a thin slab of draw-slate fell on him. It struck him on the back part of the left shoulder and crushed him to the floor.

The nature of the roof is a strong sand rock with irregular scales of draw-slate, which varies from a knifeblade to a foot in thickness, sometimes resembling a series of small pots.

Deceased was immediately rescued and medical assistance rendered. It was the opinion of the physician, after an examination, that he was not fatally injured, but at noon the following day, inflammation set in in the intestines and he expired at 11:40 p. m., June 23. There were no bones broken. Cause of death, contusion of the intestines.

(Signed) HENRY DENMAN.

July 18—John Vigil, Mexican, 21 years of age, was killed at the face of second north entry, Toltec mine, July 18, 1900, at 2 a. m.

Vigil was employed as a company hand to do brushing that was left after the advancement made by the machine men and loaders during the day shift. A few minutes previous to the accident, Foreman Kyle directed the deceased to the place to "brush" a piece of roof that was supported by three props put up by the day men. There was a small quantity of loose coal remaining under the roof that was to be brushed, and Vigil, upon his arrival, commenced to remove the same, and it is assumed that he disturbed one of the props with his shovel and thus released the rock, which fell and killed him instantly.

The rock was of an elliptical shape, 2x9 feet, with an average thickness of nine inches and nearly surrounded by a slip. Frank Rosa, loader, was present at the time and he gave the above information.

The work at which the deceased was employed, to be carried on successfully, requires great precaution and good judgment, and should be done only by men possessing a thorough knowledge of the nature and characteristics pertaining to the roof, which knowledge is obtained from close observation and long experience, and it is to be regretted that a young and inexperienced Mexican was employed to do such work.

(Signed) JNO. D. JONES.

Coroner's verdict attached:

VERDICT OF JURY.

Orman, Colo., July 18, 1900.

That J. Vigil came to his death about 2 a. m., July 18, 1900, by falling of a rock in the Toltec mine, the circumstances being accidental, and by the evidence produced find that the death of aforesaid J. Vigil is due to his own negligence, and we attach no blame to the company whatever.

ED. L. TRONIRSTINE,

Foreman.

ED. LIVINGSTONE,

GEO. SWAN,

R. M. ALDREDGE,

GEO. SHINWOOD,

JOHN ROSSI,

Jurors.

August 2—Adam Metzkoviak was killed in the pillar between the main entry and the first room on the dip side in the old Walsen seam, Pryor mine, at 3:30 p. m., August 2, 1900.

The deceased and Paul Seaman were working together taking off a "skip" along the south side of the pillar above mentioned. Both men were engaged in loading a car of coal, the deceased was working between the car and a rib when a large rock fell on his back, causing such injuries that he died in half an hour after the accident.

He worked at this mine for nearly three years and was badly injured twelve months ago about fifty feet from the scene of the accident.

He was a Hungarian, 35 years of age, and left a wife and five children.

County coroner investigated the cause of the accident, but decided an inquest unnecessary.

(Signed) JNO. D. JONES.

August 3—At 4 p. m., August 3, 1900, Louis Dugas, driver, was killed by a runaway trip of eight loaded cars at the door between the "new" and second south entries, on the main slope, Maitland mine.

At this mine there are two seams of coal worked, which are separated by natural strata varying from 12 to 18 feet in thickness. The measures have an average inclination of about four and one-half per cent. The slope is driven in the upper seam, and the cars are hauled by the "tail-rope" system. From the knuckle down for a distance of about 300 feet the slope has a pitch of twenty per cent., and from there on the grade varies from one to five per cent. About 500 feet from the entrance of the slope a new entry has been recently opened off the south side of the slope. This new opening is driven through the intervening measures to the lower vein, and is to connect with the workings of the third south, where the lower seam has been extensively developed. At a distance of about 125 feet down the slope from the new entry is the double parting of the second south, and the product of the new entry is hauled by mules to this point, where the cars are transferred to the rope haulage and conveyed to the surface.

The deceased, with his mules, was taking an empty car from the second south to the new entry, and, while he was passing through the door mentioned above, he was met by the trip, which had broken loose from the rope near the knuckle and was descending the slope at a tremendous speed. When the trip collided with the mules the first car was derailed, and the front end of the trip was smashed into a heap against the south side of the slope.

Wm. Tweeddale, foreman, and Wm. Harrigan were working close to where the trip stopped. They were immediately to the scene of the disaster and found deceased crushed to death beneath a bumper of the first car and the door frame, and the force by which he was held in this manner was so great that they had to apply a screw-jack to separate the car from the frame before his body could be extricated.

Hugh Harrigan, trapper, age 14 years, who had charge of the door, was also severely injured, receiving three scalp wounds and a broken leg.

The trip broke away by the opening of a recently made weld in a swivel-link of the bridle chain attached to the rope. The link was made of one-inch iron. The chain is connected with the cars by means of two clevises. All the cars are equipped with double couplings.

Dugas was a Slavonian, single, and 26 years old.

An inquest was held the same evening. See copy of jury's verdict.

Investigated at 2:30 p. m., August 6, 1900.

(Signed) JNO. D. JONES.

VERDICT OF JURY.

State of Colorado, County of Huerfano, ss.

An inquisition holden at Maitland, in Huerfano county, state of Colorado, on the 3d day of August, A. D. 1900, before A. M. Rice, coroner of said county, upon the body of Louis Dugas, there lying dead, by the jurors whose names are hereto subscribed. Said jurors upon their oath do say:

That they find that the deceased, Louis Dugas, came to his death through the result of an unavoidable accident in the Maitland slope by a runaway trip.

In witness whereof, the said jurors have hereunto set their hands, the day and year aforesaid.

HERBERT CAPPS,
THOMAS MORTON,
HENRY SNEDDEN,
WM. McNEISH,
JAMES BAKER,
A. K. FELLOWS,

Jurors.

Attest:

A. M. RICE,

Coroner of Huerfano County.

August 4—At 9:30 a. m., August 4, 1900, Edward Guinn, miner, was killed by a fall of rock in the pillar of room 23, off twelfth left engine road, Engle mine.

Edward Guinn, Thos. Hanneman, Alex. Jacobs and his son, a boy of 14 years, were working together drawing the aforesaid pillar. The seam at this point was about four and one-half feet thick and the coal firmly adhered to the roof. Guinn was engaged in picking top coal so as to get the face in a vertical form, when a rock fell on his body, killing him almost instantly. A few minutes previous to the accident the boy was engaged picking at the same identical place, but had, at the request of the deceased, surrendered to him the pick and retreated a few feet from the face, and was sitting

on a chunk of coal several inches beyond the limit of the rock, but fortunately clear of it.

The rock was of a conical shape, six feet in diameter at the base and completely surrounded by a very smooth slip, which was entirely obscured by a thin layer of coal, and the unfortunate man was seen examining it by sounding it with his pick shortly before it fell.

Guinn was an American, about 30 years of age, and married. He was recently elected chancellor of the K. P. lodge at Engle, and was highly respected by all who knew him.

Coroner Sipe made an investigation, but decided an inquest unnecessary.

(Signed) JNO. D. JONES.

August 17—Frank Reinhammer, American, married, was killed by a fall of coal at the Gladstone mine, Lafayette, Boulder county, at 2 p. m., August 14, 1900.

Deceased and Geo. Ransom were mining a stump between the main north and the back entry. The two entries had been driven about 200 feet room width to the boundary. The process of drawing the pillar was under way; one section had been taken off the end next to the face. There had been a section taken out of the pillar about forty feet from the faces to make a cross-cut, leaving a stump about eighteen feet square. The deceased and his partner were mining this stump on the end. They were making their last cut on the northeast corner of the stump. Mr. Ransom was sitting on the board, running the machine, and the deceased was shoveling in front of the coal, already mined, when about five tons of the coal mined fell. The north end of it, next to the machine, caught deceased, killing him instantly.

Both men had realized their danger. They had set one sprag; but I found, when making my investigation, that the sprag had pushed out in the bottom. In my judgment, if the sprag had been properly set the accident would not have occurred.

Coroner Trezise made an investigation, but deemed an inquest unnecessary.

Deceased's right leg was smashed about six inches above the knee, and internal injuries in the abdominal region caused a rupture of the internal parts, which were of such a nature as to allow protrusion of the bowels.

HENRY DENMAN.

August 30—Louis Miller, track layer, was killed by a trip of loaded cars at the entrance of the ninth east entry, Peerless mine, Las Animas county, at 5 p. m., August 30, 1900.

Deceased was standing at the mouth of the sixth west entry, and boarded the hind end of a trip of twelve loaded cars coming up the slope from the ninth east. The trip ran at its usual speed until the clevis pin of the bridle chain was forced out of its place by the point of it coming in contact with a rock that had recently fallen in the center of the track. The trip became detached from the rope and rushed down the slope at a terrific speed, with deceased still clinging to the head end. The first car turned into the ninth east and tumbled against the lower rib. It is assumed that Miller's head struck against the frog while passing over it. He was found dead in the center of the track, opposite the lower end of the wrecked car. The other seven cars took a direct course down the slope and caused great damage to the pumps and steam pipes below. The slope has a pitch of twelve feet.

Harry Mallot, foreman, stated that he had often forbidden deceased to ride on the trip. Trip Runner Jno. Richardson was riding on second coupling from the hind end and got off safely when the trip began its descent.

Deceased was an American, 38 years of age and single.

Coroner investigated cause, but deemed an inquest unnecessary.

September 1, 1900.

(Signed) JNO. D. JONES.

September 5—Mike Muneck, Slav, 23 years of age, and single, was killed in room 4, off third cross second east entry, Toltec mine, Huerfano county, September 5, 1900.

Muneck and Thomas Stewart were working together loading coal after the machines. They had the room nearly cleaned up, and there was a piece of coal, partially loose, left standing in the lower end of the room, and while Muneck was engaged picking it a large conical-shaped rock fell on his head and body, causing such injuries that he died four hours after without regaining consciousness. The rock was about five and one-half feet in diameter at the base and nearly three feet thick, and surrounded by a well-defined slip.

Stewart stated that they examined the roof a few minutes previous to the accident and pronounced it in a safe condition, and that they were always supplied with suitable timber.

An inquest was held on the 6th. See jury's verdict.

(Signed) JNO. D. JONES.

State of Colorado, County of Huerfano, ss.

Before the county coroner of Huerfano county, Colorado, we, the jurors, regularly empowered and sworn to determine the cause of the death of Mike Muneck, deceased, lying dead at Orman, Colo., under oath find that Mike Muneck came to his death on September 5, 1900, while employed in the Northern Coal Company mine at Orman, Colo.

We, the jury, do agree that Mike Muneck came to his death by an unavoidable accident at the Toltec mine, belonging to the Northern Coal Company.

ROBT. GRAHAM,

Foreman.

ROBT. HYP.

U. M. BURT.

M. FREEMAN.

AL DUEHURST.

GEO. SLIMROD.

Given before me this 6th day of September, 1900.

WM. TWEEDDALE,

Justice of the Peace and Acting Coroner, Huerfano County, Colorado.

September 8—Frank Farra, miner, was killed at the face of the main slope, Sunshine mine, Huerfano county, September 8, 1900.

Farra and Nicholas Bartlara were working together, driving the slope. Shortly before the accident they fired a shot in the coal, which is about five and a half feet thick. They were loading a car, when a large piece of the roof fell on Farra, completely covering him and killing him instantly. Bartlara was working nearer the face and beyond the limit over which the rock extended, and fortunately escaped uninjured. The rock was about seven feet long and five feet

wide, and was released by a well-defined slip running parallel and perfectly even with a cross-bar about ten feet from the face. If they had known of this "slip" and had placed the cross-bar a few inches nearer the face, undoubtedly the accident would have been avoided.

Deceased was an Italian, 35 years of age, and leaves a wife and four children.

The coroner held an inquest the same evening.

(Signed) JNO. D. JONES.

September 14—Frank Dorscha, Austrian, 39 years of age, was killed by a fall of coal at the face of No. 4 room, eighth cut-off, Rockvale mine, Fremont county, September 14, 1900.

Dorscha was mining the coal a few feet to the right of the roadway, and was in a lying position when a lump of coal fell on him, causing instant death. The seam varies from three to four feet in thickness and is worked on the "long wall advance system," principally "pick work." The coal is mined in depth according to the general conditions, overlying weight, etc. Usually the miners sprag their coal. With proper spraging they are protected from any falls of coal which may occur. Deceased had been requested by Charles Grant, the fire boss of the district, to sprag the piece which caused the accident, but failing to do so he sacrificed his life. Rudolph Davies, deceased's partner, was working on the opposite side of the roadway. Dorscha left a wife and three children.

The coroner investigated cause of accident, but decided an inquest unnecessary.

JNO. D. JONES.

September 17—John Wilson, Scotch, 58 years of age, was killed in room No. 13, second cut-off, south side, Fremont mine, Fremont county, September 17, 1900.

Deceased and his son, William, 18 years of age, were working together. Two days previous to the accident they had fired a brushing shot, which accomplished the purpose assigned to it, but left a large piece partially loosened by powder break hanging over the left side of the roadhead. After entering the room in the morning they examined the rock and pronounced it unsafe, and decided to take it down

after loading a car. However, before the car was finished the rock fell on the deceased and broke his right leg in the thigh, and also caused several contusions of a superficial nature on his shoulders and back. His death, which occurred in three hours after, is assumed to be due to the severe shock, as he had been suffering slightly from heart disease for some time.

He was a practical miner of forty-seven years' experience, and was highly esteemed by all who knew him.

The coroner investigated the cause of the accident, but decided an inquest unnecessary.

JNO. D. JONES.

September 27—Louis Canna, Mexican, married, was killed at Santa Clara, in the Cameron mine, Huerfano county, in room No. 1, west dip entry, at 4:30 p. m., September 27, 1900.

Deceased was working alone and considered a competent coal miner. His place was timbered within about ten feet of the face. The roof that fell on him was kite-shaped, about ten feet long and two feet thick by six feet wide, tapering to a knife blade at the pointed end. On one side it was flanked by a regular slip running at an angle of about forty-five degrees. In all probability had deceased kept his props closer to the face, as he had been instructed to do by the mine foreman, his death might have been averted.

The coroner made an investigation, which is as follows:

HENRY DENMAN.

VERDICT OF JURY.

State of Colorado, County of Huerfano, ss.:

An inquisition holden at Santa Clara mine, in Huerfano county, state of Colorado, upon the body of Louis Canna, there lying dead, by jurors whose names are hereto subscribed, said jurors upon their oaths do say:

We, the jury, find that the deceased, Louis Canna, met his death by having his room insufficiently timbered. We find plenty of props lying in the room. Louis Canna was killed in room No. 1, west dip entry, Cameron mine.

In witness whereof, the said jurors have hereunto set their hands the day and year aforesaid.

ANDREW DICK,
Foreman.

CHAS. BRUNELLI.

JIM MARTINEZ.

TIRSO VALDEZ.

GIO TONELLI.

Attest:

A. M. RICE,

Coroner of Huerfano County.

October 7—Banamio Catardi, Austrian, was found dead in the back entry, off the main south, Engleville mine, Las Animas county, on October 7, 1900.

Deceased worked night shift alone in said entry. His usual work was to make coal for the day shift. There were two company men working about 500 feet outside of him. He conversed with them about 10 p. m., and complained of being unwell, stating that he would fire a shot and then go home. They heard a shot fired about 11 p. m. Deceased was not seen after the time above mentioned until some of his friends went into the mine to seek him on the morning of the 7th at 7 a. m. They found him lying dead, face down, about twenty feet from the face of the entry. He had a slight abrasion on the side of his nose and one at the elbow of each arm. There was a hole drilled in the face about five feet six inches in the solid, which appeared to have been fired. The entry was nearly through into another cross-entry. It is presumed that deceased was trying to hole it by shooting it through, and had gone back too soon to see what the shot had done, and was overcome by the gases created by said shot, and he died from asphyxiation.

He was 23 years of age and single.

The coroner made an investigation and deemed an inquest unnecessary.

(Signed) HENRY DENMAN.

October 24—Albert Jovanovice, Slavonian, age 27 years, was killed at the Brookside mine, Fremont county, October 24, 1900, by a fall of top coal.

Deceased and his partner, Thos. Smith, were working in room No. 14, sixth east entry. It was machine work. They had fired a breaking-in shot the day previous, and at the time of the accident were loading the coal out. The vein is from five to six feet thick, with a parting about ten inches from the top. Sometimes this top coal hangs after the breaking-in-shot is made. In this particular case a part of it had fallen on the right hand side of the room. Deceased was working on left side of the room, opposite the track, picking the coal out in the bottom, when a slab of the top coal fell on him, breaking three ribs and his right arm, also bruising him internally.

The coroner investigated, but considered an inquest unnecessary.

(Signed) HENRY DENMAN.

October 25—Ygnacio Trijillo, Mexican, age 17 years, was killed at the Starkville mine, Las Animas county, October 25, 1900.

Deceased was employed as an oven charger. He had been to the bin loading a larry. It is supposed that he was riding down to the ovens between two loaded larrys, which were drawn by a mule. He was first discovered by the driver under the rear larry, and at a switch point about 150 feet from the bin. Whether he fell between the two larrys or how he came to his death no one knows. He was instantly killed, his left leg cut off, left arm broken and crushed over the heart.

The coroner investigated and deemed an inquest unnecessary.

HENRY DENMAN.

November 7—Peter Pulto, Italian, aged 30 years, killed by falling roof in room No. 40, twelfth left engine road, Engle mine, Las Animas county, November 7, 1900.

Pulto and three partners, Martin Degario, Jno. Luchino and Bastisto Degario, were drawing the pillar in room 40. At 10 a. m. Dave Murphy, the driver, with two mules, went into the room to get two cars they had newly loaded, and while he was preparing to attach his team to the cars he heard a heavy crack overhead, which was evidence of the roof

breaking, and he instantly shouted to the men to run to a place of refuge. They quickly responded to the call and rushed to the roadway, but before they all passed the corner of the pillar, the roof fell, covering Pulto under a comparatively thick part of it, killing him instantly, and slightly injuring Martin Degario, who was caught under the tail end. All the others escaped uninjured.

The fall was enormous in its magnitude, reaching across two of the adjacent pillars, and was very thick at some points. The roof was of argillaceous nature, stratified with thin layers of sandstone. It broke even with the face of the pillars in its entire width.

From evidence obtained they were all unaware of any danger and thought the place was safely timbered. The driver always kept a supply of suitable props for their use close at hand.

Deceased left a widow and one child, living in Italy.

Coroner Sipe investigated, but held no inquest.

JNO. D. JONES.

November 19—Alme Albert, Italian, aged 27 years, single, was killed in room No. 8, fourth east entry, at the Chandler mine, Fremont county, November 19, 1900, by a fall of coal.

Deceased was mining off his shoulder in about the center of the room, using a shovel for a shoulder pad. The room was mined clear across; the left hand side had been shot and sitting on sprags. There were no sprags set between the right hand rib and those mentioned. Deceased's partner was working on the right rib. About a ton of coal fell and caught Albert's head, crushing his skull and causing his death.

There is no one to blame but deceased; he should have spragged the coal and not taken such chances.

HENRY DENMAN.

December 5—Matteo Horocick, aged 31 years, single, was killed by a fall of coal in room No. 28, second east entry, No. 1 mine, Gray Creek, Las Animas county, at 10 a. m., December 5, 1900.

Deceased and his partner, Anton Dorotich, were drawing the pillar of said room, and while engaged loading a car a piece of coal fell from near the top of the vein (which is fourteen feet thick), and struck Horocick against the car, causing such injuries from his waist down that he died in about an hour.

I learned from the investigation that deceased and his partner had tried to pry said piece of coal down prior to loading the car, and failing to do so, considered it safe to work under.

The county coroner investigated, but held an inquest unnecessary.

JNO. D. JONES.

December 20—Archie White, timberman, was killed by a fall of rock in the fifth entry, Hesperus mine, La Plata county, at 11 p. m., December 20, 1900.

The fifth entry was driven several years ago and it extends from the main entry to the outcrop, a distance of 1,300 feet. Some time ago this section of the mine was temporarily abandoned and the entry fell in for its entire length. White, William E. Reese and Charles Harris were employed as company men to reopen the entry, and while they were making preparations to put up a set of timbers a rock fell from the upper part of the west rib, and struck White on the back part of the head and forced him against the rail, fracturing his skull in such a manner that he died a few minutes after.

The entry is opened for 600 feet and is properly timbered with sets about four and one-half to five feet apart. Where the accident occurred the seam is about six feet thick and the roof fell to a height of three and one-half feet above the coal. The roof is of an argillaceous nature, and the rock had a fall of eight feet.

Deceased was an American, 41 years of age, and leaves a family.

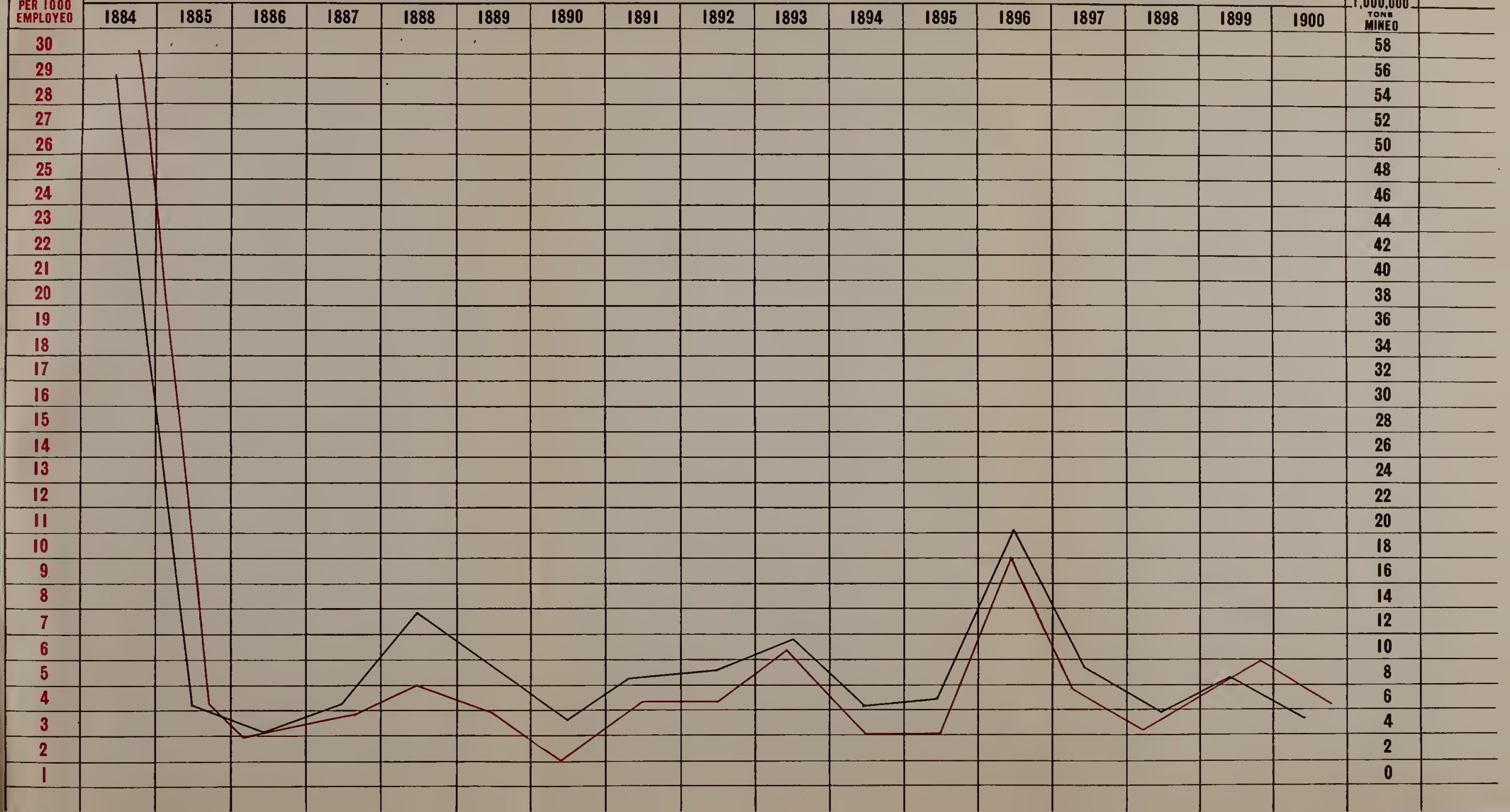
Coroner investigated, but decided an inquest unnecessary.

JOHN D. JONES.

DEATH
RATE
PER 1000
EMPLOYED

DEATH RATE FROM ACCIDENTS IN AND ABOUT THE MINES FROM 1884 TO 1900.

DEATH
RATE PER
1,000,000
TONS
MINED



List of Non-Fatal Accidents, 1900.

January 1—Dario Cordova, driver, Starkville mine, Colorado Fuel and Iron Company, Las Animas county; leg broken by a fall from a pit car.

January 3—Tom Reed, miner, Sunshine mine, Sunshine Fuel Company, Huerfano county; leg hurt by a fall of coal.

January 8—John Metz, miner, Caryl mine, Northern Coal Company, Boulder county; foot hurt by a fall of coal.

January 12—Robert Chambers, miner, Hesperus mine, Porter Fuel Company, La Plata county; leg broken by a fall of slate.

January 12—Chas Morrall, miner, Hesperus mine, Porter Fuel Company, La Plata county; leg hurt by a fall of coal.

January 12—Albert Trujillo, miner, Engle mine, Colorado Fuel and Iron Company, Las Animas county; leg broken by a fall of coal.

January 24—J. J. Doyle, miner, Anthracite mine, Colorado Fuel and Iron Company, Gunnison county; leg broken by a fall of coal.

January 26—Chas. Gray, miner, Sunshine mine, Sunshine Fuel Company, Huerfano county; thumb crushed by a fall of coal.

January 26—Fred Patterson, miner, Sunshine mine, Sunshine Fuel Company, Huerfano county; back hurt by a fall of slate.

January 31—P. Wershoning, driver, Book Cliff Coal Company, Mesa county; leg broken by a fall of rock.

February 2—Pasqual Biranello, miner, Gorham mine, Northern Coal Company, Boulder county; back bruised and one rib on left side broken by a fall of coal.

February 4—Tony Zagerich, miner, Alpine mine, Alpine Coal Company, Gunnison county; head cut by a fall of slate.

February 7—Archie and Ricardo Borgo, miners, Berwind mine, Colorado Fuel and Iron Company, Las Animas county; burned by a gas explosion.

February 7—John Libiscus, miner, Sunshine mine, Sunshine Fuel Company, Huerfano county, contusion of foot by a fall of rock.

February 8—Frank Eder, loader, Rex No. 2 mine, Northern Coal Company, Boulder county; left arm broken by a fall of coal.

February 12—Otto Prussic, miner, Sunshine mine, Sunshine Fuel Company, Huerfano county; hand cut by a fall of rock.

February 18—Regino Lobato, loader, Maitland mine, Victor Fuel Company, Huerfano county; burned by a gas explosion.

February 27—Chris Peterson, miner, Brownell mine, Southern Coal Company, Las Animas county; scalp wound by a fall of rock.

February 28—Henry Smeddon, blacksmith, Maitland mine, Victor Fuel Company, Huerfano county; broken ribs.

March 3—Jno. Williams, miner, Bowen mine, Union Coal and Coke Company, Las Animas county; leg broken by a fall of coal.

March 5—Thos. Rochester, miner, Coal Creek mine, Colorado Fuel and Iron Company, Fremont county; thigh cut by being struck by a trip of cars.

March 12—Louis Kroell, loader, Rex No. 1 mine, Northern Coal Company, Boulder county; small bone in left arm broken by being struck by a car.

March 15—Pat Ryan and Emile Heporte, miners, Rugby mine, Teacher's M. & M. Company, Las Animas county; foot of one crushed and the head of the other bruised by a fall of coal.

March 22—R. S. Anspach, miner, Pictou mine, Colorado Fuel and Iron Company, Huerfano county; back bruised and hand crushed by a fall of coal.

March 24—Harry Wilcox, motor boy, Starkville mine, Colorado Fuel and Iron Company, Las Animas county; leg cut off by a trip of cars running over it.

March 26—Chas. Lapresta, miner, Alpine mine, Alpine Coal Company, Gunnison county; head and arm injured by a fall of rock.

March 28—John Birdi, miner, Robinson mine, Colorado Fuel and Iron Company, Huerfano county; leg broken by a fall of coal.

March 31—John McCartney, miner, Pictou mine, Colorado Fuel and Iron Company, Huerfano county; back of head and ear slightly burned by gas explosion.

April 3—John Baucci, miner, Brownell mine, Southern Coal Company, Las Animas county; back bruised and rib broken by a fall of coal.

April 5—John Lewis, timberman, Alpine mine, Alpine Coal Company, Gunnison county; back hurt by a fall of slate.

April 9—John Neilly, miner, Fremont mine, Colorado Fuel and Iron Company, Fremont county; back bruised by a fall of coal.

April 14—Bart Pitrius, miner, Coryell mine, Coryell Coal Company, Garfield county; slightly burned by a gas explosion.

April 23—John Hardy and Fred Laret, miners, Alpine mine, Alpine Coal Company, Gunnison county; both slightly burned by a gas explosion.

May 7—Frank Vedano and Ed. Bosseo, miners, Coryell mine, P. C. Coryell, Garfield county; both burned by gas explosion.

May 21—John B. Williams, Superintendent Frank Mesaglio, A Dennison, tracklayers, and John Cornish, driver, Hastings mine, Victor Fuel Company, Las Animas county; slightly burned by a gas explosion.

May 23—Arthur Klingman, driver, Alpine mine, Alpine Coal Company, Gunnison county; foot sprained by being run over by a loaded car.

May 24—Luigi Mondea, miner, Starkville mine, Colorado Fuel and Iron Company, Las Animas county; leg broken by a trip-car running over it.

May 29—George Wommer, miner, Hastings mine, Victor Fuel Company, Las Animas county; leg broken by a fall of coal.

June 5—Louis Reghns, miner, Engle mine, Colorado Fuel and Iron Company, Las Animas county; hurt by a fall of rock.

June 15—Chas. Bowers, driver, Alpine mine, Alpine Coal Company, Gunnison county; finger cut off by being caught between sprag and spoke of wheel.

June 22—G. Smaler, loader, Toltec mine, Northern Coal Company, Huerfano county; hurt by a fall of slate.

June 23—John Martino, miner, Sunshine mine, Victor Fuel Company, Huerfano county; back bruised by a fall of slate.

July 6—M. Morton, blacksmith, Forbes No. 1 mine, Jos. Cox, Las Animas county; bruised by a kick from a mule.

July 6—Alejandro Martino, miner, Midway mine, H. C. Nicholls, Huerfano county; hip dislocated by a fall of coal.

July 7—John Nigretto, miner, Brookside mine, Colorado Fuel and Iron Company, Fremont county; some internal injuries and hip hurt by a fall of coal.

July 20—Beneto Lang, stable boss, Forbes No. 1 mine, Joseph Cox, Las Animas county; leg hurt by a car wheel falling on it.

July 24—Paul Romano, driller, Chandler mine, Victor Fuel Company, Fremont county; skull fractured by a fall of coal.

August 7—Matteo Geors, miner, Alpine No. 2 mine, Alpine Coal Company, Gunnison county; injured slightly by a fall of rock.

August 21—Joseph Sartore, miner, Berwind mine, Colorado Fuel and Iron Company, Las Animas county; leg broken by a fall of coal.

August 23—Manuel Pacheco, outside laborer, Sunshine mine, Victor Fuel Company, Huerfano county; arm broken by falling off a rock dump.

August 28—Henry Brueback, miner, Sunshine mine, Victor Fuel Company, Huerfano county; back bruised by a fall of a slab.

September 24—E. A. Hauser, miner, Ute mine, Ute Coal Company, La Plata county; arm and leg broken by a fall of coal.

September 29—Carmon Alberico, miner, Berwind mine, Colorado Fuel and Iron Company, Las Animas county; leg broken by a fall of coal.

September 29—Peter Trinkle, trapper, Hastings No. 2 mine, Victor Fuel Company, Las Animas county; leg crushed by car running over it.

October 2—T. Romero, entry man, Midway mine, H. C. Nicholls, Huerfano county; slight burns by gas explosion.

October 3—Natto Clovocick, miner, Engle mine, Colorado Fuel and Iron Company, Las Animas county; arm and thigh broken by a fall of coal.

October 7—Ed. Gamble, miner, Palisade mine, Palisade Coal Company, Mesa county; leg bruised by a fall of coal.

October 15—Gus Rackabitch, miner, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; back hurt by a fall of coal.

October 20—R. M. Bettis, loader, Maitland mine, Victor Fuel Company, Huerfano county; slight burns by gas explosion.

November 4—Alex. Busette, miner, Hastings No. 1 mine, Victor Fuel Company, Las Animas county; leg broken by a fall of coal.

November 12—A. S. Morgenstern, cage-loader, Rockvale mine, Colorado Fuel and Iron Company, Fremont county; skull fractured by a fall of coal.

November 18—Dan. Davis, coal loader, Broadhead mine, Northern Coal and Coke Company, Las Animas county; leg crushed by being caught between cars.

November 19—Gus Carlson, miner, Book Cliff mine, Book Cliff Railroad Company, Mesa county; leg broken and head bruised by a car running against him.

Directory of Coal Mines in Colorado

ARAPAHOE COUNTY.

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent	Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
Scranton ..	Colo. Eastern R. R. Co., Denver	-----	-----	R. McDowell	-----	1	Natural	4,500	-----	C. E.	-----

BOULDER

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent
Simpson	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Gladstone.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Mitchell.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Hecla.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Rex, No. 1.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Rex, No. 2.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Gorham.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Industrial.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Pluto.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Enterprise.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Wilson.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Acme.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Imperial.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Excelsior.....	Northern Coal & Coke Co. Denver	Jas. Cannon, Jr.	J. C. Williams...
Long's Peak.....	Long's Peak Coal Co., Erie.....	.....	Wm. Nicholson.
Fox, No. 6.....	Fox & Patterson, Gorham.....	M. V. Johnson..	.....
Caryl.....	Caryl Coal Mining Co., Denver	J. Pallott.....	.....

COUNTY.

Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
Eph Nesbitt	Eph Nesbitt.....	168	Fan	58,800	1,500	B. & M. and C. & S.	-----
-----	George Ransom	30	Fan	25,000	500	B. & M. and C. & S.	-----
-----	John Hutchinson	64	Fan	20,000	600	B. & M. and C. & S.	-----
-----	Ed. Hodgins	55	Fan	12,000	500	Colo. & Southern	-----
-----	William Atkin	100	Fan	24,000	700	Colo. & Southern	-----
-----	George Fruith	35	Fan	12,000	1,000	Colo. & Southern	-----
-----	Ralph Morton	35	Natural	10,000	500	Colo. & Southern	-----
-----	George Morrison	30	Fan	12,600	500	Colo. & Southern	-----
-----	-----	---	-----	-----	-----	-----	Shut down
-----	-----	---	-----	-----	-----	-----	Shut down
-----	-----	---	-----	-----	-----	-----	Shut down
-----	-----	---	-----	-----	-----	-----	Shut down
-----	-----	---	-----	-----	-----	-----	Shut down
-----	-----	---	-----	-----	-----	-----	Shut down
-----	-----	40	Fan	23,866	200	Union Pacific	-----
-----	David Evans	20	Natural	14,000	300	Colo. & Southern	-----
-----	Neil O. Connell	15	Furnace	7,000	150	Burl. & Missouri	-----

BOULDER

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent
Lister	Lister Coal Co., Erie	A. Stevens .....	.....
Shanahan	W. M. Henderson, Boulder .....	.....	.....
Haywood	E. C. M. and M. Co., Lafayette ..	.....	.....
Vaughan	Tom Vaughan, Lafayette .....	.....	.....
Number 8	Clark and Murray, Gorham .....	.....	.....
Boulder Valley	M. P. Fox, Gorham	M. P. Fox .....	.....
Tynon	The New Colo. Coal Co., Denver ..	.....	.....
Marfell	Marfell Coal Co., Lafayette .....	.....	.....
Sunnyside	Sunnyside Coal Co., Denver .....	.....	.....
Rosser No. 7	Rosser, Northern Coal and Coke Co., Gorham .....	.....	.....

COUNTY—Concluded.

Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
-----	-----	25	Fan	5,000	150	Union Pacific ...	-----
Mathew Davis	-----	14	Natural	3,000	200	No railroad	-----
T. Vaughan ..	-----	30	Fan	5,000	400	Bur. & Missouri.	-----
T. Vaughan ..	-----	15	Furnace	2,000	60	No railroad	-----
Geo. Clark ...	-----	5	Natural	3,000	40	No railroad	New mine
-----	-----	4	Natural	2,500	50	No railroad	New mine
C. M. Berry ..	-----	40	Fan	12,000	150	Union Pacific ...	New mine
A. Marfell....	-----	3	-----	-----	-----	-----	New mine now open'g
W. T. Barrett	-----	10	Fan	5,500	200	Colo. & Southern	New mine
Wm. Rosser..	-----	4	Natural	3,000	11	No railroad	-----

DOUGLAS COUNTY.

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent	Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
White Ash	Goldsmith & Madden, Littleton					8	No. 7 A B C Blower	5,000	50	No railroad	

EL PASO COUNTY.

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent	Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
Danville	Pike's Peak Consolidated Coal Co., Colo. Springs	.....	Jas. Morrison	.....	W. Beaman	30	Furnace	4,000	400	No railroad.	.....
Williamsville ..	Pike's Peak Consolidated Coal Co., Colo. Springs	.....	Jas. Morrison	.....	.....	34	Furnace	7,000	300	No railroad..	.....
Pike View	Pike's Peak Consolidated Coal Co., Colo. Springs	.....	Jas. Morrison	.....	.....	30	Fan	7,500	400	D. & R. G. ....	.....
Curtis	Curtis Coal Co., Colorado Springs	R. Wooden	.....	.....	.....	55	Fan	12,000	500	A., T. & S. R. R.	.....

FREMONT

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent
Coal Creek.....	Colorado Fuel and Iron Co., J. A. Kebler, pres. and gen'l mgr., Boston bldg., Denver.....	J. T. Kebler.....	Joe Ball.....
Rockvale.....	Colorado Fuel and Iron Co., J. A. Kebler, pres. and gen'l mgr., Boston bldg., Denver.....	J. T. Kebler.....	Joe Ball.....
Fremont.....	Colorado Fuel and Iron Co., J. A. Kebler, pres. and gen'l mgr., Boston bldg., Denver.....	J. T. Kebler.....	Joe Ball.....
Brookside.....	Colorado Fuel and Iron Co., J. A. Kebler, pres. and gen'l mgr., Boston bldg., Denver.....	J. T. Kebler.....	Joe Ball.....
Chandler.....	Victor Fuel Co., D. A. Chappell, pres., Peoples Bank bld., Denver.....	D. M. Simpson.....	.....
Brewster.....	W. S. Stratton, Colorado Springs.....	.....	.....
Price.....	Price & Sons, Canon City.....	.....	.....
Hayes.....	D. H. Hayes, Canon City.....	.....	.....
South Canon.....	E. P. Earle, Canon City.....	.....	.....
Smith & Cowen.....	Smith & Cowen, Williamsburg.....	.....	.....
Smith Mine.....	Simon Smith, Williamsburg.....	.....	.....
Bluff Springs.....	Thos. Williams, Williamsburg.....	.....	.....
Williams Mine.....	Morgan Williams, Williamsburg.....	.....	.....

COUNTY.

Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
J. P. Thomas	Ben Beach	175	Fan ...	40,000	400	D. & R. G. ....	.....
J. P. Thomas	Harry John	350	Fan ...	48,840	1,000	A., T. & S. F. ..	.....
John S. Jones	David Miller....	175	Fan ...	41,700	600	D. & R. G. ....	.....
W. G. Deck ..	Humphrey Davis	250	Fan ...	33,500	900	A., T. & S. F. ..	.....
Joe Smith....	P. Davies.....	114	Fan ...	27,000	600	D. & R. G. ....	.....
W. McKinzie	.....	16	Furnace	7,000	50	No railroad ...	.....
Thos. Price...	.....	4	Natural	5,000	10	No railroad ...	.....
D. H. Hayes..	.....	9	Natural	4,500	25	No railroad ...	.....
.....	Weaver	6	Jet	1,200	18	No railroad ...	.....
John Cowen..	S. Smith, Jr.	18	Jet	4,000	50	A., T. & S. F. ..	New mine
S. Smith, Sr..	S. Smith, Jr.	14	Furnace	7,000	30	No railroad ...	.....
.....	T. Williams.....	10	Natural	4,000	36	No railroad ...	.....
M. Williams..	.....	6	Natural	3,500	18	No railroad ...	.....

GARFIELD

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent
Sunshine	Colorado Fuel and Iron Co., J. A. Kebler, pres. and gen'l mgr., Boston building, Denver.....	J. T. Kebler	Joe Ball
Coryell	P. C. Coryell, Newcastle .....	.....	.....
Midland	J. W. Cummins, Sunlight .....	.....	.....
Rifle	Charles W. Fravert, Rifle .....	.....	.....
Colorado Fuel and Iron Co.)	Hines and Griffiths, Newcastle .....	.....	.....
Pocahontas	Pocahontas Mining Co., Sunlight .....	.....	.....
Central	A. Cohn, Newcastle .....	.....	.....
Diamond	Northern Coal and Coke Co., James Cannon, jr., president, Peoples Bank building, Denver.....	.....	.....

COUNTY.

Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
Jas. Stewart....	-----	31	Natural	13,000	125	Colo. Midland...	-----
P. C. Coryell....	Rogers	45	Fan ...	15,000	200	Colo. Midland...	-----
J. W. Cummins	-----	42	Fan ...	12,000	350	Colo. Midland...	-----
C. W. Fravert ..	-----	5	Natural	6,000	20	No railroad	-----
Joe Griffiths....	-----	10	Fan ...	13,000	100	Colo. Midland...	-----
E. Llewelyn....	-----	22	Natural	13,650	250	Colo. Midland...	-----
A. Cohn	-----	6	Natural	-----	---	No railroad	-----
-----	-----	---	-----	-----	---	-----	Closed down in- definitely

GUNNISON

Name of Mine	Name and Address of Operator	General Superin- tendent	Division Superintendent
Crested Butte ..	Colorado Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver.....	J. T. Kebler..	Joe Ball
Anthracite	Colorado Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver.....	J. T. Kebler..	Joe Ball
Ruby	Colorado Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver	J. T. Kebler..	Joe Ball
Alpine.....	Alpine Coal Co., Cooper bldg., Denver.....	H. Van Mater	.....
Union	H. Perrier, Gunnison.....	H Perrier....	.....

COUNTY.

Local Superintendent	Mine Foreman	Number of Employes	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
A. Alexander.....	Geo. Shields ..	326	Fan ...	47,521	1,000	D. & R. G ...	.....
W. Gorden	J. Williamson ..	73	Fan ...	31,500	225	D. & R. G ...	.....
T. M. McLaughlin	.....	33	Fan ...	12,000	300	D. & R. G ...	.....
Joe Watson.....	.....	90	Fan ...	40,000	500	Colo. & So...	.....
Geo. Fletcher ....	.....	15	Furnace	15,000	80	Colo. & So...	.....

HUERFANO

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent
Pictou	Colo. Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver ..	J. T. Kebler..	W. J. Murray..
Robinson	Colo. Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver ..	J. T. Kebler..	W. J. Murray..
Walsen	Colo. Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver ..	J. T. Kebler..	W. J. Murray..
Rouse No. 4	Colo. Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver ..	J. T. Kebler..	W. J. Murray..
Maitland	Victor Fuel Co., D. A. Chappell, prest., Peoples Bank bldg., Denver	D. M. Simpson	.....
Sunshine	Victor Fuel Co., D. A. Chappell, prest., Peoples Bank bldg., Denver	D. M. Simpson	.....
Pryor	Union Coal and Coke Co., W. R. Harp, prest., Denver .....	.....	H. Addison ..
Champion	Union Coal and Coke Co., W. R. Harp, prest., Denver .....	.....	H. Addison ..
Aztec	Northern Coal and Coke Co., Jas. Cannon, jr., prest., Peoples Bank bldg., Denver ..	.....	A. Craig ..
Midway	H. C. Nicholls & Co., Trinidad	H. C. Nicholls	.....
Bunker Hill	H. C. Nicholls & Co., Trinidad	H. C. Nicholls	.....
Rugby	Teachers' Mining and Milling Co., Denver ..	.....	.....

COUNTY.

Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
Geo. A. Phipps	-----	182	Fan ...	80,000	1,000	D. & R. G....	-----
A. French....	A. Chalmers ...	90	Fan ...	45,900	500	D. & R. G....	-----
A. French....	J. Hipplewhite..	165	Fan ...	50,760	800	D. & R. G....	-----
J. P. Breen....	J. Oneil	180	Two furnaces	24,500	900	D. & R. G....	-----
A. T. Pollock..	W. Tweedle....	123	Fan ...	46,000	500	D. & R. G....	-----
H. Tennant...	-----	60	Fan ...	15,000	250	D. & R. G....	-----
Chas. Mills....	-----	113	Fan ...	14,000	600	D. & R. G....	-----
Harry Wilson	-----	20	Furnace	10,000	250	D. & R. G....	-----
-----	-----	150	Fan ...	30,000	600	D. & R. G....	-----
H. C. Nicholls	-----	41	Furnace	12,000	250	D. & R. G....	New mine
H. C. Nicholls	-----	11	Natural	8,000	75	No railroad ..	-----
P. Brennan ...	P. Brennan.....	26	Furnace	7,000	62	Colo. & So....	-----

JEFFERSON COUNTY.

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent	Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
Mt. Carbon....	B. Prince, Morrison.....	.....	.....	B. Prince.....	.....	2	Natural..	2,000	10	No railroad..	.....
Independence.	Independence Coal Co., Golden .....	.....	.....	W. Williams	.....	5	Natural..	.....	20	No railroad..	.....

LARIMER COUNTY.

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent	Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
Indian Springs	Indian Springs Coal Co.....	C. C. Emigh	.....	.....	.....	5	Natural..	.....	75	No railroad..	.....

LAS ANIMAS

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent
Starkville	Colo. Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver...	J. T. Kebler..	W. J. Murray
Sopris	Colo. Fuel and Iron Co. J. A. Kebler, prest. and gen'l mgr., Boston bldg, Denver...	J. T. Kebler..	W. J. Murray
Eagle	Colo. Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver...	J. T. Kebler..	W. J. Murray
Berwind.	Colo. Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver...	J. T. Kebler..	W. J. Murray
Hastings, No. 1	Victor Fuel Co., D. A. Chappell, prest., Peoples Bank bldg., Denver	D. M. Simpson	.....
Hastings, No. 2	Victor Fuel Co., D. A. Chappell, Prest., Peoples Bank bldg., Denver	D. M. Simpson	.....
Gray Creek	Victor Fuel Co., D. A. Chappell, prest., Peoples Bank bldg., Denver	D. M. Simpson	.....
Peerless.	Northern Coal and Coke Co., James Canon, jr., prest., Peoples Bank bldg., Denver . . . . .	.....	Archie Craig
Broadhead, No. 4	Northern Coal and Coke Co., James Canon, jr., prest., Peoples Bank bldg., Denver . . . . .	.....	Archie Craig
Rapson.	Rapson Coal Co., Colorado Springs. . . . .	.....	R. Wootton..
Primrose	Primrose Coal Co., H. S. Nash, gen'l mgr. . . . .	.....	.....
Bloom.	George Jeffryes, Trinidad. . . . .	.....	.....
Butler	A. R. Whetstone & Co., Trinidad. . . . .	.....	.....
Bowen	Union Coal and Coke Co., W. R. Harp, prest., Denver . . . . .	.....	H. Addison .
La Belle.	La Belle Coal Co., Trinidad . . . . .	.....	.....
Majestic.	Southern Coal Co., Denver	John Connell	.....
Monarch	Joseph Cox, general manager, Chicosa . . . . .	.....	.....
Stock Canon . .	Colo. Fuel and Iron Co. J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver...	J. T. Kebler..	W. J. Murray

COUNTY.

Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
J. E. McLaughlin	J. Cameton.....	483	Two fans	35,000	1,400	A. T. & S. F.	-----
Thomas Patterson	W. Skidmore...	406	Fan....	57,700	800	Colo. & S...	-----
R. O'Neil.....	A. Riddle.....	350	Fan....	50,000	1,200	D. & R. G..	-----
J. Jennings	T. Sawers	275	Fan....	40,800	1,100	Colo. & S...	-----
J. B. Williams....	Thomas Brown	250	Fan....	40,180	1,000	Colo. & S...	-----
J. B. Williams....	John Tweedlle..	300	Fan....	63,360	1,500	Colo. & S...	-----
John Evans	Charles Lamb..	221	Natural	20,450	1,000	Colo. & S...	-----
-----	H. Mallott.....	140	Fan....	40,500	800	Colo. & S...	-----
-----	-----	75	Natural	13,000	350	Colo. & S...	New mine
-----	-----	15	Natural	6,000	50	No railroad	New mine
W. H. Brown.....	-----	30	Natural	5,000	60	Colo. & S...	New mine
G. Jeffries	-----	12	Natural	4,000	60	No railroad	-----
-----	Charles Fry....	10	Natural	3,500	75	No railroad	-----
Charles Beuchat..	-----	75	Furnace	11,000	600	Colo. & S...	New mine
T. D. Mitchell....	-----	35	Furnace	10,000	150	Colo. & S...	New mine
John Connell	G. Kennedy....	35	Furnace	15,000	500	Colo. & S...	New mine
J. Cox	J. Cox	20	Furnace	2,000	75	Colo. & S...	-----
J. Jennings	-----	10	Natural	10,000	200	Colo. & S...	New mine

LA PLATA

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent
Porter.....	Porter Fuel Co., J. A. Porter, prest., Denver.	S. E. Herr.....	.....
Hesperus.....	Porter Fuel Co., J. A. Porter, prest., Denver.	S. E. Herr.....	.....
Ute.....	Ute Coal and Coke Co., Durango.....	.....	.....
City	Gold King Consolidated Co., Durango.....	.....	.....
San Juan.....	Maloney & Carroll.....	.....	.....
La Plata.....	Jno. Cunningham, Hesperus.....	J. Cunningham	.....

COUNTY.

Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
Thos. Mason...	Joe Jones.....	71	Natural	11,000	400	R. G. So.....	-----
N. Mason	-----	37	Furnace	13,000	300	R. G. So.....	-----
-----	C. W. Hauser....	12	Furnace	7,000	75	R. G. So.....	-----
D. M. Logan ...	-----	24	Natural	8,000	150	R. G. So.....	-----
-----	-----	16	Natural	7,500	50	R. G. So.....	-----
-----	-----	4	Natural	1,200	20	No railroad .	-----

MESA

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent
Book Cliff.....	The Book Cliff R. R. Co., Grand Junction....	W. S. Phillips	.....
Palisade.....	Palisade Coal Co., Palisade .....	.....	.....
Mt. Lincoln....	Sunlight Coal Co., Palisade.....	.....	.....
Cameo.....	Grand Junction Mining and Fuel Co.....	Geo. Smith....	.....
Lorimer.....	A. H. Lorimer, Palisade.....	.....	.....

COUNTY.

Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
-----	-----	24	Natural	9,000	200	Book Cliff...	-----
Jno. Rowley...	-----	14	Natural	7,500	40	No railroad.	-----
F. Hickman...	-----	3	Natural	-----	20	D. & R. G...	-----
-----	-----	20	Furnace	-----	300	D. & R. G...	New mine
A. H. Lorimer.	-----	2	Natural	4,000	15	No railroad.	New mine

PITKIN

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent
Spring Gulch..	Colorado Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver	J. T. Kebler..	Joe Ball ...
Placita.....	Colorado Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg. Denver	J. T. Kebler..	.....
Coal Basin... ..	Colorado Fuel and Iron Co., J. A. Kebler, prest. and gen'l mgr., Boston bldg., Denver	J. T. Kebler..	.....
Union	Union Coal and Coke Co., W. R. Harp, prest., 1632 Champa street, Denver.....	.....	H. Addison

COUNTY.

Local Superintendent	Mine Foreman	Number of Employes	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
Tim. Tinsley...	J. W. Allen	134	Fan	10,290	500	Colo. Mid..	New mine.
B. L. Davies....	W. Morgan.....	90	Fan	17,460	350	C. R	New mine.
D. Griffiths.....	.....	25	Fan	20,000	....	C. R. N. G.	.....
J. Dalrymple...	.....	50	Natural	8,000	250	Colo. Mid..	.....

WELD COUNTY.

Name of Mine	Name and Address of Operator	General Superintendent	Division Superintendent	Local Superintendent	Mine Foreman	Number of Employees	Mode of Ventilation	Volume of air in cubic feet per minute	Daily Capacity	Railroad Connections	Remarks
Emerson	Smith Bros., Lupton	S. J. Smith ..	.....	.....	.....	4	Natural ..	5,000	40	No railroad .	.....
White Ash ...	Andrew & Waiter, Evans ..	.....	.....	Sam Andrew ..	.....	2	Natural ..	3,500	10	No railroad .	.....
Washington..	David Brimble, Erie .....	.....	.....	D. Brimble ..	.....	8	Natural ..	4,750	100	Union Pacific	.....
White House.	Thos. Wooley, Erie .....	.....	.....	Thos Wooley ..	.....	11	Fan	7,500	100	No railroad .	.....
Davies	Chas. Davies, Erie .....	.....	.....	Chas. Davies ..	.....	5	Natural ..	3,200	20	No railroad .	.....
Lincoln	Jno. Havell & Son, Erie ..	.....	.....	Jno Havell ..	.....	5	Natural ..	3,500	40	No railroad .	.....
Eureka	C.B. McKean & Son Rinn ..	.....	.....	T.D. McKean ..	.....	5	Furnace ..	4,700	30	No railroad .	.....
Garfield No. 2	Garfield Coal Co., W. Padfield, Peoples Bank bldg., Denver	W. Padfield ..	.....	L. S. Jones ..	.....	45	Fan	17,000	250	Union Pacific	.....

APPENDIX

THE STATUTE LAWS OF COLORADO IN RELATION
TO COAL MINES

Coal Mines.

THE STATUTE LAW OF COLORADO IN RELATION TO COAL MINES,
AS PASSED IN 1883, AND ACTS AMENDATORY THERETO.

Section 1. That the owner or agent of each coal mine or colliery in this state, employing ten or more men, shall make, or cause to be made, within six months after the passage of this act, an accurate map or plan of the workings of such coal mine or colliery, on a scale not exceeding one hundred feet to the inch, showing the bearings and distances of the workings, with the general inclinations of the stratum, and any material deflections in such workings, and the boundary lines of such coal mine or colliery, which shall be kept for the use of the inspector, at the office of the said mine in the county where such mine or colliery is located, and which shall be kept up every three months; and shall also deposit a true copy of such map or plan with the inspector of coal mines, and with the recorder of the county in which said coal mine or colliery is situated, to be filed in their respective offices; and said owner or agent shall cause, on or before the tenth day of January every year, a statement of the workings of such coal mine during the year past, from the last report to the end of the December month just preceding, to be marked on the original map or plan of said coal mine or colliery; Provided, If the owner or agent of any coal mine shall neglect, or refuse, or for any cause fail, for the period of one month after the time prescribed, to furnish said map or plan as hereby required, or if the inspector shall find, or have reason to believe, said plan or map is inaccurate in any material part, he is hereby authorized to cause a correct map or plan of the actual workings of such coal mines or colliery to be made at the expense of the owner thereof, the cost of which shall be recoverable from said owner by an action, as in cases of other debts, and shall cause a copy of the same to be filed in the office of the recorder of the county in which said coal mine or colliery is situated.

Sec. 2. It shall not be lawful, after six months from the passage of this act, for the owner or agent of any coal mine, wherein over fifteen thousand square yards have been excavated, to employ or permit more than fifteen persons to work therein, except in opening shafts or outlets, unless there are to every seam of coal worked in each mine at least two separate outlets, separated by natural strata of not less than one hundred feet in breadth, by which shafts or outlets, distinct means of ingress or egress are always available to the persons employed in the mine, and air shafts, in which are constructed and maintained ladder ways, shall be deemed and held to be an escape shaft within the provisions of this act, and no escape shaft shall be required; but it is not necessary for the two outlets to belong to the same mine; the second outlet need not be made until fifteen thousand square yards have been excavated in such mine, and to all other coal mines, whether opened and worked by shafts, slopes or drifts to such openings or outlets, must be provided within twelve months after fifteen thousand square yards have been excavated therein; and in case such outlets are not provided as herein stipulated, it shall not be lawful for the owner or agent of such mine to permit more than fifteen persons to work therein during each twenty-four hours. In case a coal mine has but one shaft, slope or drift for the ingress or egress of the men working therein, and the owner thereof does not own suitable surface ground for another opening, he may select and approximate any adjoining land for that purpose, and for approach thereto, and shall be governed in his proceedings in appropriating such land by the provisions of law in force providing for the appropriation of private property by corporations, and such appropriation may be made whether he is a corporator or not; but no land shall be appropriated under the provisions of this act until the court is satisfied that suitable premises can not be obtained by contract upon reasonable terms. Escapement shaft or other communication with a contiguous mine, as aforesaid, shall be constructed in connection with every vein or stratum of coal worked in such coal mine or colliery, as provided herein.

Sec. 3. In all cases where the human voice can not be distinctly heard, the owner or agent shall provide and maintain a metal tube from top to the bottom of the slope or shaft, or a telephone connection suitably adapted to the free passage of sound, through which conversation may be held be-

tween persons at the bottom and at the top of the shaft or slope; also, the ordinary means of signaling to and from the top and bottom of the shaft or slope; and in the top of every shaft shall keep an approved safety gate and an approved safety catch, and sufficient cover overhead on every carriage used for lowering and hoisting persons; and the said owner or agent shall see that sufficient flanges or horns are attached to the sides of the drum of every machine that is used for lowering and hoisting persons in and out of the mine, and also that adequate brakes are attached thereto; the main link attached to the swivel of the wire rope shall be made of the best quality of iron, and shall be tested by weights satisfactory to the inspector of mines of the state; and bridle chains shall be attached to the main link from the cross pieces of the carriage; and no single link chain shall be used for lowering or raising persons into or out of said mine; and not more than five persons for each ton capacity of the hoisting machinery used at any coal mine shall be lowered or hoisted by the machine at any one time.

Sec. 4. The owner or agent of every coal mine or colliery, whether shaft, slope or drift, shall provide and maintain for every such mine an amount of ventilation not less than one hundred cubic feet, and such additional number of cubic feet as may be ordered by said mine inspector, per minute per person employed in such mine; and also an amount of ventilation of not less than five hundred cubic feet per minute for each mule or horse used in said mine, which shall be circulated and distributed throughout the mine in such a manner as to dilute and render harmless and repel the poisonous and noxious gases from each and every working place in the mine; and break-throughs or air-ways shall be driven as often as the inspector of mines may order, at the different mines inspected by him; and all break-throughs or air-ways, except those last made near the working faces of the mines, shall be closed up and made air-tight by brattice, trap-doors or otherwise, so that the current of air in circulation in the mine may sweep to the interior of the mine, where the persons employed in such mine are at work; and all mines governed by this statute shall be provided with artificial means of producing ventilation, when necessary to provide a sufficient quantity of air, such as fanning, or suction fans, exhaust steam furnaces, or other contrivances of such capacity and power as to produce and maintain an abundant supply of air; but in

case a furnace shall be used for ventilating purposes, it shall be built in such a manner as to prevent the communication of fire to any part of the works, by lining the upcast with an incombustible material for a sufficient distance up from the said furnace. All mines generating fire-damp shall be kept free from standing gas, and every working place shall be carefully examined every morning with a safety lamp, by a competent person or persons, before any of the workmen are allowed to enter the mine; and the person making such examination shall mark on the face of the workings the day of the month; and in all mines, whether they generate fire-damp or not, the doors used in assisting or directing the ventilation of the mine shall be so hung and adjusted that they will shut up of their own accord and can not stand open; and the owner or agent shall employ a practical and competent inside overseer, to be called a "mining boss," who shall keep a careful watch over the ventilating apparatus, and the air-ways, traveling-ways, pumps, timbers and drainage; also, shall see that, as the miners advance their excavations, that all loose coal, slate and rock overhead are carefully secured against falling in or upon the traveling-ways, and that sufficient timber, of suitable lengths and sizes, is furnished for the places where they are to be used, and placed in the working places of the mines; and he shall measure the ventilation at least once a week, at the inlet and outlet, and also at or near the face of all the entries; and the measurement of air so made shall be noted on blanks furnished by the mine inspector; and on the first day of each month the "mining boss" of each mine shall sign one of such blanks, properly filled, and forward the same by mail to said mine inspector, a copy of which shall be filed at the office of the coal company, subject to inspection by miners.

Sec. 5. No person shall be knowingly employed as an engineer or mining boss, to take charge of any machinery or appliance whereby men are lowered into or hoisted out of any mine, but an experienced, competent and sober person, and no person shall ride upon a loaded wagon or cage used for hoisting purposes in any shaft or slope. No young person under twelve years of age, or woman or girl of any age, shall be permitted to enter any coal mine to work therein, nor any person under the age of sixteen years unless he can read and write.

Sec. 6. All safety lamps used for examining or working coal mines shall be property of the owner of the mine, and shall be under the charge of the agent thereof. The term "owner" in this act shall mean the immediate proprietor, lessee or occupier of any coal mine or colliery, or any part thereof; and the term "agent" shall mean any person having, on behalf of the owner as aforesaid, the care and management of any coal mine or colliery, or any part thereof.

Sec. 7. All boilers used in generating steam in and about coal mines and colliery shall be kept in good order, and the owner or agent, as aforesaid, shall have said boilers examined and inspected by a competent boiler maker; or other well qualified person, as often as once every six months, and the result of such examination shall be certified, in writing, to the mining inspector; and every steam boiler shall be provided with a proper steam gauge, water gauge and safety valve; and all underground, self-acting or engine planes, or gangways, on which coal cars are drawn and persons travel, shall be provided with some proper means of signaling between the stopping places and the ends of said planes or gangways; and sufficient places of refuge, at the sides of said planes or gangways, shall be provided, at intervals of not more than fifty feet apart; and there shall be cut, in the side of every hoisting shaft, at the bottom thereof, a traveling-way, sufficiently high and wide to enable persons to pass the shaft, in going from one side of the mine to the other, without passing over or under the cage or hoisting apparatus.

Sec. 8. Whenever loss of life, or serious personal injury, shall occur by reason of any explosion, or of any accident whatsoever, in or about any coal mine or colliery, it shall be the duty of the owner or agent thereof to give notice to the mine inspector, and if any person is killed thereby, to the coroner of the county, also; and the inspector shall immediately go to the scene of said accident and render such assistance as he may deem necessary for the safety of the men, and shall ascertain, by the testimony before the coroner, or by taking other evidence, the cause of such explosion or accident, and file record thereof in his office.

Sec. 9. In all coal mines in the state the miners employed and working therein, the owners of the land, or other persons interested in the rental or royalty of any such mine, shall at all proper times have full right of access to, and ex-

amination of, all scales, machinery, or apparatus used in or about such mine, to determine the quantity of the coal mined, for the purpose of testing the accuracy of all such scales, machinery or apparatus; and such land owners, or other persons, may designate or appoint a competent person to act for them, who shall, at all proper times, have full right of access to, and examination of, such scales, machinery or apparatus, and seeing all weights and measures of coal mined, and the accounts kept of the same; but not more than one person, on behalf of the land owners, or other person interested in the rental or royalty, jointly, shall have such right of access, examination and inspection of scales, weights, measures and accounts at the same time, and that such person shall make no unnecessary interference with the use of such scales, machinery or apparatus; and the miners employed in any mine may, from time to time, appoint two of their number to act as a committee to inspect, not oftener than once in every month, the mine and the machinery connected therewith, and to measure the ventilating current, and if the owner, agent, or manager so desires, he may accompany such miners, by himself, or two or more persons whom he may appoint for that purpose. The owner, agent, or manager shall afford every necessary facility for making such inspection and measurement; but the said miners shall not in any way interrupt or impede the work going on in the mine at the time of such inspection and measurement.

Sec. 10. Any miner, workman, or other person, who shall intentionally injure any shaft, lamp, instrument, air course or brattice, or obstruct or throw open air-ways, or open a door and not close it again, or carry lighted pipes or matches into places that are worked by safety lamps, or handle or disturb any part of the machinery, or enter any place of the mine against caution; or who willfully neglects or refuses to securely prop the roof of any working place under his control, or disobey any order given in carrying out the provisions of this act, or do any other act whereby the lives or the health of persons, or the security of the mines or machinery is endangered, shall be deemed guilty of a misdemeanor, and upon conviction, may be punished by a fine of not less than twenty-five dollars nor more than two hundred dollars, or may be imprisoned in the county jail not less than thirty days, nor more than one year, or may be punished by both such fine and imprisonment, at the discretion of the court.

Sec. 11. In case any owner or agent disregards the requirements of this act, any court of competent jurisdiction may, on application of the inspector, by civil action in the name of the state, enjoin or restrain the owner or agent from working or operating such mine with more than twelve miners underground during each twenty-four hours, until it is made to conform with the provisions of this act. And such remedy shall be cumulative, and shall not take the place of or affect any other proceedings against such owner or agent, authorized by law for the matter complained of in such actions.

Sec. 12. For any injury to person or property occasioned by any violation of this act, or any willful failure to comply with its provisions, by any owner or lessee or operator of any coal mine or opening, a right of action against the party at fault shall accrue to the party injured for the direct damages sustained thereby, and in any case of loss of life by reason of such violation or failure, a right of action against the owners and operators of such coal mine or colliery, shall accrue to the widow and lineal heirs of the person whose life shall be lost, for like recovery of damages for the injury they shall have sustained.

Sec. 13. The provisions of this act shall not apply to or affect any coal mine in which not more than ten men are employed underground during each twenty-four hours, but on the application of the proprietor, or of the miners in any such mine, or when the mine inspector may deem it necessary, said mine inspector shall make, or cause to be made, an inspection of such mine, and shall direct and enforce any regulations in accordance with the provisions of this act, that he deems necessary for the safety and health of the miners.

Sec. 14. That the board of examiners, heretofore appointed under the provisions of this act concerning coal mines, approved February 24, 1883, and amended by this act, shall hold their office for and during the time for which they were appointed, to-wit: until January 1, A. D. 1887. And it shall be the duty of the board of examiners to meet at such time, and at such places within this state, as may be directed by the governor of this state, and examine such persons as may present themselves for examination, touching their qualifications for the office of mine inspector, as provided in this act, and shall inquire into their character and qualifications, and shall certify the names of such persons as they shall find to be competent to fill such office of mine inspector, to the

governor, which list of names, so certified, shall be placed on file in the office of the secretary of state. Members of such board of examiners shall, before entering upon their duties, take and subscribe the following oath, viz.: We, the undersigned, do solemnly swear (or affirm) that we will perform the duties of examiners of applicants for appointment of inspector of coal mines, to the best of our abilities, and that in recommending or rejecting said applicants, we will be governed by the evidence of qualifications to fill the position under the law creating the same, and not by any consideration of political or personal favors; that we will certify to all whom we may find qualified, according to the true intent and meaning of the act, and none others, to the best of our judgment. The qualifications of candidates for said office of inspector of mines, to be inquired into and certified by said examiners, shall be as follows, namely: They shall be citizens of the United States, of temperate habits, of good repute as men of personal integrity, shall have obtained the age of thirty years, and shall have had at least one year's experience in the working of coal mines of Colorado, and five years of practical experience in the working of coal mines in the United States, and have a practical knowledge of mining engineering, and of the different systems of working and ventilating coal mines, and of the nature and properties of the noxious and poisonous gases of mines, particularly fire-damp. The board of examiners shall receive six dollars per day, and same mileage as is allowed to members of the legislature, to be paid out of the state treasury, upon the filing of the certificates of the examining board in the office of the secretary of state, as hereinbefore provided. As often as vacancies in said office of inspector of mines shall occur, by death, resignation, or malfeasance in office, which shall be determined in the same manner as in the case of any other officer of the state government, the governor shall fill the same, by appointment, for the unexpired term, from the names on file in the office of the secretary of state, as hereinbefore mentioned, as having passed examination. On January 1, A. D. 1887, and every four years thereafter, the governor shall appoint one reputable mining engineer, of known ability, and shall notify the judges of four of the judicial districts of the state, within which coal mines are being operated, to each appoint one reputable coal miner, of known experience and practice, from their respective districts, and the five so appointed shall

constitute a new board of examiners, whose duties, term of service and compensation shall be the same as those provided for by this section; and from the names that may be certified by them, the governor shall appoint the inspector of mines provided for in this act. Nothing in this act shall be construed to prevent the re-appointment of any inspector of coal mines. The inspector of coal mines shall receive for his services an annual salary of two thousand dollars, and ten cents per mile mileage for all distances traveled in the discharge of his official duties, to be paid monthly by the state treasurer; and said inspector shall reside in the state, and shall keep an office at the capitol, or other building, in which the offices of the state are located. Each inspector is hereby authorized to procure such instruments, and chemical tests, and stationery, from time to time, as may be necessary to the proper discharge of his duties under this act, at the expense of the state, which shall be paid by the state treasurer, upon accounts duly certified by him and audited by the proper department of the state. All instruments, plans, books, memoranda, notes, etc., pertaining to the office, shall be the property of the state, and shall be delivered to their successors in office.

Sec. 15. The inspector of coal mines shall, before entering upon the discharge of his duties, give bond in the sum of five thousand dollars, with sureties, to be approved by the judge of the district court in which he resides, conditioned for the faithful discharge of his duty, and take an oath (or affirmation) to discharge his duties impartially and with fidelity, to the best of his knowledge and ability.

Sec. 16. No person acting as manager or agent of any coal mine, or as a mining engineer for any coal mining company, or to be interested in operating any coal mine, shall at the same time act as an inspector of coal mines under this act.

Sec. 17. The inspector of coal mines, and his deputy, shall devote the whole of their time to the duties of their office. It shall be the duty of the inspector, or his deputy, to enter into and thoroughly examine all coal mines in the state in which more than ten men are employed, at least once each quarter, to see that all the provisions of this act are observed and strictly carried out, and the inspector, or his deputy, or both, may enter, inspect and examine any coal mine in the state, and the works and machinery belonging

thereto, at all reasonable times, by night or day, but so as to not unnecessarily obstruct or impede the workings of the mine; and the owner, or any agent of such mine, is hereby required to furnish the means necessary for such entry and inspection. The inspector shall make, to the governor of the state, a biennial report, which shall show the number of coal mines and development of the same during each year, and of persons employed in and about each mine, and the extent to which the law is obeyed; the progress made in the improvement sought to be secured by the passage of this act; the number of accidents and deaths resulting from injuries received in coal mines; as, also, statistics showing output of coal and development made annually at each mine, with all facts concerning the production and transportation of coal to market, and other facts of public interest coming under the provisions of this act; which record shall be filed in the inspector's office. The secretary of state is hereby authorized to have printed two thousand copies of said biennial report, at the expense of the state, for distribution to members of the legislature, mine owners, superintendents, and others interested in coal mines; said report shall be printed on, or before, December 31, preceding the biennial session of the legislature, and the inspector is hereby authorized to employ a deputy inspector, and such clerical assistance as may be required in his office, whose salaries shall not exceed two thousand (2,000) dollars in any one year, which shall be paid out of any moneys appropriated for that purpose on certificate of said state inspector of coal mines, showing the services rendered and the amount thereof; and, on presentation of such certificate to the state auditor by the person entitled thereto, he shall issue his warrant on the state treasurer for the amount thereof, to be paid out of any appropriation as aforesaid; and the said inspector shall be allowed the further sum of ten cents per mile mileage for all distances actually traveled by him, or his deputy, in the active discharge of their official duties, but the total sum of such mileage allowed for the mileage expenses of both such inspector and his deputy shall not exceed the sum of two thousand five hundred dollars in any one year. It is further hereby enacted that any balance of the above appropriation which may remain after paying the salary of the deputy inspector and his mileage, as hereinbefore provided, shall be applied to the hire of clerical assistance for the inspector and for necessary office expenses.

Sec. 18. That the owner, agent or lessee of each coal mine or colliery in this state employing ten or more men shall, when working in close proximity to an abandoned mine or part of a mine containing water or fire damp, cause bore holes to be kept at least twenty feet in advance of the coal face and sides of all working places in such mine or colliery known to be approaching old and abandoned workings. Side holes not to be more than twenty-five feet apart and to a like depth, also that it shall not be lawful for any owner or agent operating vertical coal veins, to mine or extract coal from levels under any portion of said mine or adjoining mines where water exists, without first having pumped out such water. All veins pitching over seventy degrees shall be understood as vertical veins under this act. And said owner or agent shall cause all abandoned shafts, air shafts, slopes, slack piles, or cave holes to be securely and safely fenced off; and in all bituminous and lignite coal mines coming under the provisions of this act, the state inspector of coal mines shall have the authority to compel the owners, agents or lessee of coal mines to remove any or all fine coal or slack which may accumulate in the working places or holes, and where gob-fires or spontaneous combustion are known or even suspected to exist, a careful inspection shall be made daily of the workings of the mine boss or another competent person, and if an increase in temperature be localized in any part of the gobs or other places, prompt action shall be taken to remove the heated gob or debris, or extinguish the fire by water or other contrivance; but if the fire has already reached such proportions that it is impossible to extinguish it in that way, then it shall be the duty of the superintendent, or mine boss in the absence of the superintendent, to at once build suitable stoppings of double walls of a concave shape, and at least two feet apart, with ends top and bottom, built into cuttings made into the coal or rock, and the center between the walls to be filled in with sand or other fine earthy matter, which shall be closely tamped, so as to fill up all cracks and crevices, the outside of said walls to be carefully plastered with lime and cement, so as to completely isolate the fire from air. Should combustion still be suspected to be going on, then steam, where practicable, shall be injected towards the fire from pipes in connection with boilers, and passing through said walls or stoppings, or to flood with water the site of the fire; and that in all

coal mines known to generate explosive gas, that the owner or agent shall provide and adopt a system by which water under pressure or otherwise shall be sprinkled and make damp all accumulations of fine coal dust from time to time that may accumulate on any haulage road, rooms, stopes or any other working place. Also, that no owner or agent shall use any part of the underground workings of such coal mines as a magazine for the storage of gunpowder or any other kind of blasting agent; on all underground roads where coal is hauled by machinery, and where the grade will average more than six (6) feet to the hundred (100), and which are used for traveling ways for men, double draw-bars shall be attached to the bottom or other parts of every car, so that two separate couplings may be used to connect each and every car lowered or hoisted on any road coming under this act, and that the hooks which connect with the draw-bar of the car shall be so constructed, with a clevice or other contrivance, so as to prevent them from becoming detached while the cars are in motion on the slope; also, that double chains, with approved safety hooks, shall be attached to the socket of the hoisting ropes; Provided, That any appliance other than those herein required may be used in the construction and hoisting of cars which may accomplish the same result with equal safety and security to life and limb.

Sec. 19. The mining boss, or other competent person, shall make daily inspection of ropes, chains, cages and other hoisting appliances, guides and shaft timbers, and make a record of such daily inspection in a book, kept at the office in the mine, for that purpose, and the fire boss shall keep a daily record of any defects in the ventilating appliances, and any standing gas that may be found in said mine, designating the entry and room in which said gas is found. Each of the records herein required to be kept, shall be open at all times to the mine inspector's and miners' committee's inspection, and a copy thereof shall be filed in the office of the said mine inspector on the first Monday of December of each year.

Sec. 20. The neglect or refusal to perform the duties required to be performed by any section of this act, or the violation of any of the provisions hereof, shall be deemed a misdemeanor, and any person so neglecting or refusing to perform such duties, or violating such provisions, shall, upon conviction, be punished by a fine of not less than one hundred dollars, nor exceeding five hundred dollars, at the discretion

of the court, and all penalties recovered under this act shall be paid into the treasury of the state.

Sec. 21. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

Sec. 22. An emergency exists; therefore, this act shall take effect and be in force from and after its passage.

Approved April 8, 1885; amended April 2, 1887.

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