No. 1
Mine Sheet No. IX.
No. 9 AIR SHAFT AND DIAMOND DRILL BORE HOLE
FROM SURFACE TO CONGLOMERATE.
Penna Coal Co.

No. 2.
Mine Sheet No. IX.
No. 9 SHAFT SR.
FROM SURFACE TO PITTSTON BED.
Penna Coal Co.

No. 3
Mine Sheet No. IX.
SHAFT No. 10 JR.
FROM SURFACE TO POWDER MILL BED
Penna Coal Co.

No. 4
Mine Sheet No. IX.
TWIN SHAFT AND BORE HOLE
FROM SURFACE TO CONGLOMERATE
F. C. Dininny.

No. 5.
Mine Sheet No. XI.
PHOENIX SHAFT AND BORE HOLE
FROM SURFACE TO CONGLOMERATE.
Phoenix Coal Co.

No. 6.
Mine Sheet No. XI.
BARNUM SHAFT No. 1
FROM SURFACE TO POWDER MILL BED.
Penna Coal Co.

No. 7.
Mine Sheet No. XI.
MOSIER SHAFT
FROM SURFACE TO POWDER MILL BED.
F. C. Dininny.

No. 8.
Mine Sheet No. X.
NEW BUTLER SHAFT
FROM SURFACE TO POWDER MILL BED
Butler Coal Mining Co. (Limited)

No. 9.
Mine Sheet No. XI.
COLUMBIA TUNNEL BORE HOLE
FROM SURFACE TO PITTSTON BED.
Old Forge Coal Co.

No. 10.
Mine Sheet No. XI.
LAW SHAFT
FROM SURFACE TO POWDER MILL BED
Penna Coal Co.

No. 11
Mine Sheet No. XI.
SHAFT No. 13.
FROM SURFACE TO POWDER MILL BED
Penna Coal Co.

No. 12.
Mine Sheet No. XII.
SHAFT No. 12
FROM SURFACE TO POWDER MILL BED
Penna Coal Co.

No. 13.
Mine Sheet No. XII.
DAWSON SHAFT
FROM SURFACE TO POWDER MILL BED.
Penna Coal Co.

No. 14.
Mine Sheet No. XII.
STARK SHAFT
FROM SURFACE TO POWDER MILL BED
Penna Coal Co.

No. 15.
Mine Sheet No. XI.
HALSTEAD COLLIERY
ROPE DRILL BORE HOLE
NEAR D. L. & W. R. R.
D. L. & W. R. R. Co.

No. 16.
Mine Sheet No. XI.
HALSTEAD COLLIERY
ROPE DRILL BORE HOLE
NEAR LACKAWANNA RIVER.
D. L. & W. R. R. Co.

No. 17
Mine Sheet No. XI.
HALSTEAD SHAFT
FROM SURFACE TO POWDER MILL BED
D. L. & W. R. R. Co.

No. 18
Mine Sheet No. XI
HALSTEAD COLLIERY
ROPE DRILL BORE HOLE
FROM FOOT OF AIR SHAFT
D. L. & W. R. R. Co.

No. 19.
Mine Sheet No. XI.
DIAMOND DRILL BORE HOLE No. 2.
M. G. SMITH TRACT.

No. 20.
Mine Sheet No. XI.
DIAMOND DRILL BORE HOLE No. 1.
FROM SURFACE TO RED SHALE.
M. G. SMITH TRACT.

No. 21.
Mine Sheet No. XI.
PORTION OF SIBLEY SHAFT
FROM SURFACE TO CLARK BED.
Elliot Mc Clure & Co.

No. 22.
Mine Sheet No. XI.
DUNN ROCK SLOPE
FROM SURFACE TO CLARK BED.
John Jermyn.

No. 23.
Mine Sheet No. XI.
DIAMOND DRILL BORE HOLE
FROM SURFACE TO RED SHALE
SOUTH OF SIBLEY COLLIERY.
John Jermyn.

No. 24
Mine Sheet No. XI.
OLD FORGE SHAFT
FROM SURFACE TO POWDER MILL BED
Penna Coal Co.

No. 25.
Mine Sheet No. XI.
DIAMOND DRILL BORE HOLE
FROM SURFACE THROUGH POWDER MILL BED
STEWART TRACT.
John Jermyn.

No. 26.
Mine Sheet No. XI.
DIAMOND DRILL BORE HOLE
FROM SURFACE TO CONGLOMERATE
MASSACHUSETTS TRACT.
John Jermyn.

No. 27.
Mine Sheet No. XI.
DIAMOND DRILL BORE HOLE
FROM SURFACE TO POWDER MILL BED
NEAR CARBON HILL SHAFT.
Hillside Coal & Iron Co.

No. 28.
Mine Sheet No. XI.
ROPE DRILL BORE HOLE
¾ MILE NORTHWEST OF PYNE SHAFT.
D. L. & W. R. R. Co.

No. 18 Continued.

Continued above.

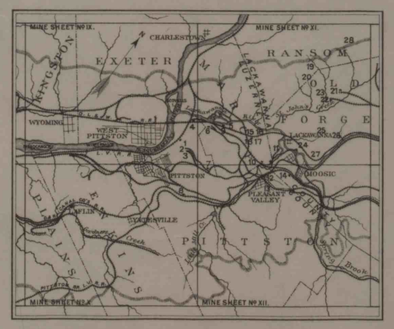
NOTES.

1. The strata composing some of these sections have been named locally and consequently a similarity of name does not necessarily indicate a similarity in the character of the strata, and vice versa.
2. Sections Nos. 5, 7, 21 and 22 were constructed from measurements made by the Geological Survey, Sections Nos. 1, 2, 3, 4, 6, 10, 11, 12, 13, 14 and 28 from records of the Pennsylvania Coal Company, Section No. 8 from those of Mr. I. A. Stearns, C. & M. E.; Section No. 9 from those of Mr. S. B. Bennett. Section No. 15 from those of the Old Forge Coal Company, Sections Nos. 15, 16, 17, 18 and 23 from those of the D. L. & W. R. R. Company, Sections Nos. 18 and 20 from those of Mr. G. Mortimer Lewis. Sections Nos. 23, 25 and 26 from those of Mr. John Jermyn and Section No. 27 from those of the Hillside Coal and Iron Company.
3. The thicknesses assigned to the individual strata are their true thicknesses perpendicular to the bedding. The thicknesses of the coal beds are shown as cut in the bore hole, shaft or tunnel which the section represents and do not necessarily show the thickness of the bed where worked at other points.
4. The thickness of the coal beds shown in these sections does not represent the thickness of the coal alone, but includes all the refuse material of the bed.

The record of the Twin Gillery Air Shaft (150' N. E. of main shaft) shows a coal bed 7'0" thick, 22' 0" below the lowest coal shown in above section.

COLUMNAR SECTIONS
OF THE
COAL MEASURES
IN THE VICINITY OF
PITTSTON AND LACKAWANNA,
LUZERNE AND LACKAWANNA
COUNTIES
CONSTRUCTED FROM MEASUREMENTS
OBTAINED FROM THE
COMPANIES NAMED IN THE INDIVIDUAL TITLES,
AND FROM THOSE MADE BY THE
GEOLOGICAL SURVEY
Scale: 40 feet to 1 inch

SKELETON MAP
OF
THE AREAS COVERED BY
MINE SHEETS Nos. IX, X, XI AND XII
SHOWING THE
POSITION OF THE COLUMNAR SECTIONS
ON SHEET VII
Scale: 2 miles to 1 inch



Scale of Coal Measure Sections 40 Feet to 1 Inch.
FEET 40 30 20 10 0 40 80 120 160 200
10 5 0 10 20 30 40 50 60 METERS.
Scale of Nature.

JANUARY 1888

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WILLIAM GRIFFITH Assistant Geologist. Assistants: ROBERT A. QUIN, WILBUR F. SMITH, GEORGE W. MILNES, EDWARD M. KEATLEY

JULIUS BIEN & CO. LITH.

E. K. MEYERS, STATE PRINTER

REFERENCE SURVEY MAPS AND SECTIONS
NORTHERN COAL FIELD | MINE SHEETS Nos. IX, X, XI AND XII.
| CROSS SECTION SHEETS