A HISTORICAL GEOGRAPHY OF CAMBRIA COUNTY, PENNSYLVANIA

Thesis for the Degree of M. A.

MICHIGAN STATE UNIVERSITY

Lawrence C. Mitchell

1965

This is to certify that the

thesis entitled

A HISTORICAL GEOGRAPHY

OF CAMBRIA COUNTY, PENNSYLVANIA

presented by

Lawrence C. Mitchell

has been accepted towards fulfillment
of the requirements for

M.A. degree in Geography

R. Morrison

Major professor

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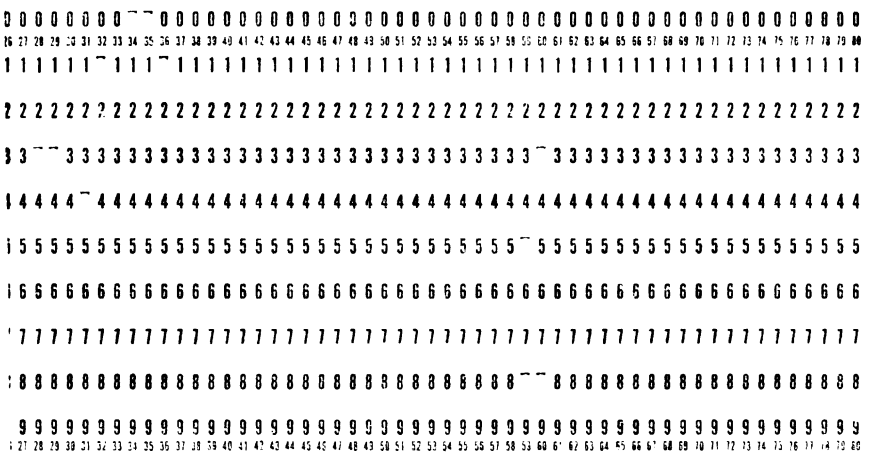

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ABSTRACT

A HISTORICAL GEOGRAPHY OF CAMBRIA COUNTY, PENNSYLVANIA

by Lawrence C. Mitchell

The thesis presents results of study of geographical changes in Cambria County, Pennsylvania through time and attempts to explain their occurrence. In most ways, this county is much like others in the Allegheny Plateau region of the state. Not only is this true of its physical characteristics, described in the introductory chapter of the thesis, but also of its settlement and economic evolution, and of the problems faced. Like the others, Cambria County is today suffering from the depressed condition of one of its major industries, coal mining, and has been losing population.

Indeed, changes in population trends, correlated with shifts in human activity, provided the basis for delimiting the four time periods studied. A chapter of the thesis is devoted to each. The first interval, the Pioneer Period, 1730-1820, began with the earliest known visit of white traders to a village of approximately 100 Indians occupying a site at the confluence of the Conemaugh River and Stony

Creek in present day Johnstown. It ended with the opening of a new transportation route through the county. Between these happenings, the Indians were largely displaced, and white settlers established subsistence farms frontier industries, and rudimentary trails and roads. By the end of the period, sixteen years after Cambria County's creation (1804), the population was 3,287 persons.

Over the next forty years population growth was more rapid, the number in 1860 being 29,155. This in part, at least, was due to construction of a canal-railway route between Philadelphia and Pittsburgh, which crossed Cambria County. In fact, much of the railway portage over the Allegheny Front lay in the county. Not only did the new transportation provide jobs directly, but is stimulated trade, changed agriculture, and contributed to the development of an iron industry based on local ore and charcoal fuel. This second period ended with the start of the Civil War and the abandonment in 1863 of the canal in Cambria County in favor of a railroad laid parallel to its course.

The third period, 1863-1920, was one of very rapid population growth and a new mineral development, the mining of coal. Cambria's population grew 197,839 in 1920. The Civil War and subsequent railroad building provided a tremendous stimulus to Cambria's iron and steel industry. This expanded, despite exhaustion of charcoal supplies,

because of the existence of good coking coal in the county. Although coal was mined here as early as 1809, the post Civil-War industrial demands were such that Cambria became one of the nation's leading coal-producing counties. World War I, like the Civil War, quickened industry in the county. Steel mills boomed and coal production reached an all-time high of 20,569,000 tons in 1918. Meanwhile, immigrants from many lands had swelled the population. Johnstown had become increasingly important as an industrial center, and this despite the tragic flood in 1889. Agriculture, like mining, reached a peak all-around significance near the end of the period. Mixed farming in conjunction with dairying prevailed.

The fourth period, 1920-1960, was one of maturity and subsequent decline. Population apparently peaked soon after 1940, when it was 213,459, but by 1960 had dropped to 203,283, only 5,444 more than in 1920. The period's early years, beset with labor trouble in mine and factory, race problems occasioned by use of Negro strike breakers in the steel mills, and cut-throat competition, were followed by the deadening effects of the "Great Depression". Recovery was marked during World War II. Coal production, for example, reached 20,266,000 tons in 1942, close to the 1918 peak, but subsequently it declined to only 6,955,000 tons in 1963. Agriculture, too, is of decreasing consequence. Only in the

Johnstown metropolitan area is population increasing. Here. steel production has changed from heavier to lighter goods, industry has diversified, and service occupations have gained in relative importance. It can be concluded that as a whole, Cambria County is a depressed area facing an uncertain future.

A HISTORICAL GEOGRAPHY OF CAMBRIA COUNTY, PENNSYLVANIA

By

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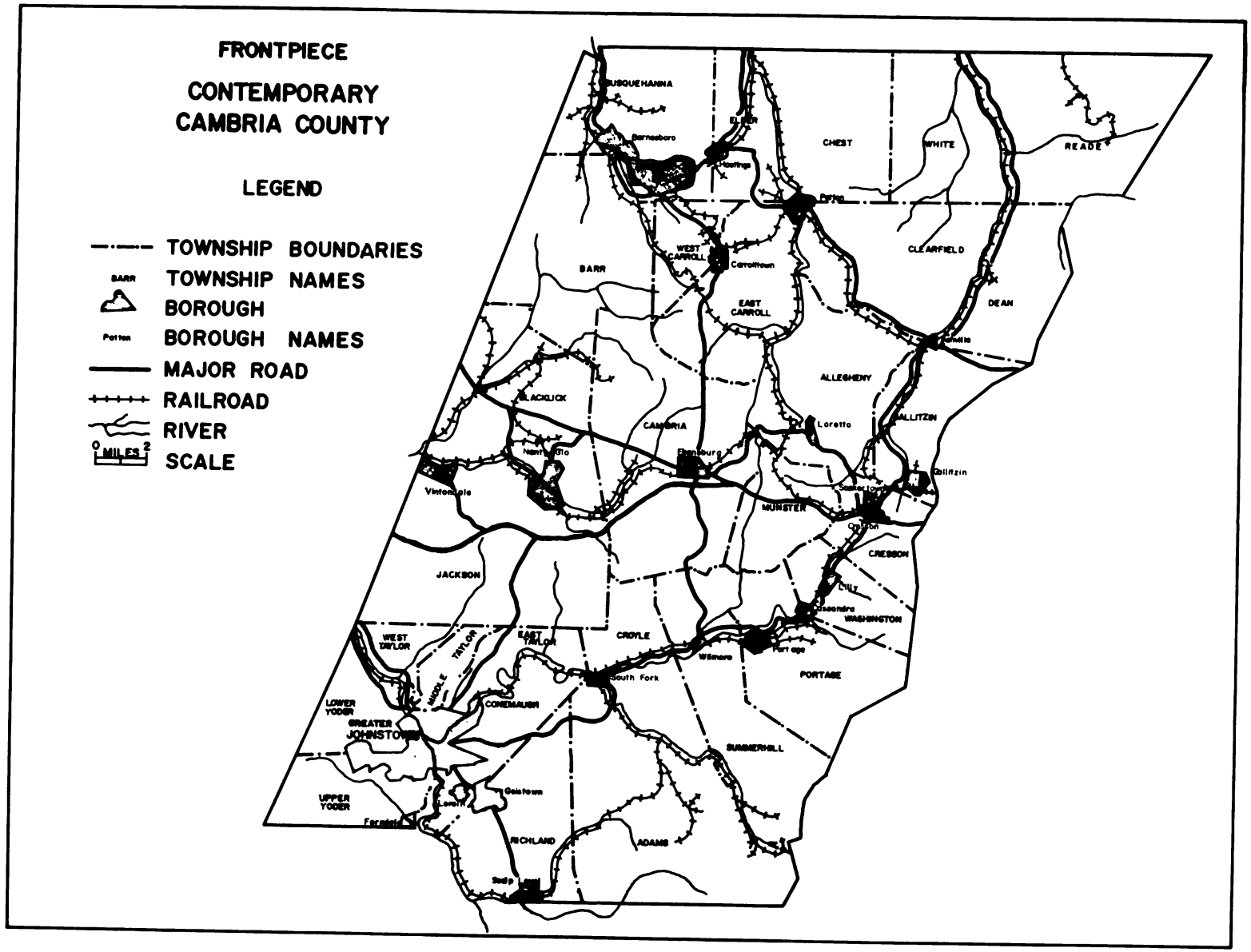
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CONTEMPORARY
CAMBRIA COUNTY
LEGEND
TOWNSHIP BOUNDARIES
BARR
TOWNSHIP NAMES
BOROUGH
Patton
BOROUGH NAMES
MAJOR ROAD
RAILROAD
RIVER
0 MILES 2
SCALE
SUSQUEHANNA
Barnesboro
Ebensburg
CHEST
WHITE
READE
Carrolltown
WEST CARROLL
BARR
EAST CARROLL
CLEARFIELD
DEAN
ALLEGHENY
BLACKLICK
CAMBRIA
Loretto
GALLITZIN
Nanty Glo
Vintondale
MUNSTER
Carrolltown
JACKSON
CRESSON
LILLY
Cassandra
WASHINGTON
WEST TAYLOR
EAST TAYLOR
CROYLE
Wilmore
Portage
South Fork
PORTAGE
LOWER YODER
CONEMAUGH
GREATER JOHNSTOWN
SUMMERHILL
UPPER YODER
Geistown
Lorain
Ferndale
RICHLAND
ADAMS
Sidman

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I would like to express my thanks to each and every person who has contributed to the preparation and completion of this thesis. Brevity prevents the listing of each one who has helped, either by suggestions, directions or long suffering.

I especially owe a note of thanke to those who provided me with material, since much of the early information about Cambria County is scattered or lost. Three residents of the county were especially helpful: Mrs. Mary E. Brougher, Head of the Reference Department of the Johnstown Public Library, with material and ideas; and Mr. Michael Timo and Mr. Mike Pirich, Jr., with memories of their mining years, I am also deeply appreciative to Mr. James Bogdan, Mr. Rodger Walcott and Mrs. Williams for their time and aid in securing material.

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CHAPTER I

INTRODUCTION

One field of study for the professional geographer is called historical geography. This includes any study of past geography or investigation of geographical change through time. This is a generic approach which focuses attention on the process of change, be this in cultural, physical or biological phenomena. The contemporary scene can be adequately described and explained only by examining happenings and conditions in the past.[1]

Statement of Problem

The purpose of this thesis is to present a summary view of Cambria County, Pennsylvania, using the methods of historical geography. This means inspecting the county's past for geographical changes and attempting to establish why these changes have occurred. The study will, therefore, emphasize the major historical and geographical factors that were active in the county during its evolution from about 1730 to the present.

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[1] Preston E. James and Clarence F. Jones, American Geography, Inventory and Prospect (Syracuse: Syracuse University Press, 1954), pp. 71-73.

The main reason for selecting Cambria County was that it is typical of the Allegheny Plateau region of Pennsylvania. Cambria's problems, both historical and contemporary, are found in the other counties. It has progressed through much the same general settlement and evolution, and recently has experienced a similar level of stagnation. Corollary with the above, however, are several factors which make Cambria County a unique situation. These include the normally expected items of names, dates and local pride and unusual items such as transportation routes, transhipment complexes and definition of the county by a survey starting at a cherry tree.

The specific objectives of this study are:

1. To examine the development, growth, and decline of a selected region using the methods of historical geography.
2. To show alterations (sequence of occupancy) in an area by changes in population and economy as the area progressed in time.

Physical Setting

Location

Cambria County, Pennsylvania, named for the Cambria Hills of Wales, is located about sixty miles east of Pittsburgh and two hundred miles west of Philadelphia. Along its eastern edge lies the Allegheny Front, an escarpment which separates the Ridge and Valley Province from the

Appalachian Plateau.[2] Since Cambria County is part of the Plateau Region, the detail of its topography is that of the dissected flat-bedded plateau surface found elsewhere in western Pennsylvania.

Area and Boundaries

The total area of Cambria County is 444,800 acres, or about 670 square miles, and it is divided into thirty townships (Frontpiece). Its shape resembles a parallelogram with its short sides on the north and south. The width axis averages about twenty miles and the length axis some thirty-four miles.

The boundary, separating Cambria from Blair County to the east, appears highly irregular on a map (Fig. 1). This is due to the Allegheny Front, which is more complex and lower in the Cambria County area than it is either to the north or south. Along the county's boundary, the Front has been eroded into a series of knob-like peaks and appears to have two crest lines.[3] The method of locating the eastern boundary was to sight from one high peak to the next. Since no attempt was made to follow either the outer or inner crest line, a zig-zagged line like the cutting edge of a saw resulted.

---

[2]The Allegheny Front is composed of the upturned beds on the northwest flank of the eroded Nittany Anticline.

[3]The outer or eastern one is composed of a conglomerate strata, while the western one, on which the true summits are located, is coal bearing.

From the southeastern corner of Cambria County (longitude 78° 45' E, latitude 40° 15' N) to the town of Scalp Level, ten miles to the west, the southern boundary is a straight line. From Scalp Level, it follows Paint Creek, and then Stony Creek (Fig. 2). At the mouth of Mill Creek, it runs due west to the Westmorland County line, a distance of seven more miles. Thus, Cambria's southern boundary is about twenty-four miles long. It is shared with Somerset County.

Portions of Westmorland and Indiana Counties border Cambria on the west. The boundary here, like that on the east, runs for part of its length along a crest line, namely the heights of Laurel Hill. It can be broken into two parts. The northern section lies west of Laurel Hill and extends in a straight line southwestward from Cherry Tree (Cance Place), to the center of Conemaugh Gap, a distance of twenty-four miles. From that point, the southern section follows the crest of Laurel Ridge for approximately eight miles, but here the line is somewhat more westerly oriented than it was farther north. The major difference between Cambria's eastern and western boundaries is the greater regularity of the western one; Laurel Ridge does not have the high degree of dissection exhibited by the Allegheny Front.[4]

---

[4] Franklin Platt and William G. Platt, Report of Progress in the Cambria and Somerset District of the Bituminous Coal Fields of Western Pennsylvania (Harrisburg: Second Pennsylvania Geological Survey, 1877), H. H., Vol. XXX, pp. XI-XIII. (See Appendix Table 1).

To the north is Clearfield County. The boundary here is a straight east-west line which follows the 40° 43.5' latitude line for nearly twenty-five miles. Consequently the county is somewhat wider at the top than at the bottom.[5,6]

Topography

Broadly viewed, however, Cambria county appears as a wide, shallow, rough-bottomed, longitudinal depression, bordered by two anticlinal ridges--The Allegheny Front on the east and, with the exception of the county's northwest corner, Laurel Hill (or Ridge) on the west. The depression is split nearly in half by the Ebensburg anticline, a ridge which is inferior to the two main ones, but parallel to them (Fig. 1). This anticline is so slight that a difference of only 200 feet can be measured between its heights and the lowest points of the adjacent synclines. All three anticlines have a general strike of North 35°E and South 35°W and this is roughly the direction of the county's eastern and western boundaries.[7] There is also a short section of the Nolo anticline, about five miles in length, in the county to the north and west of Laurel Ridge.[8]

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[5]This information was obtained from the nine United States Geological Survey Topographic Maps which provide coverage of this county. These were first published 1903-1915 and revised 1950 and later.

[6]Joseph C. Wess, Origin of Cambria County (Ebensburg, Pennsylvania, Clerk of Courts Office, Circa 1960), p. 1.

[7]Franklin Platt and William G. Platt, op. cit., p. XI.

[8]James D. Sisler, Bituminous Coal Fields of Pennsylvania (Harrisburg: Pennsylvania Geological Survey, Fourth Series, 1932), Bulletin M-6, p. 96.

Adjacent to each anticline is an almost parallel syncline which derives its name from the major or most central town located in it. Between the Allegheny Front and the Ebensburg anticline, on the eastern side of the county, is the Wilmore syncline. In the north, just west of the Ebensburg anticline, is the Bradley syncline. It appears to be a minor structure, part of the major Johnstown down-fold which is well developed to the south. Still another downwarped structure is located in the northwest at Barnesboro, just to the west of Laurel Ridge. It occupies only a small area in Cambria County and is only two miles wide at Nicktown (Fig. 1).[9]

Most of the county has a hilly surface, typical of a maturely-dissected plateau region. The rock layers are a succession of Carboniferous and Devonian sediments. Because little or no folding occurred, but rather the entire area was uplifted as a unit, the aspect is that of a highly dissected penaplane, ". . . a land of high-topped divides separated by steep-sided valleys in which flow deeply entrenched streams" (Fig. 1).[10] The highest point in the county is in the southeastern corner of Washington Township, just south of Big Spring Gap, where a border peak reaches over 2,960

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[9] Ibid., p. 96.

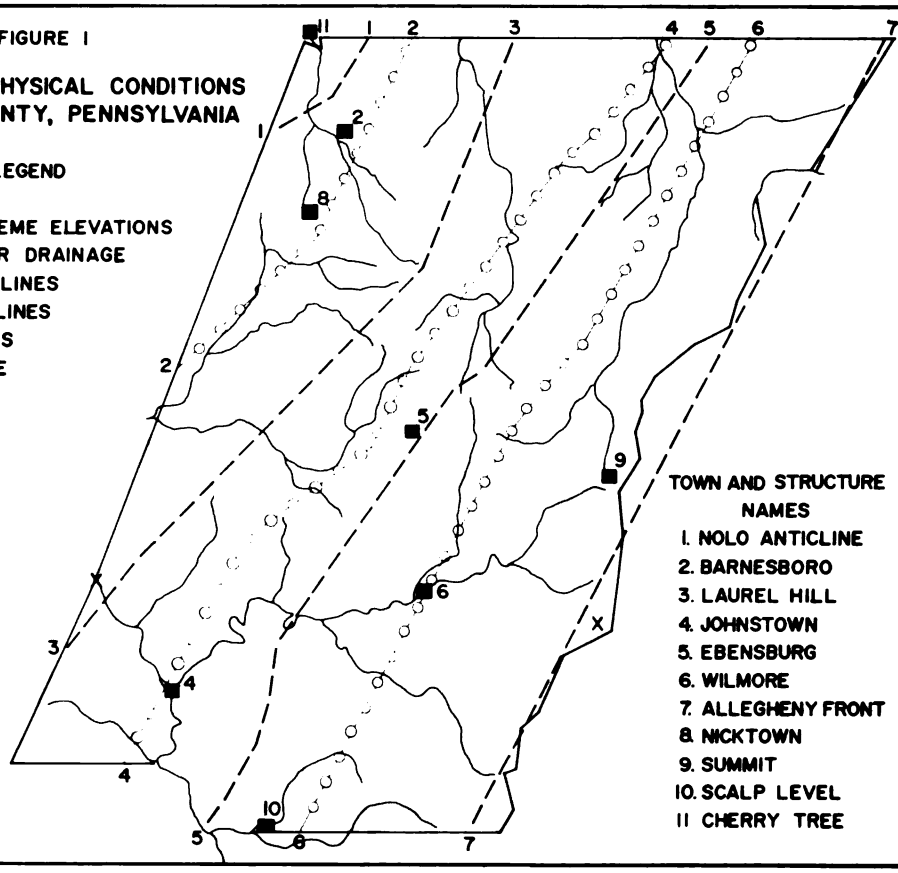
[10] Willard Bradford, Pennsylvania Geology Summarized (Harrisburg: Topographic and Geologic Survey, Dept. of Internal Affairs, 1935), Bulletin 113, p. 8.

FIGURE 1

GENERALIZED PHYSICAL CONDITIONS
CAMBRIA COUNTY, PENNSYLVANIA

LEGEND

X EXTREME ELEVATIONS
MAJOR DRAINAGE
ANTICLINES
SYNCLINES
TOWNS
SCALE



TOWN AND STRUCTURE NAMES

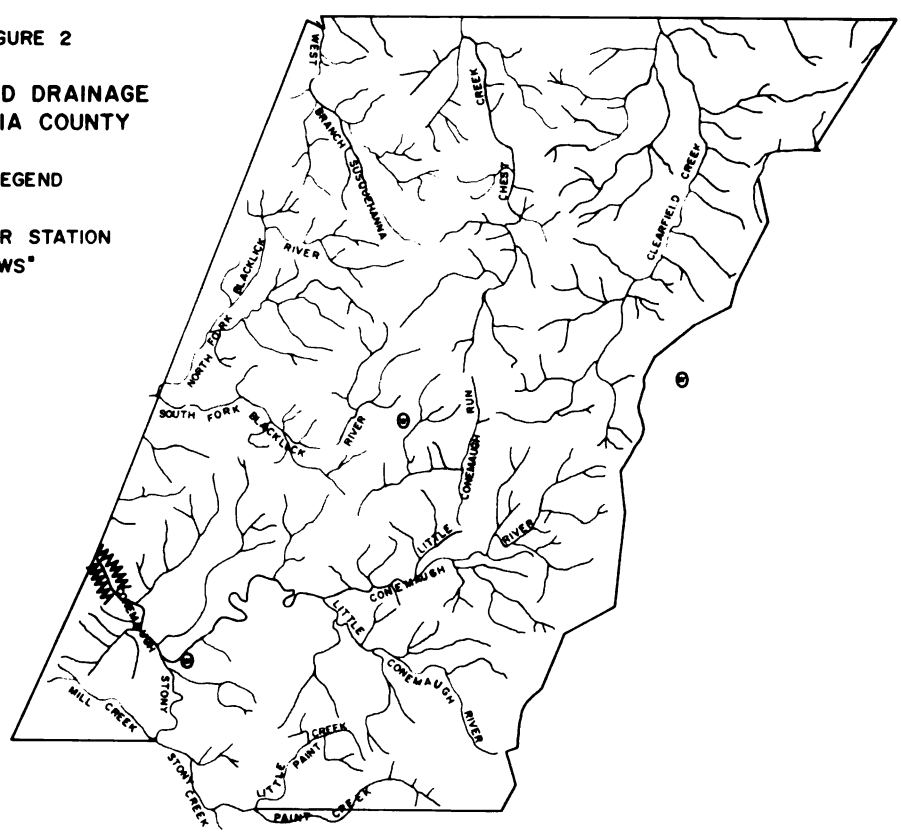
1. NOLO ANTICLINE
2. BARNESBORO
3. LAUREL HILL
4. JOHNSTOWN
5. EBENSBURG
6. WILMORE
7. ALLEGHENY FRONT
8. NICKTOWN
9. SUMMIT
10. SCALP LEVEL
11. CHERRY TREE

FIGURE 2

DETAILED DRAINAGE
CAMBRIA COUNTY

LEGEND

WEATHER STATION
"NARROWS"
SCALE



feet. The lowest elevation, 1,100 feet, is in the exit area of the Conemaugh River below Johnstown. Thus, the maximum relief for Cambria County is about 1,760 feet.[11]

Drainage

The divide between Ohio-Mississippi-Gulf of Mexico drainage and that to the Atlantic Ocean traverses southeast across the northern part of the county between Nicktown in Barr Township and Summit in Cresson Township and then follows southward along the Allegheny Ridge. North and east of this line, the water flows to the Atlantic via the West Branch of the Susquehanna River and the Juniata River. South and west of it, the greater part of the county drains toward the Gulf of Mexico via the Conemaugh River and its headwater tributaries (Fig. 2).[12]

Six main streams, fed by innumerable small tributaries or runs, drain Cambria County. Three of these flow northward, each along the axis of a syncline. They are Clearfield Creek, Chest Creek and the headwaters of the West Fork of the Susquehanna River. A fourth stream, the South Fork of the Blacklick River, begins near Ebensburg, situated at the geographical center of the county.[13] It flows westward,

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[11]United States Geological Survey Topographic Maps.

[12]Stanley W. Lohman, Ground Water in South-Central Pennsylvania (Harrisburg: Pennsylvania Geological Survey Fourth Series, 1938), Bulletin W 5, p. 153.

[13]Writers' Program of the Work Projects Administration in the State of Pennsylvania, Pennsylvania (New York: Oxford University Press, 1940), p. 551.

leaves the county by a gap in Laurel Ridge, and just across the border in Indiana county, is joined by the North Branch of Blacklick River.[14] Twenty miles beyond this, the waters of the Blacklick flow into the Conemaugh River.

This river, together with its two largest tributaries, Stony Creek and the Little Conemaugh, is not only the most important drainage feature in the county in volume, but also in commercial usefulness. Its consequence can easily be seen by a check of its industrial use, or of population located along its banks, as compared to the other streams. It begins with a spring in the area of Summit, near the top of the Allegheny Front, and leaves Cambria County northwest of Johnstown through a gap in Laurel Hill. Known as the Conemaugh Gap, or The Gap of the Conemaugh, this very narrow, steep-walled defile is locally called simply, "the Narrows" (Fig. 2).

Stony Creek, the main tributary of the upper Conemaugh, is the sixth of the main streams. It is part of Cambria County for about eight miles, but for the most part, is a drainage feature of the Somerset Sub-Basin of the Wilmore syncline to the south.[15,16]

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[14]Franklin Platt and William G. Platt, op. cit., p. XIV.

[15]United States Geological Survey Topographic Maps.

[16]Franklin Platt and William G. Platt, op. cit., pp. XIII-XV.

Climate

Two official observation stations are operated by the United States Weather Bureau in Cambria County, these being at Ebensburg and Johnstown. A third is located just ouside the county in the Allegheny Front at the Altoona Horseshoe Curve. Climate differences are not great between the three stations, although variations do occur locally throughout the county because of unlike physiography, slope-sun relationships and air-drainage.[17]

The county, as a whole, has an average of about 155 days frost-free growing season and 180 days between killing frosts. The weather station located at the Johnstown Airport, at an elevation of over 1,200 feet, reports 169 days frost-free and 190 days between killing frosts, while Ebensburg, a mere seventeen miles away, but at a height of 2100 feet, reports 139 and 168 days respectively.[18]

Annual precipitation amounts to about forty-five inches, including an average fifty-two inches of winter snow. Warm spring rains, which cause early thaws, occasionally result in floods. There are some 30-35 thunderstorms a year, mostly occurring during the summer and delivering a total of 10-15 inches of rain. Annual precipitation over

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[17]Nelson M. Kauffman, Climates of the States; Pennsylvania (Washington, D. C., U. S. Department of Commerce, Weather Bureau, 1960), No. 60-36, p. 1.

[18]Ibid., pp. 5-6.

the last seventy-four years has ranged from a minimum of 32.39 inches to a maximum of about 60 inches.[19]

Both reported extremes of daily temperature for the county occurred at Johnstown. These were -18°F in January, 1912 and 103°F in August, 1918.[20] The extremes of average monthly temperature recorded in 1960 were a high of 73.3°F for July at Johnstown and a low of 26.2°F for January at Ebensburg. The averages would place the county under the Koeppen System as having a Dfb climate.[21] In general then, the climate of Cambria County is humid-continental with warm summers, cold winters and precipitation well distributed through the year.

Historical Periods

The remainder of the paper is organized into four time periods. Each of these is based on a major shift in human activity which is reflected in the trend of numbers of people when shown on a population graph (Fig. 3). It is the author's assumption that a distinct change, either upward or downward, of population indicates a change of activity in the area. People arrive or leave because of growth or decline in the region's economy, as well as because of natural reasons.

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[20] "Climatology" in Johnstown Economic and Industrial Survey (Circa 1960).

[21] For explanation of the climate classification system devised by Waldimir Koeppen, see Arthur N. Strahler, Physical Geography (New York: John Wiley and Sons, 1960), pp. 154-155.

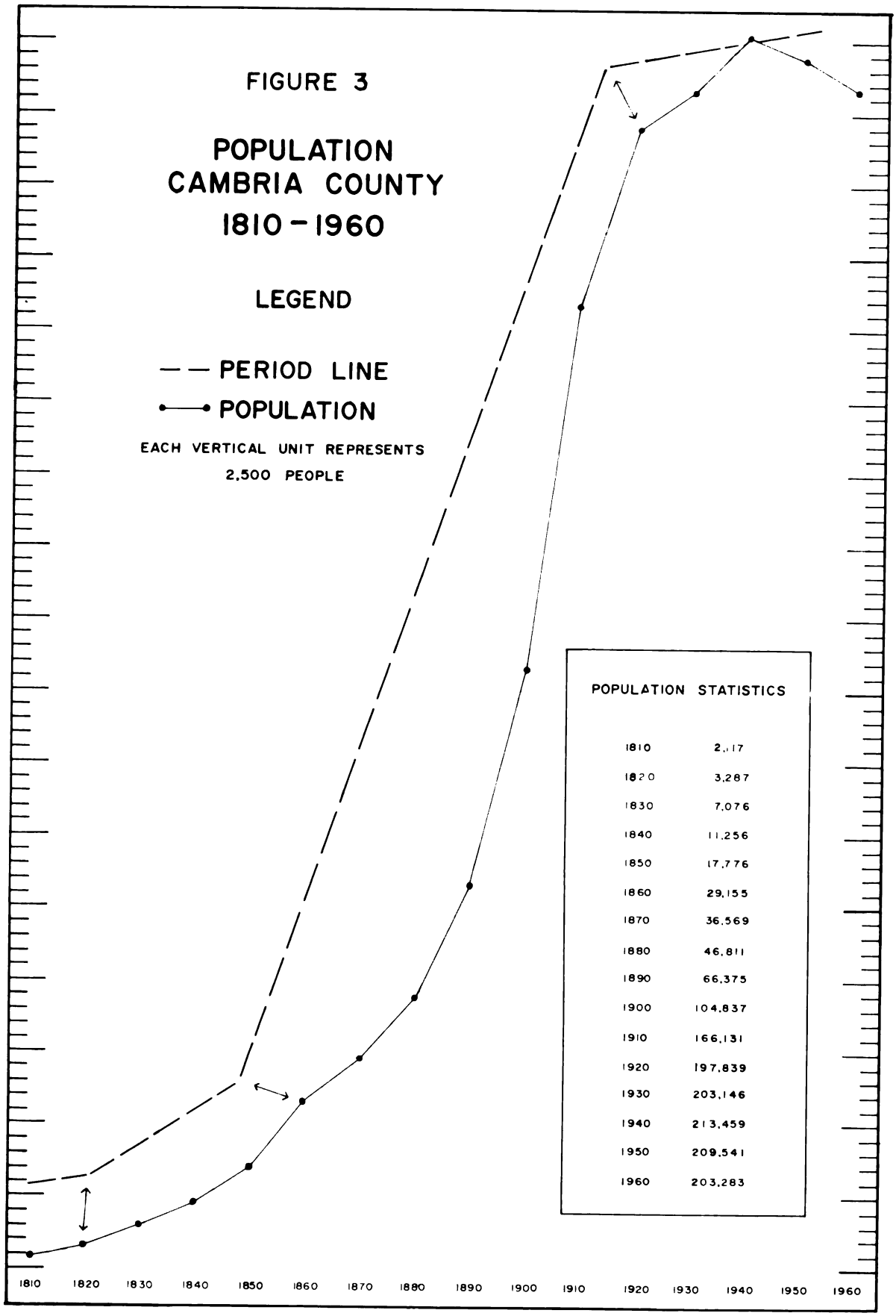
FIGURE 3
POPULATION
CAMBRIA COUNTY
1810 - 1960
LEGEND
PERIOD LINE
POPULATION
EACH VERTICAL UNIT REPRESENTS
2,500 PEOPLE
POPULATION STATISTICS
1810 2,117
1820 3,287
1830 7,076
1840 11,256
1850 17,776
1860 29,155
1870 36,569
1880 46,811
1890 66,375
1900 104,837
1910 166,131
1920 197,839
1930 203,146
1940 213,459
1950 209,541
1960 203,283
1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960

The first period ended sixteen years after Cambria County was created and was an interval of extremely slow growth. In the 90 years previous to 1820, the population increased from 100 to 3,287. During this time, the European and American settlers displaced the Indian occupants, occupied the county and established farms, frontier industries, and a primitive transportation network. Following these pioneer years, a major east-west trans-Pennsylvanian transportation system was constructed through the southern portion of Cambria County. This and the development of an iron industry brought economic prosperity and a moderate increase in population to the area.

The third time period was one of rapid growth. During the years 1863 to 1920, the population increased 168,084 persons. This was also a time of great immigration and economic activity, including the development of a new mineral resource--coal. Even a disaster such as the Johnstown flood, which destroyed the county's main city and killed thousands, failed to slow the upward trend. The fourth and last period, 1920 to 1960, was one of stagnation. A comparison of population figures for 1930 and 1960 shows an increase of only 137 persons. Economically, the situation during much of this period, especially during later years, was bleak. World War II forced mechanization, especially in the mines and heavy industries, and at its close, returning veterans found themselves without jobs.

In the following chapters, each of the four periods are dicussed and an attempt is made to explain changes in population that are indicated by changes in the slope of the line on the population graph. Thus, this graph is the dividing rod for the remainder of the thesis.

CHAPTER II

PIONEER PERIOD 1730-1820

Pre-White Settlement

The earliest known inhabitants of this region were a mixed group of Shawnee and Delaware Indians under the leadership of the Shawnee chief, Okewelsh. They occupied the alluvial site, now called "The Point" in present day Johnstown, at the confluence of the Conemaugh River and Stony Creek.[1] The flood plain at "The Point" served two purposes for the Indians. First, it provided an easily tilled, naturally productive crop area which was periodically fertilized by spring flooding. Because of this, along with warm summers, long growing season and an abundance of moisture, the Indians, and the white settlers who came later, were virtually assured excellent crops.

The second factor of value was the moat-like defense given to "The Point" on two sides by the fairly swift bordering rivers. Coupled with this defense aspect of "The Point," should be the "Great Wall Effect" of the Allegheny Front on the east and Laurel Ridge on the west. Laurel Ridge contains only one major access route to the county's interior; that through the gap cut by the Conemaugh River

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[1]M. Margaret Green, From Trail Dust to Star Dust (Johnstown, Pennsylvania: Wm. M. Greer, 1960), pp. 11-12.

after it leaves Johnstown flowing westward. This gap was easily corked by any settlement at "The Point," which in turn was protected not only by the two rivers, but by rugged land to the east. Plainly, this area was a well-chosen location for occupation, life, defense and control of what later became Cambria County. Since, in addition, the surrounding dissected plateau surface was covered with a mid-latitude mixed forest, predominating in oaks, but also having considerable white pine, poplar, ash, chestnut, hickory, walnut and giant spruce, which was filled with a variety of game, one can easily understand why the Indians considered this prime territory.[2]

The first contact between this group of Indians and whites is believed to have been about 1731 when two trapper-traders, Jonah Davenport and James LeTart, reported trading with Indians at a village called Connumah, Caugh-naugh-maugh, or Quin-Nim-Maugh. Little Otter, as it translated, had a strength of sixty warriors from a population of twenty families,[3] probably 100-150 people,[4] and at this time was the largest known Indian village west of Shamokin.[5]

Continued contact between the Indians of this area and English traders, combined with an attempt at settlement at

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[2] Ibid., p. 10.

[3] Ibid., pp. 11-13.

[4] Number of people arrived at by conjecture.

[5] Shamokin was a "melting pot" of tribes at the confluence of the North and West branches of the Susquehanna River, where the present city of Sudbury, Pennsylvania is located.

"the Forks of the Ohio" by a group from Virginia, soon alarmed the French, who recognized a peril to their fur trade. The first French attempt in 1749 to solve the problem involved burying lead claim markers. By 1752 they realized more than markers were required. They then erected a series of forts and encouraged attacks by French allied Indians or by Indians who were normally friendly to the British.

An attempt by Virginians to build a counter-fort at the junction of the Monongahela and Allegheny Rivers, on land purchased from the Indians, resulted in a French take over of the installation. It was completed by its new occupants, named Fort Duquesne, and held by them for six years. General Braddock led an English expedition against Fort Duquesne in 1755 and was soundly defeated. In the end, however, Braddock's road defeated the French by providing a cleared route to the Ohio for colonial settlers.[6]

Three years after Braddock's failure, General John Forbes led between 6,000 and 7,500 men from Pennsylvania, Maryland and Virginia in another attack on Fort Duquesne. Forbes advanced by slow stages from settled parts of Pennsylvania and constructed forts and depots for supplies along his route. He moved first via a new road, constructed in 1755 by James Burd, to Raystown (Bedford), where he occupied and strengthened a fort built one year previously (Fig. 4).

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[6]John D. Hicks, The Federal Union (Cambridge: The Riverside Press, Houghton-Mifflin Co., 1952), Vol. I, 2nd edition, p. 97.

Fort Bedford served Forbes as a jumping off place against Fort Duquesne and as a possible safe retreat area in case of repulse. It was built of eighteen foot logs and surrounded by water defenses, a river and deep moats.

The advance westward was slow since Forbes insisted on the construction of a wagon road along his route for the movement of equipment and supplies. In November 1758, Forbes arrived at Fort Duquesne, which had been abandoned by the French. He occupied and renamed it Fort Pitt or "Pittsborough" in honor of William Pitt.[7]

Many of the Indians who still felt a loyalty to the French left the area and the Indians who remained were disturbed by the differences between the methods and rules of the British and those of the French. The British garrison was not allowed to fraternize; British traders drove hard bargains; English colonists came to settle and farm, not to trade; and French renegades held out hope of a re-conquest.[8,9]

May, 1763 saw a well-planned uprising, under the direction of Pontiac, which overwhelmed eight out of the twelve forts on the frontier and seriously threatened the others. After two days of battle (August 5 and 6), Colonel Henry Bouquet suceeded

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[7]Solon J. Buck, The Planting of Civilization in Western Pennsylvania (Pittsburgh: University of Pittsburgh Press, 1939), pp. 87-95.

[8]Green, op. cit., pp. 11-13.

[9]Hicks, op. cit., p. 103.

in defeating the Indians twenty miles from Fort Pitt at a spot called Bushy Run (Fig. 4). Skirmishes between Indians and settlers, however, continued to occur as late as 1764.[10]

In an attempt to appease the Indians, Sir William Johnson promulgated the Proclamation of 1763 which closed the area west of the Appalachian Crests to colonization. As a result of this, Pennsylvania was forced to give back to the Indians all the land west of the Allegheny Ridge that had been previously purchased in 1754. Convinced of victory, Pontiac signed a peace treaty in 1766.[11,12]

For two years the frontier retreated to a static line at the Conococheaque Valley and Fort Loudon, which now was a buffer between the Indians and more densely settled areas. Intermittent attacks by Indians on settlers in this area continued, however, and brought reprisals by the whites. In fact, one of the first acts of revolution against the English Crown occurred in 1765 when James Smith and a group of settlers seized and destroyed "King's Goods"--trinkets, knives, guns, ammunition and rum, which were trade items to be exchanged for Indian furs.[13]

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[10]Writers' Program of the Work Projects Administration in the State of Pennsylvania, Pennsylvania (New York: Oxford University Press, 1940), p. 36.

[11]Buck, op. cit., p. 88.

[12]Hicks, op. cit., p. 104.

[13]Writers' Program of the Work Projects Administration in the State of Pennsylvania, op. cit., p. 448.

Repeated incidents, such as above, finally necessitated a new treaty, and in 1768 the Treaty of Fort Stanwix, New York was signed. For the price of $10,000.00 the Indians sold to the state of Pennsylvania all the land south and east of a line from the "Canoe Place" on the West Branch of the Susquehanna River, thence to Kittaning and down the Allegheny and Ohio Rivers (Fig. 4). As defined in the treaty of Fort Stanwix, the "Canoe Place" (now called Cherry Tree), is the place beyond which there is "insufficient water to float a canoe."[14,15] Cherry Tree today is not part of Cambria County, but is used to define the county's boundaries (Fig. 2 and page three).

White Settlement

April 3, 1769 was the date the state opened sale of the newly acquired land and on that date, for a sum of 43 pounds, Charles Campbell bought the first piece of land in what is now Cambria county. His purchase was the land between the Conemaugh River and Stony Creek--a piece of land that is now downtown Johnstown. Campbell later sold this property to a Mr. Johnston, who in turn sold it to James McLanahen. In 1793, McLanahen sold the 249 acres to the first real settler--Joseph Shantz.[16]

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[14]Green, op. cit., pp. 13-15.

[15]Buck, op. cit., pp. 197-200.

[16]Green, op. cit., p. 17.

The First Occupants

Previous to this, though, several spots in the area that became Cambria county had been temporarily occupied. In 1770, Soloman and Samuel Adams and their sister Rachel settled at what was later known as Horner's town, about 2.5 miles up Stony Creek from "The Point." But the Adams made no permanent impact on the area. Their period of occupancy was short because of repeated Indian troubles. Rachel and Samuel were killed by Indians and Solomon moved away. Their horse trail to Fort Bedford, which they used for the movement of furs, maple sugar, jerked venison and fish, is now part of the modern road system (State Route 56). One point on it, where Samuel was killed, is now the borough of Scalp Level (Fig. 5).[17]

The Adams family is given credit for the first road in Cambria County--The Bedford Trail. Yet there is evidence that this was a regularly used Indian trail to the sulphur, sweet water, magnesia, limestone and iron spring at Bedford Spring, two miles south of Fort Bedford.[18] This would help explain the location of Fort Bedford at this particular spot, at the Bedford and Forbes junction, a spot that overlooked, and therefore controlled, some Indian movements.

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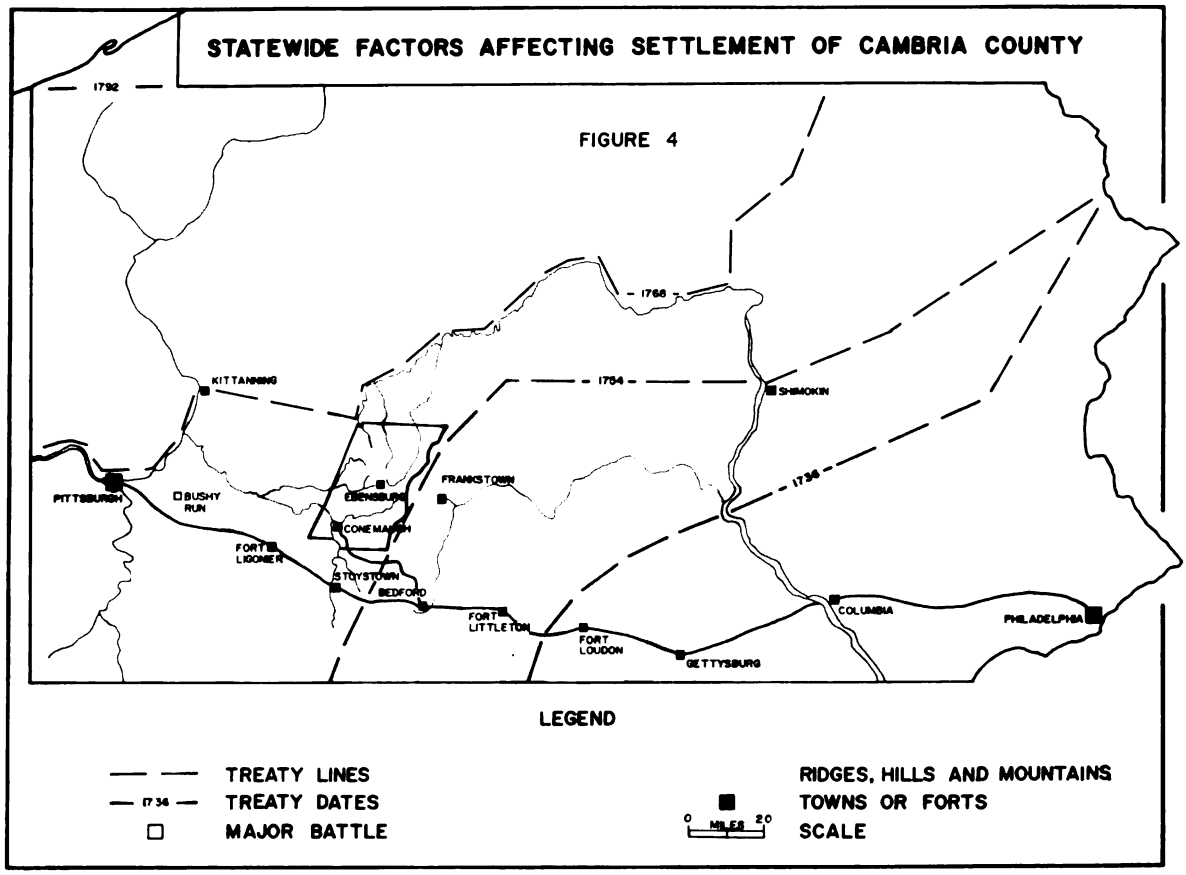
[17] Ibid., pp. 18-19.

[18] Writers' Program of the Work Projects Administration in the State of Pennsylvania, op. cit., p. 526.


STATEWIDE FACTORS AFFECTING SETTLEMENT OF CAMBRIA COUNTY
FIGURE 4
1792
1768
1754
1736
KITTANNING
SHIMOKIN
PITTSBURGH
BUSHY RUN
FRANKSTOWN
EBENSBURG
CONEMAUGH
FORT LIGONIER
STOYSTOWN
BEDFORD
FORT LITTLETON
FORT LOUDON
GETTYSBURG
COLUMBIA
PHILADELPHIA
LEGEND
TREATY LINES
1736 TREATY DATES
MAJOR BATTLE
RIDGES, HILLS AND MOUNTAINS
TOWNS OR FORTS
0 MILES 20
SCALE

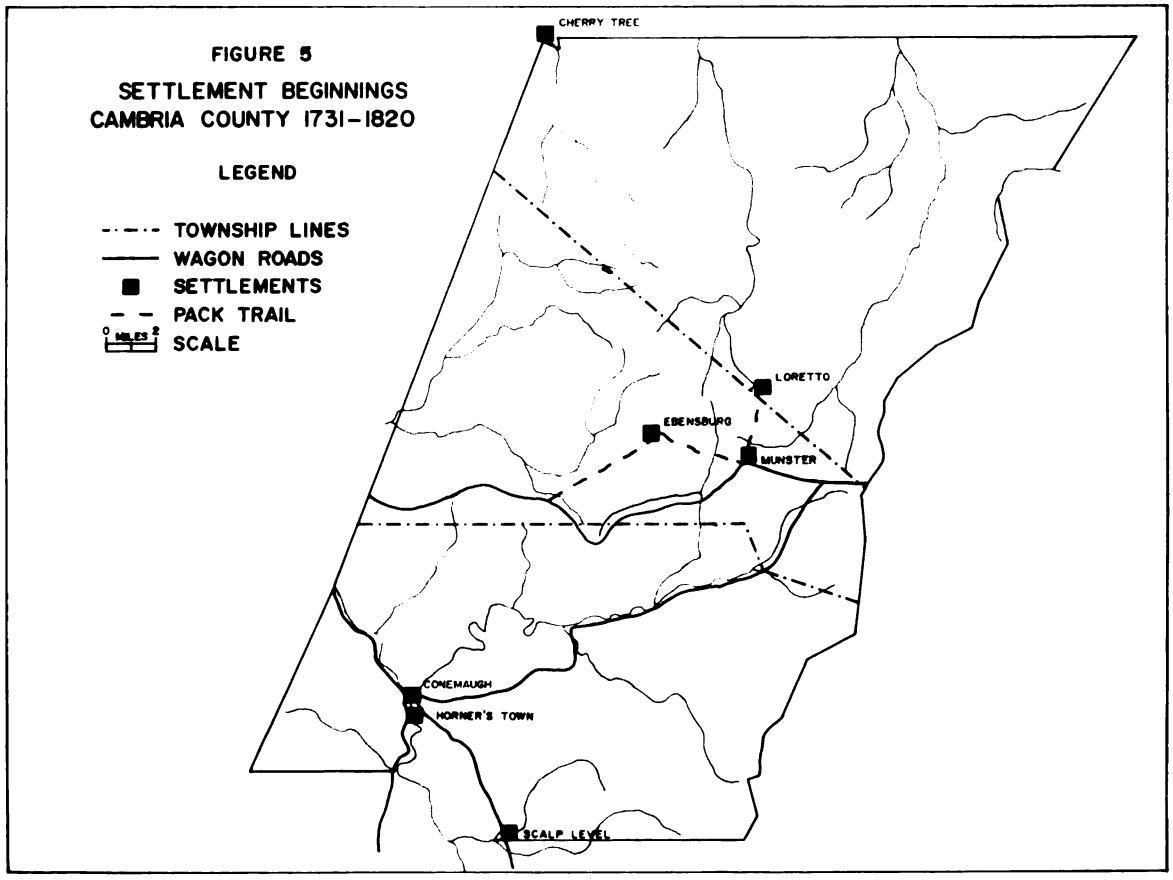


FIGURE 5
SETTLEMENT BEGINNINGS
CAMBRIA COUNTY 1731-1820
LEGEND
TOWNSHIP LINES
WAGON ROADS
SETTLEMENTS
PACK TRAIL
0 MILES 2
SCALE
CHERRY TREE
LORETTO
EBENSBURG
MUNSTER
CONEMAUGH
HORNER'S TOWN
SCALP LEVEL

Forbes' and Braddock's Routes opened western Pennsylvania and Ohio for settlement by providing good wagon paths to the new area.[19,20] The excellent land and good access roads attracted many settlers and this disturbed the Indians, especially the Shawnee. Consequently, in 1774 another Indian war broke out, known as Lord Dunmore's War, which discouraged settlement for the next several years.

Two years later the American Revolution began. As a method of harassment, the British encouraged the Indians to attack settlers on the Frontier. Raids in outlying Pennsylvania were plentiful and there are reports of a few families fleeing the area of Cambria county to escape trouble in 1777. The Wyoming Valley massacre occurred a year later and this effectively stopped all expansion in Pennsylvania until after the Revolution when colonists again began to move in via the military roads.[21]

Although Cambria County was not on the main stem of Forbes Road (U. S. Route 30), the side trail first used by the Adams Family (State 56) led settlers into a new and tempting side pocket. After the Revolution, the land about Pittsburgh was "almost all settled," and west of Pittsburgh

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[19] Ibid., p. 38.

[20] Braddock's route neither traversed nor proximated Cambria County. It aided the county, however, by funnelling settlers into a western defense zone.

[21] Buck, op. cit., p. 151.

an Indian menace still lingered. Yet, here to the east was a large amount of rich land with few occupants, along with what appeared to be a short cut to the West, by Kee-boat on the Conemaugh River, if Cambria was not as promising as it appeared. Thus, it was that the less venturous settled on the many flat areas, thankful that Fort Pitt was between them and the Indians. Many of the more daring, however, grew tired of Cambria and moved on to the West.[22]

Among early settlers of this period, Captain Michael McGuire settled at Kaylor's Station on Chest Creek (later the town of Loretto) in 1787 (Fig. 5). He was joined shortly by six settlers including Michael Roger (Rager), who is best remembered for swelling the population with twenty-seven children.[23,24]

Kaylor's Station continued its growth in a slow, quiet manner, similar to many other pioneer communities of the time, with the normal activities of self sufficient farming and home industry. Its only claim of distinction lay in the fact that even then it was the oldest continuously inhabited community in Cambria County.

The last Indian disruption of settlement in western Pennsylvania occurred during 1793-94 with an attack by the

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[22] Ibid., pp. 233-248.

[23] Green, op. cit., p. 18.

[24] Joseph C. Wess, Origin of Cambria County (Ebensburg, Pennsylvania: Clerk of Courts Office, Circa 1960), p. 4.

Seneca tribe under Cornplanter. Buck explains it thus:

> The failure of Pennsylvania and the United States to provide the Seneca with adequate trade facilities and to send teachers, carpenters and farmers to aid them in adopting the white man's ways, as had been promised, together with the moral effect of the defeats of Harmer and St. Clair and the influence of the British agents and traders, caused these Indians to waver in their allegiance to the Americans in 1793 and 1794. An occasion for the manifestation of the growing discontent of the Seneca was furnished in the attempt of Pennsylvania to occupy the Erie Triangle by 1794.[25]

On August 4, 1794, General Anthony Wayne defeated the Indians at Fallen Timbers. The lack of aid or reinforcement of the Indians by the British, followed by Jay's Treaty of withdrawal eliminated the Indian henceforth as a factor in Pennsylvanian settlement.[26]

Shantz built a log cabin at Connumah in 1793. Six years later, he plotted a village to be known as Conemaugh New Town, as a replacement for the former Indian community of Connumah, Old Town.[27] With many English and Welch settlers, Anglicanization was to be expected and the earliest example was the changing of the name of Joseph Shantz to Joseph Johns. Subsequently, Joseph Shantz's Conemaugh New Town was commonly referred to as John's town or Johnstown, although the Pennsylvania General Assembly did not legalize the name until 1834.[28]

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[25]Buck, op. cit., p. 202.

[26]Ibid., pp. 200-204.

[27]"History," in Johnstown Economic and Industrial Survey (Circa 1960).

[28]John E. Gable, History of Cambria County Pennsylvania (Topeka and Indianapolis: Historical Publishing Co., 1926), Two Volumes, Vol. I., p. 5.

In the establishment of this town, Johns set aside public lands, as had William Penn in Philadelphia before him, so the city would have beautiful and healthful parks. He specified five such areas: (1) a square at Market and Carr for a school and church, (2) a town square at Main and Market, (3) a parade grounds at "The Point," and (4) a Cemetery. The fifth, called Central Park, was a bitter disappointment to Johns because he hoped it would contain the County Court House, but this never came to pass.[29]

In 1795, the town of Beulah (Beula) was settled on the Blacklick River by a group of Welch immigrants.[30] It developed into a small, but thriving community with two schools, several hostels and a library. The County's first newspaper, the Western Sky, was published here. The town was devastated by a fire in 1796, however, and never quite recovered. The last remnants of activity ceased in 1804 when Ebensburg (only three miles away) was chosen as the county seat. The town's existence is marked today only by a historical marker just off State Highway 45.[31]

A religious dissenter, the Rev. Rees Lloyd, led another group of Welsh immigrants to Cambria County in 1796 and settled on a hill at its geographical center. Ebensburg, the city they established, is today located at an altitude

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[29]Green, op. cit., pp. 18-24, 73.

[30]Wess, op. cit., p. 4.

[31]Green, op. cit., pp. 18-24, 73.

of 2,022 feet at the intersection of Routes U. S. 22 and U. S. 422. In 1804, it was chosen as county seat because of its central position (Fig. 5). There was dissention among the early settlers over the language to be used in the church and this resulted in two churches with similar beliefs, but one of which used the "ancient Cambrian tongue" until 1824.[32]

Michael McGuire's request that a Roman Catholic priest be assigned to Kaylor's Station, by now a place of some consequence, resulted in the arrival in 1799 of Father Demetrius Gallitzin.[33,34] The first mass celebrated in Cambria County was served by Father Gallitzin in a log cabin on Christmas Eve the same year. Gallitzin's functions did not stop at just the activities of priest; he was also a counselor, lawyer, doctor, trader, tanner and farmer. A year later he added a new profession when he opened the first parochial school and became a teacher.

Soon after his arrival, Father Gallitzin suggested changing the community's name from Kaylor's Station to Loretto as a means of attracting more settlers.[35] The town

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[32]Writers' Program of the Work Projects Administration in the State of Pennsylvania, op. cit., pp. 551, 393.

[33]Green, op. cit., pp. 18-19.

[34]Gallitzin, a prince in the Russian aristocracy, had given up his privileges and titles to study for the priesthood at a seminary in Baltimore. He was ordained by Bishop John Carroll in 1795.

[35]Loretto was chosen from the Italian Shrine of the same name.

citizens approved and Kaylor's Station disappeared as a Cambrian place name. As another attempt to encourage settlement, Gallitzin bought up large amounts of land which he sold on easy terms to settlers. His personal funds were not enough for such transactions, so he obtained money from his father, who was the Russian Ambassador to Holland, from his mother and from the King of Holland.[36]

The extent of Gallitzin's encouragement, both to religion and settlement, can be seen from the growth of his church and of his travels through the area. One year after his ministery began he records, "of a congregation at Loretto, there are about forty families, but there is no end to the Catholics in all the settlements round about." On Easter of 1811, there were 424 persons who received communion, and during the summer Bishop Egan of Philadelphia confirmed 185 new communicants to raise Gallitzin's charges to over 600. When possible, Gallitzin traveled to neighboring towns to celebrate mass and from his travels we can begin to see the extent of settlement in Cambria County and beyond. He went quite regularly to Ebensburg, Johnstown and outside the area of Cambria County to Frankstown, Bedford, Uniontown and other places.[37]

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[36]Writers' Program of the Work Projects Administration in the State of Pennsylvania, op. cit., pp. 391-392.

[37]Buck, op. cit., pp. 402, 404, 413, 416, 418.

Settlers had continued to pour into Western Pennsylvania at a tremendous rate. On March 26, 1804, a new group of counties were created by an "Omnibus Bill." Included among these was Cambria County. Land for it was separated from the counties of Huntington and Somerset and was divided into three townships, Conemaugh in the south, Cambria in the center and Allegheny on the north. As mentioned above, Ebensburg was selected the county seat because of its central location and because it was the county's largest town with 150 people (Fig. 5).[38,39]

Cambria's new citizens at first were mostly Germans or Swiss, but then came a large group of Scotch-Irish, followed by Welshmen. At the time of the county's erection, the population included approximately: 35% English; 18% Irish; 17% Scotch; 12% German and 10% Welsh.[40] During 1804, Munster was added to the list of settlements that now contained Conemaugh (Johnstown), Beulah, Loretto and Ebensburg.[41]

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[38] Ibid., p. 214.

[39] Wess, op. cit., p. 2.

[40] These are estimates arrived at using information from several sources including Solon J. Buck, p. 151, M. Margaret Green, p. 27 and the Statistical Abstract of the U. S. Bureau of Census, as well as statistics obtained from the Johnstown Chamber of Commerce.

[41] Writers' Program of the Work Projects Administration in the State of Pennsylvania, op. cit., p. 219.

Agriculture

Agriculture, of a subsistence variety, was largely confined to the valleys, where alluvial soil was to be found, and to areas near the center of the geological synclines. In the latter location, portions of "The Barren Measure"[42] (non-coal bearing rocks) spread over the surface and yielded a smooth, workable soil which was hampered only by the need for constant fertilization. Some limestone beds occurred in thin outcroppings which furnish narrow streaks of rich soil. In general, however, returns from most soil outside the valleys were scanty and unremunerative.[43]

On the summits of each of the anticlines, cultivation was useless since the soil consisted of thick layers of sand intermixed with blocks of conglomerate sandstone. Such areas were generally covered with laurel thickets and this probably accounts for the name applied to the Laurel Anticline.[44]

Industry

The first industrial development in the confines of the county, beyond the home industry level, took place in

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[42] Platt and Platt, op. cit., p. XIII.

[43] Ibid., pp. XIII, XIV.

[44] Ibid., pp. XIV, XV.

Loretto before 1800 with the erection of a grist mill by Father Gallitzin. Other mills of this kind in the area were in Stoystown and Bedford. Conemaugh had no mill until 1812, when John Storm built one to save the time consuming trip to the other towns.

The beginning of a new century witnessed considerable expansion of industry; a forge for simple iron working, a saw mill, a tannery and a distillery. Wagon making, carpentry and the manufacture of farm tools were being carried on, in most cases, as side lines or a part of home industry. In 1809, a forge was established in Conemaugh at the head of Vine St. (on Stony Creek) for the manufacture of iron articles.[45] The iron was brought in as pig from the Juniata Valley by pack train. A flood in 1810 destroyed the dam which had provided power to operate the bellows and other equipment at the forge, which was then moved to the banks of the Conemaugh River.[46] The forge was later purchased by Bethlehem Steel Company, which today operates a plant on the site.

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[45]The literature disagrees as to which of two men founded this forge. Green says, "probably John Holliday of Hollidaysburg"; the U. S. Census for 1880 in its report "The Manufacturing of Iron and Steel," p. 86 credits John Buckwatter.

[46]Green, cp. cit., p. 24-28.

Transportation

Many of the present transportation routes of the county were established as early as 1792.[47] The main way by which settlers arrived was determined by the Adams-Bedford Footpath, which as early as 1780, developed into a rudimentary wagon road. Later, immigration routes were furnished by various pack-train trails, which developed into wagon roads. The most important of these was the Galbreath Trail, better known by its later name, the Frankstown Road. It ran west from Frankstown (Blair County) through the town of Munster, across Cambria County and Laurel Hill, and on to Pittsburgh. This route was commercially so important that a second Frankstown Road developed to link Conemaugh to the main route. This second trail ran southwestward from Frankstown to Conemaugh and then northwestward to join the main Frankstown Road at Chestnut Ridge. The major objective for this trail was to transport Cambrian products to the Pittsburgh market. Also operative before 1792 was the Benscreek Road, or Somerset Pike, which connected Conemaugh to Stoystown, its mail depot on Forbes Road, and to the town of Somerset farther to the south.[48]

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[47]This is directly contradictory to the statement of Peter Goughnour. He reported, after a visit to Cambria County in 1798 that, "there were no roads through the wilderness and nothing but canoes for navigation." (See Green, op. cit., p. 23).

[48]Green, op. cit., pp. 76-77.

Settlement sites in this country were often chosen because of their proximity to rivers. This had previously been true in Vermont and elsewhere in the east, since rivers commonly provided water power and transportation routes.[49] Until 1816, however, Cambria's rivers were not used to any extent for transportation except for logs and an occasional settler. The main function of rivers was to supply power to the towns on their banks, power to operate blacksmith bellows and to grind grain.

In 1816, Issac Proctor began a transportation service between Johnstown and Pittsburgh via keelboat. This was significant because Mr. Proctor made round trips and up to that time, traffic by river had been one way--down-stream. It was also important since it helped reduce the cost of moving goods between Johnstown and Pittsburgh and return. It should also be mentioned that this served as local "proof" to a later generation of the necessity and practicality of a canal system. One of Mr. Proctor's items of cargo was Juniata iron which came to Conemaugh by pack train and was destined for consumers in Pittsburgh. Settlers also left Johnstown on their own keelboats, generally breaking them up at the end of the route for cabin lumber or selling them for cash.[50]

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[49]Martha Lee Tuthill Andrews, Evolution of Settlement in Orange County, Vermont 1760-1960 (Masters Thesis, April, 1964), p. 28.

[50]Green, op. cit., p. 28, 29, 34.

The progress in the early days of Cambria was slow and it remained largely an agricultural county until the late 1820's when another change in transportation--the construction of the Pennsylvania Canal--was undertaken. This pushed the county into a new period of development.

CHAPTER III

CANAL PERIOD AND BEGINNINGS OF A MINERAL INDUSTRY 1820-1863

During the 1820's and early 1830's several changes occurred that eventually involved Cambria County. Greatest among these was the attempt by the state of Pennsylvania to meet the challenge of New York State's Erie Canal and of the National Road to Baltimore which flanked Pennsylvania on the north and south, respectively. The Ohio-Mississippi River System also seemed in league against Pennsylvania since it led trade away from the state. As a route, the latter was long and round about, but it required little work and had the exciting lure of New Orleans at its end.

A second change agent at work was the "Steam Revolution" which introduced three major items: steam-driven factory machinery, steam transportation, and power farming.[1] All of these were to play major parts in the economic evolution of Cambria County because of their effect on transportation. The latter especially influenced transportation by producing more goods for shipment.

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[1]J. Russell Smith, M. Ogden Phillips and Thomas R. Smith, Industrial and Commercial Geography (New York: Henry Holt & Co., 1913), p. 62.

Early attempts by the state to move commerce through Pennsylvania were by Forbes Road and other turnpikes, yet these roads had many failings, including expense of upkeep, poor accommodations on the route and the long period of time necessary to move the frieght.[2,3] Pennsylvanians desiring better transportation with the West (chiefly Philadelphia merchants and bankers) pointed out, as early as the turn of the eighteenth century, that much profit was being lost to other states and ports. Each year during the 1820's more than 150,000 bushels of grain had been brought down the Susquehanna and Juniata Rivers to Harrisburg, some of it even from beyond the mountains. Much more was being lost, though, that could have been moved and marketed through Pennsylvania if a better water transportation system were available.[4]

"DeWitt Clinton's Big Ditch," the Erie Canal, had been the scoff of the nation for ten years, until its beginning of operation in 1825 demonstrated the capabilities of a canal. Then there was a tidal wave of interest in canal building. After all, the Erie Canal was a ready-made

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[2]Solon J. Buck and Elizabeth H. Buck, The Planting of Civilization in Western Pennsylvania (Pittsburgh: University of Pittsburgh Press, 1939), pp. 161-165.

[3]M. Margaret Green, From Trail Dust to Star Dust (Johnstown, Pennsylvania: Wm. M. Greer, 1960), p. 56.

[4]Writers' Program of the Work Projects Administration in the State of Pennsylvania, Pennsylvania (New York: Oxford University Press, 1940), p. 443.

example and advertisement for any group that chose to promote one. Was it not paying for itself; had it not cut the cost of transportation to a tenth of the previous cost; had it not reduced the time of transport from Buffalo to New York from twenty days to eight days; and had it not, or wasn't it making New York the greatest city in the nation?[5]

The Pennsylvania Canal System

In March, 1824, as an attempted reply to its flankers, the state of Pennsylvania appointed a board of "Canal Commissioners" to investigate the feasibility of an east-west canal across the state. By the end of the year, the survey was complete and in 1825 the legislature passed a Public Work Act and an authorization bill to build a canal system which would "bind together this Great State."[6]

General inspection of a map makes the scheme appear ridiculous, since the state is crossed northeast-southwest by several "fence-like" mountain ranges. Pennsylvania's rivers, however, are unique since they cross mountain systems as well as edge them. In fact, the survey was able to report that only at the Allegheny Front would a portage

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[5]John D. Hicks, The Federal Union (Vol. I, Cambridge: The Riverside Press, Houghton Mifflin Co., 1952), 2nd edition, pp. 359-361.

[6]William B. Wilson, "The Evolution, Decadence and Abandonment of the Allegheny Portage Railroad," The Pennsylvania Railroad Mens News, Vol. 9 (Sept. 1897), pp. 289-305.

be needed between east state (Columbia) and west state (Pittsburgh). The rest of the route could be negotiated by water.[7]

Route

The Pennsylvania Canal began token operation in 1832 and full operation soon thereafter. By 1835, a traveler to the west could start in Philadelphia and ride a railroad eighty miles to Columbia on the Susquehanna River. Even before the railroad, there had been excellent land route connections between the two cities, since Columbia was part of Philadelphia's hinterland. But to handle the increased volumes of passengers and freight, a railroad was needed, and this was completed in 1834, the cars being horse-drawn at first.

From Columbia, at 225 feet altitude, the traveler would continue via canal boat north on the Susquehanna River to Amity Hall and thence west to the town of Hollidaysburg at 953 feet via the Juniata River. There he changed to rail carriages again and went over the Allegheny Front, reaching 2,397 feet altitude at Summit, and down to Johnstown at 1172 feet. At Johnstown he changed to boat once more and proceeded to Pittsburgh on a canal that paralleled the

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[7]William B. Wilson, "The Evolution, Decadence and Abandonment of the Allegheny Portage Railroad," The Pennsylvania Railroad Men's News, Vol. 9 (Oct. 1897), pp. 317-323.

Conemaugh, Kiskiminetas and Allegheny Rivers (Fig. 6 and 7). Such a trip took about seven days.[8]

Equipment

The boats at first were eight feet wide and sixteen to twenty feet long. Later, they were redesigned in three sections so they could be handled, one section to a car, on the railroad. The sections were rejoined when they were returned to the canal. The later boats averaged seventy feet in length, sixteen feet in width and since reservoirs had been constructed to provide more water, drew six to eight feet of water. In 1842, new boats were designed that split into four sections, with horses or mules, feed and harness in the first section, merchandise and passengers in the two middle sections and crew living quarters in the last section. The horses or mules were used to pull the boats with the animals on board replacing those on the towpath every six hours. Generally there were two tricks or twelve hours to a days work for men and beast.

Basins were necessary for the operation of the canals, as places of storage for boats and as a means of docking the boats at freight warehouses on their banks. As far as I have been able to determine, there were four such basins along the Pennsylvania Canal system, these being at Pittsburgh,

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[8]Green, op. cit., p. 61.

Johnstown, Hollidaysburg and Columbia.[9] Boats were moved about in the basin by poling and from the basin to the railroad or vice versa by man power and a lever system. This replaced the original method of transferal of cargo and passengers to different vehicles at each transportation mode change (Fig. 7).[10]

The Canal System in Cambria

The Waterway

West of Johnstown, a length of only six miles of the canal was in Cambria County. It started in "The Narrows" on the western edge of the county and ended at the Johnstown Canal Basin (Fig. 8). This segment averaged between four and six feet in depth (later deepened to eight feet) and about 60 feet in width. Variations in depth were due to low water caused by occasional dry periods. In an attempted solution to this problem, the state constructed a feeder reservoir at South Fork (St. Michaels).[11]

The Johnstown basin was located between Portage and Clinton Streets with Railroad Street on the north. It was semicircular in shape, about 200 yards at its widest and

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[9]Some sources seem to disagree on this, with Green claiming there were only two basins, Johnstown and Hollidaysburg.

[10]Green, op. cit., pp. 60-75.

[11]Ibid., pp. 60-62.

600 yards long at its base. Water for the basin was contributed by a forty-foot feeder dam (Suppes Dam) on Stony Creek and by a sluice from Little Conemaugh River. Today this area is occupied by the Gautier Division of Bethlehem Steel Company.[12]

The Allegheny Portage Railroad

The Allegheny Portage Railroad was not what we today would think of as a railroad. It was part of the canal system and was comprised of a series of levels and inclined planes which crossed the Allegheny Front from Johnstown to Hollidaysburg (Fig. 8). There were ten planes with a combined length of 4.4 miles, while the eleven levels were 31.2 miles in total extent, making an overall distance 35.6 miles.[13] The highest elevation was 2,397 feet at Summit, while the basins at Johnstown and Hollidaysburg were at 1,172 feet and 953 feet respectively. Five of the inclined planes and six of the levels were in Cambria County while the others descended the Allegheny Front in Blair County (Fig. 9 and Table 1).

The railroad right of way was cleared from basin to basin to a width of 120 feet, i.e. 60 feet on each side of the tracks. There were two reasons for this: one was to

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[12] Ibid., pp. 60-75.

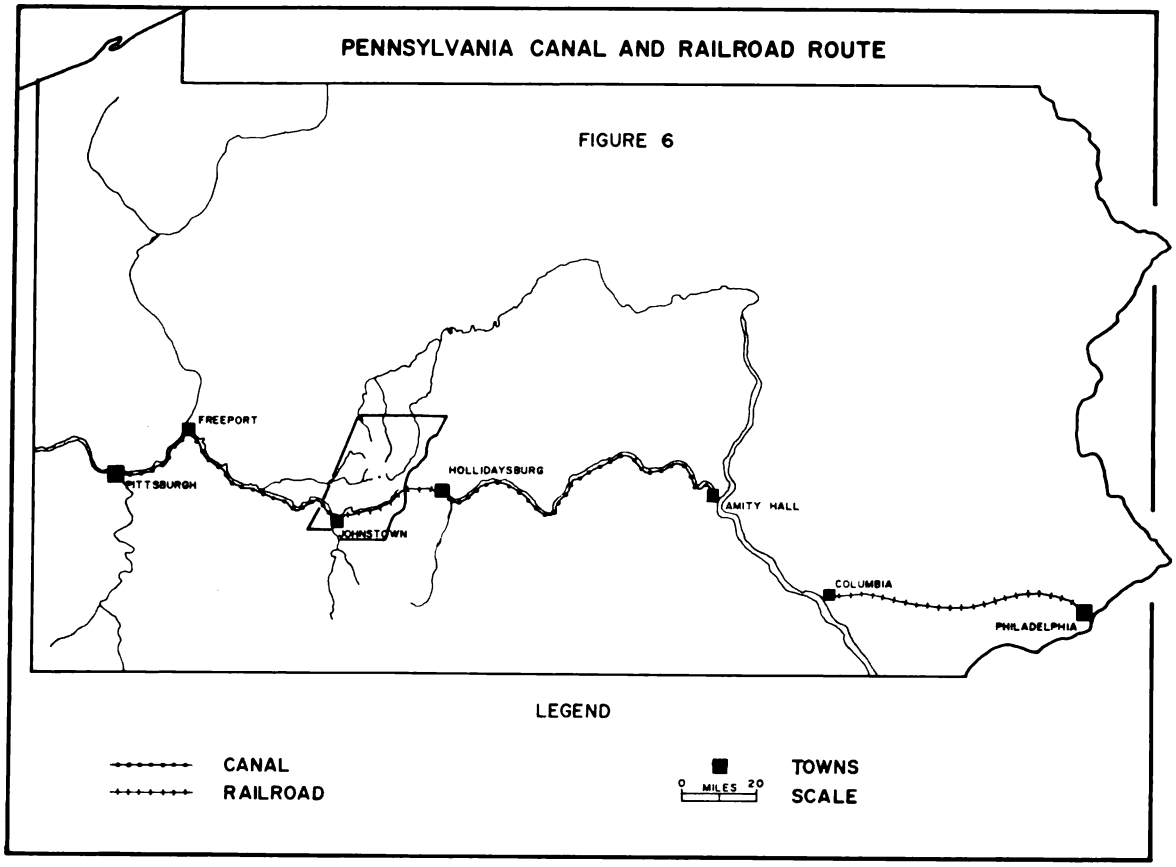
[13] Philip H. Nicklin, A Pleasant Peregrination Through the Prettiest Parts of Pennsylvania, Performed by Peregrine Prolix (pseud.) (Philadelphia: Grigg & Elliott, 1836), Letter XI, pp. 1-5.

TABLE 1.--Statistical data old Allegheny Portage Railroad.

LEVELS			PLANES		
Number	Length	Ascent*		Length of slope	Ascent*
1**	4.1 mi.	101.5 ft.	1	1607.8 ft.	150.0 ft.
2	13.1 mi.	189.58 ft.	2	1760.4 ft.	132.4 ft.
3	1.4 mi.	15.8 ft.	3	1480.3 ft.	130.5 ft.
4	1.0 mi.	18.8 ft.	4	2194.9 ft.	187.9 ft.
5	2.6 mi.	25.8 ft.	5	2628.6 ft.	201.6 ft.
Summit or 6	1.6 mi. and 1/4 mile "dead" level at height 2397 feet above sea level	19 ft.			
7	0.2 mi.	level	6	2713.9 ft.	266.5 ft.
8	0.6 mi.	5.4 ft.	7	2655.0 ft.	260.5 ft.
9	1.2 mi.	12.0 ft.	8	3116.9 ft.	307.6 ft.
10	1.7 mi.	29.6 ft.	9	2720.8 ft.	189.5 ft.
Hollidaysburg	3.72 mi.	146.7 ft.	10	2295.6 ft.	180.5 ft.

*Ascent or descent depending on direction of movement or place of origin.

**Level one had a tunnel that is 900 feet in length as part of its construction. (See Fig. 7 and 8).


PENNSYLVANIA CANAL AND RAILROAD ROUTE
FIGURE 6
FREEPORT
PITTSBURGH
JOHNSTOWN
HOLLIDAYSBURG
AMITY HALL
COLUMBIA
PHILADELPHIA
LEGEND
CANAL
RAILROAD
TOWNS
0 MILES 20
SCALE

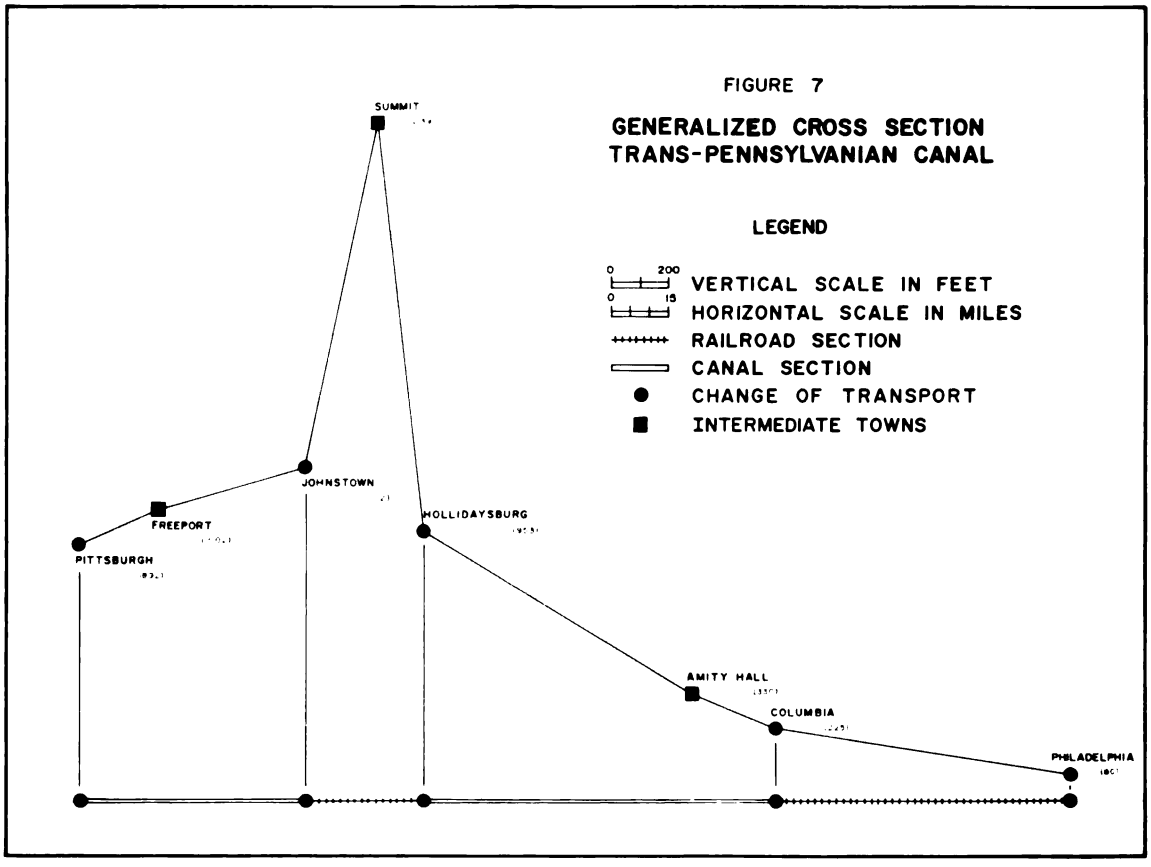


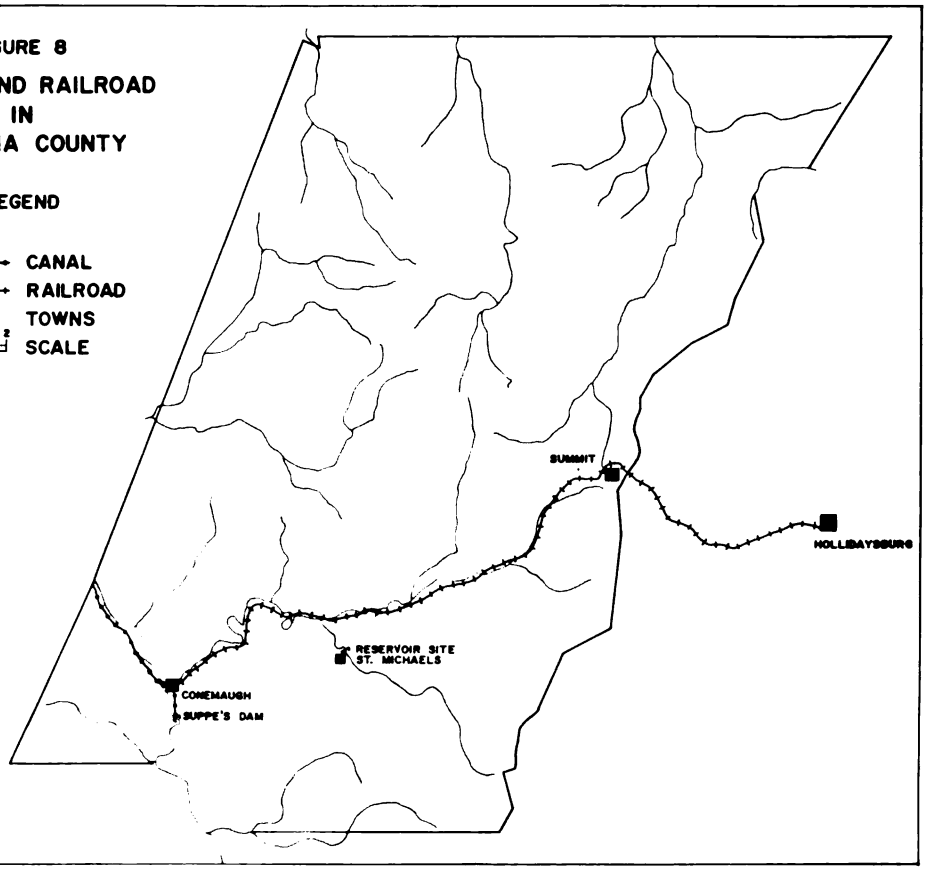
FIGURE 7
GENERALIZED CROSS SECTION
TRANS-PENNSYLVANIAN CANAL
LEGEND
0 200
VERTICAL SCALE IN FEET
0 15
HORIZONTAL SCALE IN MILES
RAILROAD SECTION
CANAL SECTION
CHANGE OF TRANSPORT
INTERMEDIATE TOWNS
SUMMIT
JOHNSTOWN
FREEPORT
HOLLIDAYSBURG
PITTSBURGH
AMITY HALL
COLUMBIA
PHILADELPHIA

FIGURE 8

CANAL AND RAILROAD
IN
CAMBRIA COUNTY

LEGEND

CANAL
RAILROAD
TOWNS
0 MILES 2 SCALE



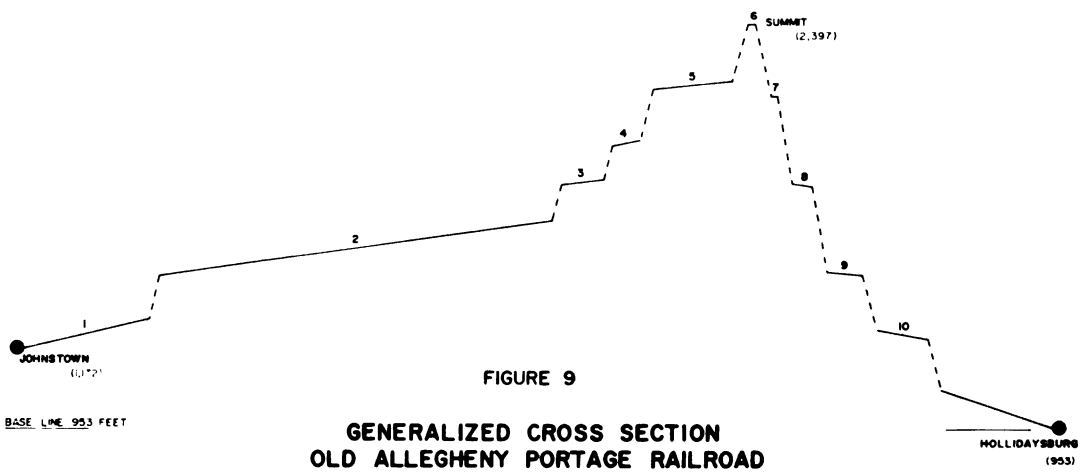


FIGURE 9

GENERALIZED CROSS SECTION
OLD ALLEGHENY PORTAGE RAILROAD

LEGEND

0 200 VERTICAL SCALE IN FEET
0 10,000 HORIZONTAL SCALE IN FEET
---- INCLINED PLANES
—— "LEVELS"
2 NUMBERS REFER TO TABLE I
● CANAL JUNCTIONS

minimize the damage that could be done by falling trees, and two, if the railroad proved unsuccessful the cleared area could be used as a turnpike.

Rails were of pine or oak, capped with a flat iron plate and were placed four feet, nine inches apart. These were fastened in an interesting way to 3 1/2 cubic foot blocks of stone. Holes were drilled into the stone, oak plugs inserted, and then the rails were nailed to the plugs. Spreading of the track was a problem, but wooden striders were used to minimize this. Frost and ice heavage over a winter often made re-setting of the blocks necessary.

Horses or mules served as motive power on the levels and were not entirely displaced by steam locomotives until 1851. Power on the inclined planes was provided by two stationary engines which were at the top of each plane. At first, rail carriages were pulled up the plane by a stout rope, and later by a wire cable, which passed around the drum of one of the stationary engines. The second engine was on hand in case of breakdown or repair of the first one. Each level or plane required a change of power, hitching or unhitching the horses; and connecting or disconnecting the engines. The time required for an average trip from Johnstown to Hollidaysburg, with no accidents or delays, was seven hours, with an average of one departure each way per day.

The route of the railroad through Cambria County, as well as the entire east-west canal system through the state, is best demonstrated by maps and graphs (Figs. 6, 7, 8, 9). There are, however, two noteworthy items in the county which should be called to the reader's attention. The first is the tunnel at the head of plane number one. This was the first railroad tunnel ever built in the United States. Completed in 1834 at a cost of $37,498,84, it was 901 feet long, 20 feet high and 19 feet wide, and can still be seen to this day. The second item was built at the same time, at a cost of $54,562.54. It was a bridge by which the railroad crossed the Conemaugh River one mile west of the present Pennsylvania Railroad South Fork Station. Considered the most perfect stone arch in the United States at the time, it had an 80 foot span, was 79 feet high and 28 feet wide. In constant use for 55 years by both the Old and New Portage Railroads and by the later Pennsylvania Railroad, it was destroyed by the great flood of May 31, 1889.[14, 15, 16]

An excellent and often quoted description of a trip on this railroad was given in 1842 by Charles Dickens in his "American Notes for General Circulation."

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[14]Wilson, op. cit., pp. 317-323.

[15]Green, op. cit., pp. 60-75.

[16]Floyd G. Hoenstine, The Skew Arch Bridge and the Portage Monument (Privately published, 1952), pp. 84-86.

> . . . .Occasionally the rails were laid upon the extreme verge of a giddy precipice; and looking from the carriage window, the traveler gazes sheer down, without a stone or scrap of fence between, into the mountain depths below. . . . It was very pretty traveling thus at a rapid pace along the heights of the mountains in a keen wind, to look down into a valley full of light and softness; catching glimpses, through the tree-tops, or scattered cabins;. . . .men in their shirt sleeves, looking on at their unfinished houses, planning out tomorrow's work; and we riding onward, high above them, like a whirlwind. It was amusing, too, when we had dined, and rattled down a steep pass, having no other moving power than the weight of the carriages themselves, to see the engine, released long after us, come buzzing down alone, like a great insect, its back of green and gold so shining in the sun. . . . It stopped short of us. . .when we reached the canal, and, before we left the wharf, went panting up this hill again, with the passengers who had waited our arrival for the means of traversing the road by which we had come.[17]

Effects of the Canal and Railroad

This new transportation system had special meaning for Cambria County, yet the operation of the system in this county is illustrative of its effect on other areas in the state as well. First, and possibly the most important item of note, was that Cambria was being crossed by the most modern, least expensive, and fastest transportation system in the United States. Secondly, since the canal operated only during the day, over-night stops were necessary. Thirdly, Johnstown was far enough from Pittsburgh to be outside its trade area, and since many small towns surrounded Johnstown, it soon became the trans-shipment

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[17]Charles Dickens, American Notes for General Circulation (New York: Wilson & Co., 1842), Chapter 10, p. 12.

center for its environs, especially Cambria and Somerset Counties. Cambria was also blessed by the necessity for a complete change in transport modes (from canal to railroad). This required handling of goods, trans-shipment and a time lag during which passengers "stretched their legs," exchanged new items and conducted business.

Other effects on Cambria County that are less direct can also be demonstrated. Farmers, in the early days of settlement, had been nearly self sufficient. They had been operating profitably using early seventeenth century methods, inadequate fertilizers, neglected livestock and poor soils. Their main products were corn, wheat, oats, barley, buckwheat, rye, potatoes, hay, flax and wool. The opening of the new transportation system suddenly plunged the farmers into a "modern" market situation.

The production of certain crops, such as potatoes, increased greatly since this area was highly suited to their production. Other crops that were marginal or could be produced at less cost elsewhere, such as wheat, declined only to increase in later years. The farmers responded by increasing the size of their farms, by putting more acres into crops, by updating their methods and by shifting to new enterprises, such as dairying. All of this hastened the end of small scale, self-sufficient farming. It should

be noted, however, that some Cambrians were still trying to be self-sufficient as late as the 1930's.[18, 19]

This change in agriculture had several effects. For one, it encouraged the migration of some farmers westward to newer and richer farming areas. More people, however, were attracted by the possibility of working on the transport system. In any event, more new people were attracted to Cambria County than left and the population grew. This caused earlier comers to examine themselves and their county for new opportunities. The tempo of life was quickened and horizons expanded. The county was now along a main stream of movement between east and west.

Service towns began to develop in Cambria County along the route of the railroad. Probably the best documented story of these, outside that of Johnstown, is about the town of Summit or Summitsville. It developed at the top of the Allegheny Crest; any way on the railroad was down from there. It never achieved any lasting importance since it was primarily a "switching point." Yet, at the time, there were two hotels there with summer resort or overnight accommodations. Lemon House was located slightly down the eastern slope of the Front from Summit (Mansion)

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[18]B. B. Derrick, Soil Survey of Cambria County, Pennsylvania (Washington, D. C.: United States Printing Office, 1917), p. 9.

[19]Martha L. Andrews, Evolution of Settlement in Orange County, Vermont 1760 to 1960 (Masters Thesis, April, 1964), p. 78.

House Hotel. The latter was located at "the highest point on the railroad (2700 feet)."[20] With the final demise of the Allegheny Portage Railroad, the town's population plummeted from over 400 to about 100 people.

As the volume of traffic increased on the Railroad, additional workers were needed. Replacement workers were also needed as can probably be best illustrated by an extract from the register book of the Summit House Hotel, which on June 12, 1853 had the following entry:

> Capt. Roland Humphreys kilted [sic.] at A.P.R.R. Tunnel. Thomas Caroll's leg taken off by cars between 4 and 5.
> Michael Storm very badly injured on Plane 8.
> Stable of Mansion House burned down about 12 p.m., also house of Mrs. Molery.
> Surely a day of accidents.[21]

New Allegheny Portage Railroad

A "New Portage Railroad" was begun in 1852 to "eliminate the dangerous and expensive (inclined) planes." This new line followed essentially the same route as that of the old Allegheny Portage Railroad, except that it ascended the next ravine north in the Allegheny Front. It was to be a railroad, as we commonly think of one in more recent times, with steel rails and steam locomotives. In July, 1855, the new road, which cost the state two million

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[20]Mahlon J. Baumgardner, The Allegheny Old Portage Railroad 1834-1854, Building, Operation and Travel Between Hollidaysburg and Johnstown, Pennsylvania (Privately Published, 1952), pp. 9-12.

[21]Ibid., pp. 22-36.

dollars, began operations. Pennsylvania, however, was financially over extended. Rather than be embarrassed, either by having to repudiate its debts or by allowing the deterioration of the facilities, the state sold the system. It was purchased by the Pennsylvania Railroad Company for $7,500,000 and the promise of continuation of its operation or of equal services.[22, 23]

Mineral Development

Iron

One of the earliest of the new settlers attracted by the canal and railroad was George Shryock King, who arrived in Johnstown from Mercersburg in 1833 at the age of 24. Mr. King opened a general store, believing that business would be excellent because of the superior transportation system. Despite such faith, not only on the part of King, but of many individuals, the effects of the "Panic of 1837" were so serious that in 1840 there was "no money" in Cambria County.[24] King's knowledge of history and business caused him to believe that some natural mineral products of the vicinity could be used as a new source of income and led him to investigate the possibilities.

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[22]Green, op. cit., p. 60.

[23]Wilson, op. cit., pp. 289-305.

[24]One cause of this listed by Hicks was the overspending by many states on transport systems, such as canals.

The concept of mineral exploration and development was not a new one to most districts of Pennsylvania, since prior to the Canal and Railroad, land transportation was so expensive that local exploitation of materials was a necessity. Local availability of iron ore was extensive, even though this ore was poor in quality in some cases. Today, wherever a traveler goes in Pennsylvania he comes upon iron pits, or mines, and furnaces where iron was extracted, either before, during, or after the Canal and Railroad Period.[25]

King's idea of mineral exploration led to the discovery of iron ore deposits at several places in Cambria County. The first was on Ben's Creek and when tested in Blair County, the product proved to be good bar iron, but hard and brittle. The smelter constructed at Ben's Creek was called Cambria Furnace. Another one was built near a mine below Coopersdale. Shortly afterward a mine was opened at Benshoff's hill, in what proved to be an excellent ore body. Since this deposit was near the Canal, the ore was hauled to the Canal and via it to Cambria Furnace. Another mine and furnace were opened soon at Mill Creek, followed by Rhey's or Johnstown Furnace at the foot of Prospect Hill. It is noteworthy that every furnace was

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[25]William O. Hickock, Iron Ores of Pennsylvania (Harrisburg: Pennsylvania Geological Survey, Fourth Series, "Minerals," 1933), Bulletin M 18-A, p. 1.

located on a stream. This was because the bellows that provided the air blast for furnace operation were operated by water power (Fig. 11).

Each furnace was about 30 feet square at the base and 45 feet high. Inside, it was shaped like an egg standing on end (narrower at the top). It rested on a "bosh" so that the raw material would drop as it was consumed. Into the hollow thirty-foot stack were dumped iron ore and charcoal. Then the blast was turned on, and the fired furnance was kept going. The molten metal ran out from the bottom of the furnace when it was tapped.[26]

The iron ore mined in Cambria County was generally found in a bed about fifty feet above one that is now called Upper Freeport Coal. (See Chapter IV). Most was a particular ore called Siderite, yellowish-white, ash-gray, or brown in color and frequently contaminated with quantities of clay. Other common contaminates were argillaceous nodules (clay-iron knuckles), or bands of carbonaceous matter which resulted in "Blackbird Iron Ore." In some cases, the deposit had been modified or altered into a limonite-like ore. Generally, both ores were carbonaceous in form, containing about 62% ferrous oxide and about 38% "carbonic acid." Their chemical formula was

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[26]Green, op. cit., p. 33.

TABLE 2.--Iron ores of Cambria County.

Siderite $FeCO_3$		Limonite $Fe_2O_3 \cdot H_2O$ aq	
Analysis		Analysis	
$FeCO_3$	77.99%	Fe_2O_3	74.57%
$MnCO_3$	.45%	Mn_2O_3	2.58%
$CaCO_3$	1.43%	Al_2O_3	1.54%
$MgCO_3$	3.53%	CoO	0.60%
Al_2O_3	2.81%	CuO	----
SiO_2 and quartz	11.56%	PbO	----
H_2O and organic matter	2.23%	P_2O_5	0.13%
	100.00%	SiO_2	6.90%
		H_2O	13.10%
			99.42%

Source: Samuel G. Gordon, The Mineralogy of Pennsylvania, p. 54.

$FeOCO_2$, or $FeCO_3$, or Fe_2C_3 . H_2O aq. It was not a highly remunerative ore, but was self fluxing (Table 2).[27]

The early furnaces had an output of four to five tons of pig metal per day, which had a market value of $22 to $25 per ton in Pittsburgh. Iron made in Cambria County was always a little lower in value than other iron because of its hardness. By itself, it did not make good bar iron, but when three-quarter Juniata pig, or other softer metals, and one-fourth Cambria were mixed it made the very best iron in the market.

As King had anticipated, trade with Pittsburgh based on pig iron from Cambria County developed. The demand for Cambria County iron was so great that even local blacksmiths were able to make a little side money by smelting iron at their "furnaces." Eventually, by including these local "furnaces," Canbria County was able to count twenty-five furnaces. Many of these ended up in 1852 as part of an organization under King's direction, called "Cambria Iron."

Cambria Iron Company

In 1853, Dr. Peter Schoenberger bought a partnership in Cambria Iron from King. Shortly thereafter, a disagreement over manufactured products developed. Schoenberger

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[27]F. A. Genth, Preliminary Report of the Mineralogy of Pennsylvania (Harrisburg: Second Geological Survey of Pennsylvania, Board of Commissioners, 1874), pp. 159-161.

wanted to produce boiling kettles for the sugar and molasses industry of Louisiana and transport these by boat via the Canal-Ohio-Mississippi to Louisiana. This was not as naive as it seems, since at that time Cambria was providing the sugar and molasses industry of Louisiana with "hogsheads" (barrels) made from local oak. The sugar industry petered out in the 1870's and it might be said with hindsight that the same would have been true of the market for Schoenberger's sugar pots. King, on the other hand, wanted to produce iron rails for railroads. This was then an almost non-existent industry in the United States; in fact, the Canal-Railroad had to import rails from England.

King, believing that the expansion of the United States would call for more rails, went to Boston to obtain funds to buy out Schoenberger. In this, he was successful and in late 1853 the Cambria Iron Company was founded. Later that year, the first rolling mill was completed and July, 1854 saw the production of the first American made rails. Subsequently, the company changed owners often, but its growth continued steadily. In nine years, the operation had expanded so, its assets reached $51,099 35.[28]

In 1855, because of financial troubles, stemming from the lack of a protective tariff, Cambria Iron leased the

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[28]Green, op. cit., p. 30-36.

mill to Wood, Morrell and Co. of Philadelphia, a combine of eastern Quaker businessmen. This brought Daniel J. Morrell to Cambria County as mill superintendent. Mr. Morrell's desire to improve the operation, plus his business knowledge, served to make Cambria Iron the leading rail producer in the nation.

Technological Advancements

Another person who came to Cambria Iron with Morrell was John Fritz, who served as Morrell's chief engineer. Also a thinker and inventor, Fritz is credited with the development of a new rail roller known as the three-high roll mill. On the old two-roll mill, the rail bars could be passed through only one way. Then they were "idled" back and passed through again. By placing a third roll above the two, the bar could be passed back and rolled at the same time. Besides preventing accidents caused by the bars lapping around the rolls, this method speeded production.

The first mill to run three-high rolls was destroyed by fire after the successful completion of a weeks run which produced 722 tons of rails. The cause of the fire has never been established, but the most creditable one is that a worker or workers made this the first attack by steel workers on automation.

Another inventor that Morrell enccuraged was William Kelly. Kelly had earlier experimented in the Kentucky iron ore regions with no success. Inspired by the Fritz success, Morrell listened when Kelly explained his idea for the removal of carbcn and other impurities from iron by the introduction of a blast of cold air. In 1857, Kelly began experiments in the Cambria Iron yards, using labor and materials supplied by the company. His first public demonstration of his process was a failure, but Morrell made possible a second trial. In 1858, Kelly succeeded in publically using his process to produce a thin plate of the first pneumatic steel ever made. A patent was granted to Kelly and Morrell and the process was soon in operation. The original Kelly Pneumatic Converter is now on loan to the Smithsonian Institute from the Bethlehem Steel Company. With this new production method, Morrell envisioned replacing all iron rails with steel ones.

Rails made of Cambria ore had a flexibility that other manufacturers could not match. They retained this even in the winter when other rails became brittle and broke. Because of Fritz's three-high roller and Kelly's converter, Cambria Iron was able to corner the rail market in the United States and hold it for several decades.

Meanwhile, however, other fundamental changes were beginning to sweep the iron industry. The very cause of prosperity in Cambria County, the building of railroads

would soon make possible the displacement of Pennsylvania's lowgrade iron mines and mining communities by bringing to market cheap, high-grade ore from other sources. The iron industry of Cambria County would continue only because of its specialization and use of modern methods.[29]

The Iron Works started by King has had its name and ownership changed six times since its beginning. The names and dates of use are as follows:

Cambria Iron Co.	1852-1855
Wood, Morrell and Co.	1855-1862
Cambria Iron Co.	1862-1898
Cambria Steel Co.	1898-1916
Midvale Steel & Ordinance Co.	1916-1923
Bethlehem Steel Co.	1923-present[30]

Miscellaneous Growth

Other evidences of economic growth during the period being discussed were the opening of the first bank in the county in 1854 and the establishment of a telegraph system in 1856. Expanded opportunity for employment, especially in the iron mines, the smelting furnaces, and the shipment of iron to Pittsburgh, but in other activities as well, attracted a rapidly increasing number of people.[31]

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[29]Hickock, op. cit., pp. 1-5.

[30]Green, op. cit., pp. 41-49.

[31]"Chronology: in Johnstown Economic and Industrial Survey (Circa, 1960).

Between 1840 and 1860 Cambria's population rose from 11,256 to 29,155 (Fig. 3). Although the majority of this growth centered near the Allegheny Portage Railroad line, settlement and population increase were going on in other parts of the county.

The community of Belsano was established in 1830 and named for a town in Italy. It was, and today remains, a quiet hamlet dependent mostly on agriculture and lumbering. Carrolltown was laid out by Father Ballitzin in 1840 and named for Bishop John Carroll. Cresson, founded during the previous decade, served as a vacation spot in 1840 for William Harrison who became President of the United States in 1841.[32] The towns of Chest Spring and Wilmore developed and were formally incorporated in 1858 and 1859, respectively (Appendix Table 2).[33]

On May 1, 1863, the Pennsylvania Railroad Company, which had built a railroad parallel to the canal (in spite of the Civil War) abandoned the section of canal between Johnstown and Blairsville and thus brought to a close the canal period in Cambria County. Vestiges of the Canal and the portage railroad are still evident. Remains of bridges,

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[32]In 1841, one month after assuming office, President Harrison died. His body was taken to its last resting place via the Allegheny Pennsylvania Railroad.

[33]Writers' Program of the Work Projects Administration in the State of Pennsylvania, op. cit., pp. 392.

the edges of South Fork Dam, several tunnels and some of the grades can still be seen if one chooses to walk the route the Canal and railroad once occupied.[34, 35, 36]

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[34]Wilson, op. cit., pp. 317-323.

[35]Writers' Program of the Work Projects Administration in the State of Pennsylvania, op. cit., pp. 386-394.

[36]Also used throughout this entire chapter was a skeletal chronology from: John E. Gable, History of Cambria County, Pennsylvania (Topeka & Indianapolis: Historical Publishing Co., 1926) 2 Volumes; and Joseph C. Wess, Origin of Cambria County (Ebensburg, Pennsylvania: Clerk of Courts Office, Circa 1960), as well as ideas from Martha L. Andrews, op. cit.

CHAPTER IV

RAPID GROWTH AND A NEW MINERAL DEVELOPMENT 1863-1920

With the death of the Canal, Cambria County entered the period of its greatest numerical population growth. The economic factors that contributed most to this were the iron industry, the railroad and the development of mining of coal--a new fuel source. Because of these activities, there was a demand for a larger labor force which was met by natural increase and immigration. Cambria's population of 29,155 in 1860 grew to 197,839 in 1920 (Fig. 3).

The Stimulus of the Civil War

The armies of the American Civil War from 1861 to 1865 concentrated many attacks on each other's supply and troop movement facilities. Railroad lines and bridges suffered the greatest damage. The destruction of either was simple and quickly accomplished; the results were significant--delay and expense to the enemy. The demands for metal for replacement of these facilities, as well as to satisfy other wartime needs, greatly expanded the iron and steel industry (Table 3).

Up to now, wood had been the principle fuel in the home, in industry, and for the railroads, but the growing

TABLE 3.--Selected mineral production of the United States during the Civil War.

	Year ending December 31, 1863	Year ending December 31, 1864
Pig Iron	$ 397,916 26,375 tons	$ 803,788 50,050 tons
Railroad Bars	$1,484,973	$3,687,970
Iron Sheets	$ 270,576	$ 383,975
Iron Tubes	142,794	148,403
Other Iron Products	2,457,575	3,427,850
Steel	$2,063,842	$2,012,197
Coal	$ 808,456 305,884 tons	$ 693,268 245,361 tons

Source: John D. Morgan, Jr., The Domestic Mining Industry of the United States in World War II (Doctor's Thesis at the Pennsylvania State College printed by The National Security Resource Board) p. 11. Original source, American Annual Cyclopadeia (New York: D. Appleton & Co. 1865), p. 748.

demands due to the war depleted the timber resources of Cambria, as they did in every other iron producing area of Pennsylvania. "Charcoal trees" disappeared quickly. Even large stands, such as the 25,000 acres of walnut, oak, and spruce that Cambria Iron had purchased in 1854, were used up by the great demands.[1]

Fortunately, a new method (the Siemens process) made it possible to use a poorer grade of coal than anthracite for smelting and this soon replaced charcoal as a fuel in the industry. Consequently, the production of iron in Cambria County was encouraged because of the area's excellent "smokeless" bituminous coal. The expansion of coal mining will be discussed in greater detail later. Suffice it is to say at this point that it and the iron and steel industry of Cambria County increased rapidly as a result of the Civil War and its aftermath.

The reconstruction period that followed the fighting brought not only a need for replacement of rails in older settled areas of the nation, but a western expansion and development that in ten years (1864-1874) more than doubled the railroad mileage of the United States.[2, 3] Since the

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[1]M. Margaret Green, From Trail Dust to Star Dust (Johnstown, Pennsylvania: Wm. M. Greer, 1960), pp. 30-35.

[2]Ibid., pp. 14-15.

[3]R. B. Saylor and A. E. Warne, Statistical Abstract of Johnstown, Pennsylvania (University Park, Pennsylvania: The Pennsylvania State University, 1953), p. 1.

iron and steel industry of Cambria County was one of the few rail producers in the nation, it was hard pressed to keep up with demands. Fritz's three-high roller was in production twenty-four hours a day and indirectly automation seemed to be making more work, at least in Cambria County.[4]

Still other new processes, such as the open hearth, were introduced in Johnstown in an attempt to keep up with the demand. Ores were even imported from Lake Superior to meet the great need for steel, but still the Cambria iron industry was hard pressed to supply the market. Besides the normal market, new areas of use were being suggested for Cambrian steel, especially bridge construction.

Significance of the Railroads

The iron industry created and manufactured and the railroad carried Cambria iron products to the entire country. Topography virtually dictated a riparian location for the railroads[5] and in Cambria County they left the stream beds only when an easier route (the road bed of the Allegheny Portage Railroad) was available. The importance to the coal-iron ore-steel complex of the transportation

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[4]Writers' Program of the Work Projects Administration in the State of Pennsylvania, Pennsylvania (New York: Oxford University Press, 1940), pp. 50-54.

[5]Alfred J. Wright, United States and Canada (New York: Appleton-Century-Crofts, Inc., 1948), p. 225.

system cannot be over emphasized. It is probably that if the transport system had not existed the coal-iron-steel complex could not have existed either.[6] The excellent rail communications to Pittsburgh and the west and to almost anywhere in the east moved much freight and many passengers through Cambria. Many of these remained to make various contributions to the growth of this area.[7]

The railroads, unknowingly, aided the iron industry in the search for a charcoal substitute. The cuts necessary to provide the one per cent grade of the track bed as it crosses the Allegheny Front and descends into the Ebensburg Valley[8] exposed all of the upper geological strata of the area, including coal at several points.[9]

Coal: A New Mineral

The Geology

The rocks of this area are mainly of the Mississippian, Pennsylvanian, Permian and Devonian systems. The first

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[6]John D. Morgan, Jr., The Domestic Mining Industry of the United States in World War II (Doctor's Thesis at the Pennsylvania State College printed by the National Security Resource Board), p. 249.

[7]Franklin Platt and William G. Platt, Report of Progress in the Cambria and Somerset District of the Bituminous Coal Fields of Western Pennsylvania (Harrisburg: Second Pennsylvania Geological Survey, 1877), H. H., Vol. XXX, p. 2.

[8]The Soil Survey of Cambria County defines the Ebensburg Valley on page 6 as a "broad lowland belt found between Laurel Ridge and the Allegheny Crest."

[9]Platt and Platt, op. cit., pp. X-XI.

three are collectively referred to as the "Carboniferous" when details are unessential. The name comes from the fact that the chief coal beds of the world are found in these systems.[10]

The Carboniferous rocks of Cambria County are fresh water beds consisting mostly of gray sandstones, shales and conglomerates with the middle portion (Pennsylvanian system) containing extensive coal beds. The Carboniferous beds are exposed in many ravines and remain almost in their original horizontal attitude. The coal beds that are exposed at the summit of the Allegheny Front in the tunnel of the Pennsylvania Railroad have a dip of one degree. Each lower bed dips somewhat more steeply with the greatest dip being found in the Middle Silurian beds.[11] In the valleys and flood plains, deposits of the Quaternary system are found which are composed mainly of clay, sand and gravel.[12]

In detail, the coal bearing strata of the Pennsylvania and Mississippi series are in the Monongahela, Conemaugh and Allegheny groups and under these in the Pottsville series. Except for a few lenses of Pittsburgh coal in the Wilmore syncline, coals of the Monongahela group are absent

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[10]Willard Bradford, Pennsylvania Geology Summarized (Harrisburg: Topographic and Geologic Survey, Dept. of Internal Affairs, 1935), Bulletin 113, p. 8.

[11]Platt and Platt, op cit., pp. XV-XVI.

from Cambria County. The Conemaugh group is composed of thin beds of coal interspersed with limestone, shale and sandstone. They are much eroded and generally not mined. Next below is the Allegheny group which contains the extensive and productive coal beds for which the county is famous. These are exposed at many spots throughout the county, especially where stream erosion is great. Below is another Carboniferous division, the Pottsville series. Its coal beds are economically unproductive and, in general, are intact.

Two other still lower groups are found. They are the Mauch Chunk and the Pocono. Both are composed of shales and sandstones and have few outcroppings or exposures in the county, except in the deep channel area of the Conemaugh River. Since neither is a coal producer, further discussion of them does not seem necessary.[13]

There are eight major structural districts in Cambria County which affect the position and depth of all the coal beds. These have been discussed earlier (See Chapter I), but some repetition here might be useful. The Allegheny Front, a double-ridged upturned escarpment on the east side of Cambria County has no coal beds in the eastern most ridge, which is composed of older strata underlying the coal-bearing formations. West of it, is

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[13] Ibid., pp. 96-97.

the Wilmore syncline in which the surface drops 1700 feet below that in the Front and the coal layers are mostly deep beneath the surface. The syncline is wide in the southern part of the county and tails out just north of St. Augustine. In the Ebensburg or Viaduct anticline, just west of the Wilmore, the beds are 200 feet higher in altitude than the corresponding ones in the neighboring synclines. This rise means that coal is nearer the surface and so the shaft mines of the former area are replaced in many cases by drift or slope mines. There is a minor structure known as the Bradley syncline west of the Ebensburg anticline and it is generally thought to be part of the next district to the west, the Johnstown syncline. This structure has for the most part, a very even and gentle slope. Its beds, including the coal, rise most rapidly on its western edge, where they pass into the Laurel Hill anticline. The Laurel Hill is one of the largest upfolds in the Allegheny plateau region and is rich in coal seams. On its western flank is the Barnesboro syncline, a small narrow structure and one of the last coal areas to go into production in Cambria County. Here the over-burden is so thin, the coal is available for strip mining. Lastly, and for only a few miles, the Nolo anticline is a part of the country, but is of little consequence.[14]

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[14] Ibid., pp. 96-125.

The Development of Mining

Early coal miners named the coal beds of Cambria County by a letter system with A representing the lowest worked beds and E the top ones worked. The beds which are highly productive are E or Upper Freeport; D or Lower Freeport; C or Upper Kittaning; and B or Lower Kittaning. All are in the Allegheny group.

Cambria County is one of the few counties in the nation to have four major coal beds in its area. These beds are especially excellent because of their good profile depths, uniformity of composition and freedom from impurities. There are, in fact, twenty-four different coal beds in Cambria's confines. Besides the four major beds, five others are marginally workable for "custom" coal. The remaining fifteen are too thin for profitable mining. Fourteen of the larger beds are shown in Figure 10. The rest are not shown because they are each under six inches in thickness.[15]

Cambria County is generally divided into five production districts. These can roughly be arranged in a historical sequence with mining beginning first in Johnstown-South Fork, then in Portage-Gallitzin, Blacklick, Mountain and last in Barnesboro-[illegible] in Fig. 11. The removal of coal started nearest the surface from the most

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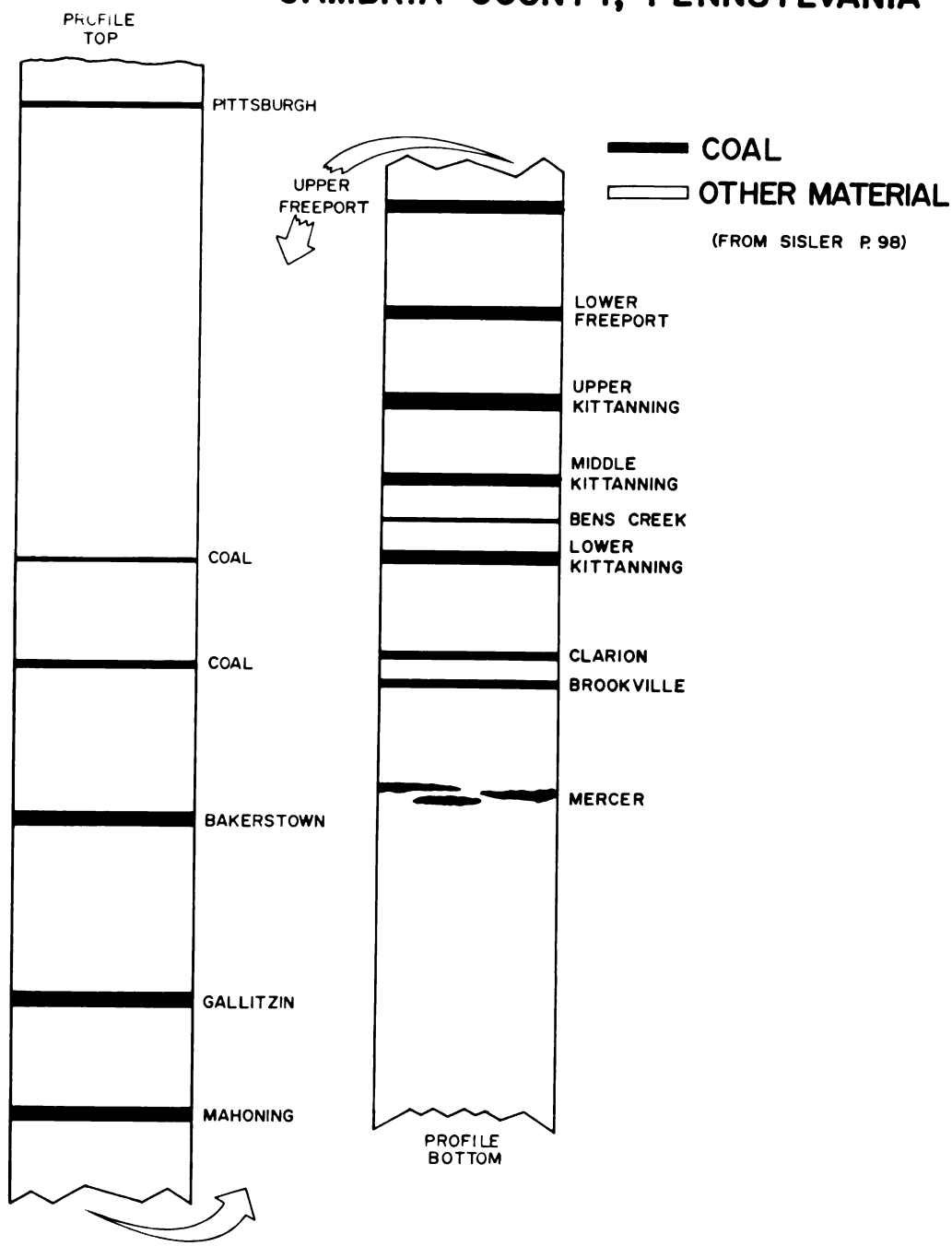
[15] Ibid.

FIGURE 10

GENERALIZED CROSS SECTION
COAL SEAMS
CAMBRIA COUNTY, PENNSYLVANIA



easily accessible beds. As each bed was depleted, the mines moved deeper into the earth (Fig. 10, Table 4 and Appendix Table 5).

The first coal deposit noted in the literature about Cambria County was that found in Moxham (part of Johnstown) by Louis VanLuven in 1788. The first shipment of coal is believed to have been in 1809 when on a return trip the Juniata pig iron pack train took some coal from Johnstown to Hollidaysburg. During the canal period, iron smelted by charcoal was shipped west to Pittsburgh and coal was shipped east to various timber poor, iron smelting regions. In fact, in 1843, some 973 tons of coal were shipped out of Cambria County on the Canal. But in the County, the iron industry operated on wood until the beginning of the railroad.[16]

The requirements of post Civil-War industrial production led to the opening of more coal mines and one of the first of the new group to develop was at South Fork, on the Pennsylvania Railroad's main line in 1867. Mr. R. J. Hughes, who opened a mine here, claimed to have been the first operator in the county to mine from the Miller or "B" vein coal.[17]

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[16]Green, op. cit., p. 50.

[17]John Fulton, "Geologic Notes on Cambria County," History of Cambria County, Pennsylvania (New York, Chicago: Lewis Publishing Co., 1907) 3 volumes, Vol. I, p. 12

TABLE 4.--Bituminous coal beds of Cambria County.

Group	Bed	Range in Interval	Range in Thickness	General Description
	Coal	325	1 ft. 9 in.	
	Coal	165	9 in.	
CONEMAUGH (none of these beds are of any commercial importance	Bakerstown	136	6 in.	Unminable, 225 ft. above Upper Freeport Coal
	Gallitzin (Brush Creek Coal)	50	6 in.	Too thin to be classed workable
	Mahoning	50	6 in.	Not worked, a future supply
	*Upper Freeport (Coke Yard or E)	40	3 ft. 6 in.	Excellent for steaming purposes.
	*Lower Freeport (Limestone or D)	35	2 ft. 6 in.	Will be mined extensively when other beds are exhausted.
	*Upper Kittaning (Cement or C')	70	2 ft. 6 in.	Excellent steam coal, marked by absence of impurities.
ALLEGHENY	Middle Kittaning	20	6 in.	Is of workable thickness at only a few points.
	Bens Creek	15	1 ft.	Has more ash than the other coals of this region.
	*Lower Kittaning (Miller or B)	35	3 ft. 6 in.	Highest grade, most important coal in this district.
	Clarion (A')	25	6 in.	Seldom over 12 inches thick, never mined.
	Brookville (A)		1 ft.	High in ash and sulphur--not profitable to mine.
POTTSVILLE	Mercer		6 in.	Geologically the lowest coal in Cambria County.

*These beds are of the greatest importance in largest areas.

Source: James O. Sisler, "Bituminous Coal Fields of Pennsylvania." September 2, 1942.

In 1873, the post war boom gave way to a depression which was to last for about five years. The net effect of this was minimal as far as Cambria County is concerned. The people simply put in garden plots and waited it out. The mines and factories worked on a reduced basis and the miners and factory workers patronized company stores. This simple, near-closed economy prevented too much hardship. The significant item that came out of the depression was Pennsylvania's Second Geological Survey.[18] This investigation of the state's mineral wealth served as a basis for future economic advancement.

The survey outlined in detail the bituminous coal fields of Cambria County. Resulting published information was highly detailed, including the types, thickness and analysis of each mine's coal. The study helped establish the total extent, for the first time, of the coal industry in Cambria County. It reported that in the year 1875 there were seventy-seven active coal mines there. The most important of these are shown in Figure 11.[19]

Coal and iron differ in their reliance on transportation. Iron is a stationary industry; once the plant and labor force are located, all supplies funnel into the

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[18]Writers' Program of the Work Projects Administration in the State of Pennsylvania, op. cit., pp. 50, 54.

[19]Platt and Platt, op. cit., 194 pp. and 4 maps.

FIGURE 11

MINING AND SMELTING
CAMBRIA COUNTY
1875

LEGEND

- SMELTING
- Fe IRON ORE
- COAL MINING
- RAILROAD
- TOWN
- 0 MILES 2 SCALE

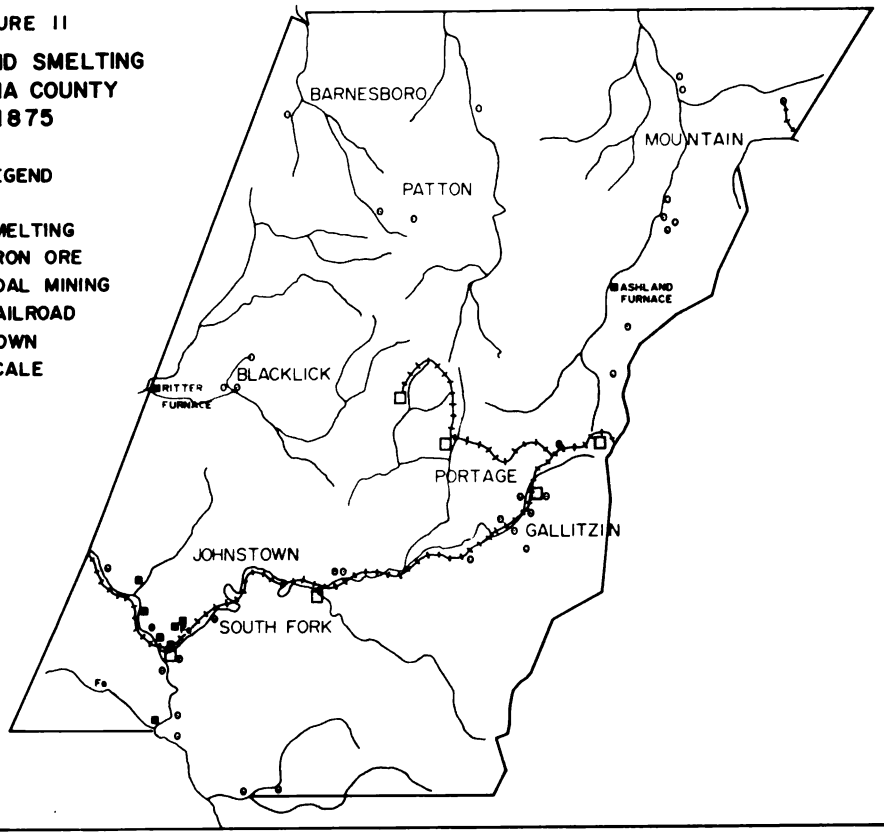
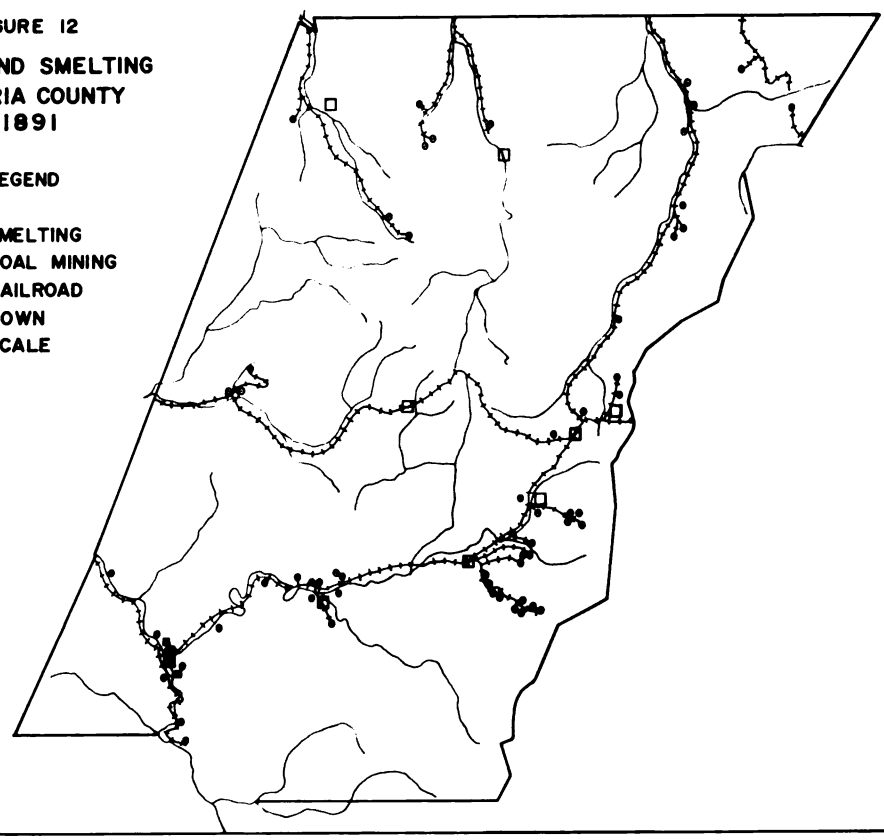


FIGURE 12

MINING AND SMELTING
CAMBRIA COUNTY
1891

LEGEND

- SMELTING
- COAL MINING
- RAILROAD
- TOWN
- 0 MILES 2 SCALE



production area. Coal, on the other hand, is a raw material handling industry, whose sole function is the changing of location of the mineral without producing changes in its structure or usefulness.[20]

Thus, coal and railroad were very closely related and for many years a new mine meant an extension of the railroad and vice versa, the extension of the railroad meant opening new mining territory. The fact that coal from each mine moved to market meant that almost every track that left the main line led to a coal mine. Generally, the relative permanency of railroad tracks and track right of ways pinpointed even abandoned mines. This was particularly true if the rails ran through a small town (mining village) and ended in uninhabited areas, such as the Bell Gap Spur (Northeast corner of Fig. 11). Since other mineral production, such as sand, clay, limestone and trap rock were at a minimum in Cambria County, following the rail lines operated as an almost foolproof method of locating coal mines while doing research for this thesis. Before the extension of the railroad to all parts of the county, however, some movement of coal by barge occurred. For example, an out of the way furnace

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[20]Norman H. Leonard Jr., The Bituminous Coal Industry (New York: Macmillian, 1953), p. 38. Quoted by Walter Adams, The Structure of American Industry, Some Case Studies.

like Ritter furnace (west central Cambria County) was supplied by barge from mines such as Big Bend, Moore's, D. Rowland and E. Rowland, which are on the South Fork of Blacklick Creek (Fig. 11).

The indication of coal mines by the presence of rail lines can easily be demonstrated if one examines the period following the 1873 depression. If the map of coal mines in 1875 (Fig. 11) is compared with that of 1891 (Fig. 12) one of the first things that can be seen is the extension of rail-lines throughout the county. Along each of the new rail-lines is a profusion of mine locations clearly indicated by the number of mine symbols.[21] Thus, a direct correlation seems to exist between railroad building and the development of coal mines. The main exception to this generalization is the Ebensburg spurs whose main function is passenger traffic.

The importance of rail transportation can best be demonstrated by the following quote:

> Coal is transported entirely by railroad and highway. The railroads of Cambria County are one of the greatest assets of its coal trade. The main line of the Pennsylvania Railroad follows Conemaugh River across the county. That line, with branches in mining towns, gives excellent facilities for moving coal to Eastern Cities, Tidewater, Central States and Lake trade. The Baltimore and Ohio Railroad running from Johnstown to mainline at

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[21]Platt and Platt, op. cit., p. XV.

> Rockwood is another direct route to both eastern and western coal trade centers. The New York Central and Hudson River Railroad carries Cambria County coal north to the other conties in Pennsylvania, which are barren of coal, to New York State and to the New England States. Railroad facilities, as well as excellent quality and reputation of coal has made Cambria County one of the largest producers of bituminous coal in the United States.[22]

Although the above quote is not from the period under discussion, it was as applicable in 1877 as in more recent times

In 1891, the last great coal field of Cambria County was opened when large scale commericial mining began at Barnesboro and the railroad was extended to service the new mining communities.[23] Because of the high quality of the coal and the excellent transportation service afforded by the Pennsylvania Railroad on the south and the New York Central Railroad on the north, this field had a phenomenal rate of growth.[24]

After this, the coal industry in Cambria County continued to grow at a moderate rate until 1902. In that year, a strike occurred in the anthracite fields of eastern Pennsylvania which forced the Eastern anthracite users in factories and homes to look for a new heating fuel. To the average consumer, the only difference between anthracite and bituminous coal was the darker smoke and lower cost of

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[22]Sisler, op. cit., p. 95.

[23]Writers' Program of the Work Projects Administration in the State of Pennsylvania, op. cit., p. 551.

[24]J. S. Burrows, "The Barnesboro-Patton Coal Field of Central Pennsylvania" (United States Geological Survey, Bulletin 225, 1904), pp. 295-310.

the latter. The demand for Cambrian smokeless coal from the "B," "C," "D" and "E" coal seams, by the consuming East, almost swamped the mines. This was to become a repetitious story, each strike by the anthracite industry drove more and more users to bituminous coal. Lack of cohesion and co-operation among the bituminous miners led to a "playing" of one group against another for many years until, via a union, unity was finally achieved.

Coke Manufacture

In spite of new techniques (Siemens process), bituminous coal did not produce quality steel. Even though the bituminous coal of Cambria contained only a small amount of volatile material, it was too high to make high grade steel. This caused the iron and steel industry of Johnstown to seek a special non-corrupting fuel for use in steel manufacturing. The desired fuel was obtained by removing the volatiles from coal by heating it in the absence of air. This resulted in a burnable product known as coke. Coke making in Cambria County is actually a footnote to the steel industry, but it is doubly worthy of notice here since it consumed large amounts of Cambria coal.

Before 1895, all coke in Cambria was made in beehive ovens. This is a firebrick chamber built with an arched roof in a manner reminiscent of an old-fashioned bee hive.

A typical oven was 12 feet in diameter and held five to seven tons of coal in a uniform layer (after raking) between 18 and 24 inches in depth. A row of rail tracks ran along the front of a battery of ovens for unloading purposes and another row of track along the top for loading. These ovens were loaded, regulated and emptied by crude hand methods and volatile waste gases were allowed to escape. This type of operation meant waste and the possibility of impurities in the product. Coking time was usually forty-eight to seventy-two hours.[25]

In 1895, Cambria Steel Co. put 60 ovens of the Otto-Hoffman type into production and in 1899, 100 retort coke ovens (United-Otto type) were added to the company's resources. In 1904 and 1907, 100 and 112 ovens of the same type were added to bring Cambria Steel's total to over 360 ovens. The volatile material obtained from this new process was used at the plant for fuel and power.[26]

The Johnstown Flood and Its Effect

In the spring of 1889, Cambria County was catapulted onto the world scene when a flood occurred which took 2,200 lives. May 31, 1889 found Johnstown under two to

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[25]Philip J. Wilson Jr., and Joseph H. Wells, Coal, Coke and Coal Chemicals (New York: McGraw-Hill Book Co., Inc., 1950), pp. 138-140.

[26]Richard R. Hice, The Mineral Production of Pennsylvania for 1913 (Harrisburg: Topographic & Geologic Survey of Pa., 1915), p. 10.

seven feet of water. After a week of continuous rain, the dam constructed at South Fork to provide water for the Johnstown Basin of the Old Canal System, broke. The waters of Lake Conemaugh moved as a body through the entrenched meanders of the Conemaugh River and struck Johnstown at about four o'clock. In ten minutes, most of the city was gone.

This tragic incident brought world attention, sympathy, and aid. It also developed an intense community spirit which helped the area recover. Shortly after the flood, many of the small sub-sections of the city consolidated with the city and a greater Johnstown emerged. Mines were pumped out, factories erected and orders began to pour in for products from Johnstown. In its own way, the flood was good for the city. It provided a lot of publicity and it destroyed old equipment, thus forcing modernization of manufacturing facilities. Hindsight shows us, that communities which do not modernize have often been abandoned. In industry, it is often cheaper to build anew than to remodel.

Evolution in the Iron and Steel Industry

Through most of this period, Cambria Iron Works was the only major metal handler in Cambria County. In 1883, another company, Lorain Steel began because of the direct encouragement of A. J. Moxham. It was located on Stony

Creek in the "city of Moxham," now part of Johnstown. In some ways, it might be considered to be a competitor or rival of Cambria Steel, but since it purchased pig iron from the older firm, this would not seem to be entirely true.[27]

From this time until about 1898, the steel industry was a period of intense, and at times destructive, competition. Various agreements and pools were arranged. Many people have pointed out the outstanding characteristics of these was "the frequency with which they collapsed."[28]

From 1898 to 1900, a widespread concentration movement took place in the steel industry. Large companies, such as Federal Steel, National Steel, National Tube, American Bridge, American Sheet Steel and others were organized into three holding companies under Andrew Carnegie, J. P. Morgan and W. H. Moore, respectively. Each of these groups realized the problems of a "battle between the giants" and a co-operation agreement resulted.[29]

In 1900, Andrew Carnegie directed Charles Schwab to sell the Carnegie Iron and Steel organization. Schwab, a native and resident of Loretto in Cambria County, persuaded J. P. Morgan to buy out Carnegie for $400 million dollars.

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[27]Green, op. cit., p. 45.

[28]H. R. Seager & C. A. Gulick, Trust and Corporation Problems (New York: Harper Brothers, 1959), pp. 2, 16.

[29]Walter Adams, The Structure of American Industry-Some Case Studies (New York: Macmillan, 1953), pp. 147-148.

Schwab was then elected President of the resultant firm--United States Steel of New Jersey, better known as U. S. Steel.[30] One of the plants which was part of this "empire" was Lorain Steel in Johnstown.

The main objective of the new firm, which controlled 65% of the United States output of steel, was to completely integrate steel production from raw material to finished product. The Commissioner of Corporations, in his report on the Steel Industry, however, believed that U. S. Steel had been formed to restrict competition and to secure large profits from the sale of inflated securities. Later when U. S. Steel was taken to court on these counts, the court found in favor of the company since "size alone was not proof of the charges brought" by the commissioner.[31]

Population and Immigration

Between the years 1860 and 1920 the population of Cambria County increased some 160,000 people. During the same period twenty-seven boroughs were incorporated (See Appendix). All of this growth cannot be credited to natural increase alone. An examination of census data shows us that much of it was due to immigration.

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[30]Douglas A. Fisher, Steel Serves the Nation (Pittsburgh: United States Steel Corporation, 1951), pp. 18-22.

[31]Adams, op. cit., p. 148.

Members of new cultural groups were now seen in Cambria in greater and greater numbers. Italians, Jews, Armenians, Lituanians, Poles, Russians and Greeks were just a few of these. They came to work in the mines and steel factories, to marry friends or friends of friends and to open small business establishments.[32] As a rule, the supply of immigrant labor was absorbed by the ever-present demand for labor in the heavy industries. The offspring of earlier immigrants often did not follow their father's occupation, especially when this was dangerous or dirty, like coal mining. The new immigrant waves took these jobs.[33]

Most of these new or second wave immigrants came to Cambria County between 1890 and 1910 (See Table 5). The largest groups were the Austro-Hungarians. They were followed in numbers by the Italians, Germans and Russians.

An interesting problem presented by the Austro-Hungarians and Russians was the complexity of their natural origins. This can be easily demonstrated by selecting one group, such as the Slovaks. At various periods before immigration, these people were ruled by Russians, Austrians

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[32]R. B. Saylor and A. E. Warne, A Statistical Abstract of Johnstown, Pennsylvania (University Park, Pa.: The Pennsylvania State University, 1953), p. 9.

[33]Isaac A. Hourwich, "The Immigrant and the Labor Market," from Immigration as a Factor in American History by Oscar Handlin (Englewood Cliffs, New Jersey: Prentice Hall, 1959), pp. 57-58.

TABLE 5.--Population statistics number of foreign-born whites in Cambria County, 1900-1910-1920.

CAMBRIA COUNTY			
	Census Year		
Nationality	1900	1910	1920
Austria	2,991	14,427	7,949
Hungary	3,535	10,418	3,839
Yugoslavia	- - -	- - -	1,430
Russia	298	2,602	1,498
Lithuania	- - -	- - -	390
Latvia	- - -	- - -	- - -
Finland	26	111	- - -
Rumania	- - -	18	39
Greece	- - -	49	165
Italy	1,316	5,529	5,104
Spain	- - -	- - -	- - -
Palestine	- - -	- - -	309
Turkey	5	380	- - -
Canada	137	164	148
England	2,586	2,868	2,200
Scotland	743	863	791
Wales	946	806	573
Ireland	1,357	1,044	627
Norway	31	37	- - -
Sweden	421	462	289
Denmark	78	57	- - -
Netherlands	5	28	- - -
Belgium	153	321	- - -
Switzerland	54	51	53
France	332	594	405
Germany	3,554	3.704	2,443
Poland	1,169	- - -	6,213
Czechs	- - -	- - -	3,272
Misc.	232	155	802

Source: "Population" in Johnstown Economic and Industrial Survey (Circa, 1960).

and in some cases Poles. The people belong to a Slavic speaking lingual group which may be called Slavish, Russian, Ruthenian or Slovak.

Modern classification by the census may lump them into such diverse categories as Austrians, Czechs, Slovaks (independent country in 1938), Russians, Ukrainians, Polish or Slavs. In fact, a neighbor or relative from over the ridge might even be a Gallican.

The major problem faced by these new residents was the hostility of their "Yankee" neighbors. They were, in a sense, "on contentry" and the path of least resistance dictated a ghetto-like existence, traces of which can still be found today. In this ghetto, they were bound together by a common language, religion and customs. In some instances, a group would be not only in a ghetto, but also in a company town where the language barrier helped prevent contact with other people--thus keeping out American ideas such as unions. This was even true in large communities like Johnstown or Pittsburgh.[34, 35]

The Status of Agriculture

The changes in agriculture during this era (1863-1920) are quite clear if one examines the statistics (See

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[34]Paul U. Kellogg, Wage Earning Pittsburgh--The Pittsburgh Survey (Philadelphia: Wm. Fell Press Co., 1914), pp. 56-60.

[35]For further discussion of this point see: Leon Litwack, The American Labor Movement (Englewood Cliffs, New Jersey: Prentice-Hall, 1962).

Tables 6, 7, and 8). The first major change to be noted is a reduction of land in farms from a peak of 311,349 acres reached in 1880 to 198,544 acres in 1920. This is a decrease of 42,805 acres and yet there were only thirty-nine less farms in the latter year (Table 6). Farms averaged 127.8 acres in size in 1880 and 81.8 acres in 1920. During the period there were decreases of 3,791 acres in cropland, 4,391 acres of pasture, and 87,064 acres of woodlot, or a total of 95,246 acres in these three categories. Obviously, some marginal farms ceased production and other farmers abandoned fields which had poorer soils and steeper slopes, mostly those in woodlot or idle land not suitable for use.

The next noteworthy statistic is the great increase in the number of dairy cows during these years. The total number of cattle declined 1,041 from 14,218 in 1860 to 13,177 in 1920, having reached a peak about 1880 when there were 18,830 head. Yet during the same years the number of milk cows rose from 6,056 to 12,168 (Table 7). The increase in dairying, and also in chicken and egg production, was especially pronounced near the larger towns and in more accessible areas. Meanwhile the number of swine remained much the same, but head of sheep and goats, which reached a high of 16,389 in 1870, dropped to 2,328 in 1920. This latter was due in part to development of western sheep ranches and probably also related to damage by dogs from the coal mining settlements.

TABLE 6.--Selected farm statistics Cambria County, Pennsylvania.

Date	Land in Farms (Acres)	Cropland (Acres)	Pasture (Acres)	Woodlot (Acres)	Number of Farms	Average Size (Acres)
1840						
1850	158,770	51,021		107,749[3]		
1860	184,817	72,311		172,506[3]		
1870	230,897	93,438		133,979	1,975	
1880	311,349	118,632	29,418	145,740	2,437	127.5
1890	224,996	128,534	37,601[1]	96,462	2,241	100.4
1900	245,523	140,180	28,568	84,901	2,566	95.5
1910	228,004	130,410	23,113	74,481	2,761	82.5
1920	198,544	114,841	25,027	58,676	2,398	81.1
1930	178.594	88,993	27,861	49,961	2,183	81.6
1940	175,194	75,752	17,216[2]	42,911	2,719	64.4
1950	174,490	61,085	36,533	38,058	2,099	78.4
1960	120,462	48,417	27,290	35,901	1,139	105.8

Data from the various United States Census Reports.

[1]Hay mowed in acres

[2]Permanent pasture

[3]Unimproved land

TABLE 7.--Selected livestock statistics Cambria County, Pennsylvania

Date	Total Cattle	Milk Cows	Sheep & Goats	Swine Hogs or Pigs
1840	8,518[1]		11.461	10,769
1850	10,583	4,551	13,267	5,946
1860	14,218	6,056	12,413	7,642
1870	12,579	6,537	16,389	7,486
1880	18,830	7,899	14,725	13,358
1890	18,560	8,280	14,130	8,414
1900	18,234	8,279	13,465	7,917
1910	14,085	8,434	4,410	7,580
1920	13,177	12,168	2,328	11,865
1930	12,451	7,385	1,525[4]	6,500
1940	10,455[2]	6,600[3]	1,051[4]	5,195
1950	12,008	6,250	517	6,267
1960	12,520	4,881	578	7,228

Data from the Various United States Census Reports.

[1]Neat cattle
[2]Over 3 months of age
[3]Number milked
[4]Six months or older

TABLE 8 --Selected crop statistics Cambria County, Pennsylvania.

Date	Corn	Wheat	Oats	Hay	Potatoes
1840	31,943b	34,421b	144,470b	5,584a	87,856b
1850	58,947b	42,898b	193,082b	10,326a	20,784b
1860	81,244b	23,289b	216,172b		134,766b
1870	153,252b	56,938b	346,991b	25,801T	89,368b
1880	10,405a 336,113b	11,047a 117,099b	14,558a 346,563b	26,879a 20,554T	2,243a 169,134b
1890	6,980a 212,467b	5,961a 74,840b	13,240a 329,189b	37,601a 45,096T	2,268a 81,120b
1900	9,738a 262,420b	7,240a 114,470b	13,622a 414,520b	35,444a 36,297T	2,816a 296,520b
1910	7,897a 303,747b	3,252a 100,579b	14,800a 459,603b	35,766a 53,769T	3,572a 422,257b
1920	6,883a 303,747b	5,44a 100,579b	15,368a 459,603b	38,380a 53,769T	3,644a 422,257b
1930	6,909a 160,885bh	3,974a 51,902bh	13,152a 387,457bh	31,399a 34,895T	3,981a 454,759b
1940	8,99a 231,381b	5,195a 109,755b	12,119a 432,446b	28,146a	5,557a 545,485b
1950	8,075a 292,752bh	7,433a 166,710b	11,897a 350,137b	25,023a	2,581a 536,529b
1960	6,653a 280,658b	3,734a 75,750b	10,654a 487,766b	21,435a	1,986a 631,279b

Data from the various United States Census Reports.

a = acres

b = bushels

bh = bushels harvested

T = tons harvested

The most spectacular increase in crop production was in potatoes, no doubt the result of growth of local and eastern urban markets for this cheap bulky product. The trend in most crops, however, was increased production (Table 8). This was much more due to increased yields per acre, than to any material gain in acreages cropped, and reflected improved efficiency of techniques and concentration of agriculture on the best suited land. Nevertheless, more land was probably devoted to hay, oats, and potatoes in 1920 than at any previous time, while areas planted with corn and wheat were lower than past peaks. Orchards also developed considerable importance during the period being discussed, producing well since the cold air, which could ruin the fruit, drains downhill causing a temperature inversion which protects the trees from frost damage.

Everything considered, it appears that agriculture reached a peak all-around significance in Cambria County about 1920. Mixed farming of wheat, corn, oats, potatoes, fruit, hay and forage prevailed in conjunction with dairying. Changes from earlier, less commercial, activities were due to the growth of urban markets and improved transportation. Also, as Derrick pointed out, "Another reason why agriculture has received increasing attention in the county during the last thirty-five years (1880-1915) is the fact that lumbering,

which formerly was. . .(a) principal occupation was declined, owing to the diminishing supply of timber."[36]

The county's rapid growth and development during this period leads one to speculate that the future would be one of continuing expansion and progress. The excellent industries, fine natural and agricultural resources, and large and diversified population appear to have had no problems to contend with as they enter a new and modern era. This optimistic view is not born out. Each area of activity, that did well during the period just discussed, "tops out" and declines in the following one. Consequently, the period from 1920 to 1960 in Cambria County can best be characterized by the phrase, maturity and decline.

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[36]B. B. Derrick and A. L. Patrick, Soil Survey of Cambria County, Pennsylvania (Washington, D. C.: Government Printing Office, 1917), p. 10.

CHAPTER V

MATURITY AND DECLINE

1920-1960

The years between 1920 and 1960 might best be characterized as ones during which Cambria County reached maturity and began old age. A twenty year period of slow demographic growth was followed by another twenty years during which there was a slow decline.

Population Characteristics

From 1920 to 1940 the population increased from 197,839 to 213,459 or nearly eight per cent, but by 1960 it had dropped to 203,283 people, or only 5,444 more than in 1920. This meant a net growth during the forty years of almost 2.8 per cent, or roughly a growth rate of .07 per cent per year.[1, 2] Comparing this to our net national growth rate of 1.37 per cent per year, it becomes evident that a large number of people had left the county since the growth in population was much below what might have been expected through normal natural increase.

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[1]R. B. Saylor and A. E. Warne, A Statistical Abstract of Johnstown, Pennsylvania (University Park, Pa.: The Pennsylvania State University, 1953), p. 3.

[2]United States Bureau of the Census, Current Population Report: Population Estimate, March 11, 1965, (Washington, D. C.: United States Government Printing Office).

While stabilization of population may seem to be a key to this period, we should not be led into an assumption of a static situation. During the first decades mentioned above, many immigrants (often of an unwanted kind; strikebreakers and Negroes) arrived. During the second period, some additions to the population because of the arrival of trained or skilled help, occurred. This influx was more than nullified, however, by an emigration of unskilled or semiskilled workers and young people to more promising economic areas.

One other population trend must be recognized during this period, namely a movement from rural areas to urban centers. The main reasons for this were the better quality and abundance of such services as education, health, shopping, and entertainment in these centers, and the greater availability there of employment opportunities.

Many of the smaller towns of Cambria County, from World War II times to the present exhibited either decadence or extreme slowness of growth because of dependency on one industry, coal. There were, however, some towns which had other diverse sources of income, such as Ebensburg, a center of government and Loretto, an education center. These continued to progress. The county's only city, Johnstown, reached its population maximum of 67,327 people in 1920. Since then, it has declined to its present size of 53,946, with the greatest demographic loss, 9,000 people, occurring in the last decade. One of the most reasonable explanations of this, the flight

from cities to the urban fringe of suburbia, seems to be indicated by the statistics of Greater Johnstown.[3] This is Cambria County's only major urban complex and its only area of continuous population growth for the period 1920 to 1960. During those forty years, Greater Johnstown's population increased over 15,141 people to a total in the last census of 112,641.

Strikebreaking and Race Problems

One factor during this period, which repeatedly affected population and economic growth, was a series of interruptions because of labor disputes, strikes and lock outs. The first strike of concern in this connection, was headed by William E. Foster,[4] founder of the National Committee for Organization of Iron and Steel Workers. In 1919, he directed the workers of United States Steel in an organization and recognition fight which ended unsuccessfully in January, 1920.[5] The effects of this strike on Cambria County were tremendous. Its failure not only temporarily brought unions into disrepute

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[3]Greater Johnstown is a term applied to include the city of Johnstown, the boroughs of Brownstown, Daisytown, Dale, East Conemaugh, Ferndale, Franklin, Geistown, Lorain, Southmont and Westmont and the townships of Conemaugh, East Taylor, Lower Yoder, Middle Yoder, Richland, Stonycreek, Upper Yoder and West Taylor.

[4]In 1951, Foster was the General Secretary of the American Communist Party.

[5]Douglas A. Fisher, Steel Serves the Nation (Pittsburgh: United States Steel Corp., 1951), p. 74.

with iron and steel workers there, but also served management with a reason for barring unions from Cambria's plants until after the Taylor-Lewis talks of 1937.[6]

Another facit of the labor strife was the importation of southern Negroes as strikebreakers. "Indeed, the great steel companies of western Pennsylvania and Ohio had been responsible for bringing in increasing numbers of Negro workers since 1916, including many strike-breakers during the great steel strike of 1919."[7,8] Thus, Negroes came to work in the steel mills of Johnstown and vicinity.[9] They were stimulated in this migration by economic and social oppression in the South and by what they believed were opportunities presented by a labor shortage in the North.[10]

Part of the reason for this importation of workers can be explained by the following letter written by Captain W. R.

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[6]Editors of Fortune Magazine, "It Happened in Steel," Fortune Magazine (New York, Time, Inc., May, 1937), pp. 91-94 176-186

[7]Richard B. Sherman, "Johnstown Vs. The Negro: Southern Migrants and The Exodus of 1923," Pennsylvania History Vol. 30, No. 4 (October, 1963) pp. 454, 464.

[8]Often these people did not realize that they were strikebreakers. The company would hire them in distant areas and transport them to the plant. When they arrived, they were company housed and put to work. Negro employees of Cambria Steel were housed in the Rosedale section of Johnstown, which is three miles north of the central business district. There, most of the property belonged to Cambria Steel.

[9]Very few Negroes are residents of any other part of Cambria County, outside of the city of Johnstown, according to the United States census.

[10]Sherman, op. cit., p. 455

Jones, a former superintendent of Cambria Iron, as advice to a new superintendent:

> We must be careful of what class of men we collect (employ). We must steer clear of the West where men are accustomed to infernal high wages. We must steer clear as far as we can of Englishmen (read Americans for Englishmen) who are great sticklers for high wages, small production and strikes. My experience shows that. . . (immigrants) . . . make the most effective and tractable force you can find (employ) . . . But mark me, Englishmen have been the worst class of men I have had anything to do with; . . .[11]

Although this letter is not of this same period, it demonstrates the feeling of steel owners and managers toward unionizers. It should be realized that even the immigrants did not remain untainted for long. As soon as they began to escape their ghettos and become Americanized, they, too, began to unionize.

Migration of Negroes to Northern States reached peaks in 1916-17 and in 1922. The proportion of Negro population in the North as a whole, rose from 1.8 per cent in 1910, to 3.3 per cent in 1930. Johnstown's Negro community, which dated back to the mid-1880's, in 1910 numbered 462 persons. This minority group in Johnstown grew 549 per cent from 1910 to 1923 (Table 9). The effect of this on the community was fear, fear that the Negro would replace the white man in the labor market. In 1923, approximately 21 per cent of the

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[11]Oscar Hadlin, Immigration As A Factor in American History (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1959), pp. 66-67.

TABLE 9.--Growth of Negro community in Johnstown, Pennsylvania 1910-1923

Date	Total Population	Negro Population	Approximate Per Cent Negro	Per Cent Increase Negro Community After 1910
1910	55,482	462	.8%	- - - -
1920	67,327	1,671	2.5%	26%
1923	67,000 (est.)	3,000 (est.)	4.5%	549%

Source: Richard B. Sherman. Pennsylvania History-Quarterly Journal of the Pennsylvania Historical Association, October, 1963.

R. B. Saylor and A. E. Warne. A Statistical Abstract of Johnstown, Pennsylvania, June, 1963.

the work force in the Cambra Steel Plant, the largest single employer in the county, was Negro.[12] Even with the importation of Negroes, Cambria Steel could not obtain enough of the type workers desired. (See Captain Jones Letter.) Because of this, Cambria Steel began to bring in Mexicans. Little objection occurred with the latter group, since its size remained small and they were soon withdrawn from the community because of the problem described below.

The race problem came to a head in August, 1923 when Robert A. Young, a Negro, shot and killed a white police officer, Joseph Gachen. Young was believed to have been drunk and possibly under the effect of drugs at the time. During the attempt to capture Young, there was a gun fight. Young and two officers were killed and several police officers were wounded. The local Ku Klux Klan, had been primarily anti-Catholic and anti-immigrant in orientation, and only nominally anti-Negro until this time, since very few Negroes lived in the county. With an influx of Negroes, however, the latent feelings became active and because of the Young incident the Klan launched a campaign of terrorization

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[12]The reader should note that 4.5 per cent of Cambria's population was Negro, yet 21 per cent of Cambria Iron's labor force was Negro. The reason for this becomes clear when one realizes the Negroes were "imported" by Cambria Iron to break a strike. They took the jobs formerly held by whites, leaving the whites unemployed, thus lending credence to the white fear the saturation of the employment market.

by burning crosses near Rosedale. An attempt by the police to protect the Negroes was nullified by the following order from Mayor Joseph Cauffel:

> I want every Negro who has lived here (Johnstown) less than seven years to pack his belongings and get out . . . For their own safety, I am ordering all newly arrived Negroes to leave town . . .

His order went on to forbid the public assembly of Negroes for any purpose and to require registration with the police or mayor's office of all Negroes in Johnstown.[13]

The New York Times headlined the Negro exodus in its September 15, 1923 edition, Johnstown Expels 2,000 Working Men. The people of Johnstown answered this by defeating Mr. Cauffel at the next election. Cambria Steel Company lost many good workers and the attention of the nation focused on Cambria County when the N.A.A.C.P., Governor Pinchot and the Mexican Ambassador each demanded an investigation of the whole problem.[14]

According to the 1960 census, there were 2,655 Negroes living in Johnstown, which had a population of 53,949. Thus Negroes at present compose a little less than five per cent of the city's population. They reside mainly in the central

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[13]Sherman, op.cit., p. 454, 464.

[14]The Mexican Ambassador is involved in this investigation as a representative for nationals from his country who were imported in small numbers by Cambria Steel. A genuine fear for the safety of the Mexicans resulted in their returning to their homeland after the investation.

urban complex, around Dale, and along the southern edge of Middle Taylor Township.[15] No active hostility against them is apparent in the community today, yet the possibility of covert hostile feelings does exist. Housing is no longer as tightly ghettoed as in the 1920's and although Negroes are not found in significant numbers in many areas, no single specific area can be designated as the Negro area. When viewed on a county wide basis, however, one finds 3,526 Negroes out of a total 203,283 residents and when their areal distribution is mapped it is plain to see that the Negro in Cambria County is strictly an urban (Greater Johnstown) phenomena

Steel Industry Trends

The period being discussed also opened with an attack on United States Steel by the various independents under the leadership of Charles Schwab, then President of the Bethlehem Steel Corporation. Schwab envisioned a unification of the independent steel companies to develop another giant company to better compete with United States Steel. He had the unique ability of merging small, independent companies with Bethlehem Steel, but still preserving to them some semblance of independence. In 1923, Cambria Steel joined the Bethlehem Corpation.

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[15] United States Census of Population and Housing, 1960 Census Tracts, by the United States Government Printing Office.

An important strategic move in Schwab's fight with United States Steel was the establishment of a wider, areal distribution of operating units. United States Steel had capital, machinery and labor force, largely tied to Pittsburgh and its environs. In Cambria County, this meant Lorain Steel and its supporting captive coal mines. Bethlehem Steel Corporation, however, was extending itself throughout the country and locating near the markets. One other factor which hampered United States Steel was that many of the independents were more progressive in adopting new technology--alloys at Republic Steel, for example, and continuous rolling at the American Rolling Mill Company. This left United States Steel using archaic methods which resulted in less efficient operation.

The beginnings of the use of scrap steel also tended to nullify United States Steel's iron ore monopoly and allowed some movement of steel plants to market areas. All this meant that Johnstown steel had to be more than simply good steel, since location of its production away from both market and ore deposits was a hindrance to competitive success.

Four reasons may be offered to explain why iron and steel production remained active in Johnstown: 1. labor was available; 2. labor was experienced and inexpensive; 3. The Pittsburgh market was close by; and 4. there was a local supply of good coking coal. Another possible reason for keeping iron and steel production here was that many of the

controllers of the industry were of local origin and were proud of the region and its people.[16]

There was another factor of change at work from 1920 to the present which directly affected Camria County's steel industry and influenced its coal production as well. This was the transition from heavy industry products, such as rails, plate, structural steel members and industrial equipment, to supplying sheet and strip steel for consumer goods. Expansion of automobile manufacturing was important because it resulted in that industry becoming the largest consumer of steel.[17] This shift from heavy to light industry is well demonstrated by Appendix Table 4 which gives the 1959 breakdown of industries in Cambria County. There were only three primary metal (heavy industry) companies in Cambria in 1959 and they employed 14,365 workers. The secondary metal (light industry) companies were not as large in total employment, but they were extremely diverse in their production and promised to continue growth, eventually employing more workers than the heavy industries. The only interruptions to development of this trend were during the years 1940-46 and 1950-52, when national defense necessitated armanent production.

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[16]Alfred J. Wright, United States and Canada (New York: Appleton-Century-Crofts, Inc., 1948) p. 102

[17]Fisher, op. cit., p. 37

Problems of the Coal Industry

Prices and Competition

The coal industry entered this era with problems. The three most direct ones it faced were erratic prices, ruthless competition and labor disputes. The latter were caused when the operators and managers, in an attempt to meet the first two problems, compounded their troubles by cutting wages.[18] A regular cycle appeared in the coal industry. When there was a demand for coal, high prices brought huge production by the operators in an attempt to cash in on the market. This would be followed by a sharp price drop. Production then had to be increased with the hope of breaking even. The cycle ended with the mines shut down and waiting for higher prices.

The situation of intensive price competition or "cut throat" marketing prevailed in the industry until 1937. Under it a mine operator would agree to deliver coal at cost or even less than cost if he could obtain a new market by underbidding the consumer's current supplier. The basic theory behind this was that once the mine began supplying a consumer, the operator could escalate his price and eventually recoup his deficit. Using this system, between 1920 and 1934, the owners suffered losses each year except in 1936. Consumers,

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[18]Negro labor did not enter the mining picture, possibly because the southern Negro was fearful of mines and because the white miner refused to take the Negro down and teach him the necessary skills.

in their turn, were faced with periodic shortages and erratically fluctuating prices which were caused by the owner's efforts to escape their deficits.[19] A coal strike in the United Kingdom in 1936 opened briefly an export market for United States' bituminous coal and siphoned off the industry's excess production.[20] This relief, however, was only temporary.

Unions and Wages

Workers were plagued with long seasonal layoffs, unsanitary and unsafe working conditions, and a very low annual income. As early as 1898, the miners had formed unions as a means of improving their lot. Yet, even the minor improvements which the early unions were able to obtain through collective bargaining, were to be eroded. The impotency of the miners' union from the early 1920's to New Deal times can be best demonstrated by the fact that the operators as a means of making up their losses from under-bidding were able to cut the miner's wage each year without union action. The threat that cowed any rebellious group was a move on the part of the owners to another area. The miners feared a layoff, but were

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[19]Norman H. Leonard, Jr., "The Bituminous Coal Industry," from the book by Walter Adams, The Structure of American Industry, Some Case Studies (New York: Macmillan, 1953), p. 29.

[20]Ibid., p. 40. Leonard categorizes the operational costs of the coal industry in the following manner: 60--65% wages, 17--22% transportation costs, 8--10% controlled by federal and state laws, and 15--3% cost structure available for change--this is where profit, if any, would show up.

terrified of permanent unemployment caused by mine abandonment. The miners were also carefully informed by management of the existence of many non-union replacement workers.

In 1926, an average Cambrian miner was making $25.00 to $30.00 for a six-day week. It should be remembered that this was during one of the better periods of production and market. The next year when the export market vanished, the prosperity of Cambria's miners did too. In an attempt to stop wage cutting,[21] the miners struck on April 1, 1927.[22] Some of the mines, for example one in Portage Borough, which I have been able to document by interview, stayed closed for twelve months. Several mines opened after three months of striking, accepting the union scale, rather than continuing to lose business.

Feelings became so bitter as the strike period extended, however, that miners lost sight of their objectives and refused to return to work even when the owner agreed to a new contract that would allow mine operation under the union wage scale. The only major accomplishment of this strike was the destruction of the union. In 1928, when the miners finally went back, wages dropped to $2.00 per day, after deductions. This meant providing for a family on $12.00 per week if the mine had enough orders to work a six-day week. The reader

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[21]The wage cut involved the elimination of a $5.00 per week bonus that hourly rated man had received under the previous contract.

[22]April 1 is the first contract date for each new contract period between the U.M.W.A. and the mine operators. This is a national holiday in coal mining areas and is called John Mitchell day, after the first president of U.M.W.A.

might remember that this was the period when Ford began to pay $5.00 a day as wages.[23, 24]

Mining Conditions

When a mine temporarily closed or a miner was "laid off" or injured, he and his family continued to occupy a company house and to run up debt in the company store. These had to be repaid, in some cases with interest, by labor in the mine. The debts that a miner had because of the system served better than chains to hold him in servitude. It should be remembered that the mines and the miners were in remote or backward areas, where no other employment was available and that the men had no other skills for the general employment market.

Escape meant leaving associates and friends, moving to a new area, establishing a new home and finding a new job. Often a miner had begun to purchase the company house in which he lived; he could not get his money out and he did not want to lose his investment. Too, he generally had insufficient funds with which to leave the area. His only hope was to remain, subsist, and wait for the mine to reopen. All this,

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[23]Interviews with Mike Pirich, Jr., former bituminous mine worker and owner, Flint, Michigan, December 27, 1964 and March 30, 1965.

[24]An excellent description of this whole labor problem can be found in a book entitled "I Went to Pit College" by Laurin Gilfillan, (New York: The Literary Guild, 1934).

coupled with the dangers of mining, probably explains why most miners were anxious that their sons escape the mines.[25, 26]

A great increase in production tonnage occurred in 1929 when theoretically there should have been some decline (Table 10). During this period, the miners were being paid by tonnage with a "going rate" of 50¢ per ton. Manual loading and a ten hour shift would bring an income of about $2.00 a day before deductions for supplies. This extreme low wage scale then would explain how the owners could produce so much coal.

The "Traumatic Impact of the Great Depression"[27] is not as evident in the production statistics of Cambria County as it is in those for the United States as a whole, probably because Cambrian coal was more in demand than other coals and also because a good number of the larger producers were captive mines (Table 10).[28] In 1932, however, when Cambria's coal production was at its lowest ebb in many years, miners were working three days out of a

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[25]Leonard, op. cit., p. 44.

[26]John D. Morgan, Jr., The Domestic Mining Industry of the United States in World War II (Washington, D. C.: The National Security Resource Board, 1949), Doctor's Thesis at the Pennsylvania State University, p. 211.

[27]Leonard, op. cit., p. 30.

[28]A captive mine is a mine owned and operated by a company principally involved in the production of some other product, such as steel or chemicals.

TABLE 10.--Coal production in Cambria County 1900-1960.

Date	Thousand Tons	Date	Thousand Tons
1900	8,190	1933	12,047
1901	9,045	1934	12,498
1902	10,562	1935	12,522
1903	10,942	1936	14,469
1904	10,846	1937	14,819
1905	12,601	1938	12,333
1906	12,439	1939	13,785
1907	16,362	1940	16,386
1908	14,138	1941	18,603
1909	15,545	1942	20,266
1910	16,629	1943	19,535
1911	16,929	1944	19,477
1912	17,585	1945	16,578
1913	19,621	1946	15,183
1914	18,034	1947	17,594
1915	18,716	1948	15,794
1916	19,588	1949	10,967
1917	19,731	1950	12,449
1918	20,569	1951	13,601
1919	16,900	1952	12,339
1920	18,968	1953	11,983
1921	16,339	1954	9,137
1922	12,957	1955	10,904
1923	19,751	1956	11,016
1924	16,640	1957	10,783
1925	17,327	1958	8,185
1926	18,861	1959	7,234
1927	14,562	1960	6,650
1928	15,013	1961	6,026
1929	17,515	1962	5,885
1930	15,865	1963	6,955
1931	13,236		
1932	10,836		

Source: U. S. Bureau of Mines, Mineral Yearbook, various editors.

two-week period. The author's father-in-law recalls a two-week pay check of $4.34 total pay after deductions for dynamite and caps, carbide, work clothes and other operating necessities. During this period, a worker would be penalized by receiving a "day off" if his car returned to the surface with twenty-five pounds or more rock and impurities per long ton (2240 pounds). The second offense meant a two-day leave; the third, three days. Each month the slate was wiped clean and the system began again.

The food problem was perhaps the greatest "thorn in the paw" of each miner. This was taken care of by garden patches, of the type still in evidence in small mining communities in Cambria today. The present patches belong to older or retired miners' families who remember the "old days" when Mama's canned goods carried the family through between pay checks.[29]

Federal Involvement in Cambria County

Advent of the "New Deal"

The "New Deal" of Franklin D. Roosevelt brought the National Recovery Act on the scene in 1934. This raised wages and brought about better working conditions.[30] It also meant the recognition and appreciation of unions.

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[29]Pirich, op. cit., and author's observations.

[30]Leonard, op. cit., pp. 47-48.

Yet, coal tonnage didn't increase as much as desirable during this period because the consuming industries were still not producing. Wages, however, were going up and more people were finding employment.

A Second Johnstown Flood

On March 17, 1934 a second Johnstown flood occurred costing fifty million dollars in property damage and twenty-five deaths, mostly from heart attacks. As before, the nation was sympathetic and in a month's time the city was functioning again. The bad publicity because of race riots was replaced by national concern. In an attempt to attract federal funds for flood control, the city mass-mailed 16,000 letters to Washington. The answer returned on August 13, 1936 in the presence of President Franklin Roosevelt. During his visit, he pledged a public works program which would leave Johnstown "flood free." The project, which began in 1938 and was finished in November, 1943, was accomplished under the supervision of the United States Army Engineer Corps.[31]

Imposition of Government Controls

In 1938, government controls of the coal industry reached the point of price fixing and the mines were

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[31]George Gore, The Johnstown Flood Story (Photographic Essay published locally), pp. 1-36.

required to use a uniform accounting procedure. Non co-operators were subject to a tax of up to 19.5 per cent of the value of coal in the mine.[32] Further government intervention occurred just before World War II when the combination of strong and militant unions and more workers than the industries could employ, led President Roosevelt to suggest that the forty-hour week be made the law of the land.[33, 34]

Coal During World War II and After

Wartime Production and Problems

Coal production in Cambria County increased by 3,000,000 tons in 1940 and it had almost as large a rise in 1941. This pre-war upswing raises the question of why, since the United States didn't enter the war until after December 7, 1941. The answer lies in war orders from Allied governments. These boosted steel into full production and this was reflected in Cambria County by increased coal orders.[35]

From 1938 to 1945, the output per man-hour in coal mines increased by almost 30 per cent. This permitted a

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[32] Morgan, op. cit., p. 180.

[33] Ibid. p. 207.

[34] Leonard, op. cit., pp. 47-48.

[35] Morgan, op. cit.

cut in employment and the union policy was one of keeping an efficient industry which paid its workers well. With this as a union and management policy, a production record of over 20,000,000 tons was attained in 1942 with almost 2,000 less miners than the previous year (Table 10). The decrease in manpower was possible because of an expansion of mechanization. Most mines were cutting by machine and over half were machine-loading at the time. The obvious question is, where did those 2,000 men go? Most went to the armed services, while some went into the steel industry or to the construction industry where workers were needed.[36]

High production levels throughout the war years did not mean the lack of labor problems. A short coal dispute flared in 1941, but was settled in January 1942. Two government seizures of the mines occurred in 1943 because of labor trouble. In 1945 there was another seizure on April 3 and a strike which extended from September to mid-October.[37] During this period, while tons of coal production were being lost because of the conflict, the steel industry was operating at 98.1 per cent of capacity.[38]

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[36] Ibid., pp. 211, 249.

[37] Ibid., pp. 258-261.

[38] Walter Adams, The Structure of American Industry, Some Case Studies (New York: Macmillan, 1953), p. 153.

In 1942, Cambria was the fourth largest county in Pennsylvania in the production of bituminous coal. As a shipper of coal to the United States market, she ranked among the first counties in the nation. A portrait of coal in Cambria County in 1942 would picture the industry at one of its more peaceful and productive periods. That year Cambria's coal industry reached its second highest production level on record with the delivery of 20,266,000 tons. Only in 1918, another war year in another war, was the output greater (Table 10). The next two years should have been even better than 1942 but labor troubles and mine seizures by the government prevented this. The county coal production peaked in the years 1942-1944 and began a downward trend which continued until 1954, when only 9,137,000 tons were mined.

The greatest obstacles faced by the coal industry in Cambria County and the nation during World War II are listed below. Despite these problems the industry in Cambria produced at near record levels during the war years.

1. A severe labor shortage--most men not "frozen" in position by law were away in uniform, or were needed in other industry such as construction. This shortage was solved in the Cambrian mines by mechanization.
2. A lack of transportation equipment and lack of up-to-date loading facilities--most mines loaded

their coal directly into rail cars since they had no storage room. Morgan reports "several days of idleness each month" caused by lack of railcars.

3. A lack of definite policy under which to operate--Morgan lists 31 pages of agencies and organizations active and in authority in Washington, D. C. who were involved with mineral production.[39]

Increased complexity of mining because of mechanization brought higher wages to the miners since now they were becoming specialists. But it also meant the fellows who left the "pick and shovel" mines during the depression or during the early war years were members of a new group--the technologically unemployed.

The shortage of coal throughout the war, labor disputes, priority use in industries, and unstable prices and supply, led the consuming market to look for a new fuel source. This loss of customers can probably best be deomonstrated by reviewing the changing importance of coal as an energy source.

> Coal once reigned supreme in the energy market, its only competitors being localized water power and wood. In 1900 coal supplied 90 per cent of the total energy demand in the United States in contrast to the 46 per cent it supplied in 1945. By 1945,

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[39]Morgan, op. cit., pp. 134-166.

> coal had lost 51 per cent of its public utility demand, 20 per cent of its railroad demand, and 15 per cent of its industrial demand. . . . The petroleum industry, which in 1918 supplied only 9.8 per cent of the energy market, raised that percentage 28.1 per cent by 1933. Expansion for water power and natural gas was also significant.[40]

Two factors kept coal in the running. The first was that the other fuels could not supply the total market needs if coal was removed. The second is apparent from the quotation, "The declining relative position of coal has been cushioned by large increases in the size of the energy market as a whole; the demise of the coal industry has occurred without any decrease in the absolute tonnage produced and sold."[41]

Post War Changes and the Present

Cambria County, at the present time, can still be considered to be an important coal production area because of its high-grade and special coals. In 1963, the latest year for which county totals are available, its production tonnage was surpassed by only three other Pennsylvanian counties, namely Washington, Greene and Clearfield.

In 1962, however, Cambria's coal output reached a record low of 5,885,000 tons. This was the lowest production in more than 62 years. The start of the long trend decline, which resulted in a loss of about 70 per cent of production,

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[40] Leonard, op. cit., p. 32.

[41] Ibid.

can be traced back to 1944 (Table 10). Annual production, for the present at least, seems to have stabilized around six million tons as demonstrated by the average for the years 1960 to 1963, 6,379,000 tons to be exact. The recent period, then, has been one of decline in production and the picture of coal in Cambria County is that of a seriously ill industry.

An important fact that should be stressed before mention of other facits of coal mining in Cambria County today, is that the mines in operation are divided into two groups: "captive" mines which are the larger, high production mines, and "house coal," which mines are operated by a father and sons or by a group of close relatives, in some cases as a weekend or "moonlight" operation. Using a rough rule of thumb, I was able to count 104 "house coal" mines among the 121 mines that are presently producing in Cambria County.[42] This means there are only sixteen large mines operating. Classifying the mines of Cambria County another way shows 101 underground mines, two augur mines and 18 strip mines. Of the 6,955,000 tons of coal mined in 1963, 88 per cent was produced by the underground mines.

In the United States in general, strip and augur mining, which are the two newest methods, are expanding

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[42]I classified the mines as a "house coal" mine by the use of three indicators: (1) low total production (under 1000 tons annually); (2) small work period (under 80 days operation per year); and (3) few workers (ten or less men involved in the operation). Case in point is the Heseltine Coal Co. which had one operator who worked the mine ten days during the year.

because of the low initial capital needed to begin production and the relative low operating overhead. They are able to produce coal at low costs, averaging between $3.26 - $4.50 per ton F.O.B. the mine. In Cambria County, however, strip mining accounts for about 10 per cent of the total coal production and is not expanding since most of the area's coal is under too much overburden to the economically mined by this method. In two instances, augur mines are attempting to continue operations where overburden has become too thick, but the results have been less than satisfactory.[43] The strip mines are located in the northwest corner of the county. The largest operation is that of the C. E. Powell Coal Co. and employes 110 men; 16 other strip mines have less than ten employees each, and one has only two workers.

The situation in Cambria County for 1963, the latest date for which statistics were available, was an average of

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[43]George F. Deasy and Phyllis R. Griess, "Geographical Significance of Recent Changes in Mining in the Bituminous Coal Fields of Pennsylvania," Economic Geography, Vol. 33 (October, 1957), pp. 283-298. Deasy explains it thus: "As strip mines in the rugged terrain of western Pennsylvania are pushed farther and farther into the sides of mountains, they gradually encounter overburden so deep that normal stripping operations no longer are practicable. In order to continue operations, huge augurs, measuring up to 280 ft. long and more than 4 ft. in diameter, now are used at a number of mines to bore horizontally into the exposed seams of coal along the 'high wall.' The coal from the augur falls into a conveyor which elevates it onto trucks. The number of tons of coal produced per man-day with augur mining exceeds that obtained with conventional stripping equipment."

3,646 men employed per working day in bituminous coal mines. Over 96 per cent were members of the U.M.W.A. (union). The mines worked an average 184 days and produced 6,954,484 tons of coal, or a daily production per man of 10.36 tons. Cambria coal retailed for $5.82 a ton F.O.B. the mine head, as compared with $5.08 the average price of coal in the state. At present, the normal work period is an eight hour portal (mine opening) to portal day, five days per week. Statistics on wages are somewhat difficult to obtain, but union wages average twenty-six dollars per working day. Using the present scale times 184 days, an accurate estimate of the average annual wage for a Cambria County miner in 1965 would be $4,784. It must be remembered that "house coal" or part time miners make much less than "captive" miners thus reducing the true picture. It should also be noted that Cambrian wages are generally above average for the state. Present daily output per man averages about 10.4 tons, which is quite high when compared to the 1956 figure of 4.9 tons, yet it is somewhat low when compared to that possible using the newer production methods. The most significant reason for this rise in production rate is that now 97 per cent of underground coal loading is done mechanically. The low daily output per man relatively, can be partly explained by the time lost due to travel from the mine opening to the coal face and while waiting for empty cars at the coal face. Time loss also occurs because

of accidents which are fairly common in underground mining. Cambria's safety rate can be demonstrated numerically in terms of coal mined per non-fatal accident. This is about 94,000 tons per non-fatal accident, which is about average for underground mines throughout Pennsylvania.[45]

About 9 per cent of the coal produced moves by truck and the rest is transported by rail. This means the railroad and its problems are closely interrelated with the coal industry. This is not really adverse. Most sources point out that the development of Cambrian coal has been because of the excellent rail network that facilitated movement of the product to makret. The only difficulty in this transportation situation is that since coal mines have no storage facilities, coal must be loaded directly into railroad cars. The lack of cars available at the mine heading has often led to a stoppage of work in the mine.

Deasy, in describing coal mining in southern Pennsylvania at an earlier period said "The south, (of which Cambria County is part) retains much of the flavor of the classical coal mining industry of pre-World War II." In fact, Cambria County can serve as an excellent example of the rise, decline, and present state of the older coal industry areas of Pennsylvania.[46]

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[45]These statistics were obtained from the various Mineral Yearbooks, prepared by the Bureau of Mines for the years 1962 and 1963, especially Vol. 2, "Fuels," and Vol 3, Area Reports.

[46]Deasy and Griess, op. cit., p. 297.

The last three developments during this period which should be noted are: (1) a great increase of women in the labor force, (2) the enlargement of most of the service industries in the municipal and county areas, and (3) the changes in agriculture since 1920. These factors are as important as coal and probably with the exception of the latter, owe their development as much to the mining of coal as does the steel or coke industry.

Relation of Coal Industry to Employment of Women

The traditional role of women at the beginning of this period was in the home. Usually, only because of the death of her husband would a woman seek outside work. Wright points out, however, that various side industries were able to begin production in steel and coal areas using female workers.[47] Their gainful employment was often a necessity for the family owing to the seasonal nature of the husband's employment or some other disability a husband might suffer. The wage scale was very low and if the women objected they were "let go." Unions were, and in many cases still are, not part of the scene in female employment in Cambria County. The first industry in which females were employed was clothing manufacture.

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[47] Wright, op. cit., p. 226.

Sewing shops were able to use the skillful women who had learned tailoring by practicing on their families.[48]

The number of women employed increased when World War II siphoned off many men. Industry kept production up by replacing the men with women. During the war, working women were a common fact in industry, often performing better than the men they had replaced. After the war, female employment was freer because of greater mechanization of industry, various labor-saving home appliances, and the destruction of prejudice against working women. The women were also accustomed to working by then and were quite reluctant to give up their greater freedom and money income.

The extent of female involvement in productive industry in Johnstown can demonstrate this new role of women. In 1939, there were 897 females employed in productive industry; ten years later the number was 1,841. The overall total of women employed in Johnstown in 1949, however, was 2,268 or about ten per cent of the city's labor force. In 1960, the census of the county listed 17,595 employed females in a labor force of 61,703. Thus,

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[48]This industry is still evident in several boroughs, with each borough having its own specialty product. Barnesboro-Patton-men's shirts; Gallitzin--men's shirts; Hastings--dresses; Ebensburg--dresses; Lilly--pajamas; Portage--women's foundations (Bali); Johnstown--men's and boy's clothing, corsets and allied garments, dresses, apparel belts.

women who composed about 8.7 per cent of the county's population accounted for slightly more than 28.5 per cent of thelabor force. Clearly then, the women were proportionately more significant in the employment picture than among the general population. This seems a far cry from the days when a "woman's place was in the home."

The Service Occupations

Service industry increases have occurred in two main areas; education and consumption. In most cases, the information available on these is poorly organized and irregularly codified, so I have used illustrative information from the city of Johnstown when county information was weak.

In Cambria County, the city of Johnstown is the leader in educational facilities and is served by thirty-one public schools and fourteen parochial schools. The Johnstown College of the University of Pittsburgh now has a four-year program in the Liberal Arts operating in the city and the enrollment is constantly expanding. A recent gift means that soon the college will be operating on its own 137 acre campus. Other higher education in the city is provided by the Johnstown College of Music and the Cambria-Rowe Business College.[49]

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[49]Saylor and Warne, op. cit., p. 2.

All areas of the county outside Johnstown are similarly equipped with first through twelfth grade school systems.[50] Higher education is also well represented by St. Francis College in Loretto which was founded in 1847; it too has a challenge of keeping up with its enrollment. This is a small Catholic Liberal Arts College which is well attended even by students of a non-Catholic background. Nearby is the St. Joseph Roman Catholic Seminary. Students leaving the county often go either to Indiana State College in Indiana County, The Pennsylvania State University in State College, Pennsylvania or the University of Pittsburgh in Pittsburgh. The total number of persons employed as professional educators in Cambria County for the year 1960 was 3,095. This statistic does not represent supervisory personnel or other people necessary for operation of schools. Cambria County clearly then is an area committed to furnishing education for its young people. Probably the greatest push for accounting for this commitment is the belief by the immigrant miners and steel workers that education is the only way to "keep the kids out of the mines or mills" and give them a chance for a better life than that had by their parents.

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[50]Many of the public school systems in the smaller towns do not have kindergarten, thus this reads first through twelfth grades instead of the more usual kindergarten through twelfth.

If we examine the employment statistics for 1960, it is found that a total of 61,703 persons were employed. Of those 30,516 were involved in mining, agriculture, forestry, construction and manufacturing. The remainder, 31,186, or slightly more than one out of every two workers, were involved in some type of service industry (Appendix Table 4). A complete breakdown and discussion of each of these employment areas is not necessary for this paper. The one important fact that needs to be pointed out here is that employment in basic industries such as coal and steel is declining, yet employment in service industries is on the increase.

One probable explanation for this is the Madison Avenue emphasis on consumption which has not bypassed Cambria County, but rather has inundated the area. In times past, much of the present service industries were not operative or were decidedly smaller. Now many of the products, such as bread, that were formerly made at home are being purchased outside it. This calls for an expansion of the baking industry and thus expansion of a service industry.

Agriculture Since 1920

The prevailing type of farming in Cambria now consists of a general mixed farm operation in conjunction with dairying, poultrying or meat raising. The agricultural statistics for this period indicate that a reduction of land in farms has continued from the previous period.

Between 1920 and 1960 there was a decrease of 78,082 acres in farms. Coupling this with the 42,805 acres lost between 1880 and 1920 gives a total loss for the 80 year period of 120,887 acres. The number of farms has also diminished quite drastically, dropping from 2,398 in 1920 to 1,139 in 1960 (Table 6). This decrease of 1,259 farms can be attributed both to the change in definition of "farm" by the census and to an increase in the number of part-time or "suburban farmers" who no longer list their land as a farm. Marginal farms have also been removed from the scene. Mechanization of farms has increased the need for capital, thus forcing many small operators "out of the market." With the elimination of many of these small farms, the average farm size has increased by ten acres. Coupled with this should be the realization that increased yield per acre and other agricultural improvements have lessened the land necessary to produce adequate returns.

A major decrease in numbers of sheep is probably the most evident change in livestock for this period. In fact, they are nearly eliminated from the table of statistics, there being only about 500 sheep in Cambria County today (Table 7). In other livestock, the largest change of this period can be noted in the number of milk cows. A decrease of 7,287 head occurred, from 12,168 in 1920, to 4,881 in 1960. The statistics headed "total cattle" indicate that beef cattle are taking up the slack caused by the decrease

in dairying (Table 7). This might be explained in terms of the farmer desiring to raise pasture-using animals, but wishing to avoid the constant attention needed by a dairy cow. The answer is to raise beef cattle. Poultry farming continues to be on the upswing, especially near the city of Johnstown which provides an excellent market for chickens and eggs. With the exception of 1920, a prolific year, and 1940, a slack period, hog production seems to have been on a relatively stable basis for the entire period.

The crop statistics that are the most significant of this period is the decrease in acreage, yet the maintenance of quantity of production. This can be credited to improvements in plants, fertilizing techniques and use of machinery. The greatest production increases were in oats and potatoes, both accomplished despite a reduction of acreage planted. There was a loss of 4,714 acres and 1,658 acres respectively (Table 8). Corn, a somewhat marginal item anyway, was down in bushels in 1960, when compared to 1920, although the acreage remained about the same. This no doubt reflects variations of growing conditions. Hay showed some slippage also, dropping 16,945 acres in the period, probably because of the decrease in the number of milk cows. Wheat displays a fluctuating production throughout the entire forty years and very few generalizations can be drawn except to say that average yield per acre remained essentially the same throughout the entire period.

Orchards also continue to be important in the county, although nut production has slipped because of west coast and foreign competition.

Whither the Future

Where is the county to go from here? Obviously more coal production is not the answer or else mines would be in peak operation now. This may someday be a solution, however, for if we as a nation exhaust our other fossil fuels, we may one day return to coal. Agriculture and forestry, as we have seen, are not industries that have a particularly hopeful outlook. If they should rebound, they will not be of much use as absorbers of the unemployed since few men would be required and, as has been demonstrated lately, few Americans desire this type of employment. An increase of manufacturing also at present appears to be only a limited answer since most raw materials, except coal, must be shipped in and most finished products must be shipped out to markets.

The town of Portage, however, used some careful thinking to bring in manufacturing. Its location on the main rail-line meant ease of access to Pittsburgh and the major eastern markets. The only thing lacking was a product and a manufacturing plant. The town met this problem by making voluntary contributions to raise the capital with which a plant was built and equipped. An eastern shoe

manufacturer was invited in and now the town has a small shoe-making plant in operation. It seems that other areas of the county, with a little imagination or initiative could do the same.

One new employment possibility that could bring a good monetary return with very little depletion of resources is tourism. Cambria has the inherent ability to attract tourists through five different areas: history, geology, sports (hunting and fishing), cultural backgrounds, and simply as a restful vacation spot.

Accommodations are available in Johnstown and Ebensburg that are approved by AAA and suitable facilities exist in most of the other communities. Twenty-eight hotels with a total of 994 rooms are presently operating in the county. Interestingly enough, the AAA Tour Book indicates "One of Pennsylvania's best restaurants is to be found in the town of Gallitzin."

Historical attractions of Cambria County include the first railroad tunnel in the United States and many other items of history discussed in the first four chapters. Geologically, there is the Horseshoe Curve just to the east of the county and from there a one per cent grade to Summit and down to Johnstown which is perfect in terms of viewing exposures of geological strata. At St. Boniface, there is the "Seldom Seen Mine" which has an electric

train trip for tourists through a real coal mine.[51] Hunting and fishing is good because of the woodland cover and many streams. The area is culturally polyglot because of the diverse origins of the people. If each group or subgroup staged a gathering or folk celebration similar to the "Indian Roundup" at Gallup, New Mexico, or to Cleveland's "All-Nation Exhibition and Food Fair," most of the summer could be financially rewarding to the county. Another example, is Fiddler's Green. It was formerly the site of fiddle contests and exhibitions on Saturday nights. Most of the county is quite scenic and there is an excellent guide book to the various routes and sights of the county.[52]

Thus it would seem that, barring a resurgence of underground mining of coal, the most significant resource available in Cambria county is the people. Economic progress will depend to an increasing extent upon their arriving at imaginative answers to the question, "Whither the Future?"

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[51]American Automobile Association, Mid-Eastern Tour Book (Spring, 1964-65 Edition), p. 191.

[52]See Writers' Program of the Work Projects Administration in the State of Pennsylvania for tours across the county.

APPENDICES

APPENDIX TABLE 1--Geologic survey of Pennsylvania

There have been four geological surveys of Pennsylvania and four resulting series of publications.

1st Survey 1836-1854

Publications--Six annual reports, four two quarto volumes, and a state geologic map.

2nd Survey 1874-1887

Publications--81 volumes, 35 atlases, and a grand atlas.

3rd or Commission Survey 1899-1919

Publications--Six biennial reports and 12 economic reports

4th survey 1919 ——→

Publications--numerous, consisting of the following classes

A. Atlas Reports
C. County Reports
G. General Geologic Reports
M. Mineral Resource Reports
SB. Special Bulletin-
oil and gas atlas reports
W. Ground Water Reports
PR. Progress Reports
IC. Information Circulars

APPENDIX TABLE 2--Chronological incorporation dates for Boroughs in Cambria County Pennsylvania.

1825 Ebensburg

1845 Loretto

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1858 Carrolltown (April)

Chest Springs (May)

1859 Wilmore

- - - - - - - - - - - - - -

1868 Franklin (March)

East Conemaugh (Sept.)

1873 Gallitzin

1876 Tunnelhill

1883 Lilly

1887 Ashville (June)

South Fork (August)

1889 Johnstown (A.F.)

1890 Portage

1891 Dale

1892 Westmont (June)

Summerhill (Sept.)

1893 Daisytown (June)

Patton (Sept.)

Spangler (Dec.)

1894 Barnesboro (March)

Hastings (December)

1896 Ferndale

1898 Scalp Level

1906 Cresson (June 7th)

Sankertown (June 11th)

1908 Brownstown (June)

Vintondale (Sept. 4)

Cassandra (Sept. 23)

1915 Lorain

1918 Nanty-Glo

1919 Southmont

- - - - - - - - - - - - - -

1930 Geistown

1956 Ehrenfield

Lines indicate time breaks between chapters.

APPENDIX TABLE 3--Coal beds in Cambria County

The coal-bearing formations in Cambria County contain some twenty-four coal beds. Four are of great importance in large areas.

Lower Kittanning ("B," Miller, White Ash) Coal. This coal is the lowest mined and most persistent bed in the county. It has great importance in the southern part of the county where it is highly prized as a steam coal. In the northern half of the county also it is a persistent bed with good thickness and quality; its development has been slow because it is below drainage under most of the county, and other good coals are more easily accessible.

Upper Kittanning ("C," Cement) Coall This bed lies about 125 feet above the Lower Kittanning. It is mined extensively for steam coal in the southern part of the county where it reaches its greatest thickness and importance. Development of this coal began in the northern part of the county at Hastings and later spread to Patton, where it is thinner and of poorer grade than in the Johnstown region.

Lower Freeport ("C," Moshonnon, Limeston) Coal. In the northern part of the county the Lower Freeport is an excellent coking coal with low sulphur content and is therefore more widely prospected and developed than the other beds. In the southern half of the county it is mined at many places, especially in the Johnstown region, but it is poorer than the other coals and has been tested in only a few places by drill. This bed is 120 to 190 feet above the Lower Kittanning coal.

Upper Freeport ("E," Lemon) Coal. Thirty to forty feet higher in the geologic column is the Upper Freeport bed. The coal is used in railroad locomotives and with varying results in making coke. It has been mined principally in the Barnesboro county on account of higher percentage of ash and sulphur than in the other beds. The Upper Freeport is thicker and better in the southern part of the county and is mined in many places.

Five other beds are mined for custom coal. These are listed below.

Mercer Coal. This is geologically the lowest coal in Cambria County. It is thin and mixed with many partings of bone and shale. At South Fork its horizon is of commercial importance because it is associated with a valuable bed of flint clay.

Middle Kittanning Coal. The Middle Kittanning coal is found at many places from 25 to 25 feet above the Lower Kittanning bed. In this county it is unimportant and of poor quality.

The Mahoning Coal lies about 45 feet above the Upper Freeport coal and between the lower and upper parts of the Mahoning sandstone. The coal itself is not valuable but the iron ore and clays associated with it are sometimes worth exploitation.

The Harlem Coal lies from 300 to 400 feet above the Upper Freeport coal. It has been mined as custom coal in one locality. The bed is very thin, but it is reported to be a good smithing coal.

Pittsburgh Coal. An impure coal lying about 775 feet above the Upper Freeport and having an average thickness of less than two feet in a very small acreage on a knob two miles south of Wilmore, has been correlated as the eastern remnant of the Pittsburgh coal in Cambria County. The coal has been mined but is of little value

Six other beds are notewcrthy. These are listed below.

Brookville ("A") Coal. The Brockville bed lies from 40 to 100 feet below the Lower Kittanning coal. This bed is four feet thick at Dysart and on Stony Creek. Large numbers of "knife blads" and nodules of iron pyrite, and partings of shale and bony coal make it so high in ash and sulphur that it cannot be profitably mined, although the fixed carbon and the volatile matter compared well with the Lower Kittanning.

Bens Creek (Lower Kittanning rider) Coal. A local coal fourteen feet above the Lower Kittanning has been mined on Bens Creek. Drill hole records in this region indicate that it is a persistent bed, having an average thickness of 2½ feet. It has more ash than other coals of the same region; otherwise its quality is the same.

Conemaugh Coals. Numerous small beds of unmineable coal in the Conemaugh formation are scattered through 700 to 900 feet of strata above the Upper Freeport bed.

The Brush Creek or Gallitzin Coal, lying 70 to 110 feet above the Upper Freeport coal, never exceeds one foot in thickness and is unmineable.

The Bakerstown Coal is an unmineable bed lying some 225 feet above the Upper Freeport coal.

Clarion ("A") Coal. This bed, lying 20 to 40 feet above the Brookville coal, is seldom over one foot thick in the county and is never mined.

The remaining nine are so thin that they will probably never be mined, so they are not listed here.

APPENDIX TABLE 4--Industrial Directory of Cambria County, Pennsylvania, 1959.

CAMBRIA COUNTY

Industry and name of firm	Location of plant	Office address	No. employes
	BITUMINOUS COAL MINING		
BITUMINOUS COAL.			
Adams Fuel Corp.	Adams Twp.	South Fork	45
Balzano Coal Co.	Reade Twp.	Dysart	4
Barnes & Tucker Co.	Barr Twp.; W. Carroll Twp.	357 W. Lancaster Ave., Haverford	456
Barnes & Tucker Co. (Springfield Coal Corp.)	Spangler	357 W. Lancaster Ave., Haverford	217
Basile Coal Mine	Susquehanna Twp.	810 Maple Ave., Barnesboro	2
Bastin, Lester	Adams Twp.	Sidman	-
Becker Fuel Co.	Chest Twp.	Hastings	4
Berwind-White Coal Mining Co.	Adams Twp.; Richland Twp.	1500 Pennsylvania Bldg., Phila. 2	1,223
Bethlehem Mines Corp.	Cambria Twp.; Conemaugh Twp., Middle Taylor Twp.	800 E. 3rd St., Bethlehem	2,531
Bird Coal Co.	Ferndale	7 Bala Ave., Bala Cynwyd	107
Black Coal Co.	Reade Twp.	Fallentimber	4
Blacklick Mining Co.	Blacklick Twp.	P. O. Box 417, Ebensburg	3
Brookdale Coal Co. (William Spese)	E. Taylor Twp.	P. O. Box 46, Mineral Point	6
Burchini Coal Co.	Adams Twp.	Dunlo	-
Burkett, A. R.	Summerhill Twp.	P. O. Box 146, Summer Hill	65
Byrnes Bros. Coal Co.	Susquehanna Twp.	200 Chestnut Ave., Barnesboro	-
Cambria Mills Coal Co.	Reade Twp.	Fallentimber	22
C & C Coal Co.	White Twp.	Utahville	3
Chest Creek Coal Co.	Saint Boniface	Osceola Mills	18
Chickaree Hill Coal Co.	Jackson Twp.	P. O. Box 34, Hemlwood	13
Citizens Coal Co.	Stonycreek Twp.	74 Colgate Ave., Johnstown	-
Collins Fuel Co.	Vintondale	Vintondale	238
Commercial Coal Co. of Twin Rocks	Blacklick Twp.	1298 Davis St., Nanty Glo	16
Deal & Lantz Coal Co.	Stonycreek Twp.	204 Poplar St., Johnstown	22
Dean Coal Co.	White Twp.	Ramey	21
Delozier, T. W.	Gallitzin Twp.	P. O. Box 8, Coupon	-
Eastern Gas & Fuel Associates (Coal Div.)	Colver, Portage	Koppers Bldg., Pittsburgh 19	900
F & K Coal Co.	Reade Twp.	Blandburg	7
Hastings Fuel Co.	Elder Twp.	12 S. 12th St., Phila.	7
Holtz Coal Co., A. E., Estate	Elder Twp.	Spangler St., Hastings	7
Huber Street Coal Mining Co.	Conemaugh Twp.	172 Chandler Ave., Johnstown	4
Hughes & Co., C. A.	Washington Twp.	P. O. Box 207, Cresson	62
Imperial Coal Corp.	Blacklick Twp.	703 Johnstown Bank & Trust Bldg., Johnstown	69
Jackson Hill Coal Co.	Jackson Twp.	P. O. Box 201, Vintondale	7
Johnstown Coal & Coke Co.	Beaverdale	1006 United States Bank Bldg., Johnstown	221
Kenner Coal Co.	Gallitzin Twp.	Coupon	15
Lantzy Bros. Coal Co., Inc.	W. Carroll Twp.	P. O. Box 719, Spangler	4
Laurel Ridge Coal Co.	Dean Twp.	713 Fifty-eighth St., Altoona	2
Lick Run Coal	Summerhill Twp.	P. O. Box 45, Lloydell	8
Marport Coal Co.	Portage Twp.	R. D. 2, Box 87, Portage	14
Martindale Coal Co.	Portage Twp.	P. O. Box 365, Portage	3
McCormick Coal Co.	Susquehanna Twp.	Barnesboro	16
Miller Coal Co., H. W.	Reade Twp.	Glasgow	10
Miller Shaft Coal Co.	Portage Twp.	1016 Johnson Ave., Portage	35
North Cambria Fuel Co.	Susquehanna Twp.	P. O. Box 427, Patton	19
Orr Coal Co., Inc.	Beaverdale	P. O. Box 35	52
P P & K Coal Co.	Susquehanna Twp.	P. O. Box 485, Barnesboro	2
Patton Clay Mfg. Co.	Chest Twp.	P. O. Drawer M, Patton	23
Pennsylvania Coal & Coke Div. (Penn-Texas Corp.)	Barr Twp.; Croyle Twp.	115-19 Ashcroft Ave., Cresson	467
Piper & Co., Inc., W. H.	Washington Twp.	Main St., Lilly	18
Powell Coal Co., C. E.	Fallentimber	Blandburg	142
Press Coal Co.	Susquehanna Twp.	P. O. Box 245, Barnesboro	3
Prince Coal & Supply Co.	Gallitzin Twp.	Hillsdale	33
Prospect Coal Co.	R. D. 2, Portage	R. D. 2, Box 102, Portage	30
Red Ridge Coal Co.	Dean Twp.	P. O. Box 186, Altoona	4
Red Top Coal Co.	Elder Twp.	Spangler	13
Reghetti Coal Co.	Dean Twp.	P. O. Box 74, Dean	2
Reynolds Coal Co.	White Twp.	Glasgow	4
Rich Hill Coal Mining Corp.	Elder Twp.	P. O. Box 246, Cresson	215
Richland Coal Co.	Richland Twp.	400 Maple Dr., Windber	20
Roufabush, C. L.	Conemaugh Twp.	220 Bedford St., Johnstown	-
Scanlan & Son, Walter J.	Dean Twp.	319 Spruce St., Cresson	1
Scott Bros. Coal Co.	Reade Twp.	Blandburg	34

CAMBRIA COUNTY

Industry and name of firm	Location of plant	Office address	No. employees
BITUMINOUS COAL (Contd.)			
Shaffer & Sons Coal Co., I.	Richland Twp.	3204 Graham Ave., Windber	4
Shank Mine Co., Albon C.	Richland Twp.	456 Cooper Ave., Johnstown	3
Sherbine, Lawrence	Wilmore	P. O. Box 66	8
Sterling Coal Co.	W. Carroll Twp.	1089 Suburban Station Bldg., Phila. 3	324
Stineman Coal & Coke Co.	Croyle Twp.; Richland Twp.; Stonycreek Twp.	1145 Suburban Station Bldg., Phila. 3	85
Stoker Coal Co., Irvan	Portage Twp.	P. O. Box 116, Lloydell	13
Swank's Sons, Hiram	Dean Twp.	P. O. Box 630, Johnstown	10
Tocarchik, Joe	Susquehanna Twp.	Spangler	1
Toth & Knecht Coal Co.	Conemaugh Twp.	R. D. 3, Hooversville	3
Velest Coal Co., Inc.	Dean Twp.	1115 Philadelphia Ave., Barnesboro	14
W & H Coal Co.	Dean Twp.	R. D., Ashville	8
Wantiez Coal Co., Forrest	Adams Twp.	28 Huff St., Dunlo	4
Wertz Bros. Coal Co.	Dean Twp.	R. D. 4, Box 238, Altoona	14
Windber High Grade Coal Co.	Richland Twp.	1309 Midway, Windber	18
Witherow Coal Co.	Dean Twp.	Fallentimber	8
Wood Coal Mining Co., F. B.	W. Carroll Twp.	800 Chestnut St., Barnesboro	5
Yobbugy Co., Joseph E.	Nanty Glo	Route 422 W., Ebensburg	10
Zemlock Coal Co.	W. Carroll Twp.	Spangler	12
Zimmerman, D. P.	Dean Twp.	822 Fourth Ave., Juniata, Altoona	4
MINING AND QUARRYING OF NONMETALLIC MINERALS			
SAND AND GRAVEL, EXCEPT GLASS SAND			
Nicosia Stone Quarry	W. Taylor Twp.	306 Cooper Ave., Johnstown	5
FIRE CLAY			
Swank's Sons, Hiram	E. Taylor Twp.	P. O. Box 630, Johnstown	4
FOOD AND KINDRED PRODUCTS			
MEAT PACKING PLANTS			
Froelich Packing Co., Alex	Johnstown	P. O. Box 485	12
Hahn Packing Co., Edward	Johnstown	Hickory St. & B & O R. R.	67
Johnstown Packing Co.	W. Taylor Twp.	P. O. Box 188, Johnstown	22
SAUSAGES AND OTHER PRAPARED MEAT PRODUCTS			
Armour & Co.	Johnstown	Union Stock Yards, Chicago 9, Ill.	16
Weiss Bros. Provisions	Lower Yoder Twp.	P. O. Box 328, Johnstown	17
CONDENSED AND EVAPORATED MILK			
Weller's, Inc.	Johnstown	115 Luther Rd.	26
ICE CREAM AND FROZEN DESSERTS			
Penn Cress Ice Cream Co.	Cresson	Park Ave. & Front St.	38
Von Lunens Dairy Store	Geistown	2450 Bedford St., Johnstown	4
FLUID MILK			
Galliker Dairy Co.	Johnstown	447 Franklin St.	107
Griffith Farm Dairy	R. D. 2, Ebensburg	R. D. 2, Ebensburg	3
Johnstown Sanitary Dairy Co.	Johnstown	408-18 Franklin St.	270
Keystone Farms Dairy	Munster Twp.	R. D. 1, Ebensburg	9
Vale Wood Dairy	Munster Twp.	P. O. Box 13, Cresson	16
PREPARED FEEDS FOR ANIMALS AND FOWLS			
Lantzy Milling Co.	Garman	R. D. 1, Barnesboro	2
BREAD AND OTHER BAKERY PRODUCTS, EXCEPT BISCUITS, CRACKERS, AND PRETZELS			
American Stores Co.	Johnstown	124 N. 15th St., Phila. 2	54
Barnesboro Bakery, Inc.	Barnesboro	1220 Philadelphia Ave.	19
Cambria Home Bakery, Inc.	Ferndale	555 Ferndale Ave., Ferndale, Mail Johnstown	41
Cookie Jar, Inc.	Johnstown	536 Main St.	14
Elite Bakery, Inc.	Johnstown	310 Bedford St.	15
Harris-Boyer Co.	Johnstown	147 Fairfield Ave.	267
Home Baking Co.	Ebensburg	112 E. Sample St.	30
Livingston Baking Co.	Johnstown-Two Plants	545 Coleman Ave.	27
Mertens Bakery	Patton	303 McIntyre Ave.	9
Minnies Pie Shop	Johnstown	356 Oakland Ave.	1
Patty Cake Bakery	Johnstown	960 Bedford St.	3
Penn Traffic Co.	Johnstown	319-47 Washington St.	12
Russo's Bakery, L.	Johnstown	301 Strayer St.	1

CAMBRIA COUNTY

Industry and name of firm	Location of plant	Office address	No. employes
BREAD AND OTHER BAKERY PRODUCTS, EXCEPT BISCUITS, CRACKERS, AND PRETZELS (Contd.)			
Stella's Corner Cupboard	Johnstown	304 Locust St.	4
Yost's Sweet Wheat Bakery	Johnstown	612 Oak St.	22
CANDY AND OTHER CONFECTIONERY PRODUCTS			
O'Sheas Candies	Johnstown	1118 Solomon St.	5
BOTTLED AND CANNED SOFT DRINKS AND CARBONATED WATERS			
Cassandra Bottling Works	Cassandra	Cedar St.	16
Coca-Cola Bottling Co. of Johnstown, Inc.	Johnstown	3200 Huntington Ave., Newport News, Va.	24
Dr. Pepper Bottling Co.	Barnesboro	406 Nineteenth St.	5
Hastings Bottling Works	Hastings	429 Spangler St.	2
McAllister Bottling Co., Inc., A.	Johnstown	425 Coleman Ave.	36
Nehi Bottling Co. of Johnstown, Inc.	Lorain	425 Valley Ave., Johnstown	14
Squirt Bottling Co., Inc.	Johnstown	528 Washington St.	22
Tulip Bottling Co.	Johnstown	411 Third Ave.	47
MANUFACTURED ICE			
Shaffer Ice Co., F. M.	Johnstown	151 Horner St.	6
FOOD PREPARATIONS, N. E. C.			
Daniels	R. D. 5, Johnstown	R. D. 5, Box 247 A, Johnstown	8
TOBACCO MANUFACTURES			
CIGARS			
Penn Cigar Co.	Johnstown	115 McConaughy St.	13
APPAREL AND OTHER TEXTILE PRODUCTS			
MEN'S, YOUTHS', AND BOYS' SHIRTS (EXCEPT WORK SHIRTS), COLLARS, AND NIGHTWEAR			
Phillips-Van Heusen Corp.	Barnesboro; Patton	417 Fifth Ave., New York 16, N. Y.	527
Publix Mfg. Corp. (Publix Shirt Corp.)	Gallitzin	350 Fifth Ave., New York 13, N. Y.	325
MEN'S, YOUTHS', AND BOYS' CLOTHING, N. E. C.			
Hartmann-Schneider Co.	Johnstown	627-31 Elder St.	23
DRESSES			
Carol Ann, Inc.	Hastings	P. O. Box 222	76
Cay Artley Apparel, Inc.	Johnstown	232 Levergood St.	558
Jo-Ann Dress Mfg.	Ebensburg	206 W. Sample St.	76
WOMEN'S, MISSES', CHILDREN'S, AND INFANTS' UNDERWEAR AND NIGHTWEAR			
Chance Pajama Mfg. Co.	Lilly	331 Main St.	77
CORSETS AND ALLIED GARMENTS			
Bestform Foundations of Pennsylvania, Inc.	Johnstown	3801 Forty-seventh Ave., Long Island City, N. Y.	451
Puritan Foundations, Inc.	Portage	568 Broadway, New York 12, N. Y.	302
APPAREL BELTS			
See-Gal Mfg. Co.	Johnstown	220 Franklin St.	17
LUMBER AND WOOD PRODUCTS, EXCEPT FURNITURE			
SAWMILLS AND PLANING MILLS, GENERAL			
Adams Bros.	Johnstown	R. D. 1, New Florence	3
Amadei, Tony	Barr Twp.	Nicktown	3
Baker's Sons, Elijah	Beaverdale	Emeigh	6
Becker, Ralph C.	R. D. 1, Portage	R. D. 1, Box 620, Portage	-
Chalan & Chappell	Portage Twp.	R. D. 1, Box 134 A, Portage	6
Cramer, James E.	R. D. 1, Barnesboro	R. D. 1, Box 194 B, Barnesboro	-
Doliveira Bros.	Jackson Twp.	Twin Rocks	5
Dumm Bros. Lumber Co.	Barr Twp.	Nicktown	3
Hammond Co., J. V.	Spangler	P. O. Box 832	67
Herman Lumber Co., John	Portage	1211 Gillespie Ave.	6
K & C Lumber Co.	Dunlo	P. O. Box 22	6
Krumenacker Lumber Co.	Barr Twp.	R. D. 1, Carrolltown	5
Long & Sons, George	Chest Twp.	R. D. 1, Box 83, Patton	6
Long Lumber Co., Louis	Cambria Twp.	902 N. Caroline St., Ebensburg	4
Lowman, Charles W. & C. L.	W. Taylor Twp.	8 Cooper Ave., Johnstown	-
Martindale Lumber Co.	Portage Twp.	P. O. Box 207, Portage	6

CAMBRIA COUNTY

Industry and name of firm	Location of plant	Office address	No. employees
SAWMILLS AND PLANING MILLS, GENERAL (Contd.)			
McNulty's Sawmill	E. Carroll Twp.	Carrolltown	-
Queen Lumber Co.	Munster Twp.	Claysburg	13
Ragley, Herman	Barr Twp.	R. D. 2, Ebensburg	3
Rhody, K. C.	White Twp.	207 Highland Ave., Patton	6
Rorabaugh, Samuel E.	Cambria Twp.	R. D. 1, Box 576, Portage	1
Rummel, Ward	Blacklick Twp.	Belsano	20
Smith, Cletus & Clement	Croyle Twp.	R. D. 1, Box 608, Portage	3
Wagner Lumber Co., Inc.	Reade Twp.	R. D. 1, Fallentimber	16
Walter & Sons, H. E.	Adams Twp.	R. D. 1, Box 234, South Fork	14
MILLWORK PLANTS			
Citizens Lumber & Supply Co.	Ebensburg	E. Ogle St.	18
Hammond, William L.	Barnesboro	Eleventh St.	2
Moxham Lumber Co.	Johnstown	Park Ave. & DuPont St.	24
Thomas-Kinzey Lumber Co.	Johnstown	548 Horner St.	21
WOOD PRODUCTS, N. E. C.			
Fishel, Glen R.	Blandburg	Blandburg	5
FURNITURE AND FIXTURES			
WOOD HOUSEHOLD FURNITURE, EXCEPT UPHOLSTERED			
DeFrehn & Sons, William	Johnstown	813 Horner St.	44
Ebensburg Cabinet Co.	Ebensburg	706 Triumph St.	16
MATTRESSES AND BEDSPRINGS			
Page Bedding Co., C. H.	Johnstown	47 Messenger St.	28
FURNITURE AND FIXTURES, N. E. C.			
Brooklyn Hospital Equipment Co., Inc.	Johnstown	Oak & Murdock Sts.	74
United Metal Fabricators, Inc.	Richland Twp.	609 Bob White St., Johnstown	25
PAPER AND ALLIED PRODUCTS			
FOLDING PAPERBOARD BOXES			
Friendly City Box Co.	Johnstown	725 Railroad St.	8
PRINTING, PUBLISHING, AND ALLIED INDUSTRIES			
NEWSPAPERS: PUBLISHING, PUBLISHING AND PRINTING			
Barnesboro Star	Barnesboro	520 Philadelphia Ave.	4
Globe Gazette, Inc.	Patton	First Natl. Bank Bldg.	3
Johnstown Tribune Publishing Co.	Johnstown	425 Locust St.	243
Mountaineer-Herald	Ebensburg	113 S. Center St.	4
Sedloff Publications, Inc.	Portage	709 Caldwell Ave.	14
Union Press Courier	Patton	542 Magee Ave.	8
COMMERCIAL PRINTING, EXCEPT LITHOGRAPHIC			
Beckley Printing Co., F. R.	Portage	513 Main St.	-
Benshoff Printing Co.	Johnstown	46 Valley Pike	23
Carroll Press	Carrolltown	Main St.	4
Eagle Printing Co.	Barnesboro	905 Philadelphia Ave.	-
Gipe Bros.	Johnstown	18 Clover St.	3
Lints Printing Shop	Ebensburg	Masonic Bldg.	4
North Cambria News	Hastings	Hastings	-
Pean Printing Co.	Johnstown	646 Main St.	9
Probert Printing Shop	Johnstown	197 Fairfield Ave.	-
Raab & Son, Inc., William H.	Johnstown	220 Franklin St.	5
Schubert Press, Inc.	Johnstown	542 Main St.	3
Valley Printing Co.	Johnstown	667 Main St.	8
COMMERCIAL PRINTING, LITHOGRAPHIC			
Weigel & Barber, Inc.	Johnstown	343 Stonycreek St.	12
PHOTOENGRAVING			
Conemaugh Engraving Co. of Johnstown, Inc.	Johnstown	425 Locust St.	28
CHEMICALS AND ALLIED PRODUCTS			
INDUSTRIAL GASES			
Air Reduction Sales Co. Div. (Air Reduction Co., Inc.)	Johnstown-Two Plants	150 E. 42nd St., New York 17, N. Y.	23

CAMBRIA COUNTY

Industry and name of firm	Location of plant	Office address	No. employes
INDUSTRIAL INORGANIC CHEMICALS, N. E. C.			
Sunshine Chemical Works	Johnstown	134 Spring St.	-
SPECIALTY CLEANING, POLISHING, AND SANITATION PREPARATIONS			
Hal-Pro Processing Co.	Patton	809 N. 5th Ave.	2
PETROLEUM REFINING AND RELATED INDUSTRIES			
PAVING MIXTURES AND BLOCKS			
Interstate Amiesite Corp.	Barnesboro	P. O. Box 868, Wilmington 99, Del.	5
Pennac Asphalt Products Co.	W. Taylor Twp.	83 Cooper Ave., Johnstown	7
STONE, CLAY, AND GLASS PRODUCTS			
BRICK AND STRUCTURAL CLAY TILE			
Triangle Clay Products Co.	Johnstown	83 Cooper Ave.	39
CLAY REFRACTORIES			
Swank's Sons, Hiram	Johnstown	P. O. Drawer 630	131
STRUCTURAL CLAY PRODUCTS, N. E. C.			
Patton Clay Mfg. Co.	Patton	P. O. Drawer M	142
CONCRETE BRICK AND BLOCK			
Beckey, William	Blacklick Twp.	R. D. 2, Ebensburg	-
Butler, W. W.	Johnstown	206 Mango Ave.	5
DeGol Bros.	Gallitzin	1027 Quarry St.	3
Farrell Builders	Marstellar	Marstellar	16
CONCRETE PRODUCTS, EXCEPT BLOCK AND BRICK			
Fihoff Concrete Products Co.	Stonycreek Twp.	240 Bentwood Ave., Johnstown	11
Kissell Concrete Block Co.	Johnstown	Murdock & Oak Sts.	13
Norwalk Concrete Vault & Tent Service	Middle Taylor Twp.	R. D. 1, Box 137, Johnstown	2
CUT STONE AND STONE PRODUCTS			
Keystone Memorial Co.	Johnstown	93 Clinton St.	4
Van Scoyoc Memorial Studio, R. C.	Johnstown	850 Millcreek Rd.	2
MINERALS AND EARTHS, GROUND OR OTHERWISE TREATED			
Cambria Slag Co.	Johnstown	1200 Wick Bldg., Youngstown, Ohio	33
NONCLAY REFRACTORIES			
Haws Refractories Co.	Johnstown-Two Plants	407 Main St.	98
PRIMARY METAL INDUSTRIES			
BLAST FURNACES, STEEL WORKS, AND ROLLING MILLS			
Bethlehem Steel Co.	Johnstown	800 E. 3rd St., Bethlehem	14,340
GRAY IRON FOUNDRIES			
South Fork Foundry & Machine Co.	South Fork	South Fork	9
MALLEABLE IRON FOUNDRIES			
Korns Co., C. C.	Southmont	350 Southmont Blvd., Johnstown	16
FABRICATED METAL PRODUCTS			
FABRICATED STRUCTURAL STEEL			
Griffith-Custer Steel Co.	Johnstown	307 Bedford St.	57
Leffler's Ornamental Shop	W. Taylor Twp.	775 Cooper Ave., Johnstown	1
Structures, Inc.	Johnstown	P. O. Box 538	33
METAL DOORS, SASH, FRAMES, MOLDING, AND TRIM			
Steptcraft Corp.	Johnstown	1195 Franklin St.	-
SHEET METAL WORK			
McCall & Co., Inc., C. S.	Johnstown	418 Wood St.	15
ARCHITECTURAL AND MISCELLANEOUS METAL WORK			
Sender Ornamental Iron Works	Johnstown	73 J St.	2

CAMBRIA COUNTY

Industry and name of firm	Location of plant	Office address	No. employes
ELECTROPLATING, PLATING, POLISHING, ANODIZING AND COLORING			
McDonald Bros.	R. D. 1, South Fork	R. D. 1, Box 105, South Fork	2
FABRICATED METAL PRODUCTS, N. E. C.			
United States Steel Corp.	Johnstown	525 William Penn Pl., Pittsburgh 30	2,450
MACHINERY, EXCEPT ELECTRICAL			
MINING MACHINERY AND EQUIPMENT			
Flood City Brass & Electric Co.	Johnstown	Elder & Messenger Sts.	46
Raczey, Charles J.	Johnstown	322 Horner St.	4
Penn Machine Co.	Ferndale	106 Station St., Ferndale, Mail Johnstown	135
METALWORKING MACHINERY, EXCEPT MACHINE TOOLS			
National Bending Machinery Corp.	Ferndale	100 Station St., Johnstown	-
PUMPS, AIR AND GAS COMPRESSORS, AND PUMPING EQUIPMENT			
Emgio Products Corp.	Johnstown	116 DuPont St.	4
MACHINE SHOPS, JOBBING AND REPAIR			
Johnstown Welding Co.	Johnstown	91 Poplar St.	2
Reighard Machine Co.	R. D. 1, South Fork	R. D. 1, South Fork	3
Smith's Machine Shop	Johnstown	820 Wood St.	4
Stevens Mfg. Co.	Ebensburg	724 Cresson Rd.	58
ELECTRICAL MACHINERY, EQUIPMENT AND SUPPLIES			
ELECTRICAL INDUSTRIAL APPARATUS, N. E. C.			
General Electric Co.	Johnstown	1 River Rd., Schenectady, N. Y.	14
Universal Electric & Mfg. Co.	Johnstown	629 Elder St.	22
Westinghouse Electric Corp.	Johnstown	P. O. Box 2278, Pittsburgh 30	22
NONCURRENT CARRYING WIRING DEVICES			
Deltron Electric Products, Inc.	Ebensburg	626 N. Margaret St.	4
J A B Co., Inc.	Ebensburg	P. O. Box 205	3
CATHODE RAY PICTURE TUBES			
Lamont Television Tube Corp.	Cresson	1027 Front St.	42
TRANSPORTATION EQUIPMENT			
TRUCK AND BUS BODIES			
Mason & Holsinger Co.	Johnstown	Matthews & Short Sts.	4
Trabold Co.	Johnstown	P. O. Box 167	17
AIRCRAFT PARTS AND AUXILIARY EQUIPMENT, N. E. C.			
National-United States Radiator Corp.	Johnstown	221 Central Ave.	512
RAILROAD AND STREET CARS			
Bethlehem Steel Co. (Car Shop)	Johnstown	800 E. 3rd St., Bethlehem	2,629
Davis Brake Beam Co.	Johnstown	P. O. Box 982	86
PROFESSIONAL, SCIENTIFIC, AND CONTROLLING INSTRUMENTS			
ORTHOPEDIC, PROSTHETIC, AND SURGICAL APPLIANCES AND SUPPLIES			
Johnstown Orthopedic Co.	Johnstown	1009 Beckley Ave.	-
MISCELLANEOUS MANUFACTURING INDUSTRIES			
MARKING DEVICES			
DuRaney Rubber Stamp Works	Johnstown	Fisher Bldg., 536 Main St.	-
SIGNS AND ADVERTISING DISPLAYS			
Minahan Neon Signs	Lower Yoder Twp.	101 Norton Rd., Johnstown	5
O'Hara Sign & Paint Supply	Ebensburg	P. O. Box 82	2
Oppy Sign & Neon Co., Harry R.	Johnstown	97 Clinton St.	8

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