SOIL SURVEY OF POSEY COUNTY, INDIANA.

By HERBERT W. MAREAN.

LOCATION AND BOUNDARIES OF THE AREA.

Posey County is situated in the extreme southwestern corner of the State of Indiana. It is bounded on the south by the Ohio River, on the east by Vanderburg County, on the north by Gibson County, and

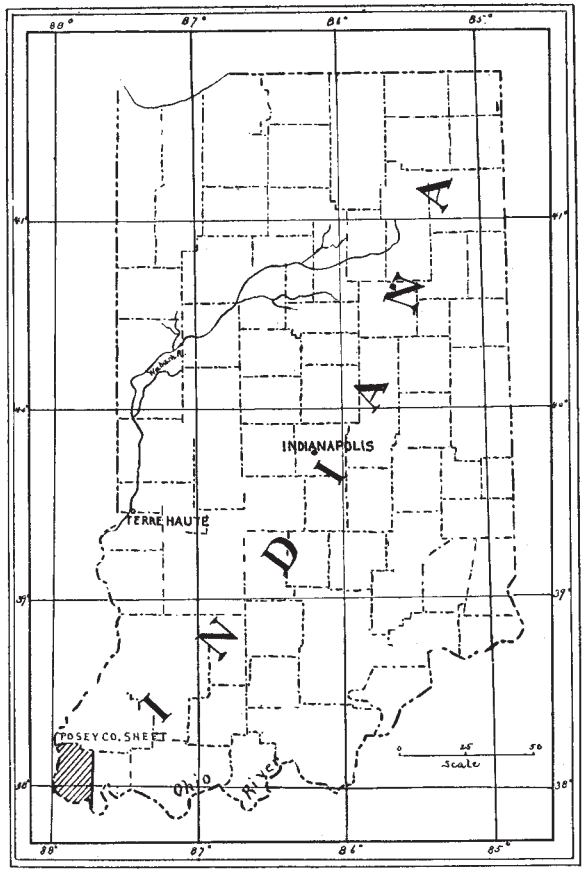

Fig. 12.—Sketch map showing area surveyed in Indiana.

along its entire western border flows the Wabash River. The county has a population of about 23,000, composed mostly of whites, though there is a small colored population along the southern boundary. Mount Vernon, the county seat, is situated in the middle southern part of the county, on the Ohio River. It has a population of about 5,000.

New Harmony and Poseyville rank next in size and importance. Good transportation facilities are afforded by the three lines of railroad which cross the county, while the Ohio River furnishes easy means of traffic by water. (See fig. 12.)

HISTORY OF SETTLEMENT AND AGRICULTURAL DEVELOPMENT.

Little is known of the conditions existing in this part of the country previously to the advent of the white settlers. There are evidences, however, that point to the fact that the territory was held by the Potawatomi and Wea Indians. The first settlers came from North Carolina and Tennessee in the year 1809. A number of German families from Pennsylvania also settled in the county, and to-day the German element constitutes a thrifty and prosperous community in the eastern part of the county. These pioneer farmers established their homes on the sand hills and ridges, where springs afforded an adequate supply of water, above the unhealthful influences of the swampy lowlands. Agriculture at this early day was necessarily primitive and conducted upon a small scale. A few acres of cleared land sufficed for the needs of the family, and rude log huts were their dwellings. Crude implements were employed in the cultivation of meager crops of corn and wheat. These were the principal products, with small quantities of cotton and hemp which served to furnish their clothing. Some of the best lands of the county were then in a swampy condition and have more recently been developed by improved methods of drainage. Conditions gradually improved, and through a recognition of the fertility of the soil and the advantages derived from reclaiming swamp lands, agriculture in the county was given an impetus which has lasted to the present time, and to-day Posey County is one of the richest farming districts in Indiana. At least two-thirds of the county has been cleared and put under cultivation since 1860. Prominent among those who took an active part in the development of the county and the administration of its affairs were the Rapps, the Owens, and Thomas Posey. The last mentioned was governor of the Territory of Indiana previously to its admission as a State, and Posey County was named in his honor. The county was organized in September, 1814, when, by an act of the legislature, Posey County was formed from parts of Gibson and Warrick counties. In December, 1818, Vanderburg was formed from parts of Gibson, Warrick, and Posey, when the present boundaries of the county were permanently fixed.

CLIMATE.

Mount Vernon, situated on the Ohio River, is the only station of the Weather Bureau in Posey County, but the records of temperature and rainfall kept by that station are quite fragmentary and no normals have been established. The nearest stations outside the county for which normals have been established are Evansville, situated on the

Ohio River and in about the same latitude as Mount Vernon, though 20 miles farther east, and Princeton, the county seat of Gibson County—the next county to Posey on the north—and about 15 miles north of the county line. The table given below contains data drawn from the records of these two stations. It is believed that they fairly represent the conditions of the area surveyed.

Normal monthly and annual temperature and precipitation.

Month.	Evansville.		Princeton.	
	Temperature.	Precipitation.	Temperature.	Precipitation.
	° *F.*	*Inches.*	° *F.*	*Inches.*
January	35.4	3.41	30.7	2.96
February	32.3	2.98	32.9	3.23
March	44.6	4.84	42.3	4.33
April	57.0	3.55	54.7	3.37
May	67.0	4.38	64.1	3.67
June	76.3	4.67	74.6	4.35
July	79.6	3.54	76.9	2.83
August	78.4	2.09	75.1	2.64
September	71.9	2.48	68.2	3.16
October	59.2	2.87	55.4	2.16
November	45.0	3.67	42.9	3.82
December	35.8	3.02	35.3	3.15
Year	56.8	41.50	54.4	39.67

The frost records kept by the station at Mount Vernon are more complete. The occurrences of the last killing frost in spring and first in fall during the last nine years are given in the following table:

Dates of killing frosts.

Year	Mount Vernon.		Year.	Mount Vernon.	
	Last in spring.	First in fall.		Last in spring.	First in fall.
1893	Mar. 29	Oct. 29	1899	Apr. 10	Sept. 27
1894	May 19	.....	1900	Apr. 12	Nov. 8
1895	May 14	Oct. 1	1901	Apr. 21	Oct. 17
1896	Apr. 4	Oct. 19	Average date	Apr. 17	Oct. 20
1897	Apr. 20	Oct. 29			
1898	Apr. 7	Oct. 27			

From the above table it appears that, at least along the Ohio River, there is an average period of one hundred and eighty-six days during which tender vegetation is safe from damage by freezing. This period is probably subject to local variation, due to differences of elevation or other physiographic features.

PHYSIOGRAPHY AND GEOLOGY.

Posey County lies in the point between the Ohio and Wabash rivers at their confluence, and these streams form the natural boundaries of the county, as well as of the State, on the south and west. The flood

plains of these two rivers form together one of the two main physical divisions into which the county naturally divides itself. The width of the river bottoms varies from a few rods to 4 or 5 miles. The topography of these bottoms is generally level; sometimes very gently undulating, with depressions or sloughs alternating with low ridges that are apt to be sandy in nature. Two or three low but distinct terraces can be observed in crossing from the banks of the stream to the bluff which separates the river bottoms from the upland. These terraces mark successive stages in the erosion of the river valley, and a change of soil type is likely to be encountered as one passes from a lower to a higher flood plain. Thus in Point Township the lower plain along the Ohio and Wabash rivers is occupied by the Yazoo clay, while in ascending a bluff 10 or 15 feet high we come upon the Guthrie clay, occupying an older flood plain formed by the combined action of the two rivers. So also in the region east of Mount Vernon the lower bottom is occupied by recent sediments, while rising 25 feet above this is a level area which is now covered by Waverly silt loam, but which was once formed as an alluvial plain of the Ohio. The original soil of this older bottom can be seen in deep stream cuts underlying the deposit of loess, from which, by weathering, the present soil has been derived.

The rise from the river bottoms to the uplands varies greatly in abruptness. Along the Wabash, especially where the bottom is narrow, the ascent takes the character of a steep bluff, rising in some instances to an altitude of 150 feet above the river. In the south, however, along the Ohio River, the slope from the bottoms to the upland is more gradual. Again, in the eastern border of the county a bold bluff separates the two physiographic features of the county.

The general character of the surface in the upland may be described as undulating. Low, rolling hills, descending with symmetrical curves to the broad stream valleys, with here and there a wooded slope, combine to form a scene most pleasing to the eye. The general slope of the country is toward the southwest. A large part of the upland is drained by Big Creek and its tributaries, emptying into the Wabash west of Upton. The Black River drains a narrow belt on the north, and in its lower course, where it joins with the broad Wabash Valley, it has cut off a portion of the upland which rises in an isolated mesa-like plateau 50 or 75 feet above the surrounding valley. A few minor streams in the south empty directly into the Ohio River.

Underlying the soils of the whole county are found rocks belonging to the Carboniferous or coal-bearing group. These rocks, which are usually shales or shaly sandstones, are met at an average depth of 20 feet. Deep road cuts sometimes reveal the disintegrating shale with loess lying unconformably above it. Along the river bluffs, near the eastern border of the county, outcrops of an impure limestone are to

be found. Inasmuch as all these rocks are covered by a deep coating, either of loess or river sediment, they have had no direct influence upon the formation of the soils. But there is an intimate relation between the soils of the county and Pleistocene geology. The invasion of the ice sheet which took place in the beginning of the Quaternary era reached to the southern part of Indiana, and traces of it are to be found in the northwestern corner of Posey County. Wells dug in the neighborhood of Poseyville pass through a stratum of granitic gravel which is unmistakably of glacial origin, and in other places in Robb and Harmony townships glacial till underlies the deposit of loess. Evidences of glacial action are also to be seen in the physiography of this section. The level-topped plateau previously mentioned, which lies just north of Griffin, is plainly a "glacial bench" formed by the glacier as it passed over this hill and planed off the overlying softer beds, leaving the nearly level surface of the harder strata to form an isolated table-land. Throughout the valley of the Black River, and to a less extent in the Wabash bottom, granitic and other crystalline gravels are found, indicating that these recent sediments may be composed largely of reworked glacial material.

SOILS.

The soils of Posey County present many interesting problems to the student of agriculture. Though not differing greatly in native fertility, they show an unusual degree of variation in their physical properties. In a limited area are to be found five or six distinct types and phases of soil, each with its own peculiar relation to the quality and quantity of crops.

The soils naturally divide themselves, according to the two main physiographic features, into the upland types and the river-bottom types. There are four upland types: Miami silt loam, Waverly silt loam, Miami sand, and Memphis silt loam. The river-bottom types, including soils occurring on the level flood plains of the Ohio, Wabash, and Black rivers, are seven in number: Yazoo clay, Guthrie clay, Yazoo loam, Miami fine sandy loam, Yazoo sandy loam, Miami sandy loam, and Griffin clay.

The following table shows the extent of each of the several soil types:

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Miami silt loam	149,376	60.3	Miami sand	7,680	3.1
Yazoo clay	30,720	12.4	Miami sandy loam	3,584	1.4
Waverly silt loam	16,384	6.6	Miami fine sandy loam	3,456	1.4
Guthrie clay	14,592	5.9	Yazoo sandy loam	2,752	1.1
Memphis silt loam	9,408	3.8	Griffin clay	1,600	.6
Yazoo loam	8,320	3.4	Total	247,872	

MIAMI SILT LOAM.

This is a soil of remarkable uniformity. Over the large area which it covers it maintains a nearly constant character with only minor variations due to the physical features of the land. The soil is typical of a silt loam. Fine sand is present to a considerable degree, but the percentage of coarse sand and clay is very small. When wet it possesses a certain degree of plasticity, but when dry it is open and friable, crumbling into a loamy mass under cultivation. The surface soil is light gray or reddish yellow. The more open portion of the soil, which constitutes the soil proper, extends to a depth of about 9 inches. Lying below this is found a more plastic silt loam of a light-red or yellow color, and this is in turn underlain at 14 or 15 inches by rather heavy, tenacious silt loam of a claylike nature. This heavier subsoil contains more clay particles and less of the fine sand groups, but, as will be seen by the accompanying mechanical analyses, silt still predominates. The subsoil in some cases descends with little variation to a depth of 10 or 20 feet, but as a rule deep cuts reveal a change occurring at about 5 feet below the surface. At this depth the red claylike material grades into an incoherent yellow silt, which in some cases shows traces of stratification.

The Miami silt loam is by far the most extensive soil in Posey County, covering more than half the total area. It is found in every part of the upland region, where it occupies all the various features of topography. In general, however, the country over which it extends presents a moderately rolling surface. Little or none can be called rough or broken, although along the eastern border the aspect of the country approaches this condition. In some localities the soil lies almost perfectly level, and here is found a phase varying somewhat from the type. The surface is light gray, and mixed with the soil are small nodules of concretionary iron oxide. The soil in these places is deeper than on the ridges, and the subsoil is generally lighter in shade, indicating a lower degree of oxidation of the iron salts.

In the southwestern part of the county, where this type borders the Guthrie clay, and also in the region west of Mount Vernon, a phase of the Miami silt loam is found which is deserving of attention. The soil here is rather mixed; small, sandy patches are found occupying low ridges or knolls, and where they are sufficiently extensive are indicated on the soil map as areas of another type. Other patches are found occupying little depressions, and here the soil is of a whitish color with a mottled claylike subsoil. The phase has arisen as a result of wet conditions that have prevailed, consequent upon the low-lying, level position of the soil.

The origin of the Miami silt loam explains its uniformity of character and its wide distribution. It is composed of material known to geologists as loess. This material is supposed to be of glacial origin, brought down by the ice sheet in the great Ice Age of North America.

Though there is little difference of opinion as to its origin, the manner in which it was deposited is still a matter of controversy. Some believe it to have been deposited in the shallow waters of a great inland sea, which they suppose to have covered a vast area in the Mississippi Valley at that period. Others think the deposits should be attributed to æolian agencies; that the winds blowing across the ice covered with earthy débris and over the deposits of till, unprotected by vegetation, bore away the finer particles of dust and dropped them over the region farther south.

It is easy to see that a soil derived from so wide a source will possess much of the natural fertility that we find in alluvial soils. It is not apt to lack any of the essential ingredients of plant food, and in its physical properties it will be well adapted to widely varying agricultural products. Such is the case with the Miami silt loam. Wherever found it is a fertile soil, producing good yields of wheat, corn, and clover, and timothy hay—the staple products—together with some fruit and garden vegetables that are raised for home use. The average yield of wheat is 20 bushels per acre and of corn 35 or 40 bushels, while in favorable seasons 25 or 30 bushels of wheat and 50 bushels of corn are produced per acre. Some strawberries and other small fruits are grown in the vicinity of the larger towns and yield good returns. A number of Kieffer pear orchards are found on this soil, but apples seem to be the fruit best of all suited to the soil and climatic conditions. (See Pl. XXV.)

The following table gives mechanical analyses of the soil and subsoil of this type:

Mechanical analyses of Miami silt loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
7122	3 miles W. of Mount Vernon.	Silty loam, 0 to 8 inches.	1.49	0.00	0.44	0.40	0.78	3.76	85.20	8.62
7120	1 mile N. of Mount Vernon.	Coarse silty loam, 0 to 8 inches.	2.47	.00	.14	.08	.36	3.86	81.82	13.68
7124	7 miles E. of Mount Vernon.	Silty loam, 0 to 7 inches.	1.90	.56	2.10	1.56	4.30	10.90	62.28	17.36
7121	Subsoil of 7120.....	Heavy silty loam, 8 to 36 inches.	.34	.00	.10	.12	.50	5.92	84.16	9.10
7123	Subsoil of 7122.....	.....do.....	.49	Tr.	.32	.18	.42	5.78	70.34	22.26
7125	Subsoil of 7124.....	Heavy silty loam, 7 to 36 inches.	.47	.30	1.58	1.12	2.46	6.20	54.68	33.30

WAVERLY SILT LOAM.

The Waverly silt loam is the soil locally known as the "black bottoms." The soil is a mellow, black loam, plastic when wet but loamy

and easily tilled. It becomes heavier at a depth of 7 or 8 inches, and the black loam is underlain at a depth of from 10 to 20 inches by a yellowish or drab clay loam, plastic and tenacious. This subsoil contains more silt than true clay, but it possesses the characteristics of a clay loam. The black color of the soil is due to the presence of organic matter, which also gives the soil a very desirable tilth when cultivated. In some instances there is little change in the appearance of the soil to a depth of 20 inches or more.

The total area of Waverly silt loam is comparatively small, but it ranks third in agricultural importance. It covers in all about 25.6 square miles, or 16,384 acres. It occurs in nearly all parts of the county, but the principal areas occur in the neighborhood of Poseyville, at the northern border of the county, and in the vicinity of Mount Vernon in the south. Small, scattering areas occur throughout the upland region, and there are a few patches along the bottoms of the Wabash and Black rivers. In the Poseyville and Mount Vernon areas, where it is most typically developed, the soil occupies level or gently sloping topography. Along the Wabash bottoms it is sometimes found as a gently sloping talus at the foot of the river bluffs, and here it is more sandy than the typical soil. In other localities it occurs in minor depressions, where the poor drainage has given rise to marshy conditions and allowed considerable amounts of humus to accumulate. A small area in the valley of the Black River differs from the type in being of a heavier and more claylike character. This phase possesses a very heavy, tenacious, drab clay subsoil and is commonly characterized by a slight admixture of coarse sand and rounded gravel in the soil.

There is an intimate relation between the origin, physiography, and drainage of the Waverly silt loam. With the possible exception of the small area found in the Black River Valley, which may be in part alluvial, the soil is of loess material. In the Poseyville area it lies in the broad, level upland valleys that resemble old lake floors. The material forming the mineral portion of the soil was deposited at the same time and probably in the same manner as the loess of the surrounding uplands. But the low-lying areas, now occupied by the black soil, were covered by shallow, stagnant water, or by bogs and swamps, and fallen limbs and leaves of trees and decaying swamp vegetation added to the soil the supply of humus which gives it the black color and loamy tilth which it now possesses. Silt was also sifted in by washing from the uplands while this swampy condition prevailed, for the organic matter did not accumulate as a layer of peat, but was thoroughly mixed with soil particles. Subsequently, through natural process of erosion and by artificial means, these lands have been drained and to-day form one of the most highly valued soils of the area.

Considerable ditching and tile drainage is practiced in areas of this soil, and always with good results.

In the southern part of the area, east of Mount Vernon, the soil also occupies a level position. Here it lies upon an old Ohio River terrace, where a coating of loess covers the clay loam of the ancient river flood plain to a depth of 20 feet or more. The southern boundary of this area is a bluff with a descent of 25 to 30 feet to the present river bottom. As there is no barrier which might have held back the surface water from draining into the Ohio River, the imperfect drainage which produced marshy conditions must have been due to level topography and the texture of the soil. Upon this old terrace the soil grades by degrees into the Miami silt loam, and no sharply defined boundary between the two types is found.

In agricultural importance the Waverly silt loam stands next to the Yazoo clay. It is well adapted to all the crops now grown in the county. The average yield of corn is 50 bushels per acre; of wheat, 25 bushels; while clover crops yielding from 1½ to 2 tons of hay per acre are cut, with a second cutting for seed. Some fruit and vegetables are grown, but only on a limited scale and for home consumption. The soil is well adapted to the production of timothy hay, and yields of from 1 ton to 1½ tons per acre are average crops.

The texture of this soil is shown by the mechanical analyses given in the following table:

Mechanical analyses of Waverly silt loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
7132	2 miles E. of Mount Vernon.	Silty loam, 0 to 10 inches.	3.56	0.10	0.44	0.24	2.10	10.68	74.78	11.48
7134	4 miles E. of Mount Vernon.	Loam, 0 to 12 inches.	2.77	.20	.50	.24	1.14	5.78	78.44	13.68
7133	Subsoil of 7132.....	Sticky silty loam, 10 to 36 inches.	1.61	.12	.52	1.00	4.18	8.56	71.28	14.30
7135	Subsoil of 7134.....	Clay loam, 12 to 36 inches.	1.35	.40	.60	.30	.88	4.98	78.38	14.36

MEMPHIS SILT LOAM.

The Memphis silt loam is an upland type, sometimes called the "gray bottom," or made land. The soil is a brown or yellowish-gray silt loam 10 or 12 inches in depth, underlain by silt of a mealy texture. It differs in texture from the other silt soils of the area in that it lacks the plasticity that they usually possess, resembling in this respect very fine

sand. As a rule, the soil varies but little in texture to a depth of 3 or 4 feet, although the upper foot is usually of a more loamy nature, due to the effects of cultivation.

This soil is found occupying the narrower stream valleys in the upland portion of Posey County. No large areas of it occur, but it extends in narrow strips, from 200 to 500 yards wide, along the edges of the upland streams. The most extensive of these belts is that along the Big Creek bottoms in the eastern part of the county. Other narrower belts are found throughout the territory occupied by Miami silt loam, and occasionally these extend for a short distance into the river lowlands.

The soil lies in a nearly level position, forming the flood plain of the stream to whose agency it owes its origin. These flood plains are subject to frequent overflow, and the land is generally inclined to be wet and in need of drainage. Where the bottom is narrow, a common method of drainage is employed in which the stream channel is deepened and straightened. If the flood plain is broader, a more adequate method is to lead lateral lines of tile into this central ditch.

As we should expect, this soil, derived by stream sedimentation from fertile upland soils, is a strong and productive type. Corn is the crop chiefly grown and the one to which the conditions are best adapted. The yields average about 50 bushels per acre. The low-lying position of the soil and its favorable texture give to it the desirable property of resisting drought. In a country where late droughts are liable to reduce the corn yield this characteristic greatly enhances the value of the soil. The Memphis silt loam is also an excellent grass soil, and wheat does fairly well upon it. Sorghum is raised, but only to a limited extent, for the production of sirup for domestic use, and though it does well on this and other soils, it can not compete with corn and grass.

MIAMI SAND.

The Miami sand is found almost exclusively in the northern and western parts of Posey County. It usually lies in strips from a quarter of a mile to a mile broad along the bluffs facing the Black and Wabash rivers. The foot of the bluff almost invariably forms one boundary, and the type is here bordered by the Yazoo loam, Yazoo sandy loam, or some other river-bottom type. The upland boundary, however, is less distinctly marked. As a rule the soil grades into the Miami silt loam of the upland by slow degrees, and shows no abrupt change of character to mark a definite boundary. In the district just north of Poseyville it extends down and off the bluff into the valley, where it occupies gently undulating topography. But at this point bluff and valley are not as distinct as they are along the Wabash lower

down, and the change is little more than a gradual descent from high, rolling upland to low, undulating valley.

The character of the soil is somewhat variable. In typical areas it is found to be a medium sand, somewhat loamy, though containing little silt and clay in the soil. This sand is of a dark reddish-brown color, or light gray where it lies more level and has been bleached by the action of the elements. The particles are composed chiefly of rounded quartz grains showing the action of water. There is considerable admixture of heavier material in the subsoil, which becomes somewhat sticky at a depth of from 12 to 14 inches and which at 3 feet is a sticky orange sand, sufficiently mixed with clay to give it a plastic character.

In some localities this soil assumes the character of a sandy loam of finer texture and more coherency than the typical soil. On the other hand, a few areas occur where to a depth of 5 or 6 feet at least the soil is an orange-red sand, and in places where a road cut affords a view of the deep subsoil traces of an irregular stratification are seen.

The soil is well drained. It is so perfectly drained in many cases as to be ill adapted to general farm crops.

It is difficult to say just what has been the origin and method of formation of the Miami sand. It is thought by some to be of loess origin, i. e., to have been transported to its present position at the same time and by similar means as the loess soils of the upland lying to the east and south of it. The roundness of its particles, as well as the lines of stratification in the subsoil, would lead to the conclusion that this material was deposited in water. Others believe it to be wind-blown sand and to be of a later geological age than the loess.

Miami sand is the chief watermelon soil of the county. Its open, leachy texture makes it unreliable for general farm crops, and until melon production was introduced this land was considered very inferior and could be purchased at a low price. But the recognition of its adaptability to melon production has greatly enhanced its value. Watermelons and cantaloupes are raised in large quantities and with good profit. (See Pl. XXVI.) Wheat does very well when it follows melons, but corn, which matures late, is apt to suffer from dry weather. Stock peas often find a place in the system of rotation, and are better adapted to the sandy condition than clover, while they perform a similar office of fertilization. Alfalfa might be profitably introduced on this soil. It is suggested that peaches, which are profitably grown on a similar soil in Michigan, might do well on the Miami sand.

The following analyses show the texture of the Miami sand:

Mechanical analyses of Miami sand.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
7128	3 miles NW. of Poseyville.	Medium sand, 0 to 8 inches.	1.08	0.00	2.34	23.04	52.60	8.60	8.88	3.68
7126	4 miles W. of Mount Vernon.	Medium sandy loam, 0 to 7 inches.	.60	.00	2.54	20.50	61.54	4.78	6.82	4.12
7127	Subsoil of 7126.....	Medium sand, 7 to 36 inches.	.22	.00	2.04	25.70	50.54	3.78	13.78	4.10
7129	Subsoil of 7128.....	Medium sand, 8 to 36 inches.	.52	.14	2.74	21.32	54.70	7.36	8.84	4.74

MIAMI SANDY LOAM.

The Miami sandy loam is of limited extent, and consequently of small agricultural importance. It possesses some characteristics, however, which distinguish it as a separate type and give it special adaptability to certain products. The soil varies from a light-brown to black sandy loam, composed of well-rounded, medium sand mixed with heavier material which gives it considerable coherency. Even where the percentage of clay is small the soil possesses a high degree of compactness, which is one of its characteristic features. The soil becomes heavier at a depth of about 10 inches, and, as is the case with most of the Wabash bottom soils, there is considerable fine rounded gravel present in the subsoil. The sandy nature of the soil prevails to a depth of about 3 feet, but below this the deep subsoil differs little from the subsoil of the Yazoo loam, being a rather heavy clay loam mixed with gravel.

The total area of this type is about 0.6 square mile, most of which lies in the Wabash and the Black River bottoms. The principal areas of it occur in tracts of from 400 or 500 to 1,000 acres each. Several of these areas are found on the river flats west of Mount Vernon; others are found north of New Harmony and on Cutoff Island, and still another is found bordering the Black River, just on the northern edge of the county.

Although the land lies almost perfectly level, the soil is generally well drained. In fact, where the sand content exceeds the average the soil is apt to be too well drained for most crops. Its location and physiography, as well as its composition, indicate that the derivation is alluvial. It is hard to say just what cause should be assigned to the peculiar black color which it usually possesses, but this

is probably due to the admixture of organic material with the heavier portion of the soil, for the sand grains seem to be largely of quartz.

In its crop relations the Miami sandy loam shows a great deal of diversity, and it is hard to assign the reasons for this variation. In some localities where it is devoted to wheat and corn it gives large yields of these crops. Again, the productiveness may fall far below the average for the county. There seems to be little difference in the physical properties of the soil in these two cases, although the more fertile areas contain a slightly larger percentage of clay. In a few cases melons are grown on this soil, and it is thought that larger areas might well be devoted to this industry, especially where the general farm crops do not thrive.

The texture of this soil is shown by the following mechanical analyses:

Mechanical analyses of Miami sandy loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
7112	2¾ miles NE. of New Harmony.	Black sandy loam, 0 to 10 inches.	1.54	0.00	1.82	10.80	36.86	12.32	26.74	11.24
7113	Subsoil of 7112.....	Medium sand and clay, 10 to 36 inches.	1.42	.01	1.47	11.78	41.30	12.04	20.58	12.84

MIAMI FINE SANDY LOAM.

Miami fine sandy loam is the name given to one of the river-bottom soils. It is a red-brown or yellowish sandy loam of medium texture, but varies considerably in the percentage of clay it contains. A typical profile shows a mellow sandy loam, 10 inches in depth, overlying red sand of medium texture. Sometimes clay loam is met at a depth varying from 1 to 4 feet. Often the soil is a loose, incoherent sand, resembling beach sand, and in this phase is at times devoid of vegetation.

The soil occurs in low ridges, usually very narrow, immediately bordering upon the Ohio and Wabash rivers. Other patches of it occur throughout the river lowlands, and bordering the lower course of the Black River there is an area of considerable extent. In this locality the soil varies considerably and departs somewhat from the typical section. A single sample is less uniform in texture; there is some coarse sand and fine gravel, and the soil itself possesses a degree of compactness not usually found in this type.

The areas of this type are as a rule higher than the soils which lie adjacent to them. These sands are the product of alluvial deposition and have been laid down during the inundations which frequently occur. As long as the swollen stream is confined within its narrow channel the flow is so swift that the coarse particles are held in suspension, but as soon as the overflow takes place and the water, spreading out over the broad, level bottoms, is retarded in its rate of flow, the sediment is dropped, the sand being the first to be laid down. Farther from the banks, where the flow is still more sluggish, silt and clay particles are deposited, forming the clay-loam soils.

Nearly all of this soil is under cultivation, although there are some areas of nearly pure sand upon which no crops are grown. Corn is the principal crop, and where there is a considerable proportion of clay in the soil an average yield of from 40 to 45 bushels per acre is secured. Watermelons are also successfully grown on many small patches too sandy for other crops. Fair yields of wheat are secured where the soil lies above high-water mark, and garden vegetables, though not extensively grown, are successful crops on this type of soil.

The texture of typical samples of the soil and subsoil of this soil type is shown in the following table:

Mechanical analyses of Miami fine sandy loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
7130	7 miles E. of Mount Vernon.	Medium sandy loam, 0 to 7 inches.	0.93	0.00	0.24	0.34	41.24	35.72	14.82	7.78
7131	Subsoil of 7130.....	Medium fine, sandy loam, 7 to 36 inches.	1.10	.00	.20	.14	31.34	31.42	25.32	11.22

YAZOO SANDY LOAM.

The Yazoo sandy loam is an important type of soil, covering in all nearly 5 square miles, or 2,752 acres. It is found chiefly in the higher parts of the Wabash River bottoms near New Harmony. As a rule, the type occurs at the foot of the sandy bluffs, from which it is often separated by a narrow talus of Waverly silt loam. Its derivation is somewhat obscure, but it is probably composed of material washed down from the sandy bluffs above and mingled with finer material of the bottoms. It occupies higher ground than the Yazoo loam, which it usually borders on the river-ward side, and as a rule it is separated from this type by a low terrace.

This soil is a fine sandy loam, resembling the Yazoo loam in surface appearance. The texture varies somewhat. In some cases it is a medium sandy soil with little coherency and with a subsoil of fine yellow sand, but typically the soil to a depth of 12 inches is a fine sandy loam, becoming more cohesive and sticky with silt and clay in the subsoil. At a depth of about 3 feet the clay predominates, giving the soil a desirable moisture-holding character.

For corn and wheat, the crops generally grown, this soil is less valuable than the Yazoo loam. The more sandy portions are, however, very well adapted to melon culture and are beginning to be used for this industry. A patch of watermelons was seen which produced about 4 carloads of melons and yielded a money return of about $40 per acre. More of this soil might profitably be devoted to this paying industry.

The texture of this soil type is shown by the following mechanical analyses:

Mechanical analyses of Yazoo sandy loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
7116	2 miles E. of New Harmony.	Fine sandy loam, 0 to 8 inches.	1.59	0.14	1.48	2.46	10.76	7.86	71.76	5.52
7118	1 mile E. of New Harmony.	.....do	2.34	1.28	10.04	14.76	20.02	5.60	36.84	11.12
7117	Subsoil of 7116....	Sand and clay, 8 to 36 inches.	.73	.14	1.12	1.64	6.34	5.76	72.86	12.10
7119	Subsoil of 7118....	Fine sand and clay, 8 to 36 inches.	.84	.60	7.96	14.02	17.12	4.54	38.38	17.38

YAZOO LOAM.

The Yazoo loam is one of the Wabash River bottom soils. The soil is a brown loam, composed of a mixture of fine sand, silt, and clay, with a good tilth, due to the presence of considerable organic matter. The surface appearance varies considerably, and this variation indicates different phases of the soil. In some localities it is light gray, almost white, when dry. This phase often contains some medium-sized, rounded gravel. The soil here is inferior in fertility to the other phases. In the other extreme the soil presents a dark-brown or black appearance. These black areas occur as small patches within the district over which the type extends, and but for their limited extent might have been recognized as a distinct soil type. This phase occupies minor depressions and owes its peculiar characteristics to the wet conditions which at one time existed in these places. It is generally true that where a soil occupies low land and is continually wet

it is found to be of a heavier type and to contain more humus than the soil about it, although it may originally have been derived from the same source. Such is the case with this phase of the Yazoo loam.

A typical profile of the soil and subsoil of the Yazoo loam shows a brown loam containing a good deal of fine sand, with an average depth of 8 inches. Lying below this is a loam, somewhat heavier and of a light-brown or orange-yellow color, which contains some coarse sand and waterworn gravel. This, at a depth of about 15 inches, is underlain by a heavier clay loam to a depth of 36 inches or more. Gravel is sometimes present to the amount of 10 or 15 per cent of the entire soil, and in one or two instances stream cuts show a stratum of gravel occurring at a depth of 10 or 15 feet. Those who have engaged in well digging in the neighborhood say that it is quite common to find this layer of gravel in the deep subsoil. This stratum has an important effect on the drainage of the soil, furnishing a natural outlet for the surplus ground waters.

The Yazoo loam is of comparatively limited extent, but of considerable agricultural importance. It covers a total area of 8,320 acres, lying wholly within the Wabash and Lower Black River valleys. It occupies the nearly level flood plain of these streams, to whose agency it owes its origin. The presence of granite and other crystalline pebbles in the soil suggests that the material of which it is formed may be in part reworked glacial drift.

The Yazoo loam is the principal wheat soil of the Wabash bottoms. It is eminently adapted to the growing of wheat, producing grain of excellent quality, with an average yield of 25 bushels per acre and occasional yields of 40 bushels on limited areas where the soil is black and rich. Corn varies a good deal in yield, being more dependent upon the season than wheat, but the average yield is good. Clover and timothy are the hay crops generally raised, and these about complete the list of products at present grown on the Yazoo loam.

The following table of mechanical analyses shows the texture of this soil:

Mechanical analyses of Yazoo loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
7114	1¼ miles SW. of Griffin.	Sandy loam, 0 to 8 inches.	1.49	1.02	8.04	10.78	10.50	4.86	50.98	13.40
7115	Subsoil of 7114.....	Clay loam with sand and gravel, 8 to 36 inches.	.75	.74	6.92	8.80	8.58	3.78	44.52	26.66

YAZOO CLAY.

Next in extent and importance to the Miami silt loam comes the Yazoo clay. The soil to a depth of 7 or 8 inches is a brown clay loam, fairly friable when not too moist and usually containing a small amount of sand, which, together with the intermingled organic material, gives it a desirable tilth. The subsoil differs little from the soil except that it has a more compact structure. This clay is often underlain, at a depth varying all the way from 5 to 20 feet, by sand or sandy clay.

This soil forms the principal alluvial soil of the Wabash and Ohio river valleys. Belts of it are found stretching all along the river boundaries of the county, with occasional breaks where the upland bluffs approach near to the rivers. The belts of Yazoo clay are from a few rods to 3 or 4 miles broad, and where there are other types of soil upon the flats this type occupies the lowest position, forming a flood plain that is in most cases subject to annual overflow. The physiography is that which usually characterizes a river flood plain. The land lies nearly level, with a gentle inclination in the landward direction. There are numerous depressions, bayous, sloughs, and narrow ponds running in a direction generally parallel to the course of the river. Along the bluff that separates the lower bottoms from the upland or from a higher terrace it is usual to find a marshy strip of land or cypress bayou. Occasionally the Yazoo clay is found occupying these higher terraces above the reach of all but the highest floods. Such an area is found along the Wabash River west of the town of Upton. Here the soil departs somewhat from a strict conformity to the typical character. Slight depressions running up and down the valley give the land a gently rolling appearance. In these depressions the soil is black from the presence of humus, while on the low, narrow ridges that separate these depressions is often found a coating of coarse sand 12 inches or more in thickness. These sandy areas are not indicated on the soil map, because they are so limited in extent that they could not be accurately drawn on so small a scale.

As already stated, this soil is a product of alluvial deposition. The forces that have operated in its formation are still active. Much of it is subject to annual overflow, and each flood leaves a coating of sediment or washes away a part of that already deposited, and so the surface soil is constantly renewed and altered. Thus is formed a strong, fertile soil capable of producing good yields of various crops. On account of the danger from overflow, however, it is planted almost exclusively to corn. For the most part the land is owned or rented by farmers having farms in the upland district, who remain on the bottoms only long enough to cultivate and harvest this crop. In those areas where Yazoo clay occupies a higher terrace or "second bottom" winter wheat and other crops are planted, and do remarkably well. Timothy grass and clover average 1½ to 2 tons per acre, and a yield of

from 25 to 30 bushels of wheat is commonly obtained. Corn on the lower bottoms produces with comparative regularity, a fair average yield being 45 bushels per acre. From its physiographic position and its natural water-holding property the soil is able to resist drought better than the less favored soils. Corn planted late in the sloughs and draws in which the overflow water remains longest will mature and give a generous yield, while late corn on the upland is almost sure to suffer from the summer drought. The pecan is a natural forest growth of this soil, and many of the nuts are annually gathered for the market. Several carefully kept orchards were seen which yield good returns to their owners.

The texture of the soil and subsoil of this type is shown by the following mechanical analyses:

Mechanical analyses of Yazoo clay.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
7106	1 mile E. of Mount Vernon.	Clay loam, 0 to 7 inches.	2.42	0.00	0.00	0.02	0.30	4.50	66.76	28.42
7108	1½ miles E. of Mount Vernon.	.....do.....	2.60	.00	.02	.02	.06	1.50	70.04	28.46
7107	Subsoil of 7108.....	Clay loam, 7 to 36 inches.	2.27	.00	.01	.02	.14	3.06	66.44	30.32
7109	.....do.....	.....do.....	2.27	.00	.01	.02	.04	.98	67.32	30.90

GRIFFIN CLAY.

This is an unimportant soil type that occupies an area of only about 1,600 acres in the valley of the Black River, on the northern edge of the county. Larger areas are supposed to occur in the county adjoining this one to the north. It is entirely different in character from any of the other soils occurring in this area. In its virgin state it is found to be a very compact soil, composed of a mixture of medium to fine gravel, coarse sand, rounded by water action, and clay. The clay is dark brown or mottled in color, very stiff and waxy, and difficult to work. In some areas the gravel is entirely absent, and where this is the case we have a very heavy clay of a tough and waxy character. Taking the whole area into consideration, there is an average gravel content of about 10 per cent, while at times it is as high as 40 per cent.

This soil occupies the broad, level floor of the Black River Valley, forming a part of the river flood plain. Occupying as it does the lowest portions of the river valley and being of a close, impervious

nature, it would seem to be poorly drained. While this is to a certain extent true, and drainage where employed is beneficial, still most of that which is at present under cultivation is undrained, except for occasional open ditches. The explanation of this may be found in the fact that the soil is generally underlain by a stratum of gravel at a depth of from 5 to 10 feet, which forms a natural drain.

The soil is alluvial in its origin, and the presence of so much gravel may be due to the reworking of glacial material. Pebbles of granite and other foreign rocks point to a glacial origin for the deposits along the river banks.

A large portion of this soil is covered by forest growth, but these are being rapidly cleared and the country is being opened up to cultivation. Corn is the chief product, and considerable wheat and some oats are grown. Large yields are reported. Wheat produced in the season of 1902 in one instance 38 bushels per acre, though this is above the average. Corn will yield from 50 to 60 bushels per acre. It is thus easily seen that though the soil is at first exceedingly difficult to cultivate, still when good cultural methods have been employed for a few years and the soil has become more friable and loamy large returns may be realized.

The following table gives mechanical analyses of typical samples of this soil.

Mechanical analyses of Griffin clay.

[Fine earth.]

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
7110	3 miles NE. of Griffin.	Compact gravelly clay, 0 to 6 inches.	2.17	1.92	12.34	18.62	12.94	3.76	25.46	24.64
7111	Subsoil of 7110.....	Gravelly clay and coarse sand, 6 to 36 inches.	.90	1.14	14.68	21.20	13.32	3.18	20.24	26.28

GUTHRIE CLAY.

The Guthrie clay is a soil of somewhat variable texture. A typical profile shows a light-gray or whitish silty loam, 5 or 6 inches deep, underlain by a stiff clay subsoil usually mottled with yellow and white. The surface presents a whitish or ashy appearance and when dry is very hard and compact, though the soil itself is not very plastic or tenacious when wet. Silt forms the largest part of the material, and mixed with it are varying amounts of coarse sand and iron concretions

about the size of buckshot or larger. In areas bordering the Wabash River some coarse sand and fine rounded gravel is present, but not in sufficient quantities to affect, in any marked degree, the agricultural value of the soil.

The Guthrie clay occurs in but one locality. It is found in the southwestern corner of the county, between the Wabash and Ohio rivers, where it occupies an area of 22.8 square miles, most of which lies in Point Township. In this area are found small, isolated patches of Miami sandy loam, Yazoo sandy loam, and Miami silt loam, but the Guthrie clay itself is never met in small detached areas. Its surface appearance is one of the characteristic features of this soil, from which it has derived the local designation of "the woods flats." The land lies almost perfectly level and is for the most part covered with forest. A few low ridges occur, but these are usually occupied by some other type of soil. From the topography it is evident that the soil occupies an old Ohio-Wabash flood plain that the deeper cutting of the stream valley has left above ordinary high water. From the present river-flood plains, which are occupied by the Yazoo clay, this older terrace is separated by a low bluff from 10 to 20 feet in height. At times of very high water, which may occur once in ten or fifteen years, the river floods rise above this bluff and cover the broad area of the Guthrie clay, leaving only the ridges above water. Such inundations have left their marks in scattered patches of sand and water-washed gravel. It was at first thought that the origin of the soil was by deposition from these flood waters, but on closer study it was found that although the soil has been considerably added to and altered in character by these inundations, yet it is not strictly an alluvial soil. It is supposed that the soil was derived, like the Miami silt loam, from the loess and that its present character is due to physical and chemical changes that have taken place since its accumulation ages ago. The changes are those which commonly result from low-lying, level topography, prevailingly poor drainage, and consequent wet conditions.

The soil is one of the least valuable of all the Posey County types, and this fact seems to be chiefly due to its poor drainage. Only in very dry seasons does it produce a fair yield of corn. Wheat produces well only in favorable seasons. Some underdrainage has been done, with good results, but the present need is for large outlet ditches into which smaller ditches and tile lines might be led. The larger portion of this soil is now wooded, but with a good system of ditches and tile drainage there is reason to suppose that much of the area may be converted into productive land, adapted to grain and grass. Application of lime, it is thought, would improve the tilth and increase the productiveness of this soil.

At present grass and small grain are the crops to which the soil is best adapted. Wheat averages about 15 bushels per acre and timothy

hay from a ton to a ton and a half. Clover is said to do well and to produce an especially good crop of seed. These yields, of course, refer to those parts of the area that have been under cultivation for some time and have lost to some degree the unfavorable character of the soil in its original state.

Mechanical analyses of this soil are given in the following table:

Mechanical analyses of Guthrie clay.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
7136	Point Township....	Clay, 0 to 7 inches .	1.73	0.90	2.78	1.48	6.46	7.78	54.20	25.86
7138	7 miles SW. of Mount Vernon.	.....do	2.13	1.76	3.50	1.96	2.42	2.58	51.74	36.16
7137	Subsoil of 7136.....	Clay, 7 to 36 inches .	.89	1.24	2.22	.96	5.12	5.82	55.50	29.18
7139	Subsoil of 7138.....	.....do	.92	2.80	3.44	1.72	2.02	2.40	48.46	38.48

AGRICULTURAL CONDITIONS.

Posey County is a prosperous agricultural community. On the whole, the farming classes are a progressive people. This is evident from the appearance of homes, farms, and farm equipments throughout the county. There is a general recognition of the fact that well-constructed barns and sheds for the protection of farming implements pay in the end, and farmers make an effort to have as substantial a shelter for their stock as possible. The typical dwelling is a two-story frame building. Many of the dwellings have modern conveniences and comforts, and in a large number of cases windmills furnish an adequate water supply for house and stable purposes.

The county is divided according to the rectangular system, and the roads conform in general to section lines. The farms vary in size from only a few acres to as many as 3,000, the average being about 65 acres. As the price of land varies according to location and character of the soil, a correct estimate could hardly be made of the value of land in the county, but much of it can not be bought for less than $100 per acre. In general the farms are managed by the owners. Proprietors of larger tracts sometimes subdivide their lands and rent small holdings to tenants, who pay rent in a share of the produce or less frequently in money.

White labor is employed exclusively, and this is of an efficient character. In many cases where the farms are small no regular hired hands are employed except at times of special pressure, such as wheat

harvesting, etc. At other times the farmer is able with the help of his boys to carry on the regular work of the farm.

The staple crops of the county are corn, wheat, hay, and melons. The upland, which is best adapted to the cultivation of wheat, yields an average of 20 bushels per acre, and of corn about 35 bushels, while from 1½ to 3 tons of clover and timothy hay are cut to the acre. By far the greater amount of corn is grown on the soils of the Ohio and Wabash bottoms, and in some cases they average as much as 65 bushels to the acre. Soils admirably adapted to the production of wheat and grass are to be found among these river-bottom types. The sandy hills and ridges which extend in a semicircle about the county are made use of for melon growing. The melon industry is one for which the county is famous. The quality of the watermelons grown on the sandy soils is very superior, and they find a ready market in Cleveland, Indianapolis, Chicago, and even as far east as Pittsburg and Buffalo. Later in the season shipments are made to New Orleans. Poseyville is the principal shipping point, and 300 or 400 carloads are shipped annually from this place to all points in the Middle West. Cantaloupes also thrive on the sandy soils, and their cultivation is a very profitable industry, although they are not so easily handled as the watermelons. Melon growing has been carried on in this region for many years. The first shipments were made about forty years ago. But though not a new one, the industry is still growing and is capable of much more extensive development. The Miami sand and many areas of the Miami sandy loam and Yazoo sandy loam are well adapted to the production of an excellent grade of melons. Outside the melon industry fruit culture is carried on only to a limited extent. Enough is grown, however, to make it evident that many varieties would do well. Practically none is shipped outside the county, the greater proportion being utilized for home purposes. Apples, peaches, pears, plums, and grapes all do very well, and few farms are without an orchard or grape arbor.

There is a general recognition of adaptation of soil to crops, evidences of which can be observed in any part of the county—as, for instance, the silt soil of the upland for wheat, melons on the sand hills and ridges, corn along the upland stream bottoms and river flats, etc.

As far as soil and climatic conditions are concerned Posey County is eminently adapted to the production of tobacco of the heavy export type. A soil survey was made in Union County, Ky., just previous to this survey, and all the tobacco soils found there occur also in Posey County. There is an erroneous idea among farmers of Posey County that their soil is not as well adapted to tobacco culture as are the soils in Henderson and Union counties, immediately across the river; but the Miami silt loam and the Waverly silt loam, the two chief tobacco soils of this part of Kentucky, are found in Posey County, with the same properties and subject to the same climatic influences. The

growing of this crop, however, requires considerable skill and experience, and a lack of this is probably the cause of failure on the part of the Indiana farmers to produce a crop of tobacco equal to the Kentucky crops. And so the advisability of introducing tobacco into this locality is a debatable question, and yet it is well for the farmer to know that this is one of the many crops to which his soil is adapted.

No commercial fertilizers are used, barnyard manure and decayed wheat straw furnishing a good supply of soil-enriching material. More care might well be taken, however, to preserve and utilize this store of fertilizer. Experience demonstrates that the work and expense of conserving and applying barnyard manure to the soil is sure to pay in the end.

Posey County has a favorable location with respect to markets for her produce. Three railroads—the Illinois Central, Louisville and Nashville, and Evansville and Terre Haute—traverse the area, affording transportation facilities to Chicago, St. Louis, Indianapolis, Louisville, Cincinnati, and Nashville, while the waterway afforded by the Ohio River makes traffic by steamboat practicable for the river towns. The county is furnished with a good system of wagon roads, making internal communication convenient. These roads are now being greatly improved by the construction of macadam roadbeds of broken limestone.

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