SOIL SURVEY

SERIES 1956, NO. 1
ISSUED FEBRUARY 1960

Terrebonne Parish

Contents

SOIL SURVEY OF TERREBONNE PARISH, LOUISIANA

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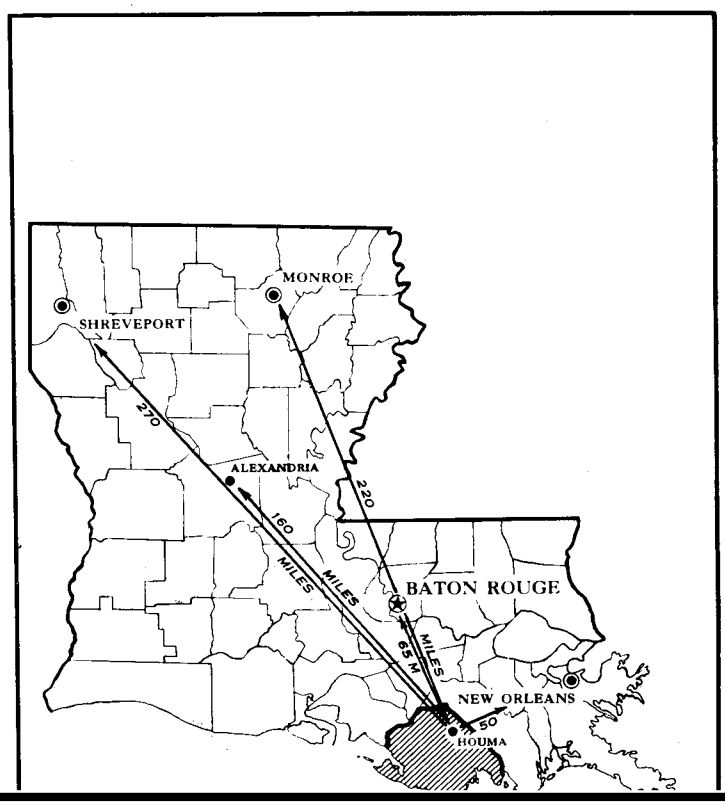
UNITED STATES DEPARTMENT OF AGRICULTURE IN COOPERATION WITH THE LOUISIANA AGRICULTURAL EXPERIMENT STATION

General Nature of the Area

Terrebonne Parish is in the southern part of Louisiana. Much of the land is at sea level, and areas near the coast are inundated by normal tides of 1.5 feet. During tropical storms, however, large areas of the parish may be flooded to depths of several feet. Some lowland areas are flooded occasionally by the Lower Atchafalaya River.

Fertile alluvial soils occur along the natural levee ridges in the northern part of Terrebonne Parish. These ridges border present streams and former channels. They decrease in height and width as they extend generally to the southeast. The sediments were deposited by the Mississippi River from the fertile areas through which it flows—from the phosphate rocks of Tennessee, the limestones of the Upper Mississippi Valley, and alluvium from the eastern Rocky Mountains and the Great Plains. Some sediments were deposited by the Red River.

The soils in Terrebonne Parish are high in most plant nutrients. Under proper management, the better drained soils produce heavy yields. Sugarcane does well because of the humid, subtropical climate with its long growing season. It was planted by the early settlers and continues to be the major agricultural product in the parish. Other crops are corn, soybeans, pasture grasses, and legumes. Some areas of coastal marshes are suitable for seasonal grazing. Other areas are suited to wildlife. Some of the areas could be reclaimed and used for tilled [illegible]. Trees and forage plants grow in the coastal



Physiography, Relief, and Drainage

This parish, in the Mississippi River delta, consists of undulating narrow ridges, back-swamp borders of the ridges, and extensive swamps and marshes. The wet coastal marshes and swamps range from sea level to about 3 feet in elevation. They are frequently inundated by overflow from the streams or by tides. These low areas make up about 91 percent of the parish.

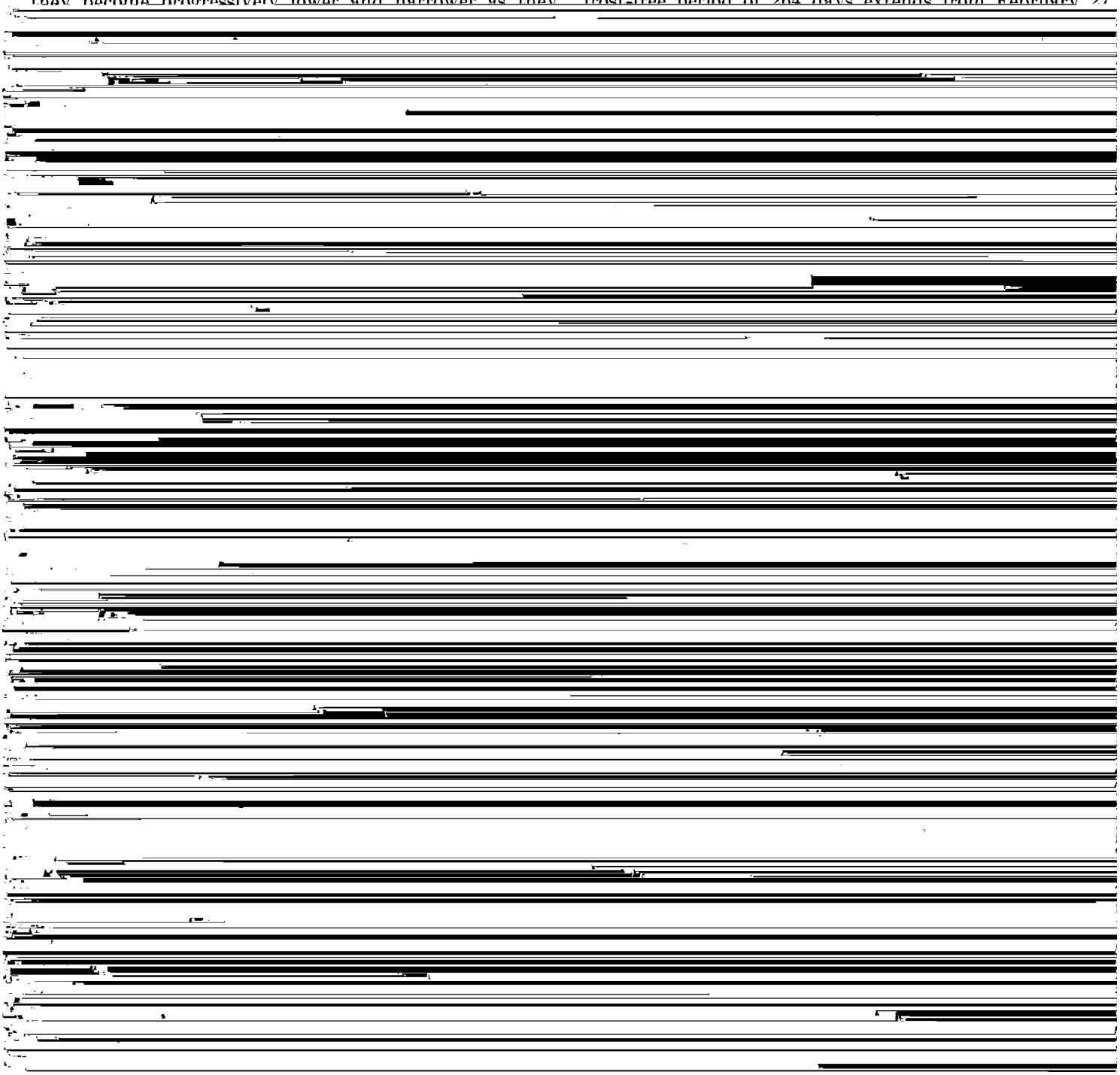
The areas suited to crops are on the low natural levee ridges in the northern and eastern parts of the parish. Near Schriever, some of the ridges are 16 feet high, but they become progressively lower and narrower as they

Climate

Terrebonne Parish has a mild, humid, subtropical climate. Climatic data from the United States Weather Bureau Station at Houma are given in table 1.

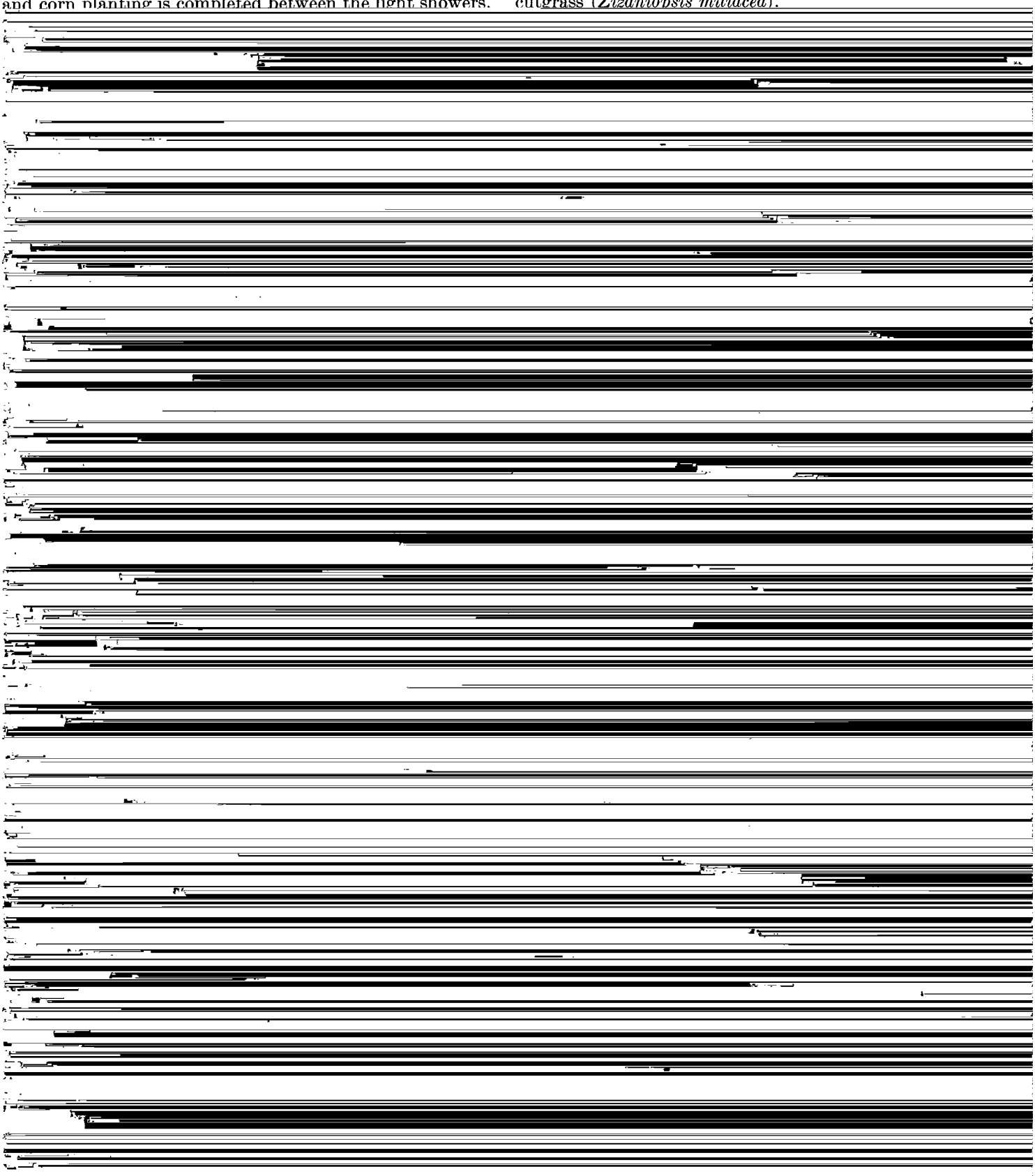
The summers are long and hot. Fall weather is warm and is often without killing frosts. There are a few cool days. The winters are usually mild and cool, but a few days are cold. Spring weather is mild and warm.

The latest killing frost in spring occurred on April 10, 1938; the earliest in fall was on October 25, 1903. Terrebonne Parish has a long growing season. The average frost-free period of 264 days extends from February 27



March, all of the better drained soils have become warm, and corn planting is completed between the light showers.

(*Typha latifolia*), delta potato (*Sagittaria lancifolia*), and cutgrass (*Zizaniopsis miliacea*).



All settlements were located on the higher land along the navigable streams. Most of the population lives in rural areas. In many places, there is a continuous row of houses along each side of the highways that parallel the major streams.

Small settlements or communities have been built up around many of the large plantation headquarters in the parish. These plantation settlements include the dwell-

Schriever and Gibson in 1852 and was first used in 1855. In 1872 a branch railroad, now a part of the Southern Pacific Railroad, was built between Schriever and Houma.

Most settlements and towns in the parish can be reached by good shell, gravel, or hard-surfaced highways. The larger towns and settlements are on scheduled bus and truck routes. The old Spanish trail to the west (United

Figure 2.—**Sugar fields and factory.**

ments were on French or Spanish land grants, and each had a frontage on a navigable bayou. The early settlers planted corn, rice, indigo, cotton, and sugarcane.

culties, competition from Cuba and Hawaii, unfavorable weather, and floods (*8*).

The increased demand for sugar during World War I

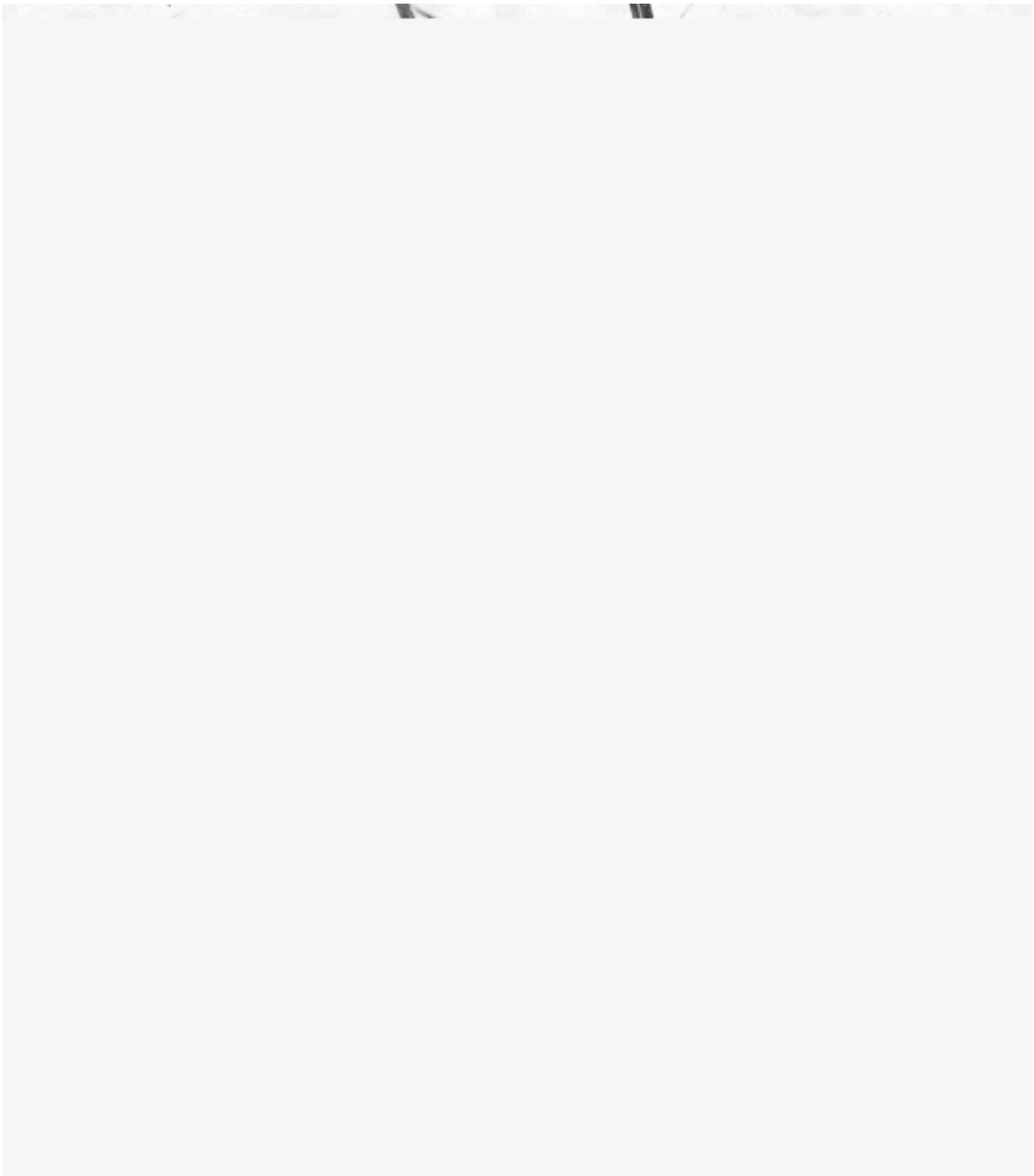


Figure 3.—Sugarcane sprouts from the nodes of old stalks after the joints have been planted on tops of the rows and covered with about 4 inches of soil. Three crops are usually harvested from one planting; first, the plant cane and then two crops of stubble cane.

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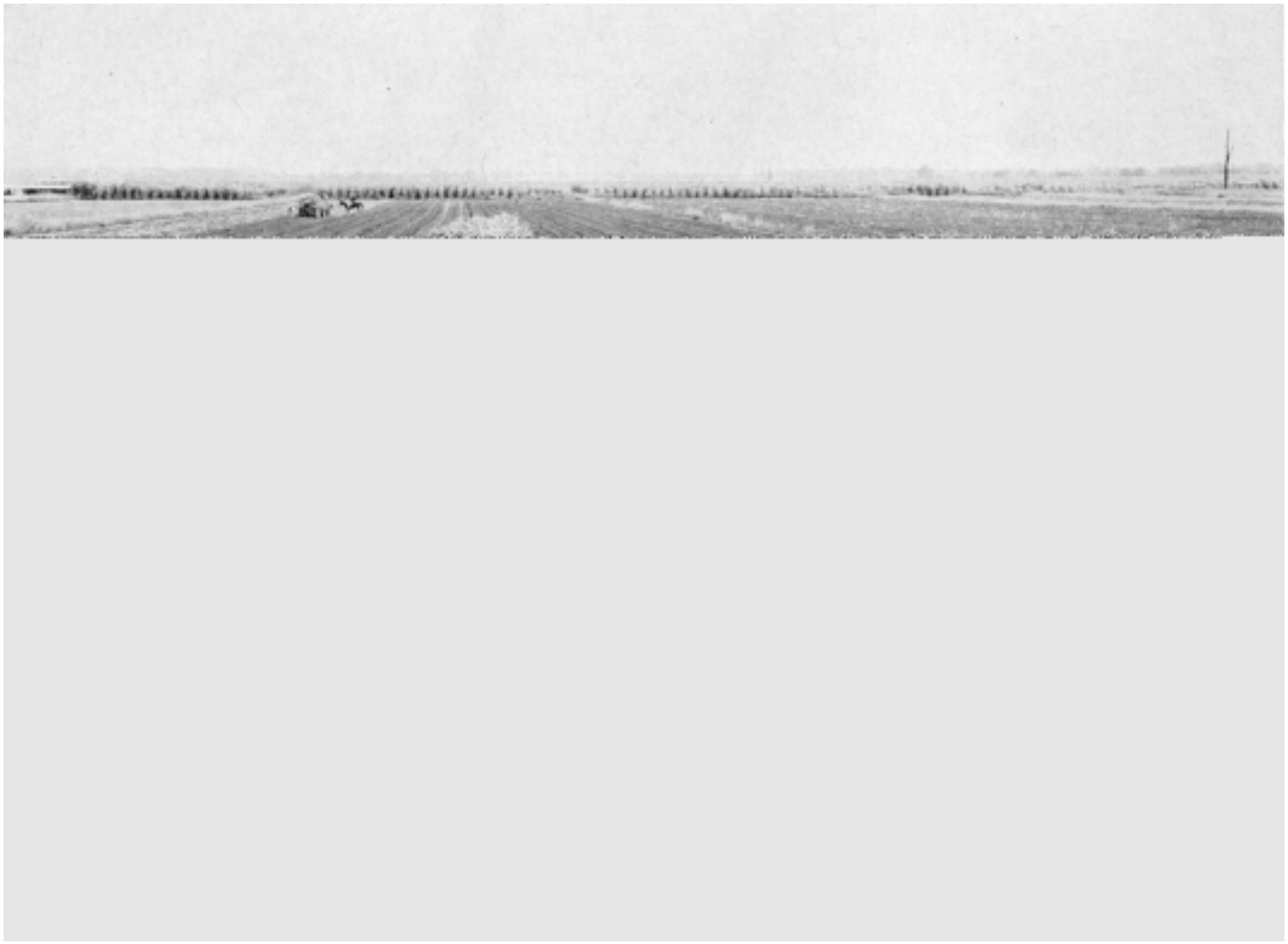


Figure 4.—**Planting sugarcane on Mhoon-Sharkey clays: The stalks are dropped into the rows as the cart moves across the field. The workers chop any of the crooked pieces so they will be straight in the row. Johnsongrass borders the lateral ditches on the sides of the cuts.**

from the area and on the texture and permeability of the soils.

Sugarcane is planted on top of rows (fig. 4) spaced 6 feet apart and thrown up 16 to 20 inches high. The rows aid drainage by following the slope. The middle, or space between two rows, acts as a drainage ditch. The fields are laid out in plots or cuts. Each cut contains several rows and is bordered by ditches parallel to the rows (lateral ditches). Drainage water from the cuts is carried to the lateral ditches by quarter drains (fig. 5). These are shallow ditches at right angles to the rows. They are used to remove water that collects at the ends of the rows or in low spots in the cuts. In some areas, the lateral ditches extend from near the crests of the natural levee ridges to the backswamps. In narrow areas where drainage water is carried short distances, the main ditches are generally along the border of the natural levee ridges. Long fields are more effectively drained by using two or more properly spaced main ditches. The main ditches are usually laid out at right angles to the lateral ditches. Drainage water is carried from the area by these wider and deeper ditches. On the better drained soils, the lateral ditches are widely spaced and the cuts are larger. More closely spaced lateral ditches and smaller cuts are generally used for draining the finer textured soils on the back slopes of the ridges.

Cut crowning is often used on the more poorly drained soils on some plantations. In cut crowning, the center of the cut is made higher than the edges by moving the soil toward the center with a grading machine or by plowing. The fall from the center of the cut to the sides is usually 0.3 to 0.5 foot in 100 feet. Adequate drainage is thus provided to the lateral ditches.

Sugarcane is planted late in summer and early in fall. It is fertilized in spring if the stand is favorable. The cane is cultivated at least three times to provide good tilth and to kill weeds.

The sugarcane harvest begins about the second week in October, but the actual date depends upon the size of the crop, the weather, and the amount of sucrose in the plants. The harvest is usually completed by the first of January.

Only a small amount of rice is now grown in Terrebonne Parish. Rice is planted in a rotation consisting of (a) 2 years of rice and 1 year in volunteer vegetation, or

Figure 5.—**Quarter drains for removing excess water are plowed to the lateral ditches at right angles to the rows. The soil thrown into the row middles is removed by hand shoveling.**

(b) 1 year of rice and 1 year in volunteer vegetation. The levees used for irrigating ricefields are 8 to 12 inches high. They are constructed on the contour at points of equal elevation. They are spaced with a fall of 0.2 foot per 100 feet between the levees so that the ricefields can be flooded to a depth of 4 to 6 inches. Drainage systems are needed to remove the irrigation water and any excess rainfall. A grain drill is commonly used to plant the seed and to apply the fertilizer at the same time.

Corn is generally planted in a rotation after 3 years of sugarcane (fig. 6). It is planted on the top of rows that [illegible]

one-crop economy and by the reduction in sugarcane acreage. A few pioneers in livestock raising in Terrebonne and neighboring parishes have had favorable returns.

Each plantation keeps a few milk cows and small herds of cattle, most of which are grazed in the marshes. In 1952, there were 7 herds of purebred cattle and 26 family-size dairies in the parish.

In 1954, there were 4,083 head of cattle and calves sold, and there were 12,859 cattle and calves in the parish. This parish is very well suited to livestock because the luxuriant grasses and clovers provide year-round grazing.

[illegible]

Figure 6.—**Lister or "middle-buster" used on old rows of stubble after the third crop of sugarcane has been harvested. Corn or soybeans are then planted in a well-prepared seedbed on the tops of the new rows.**

In 1954, more than 56 percent of the farms were less than 50 acres in size. Many of these small farms are on the narrow natural levee ridges in the south-central and southeastern areas.

The average size farm for the parish increased from 125 acres in 1940 to 177.2 acres in 1954. In 1954, more than 5 percent of the farms were 260 to 1,000 acres, and slightly less than 5 percent were 1,000 acres or more. In 1954 there were 68 fewer farms in the parish than in 1950.

Land Use

Approximately 13 percent of the parish is in farms. Of the land in farms, the area used for crops was 41.2 percent

Farm Tenure

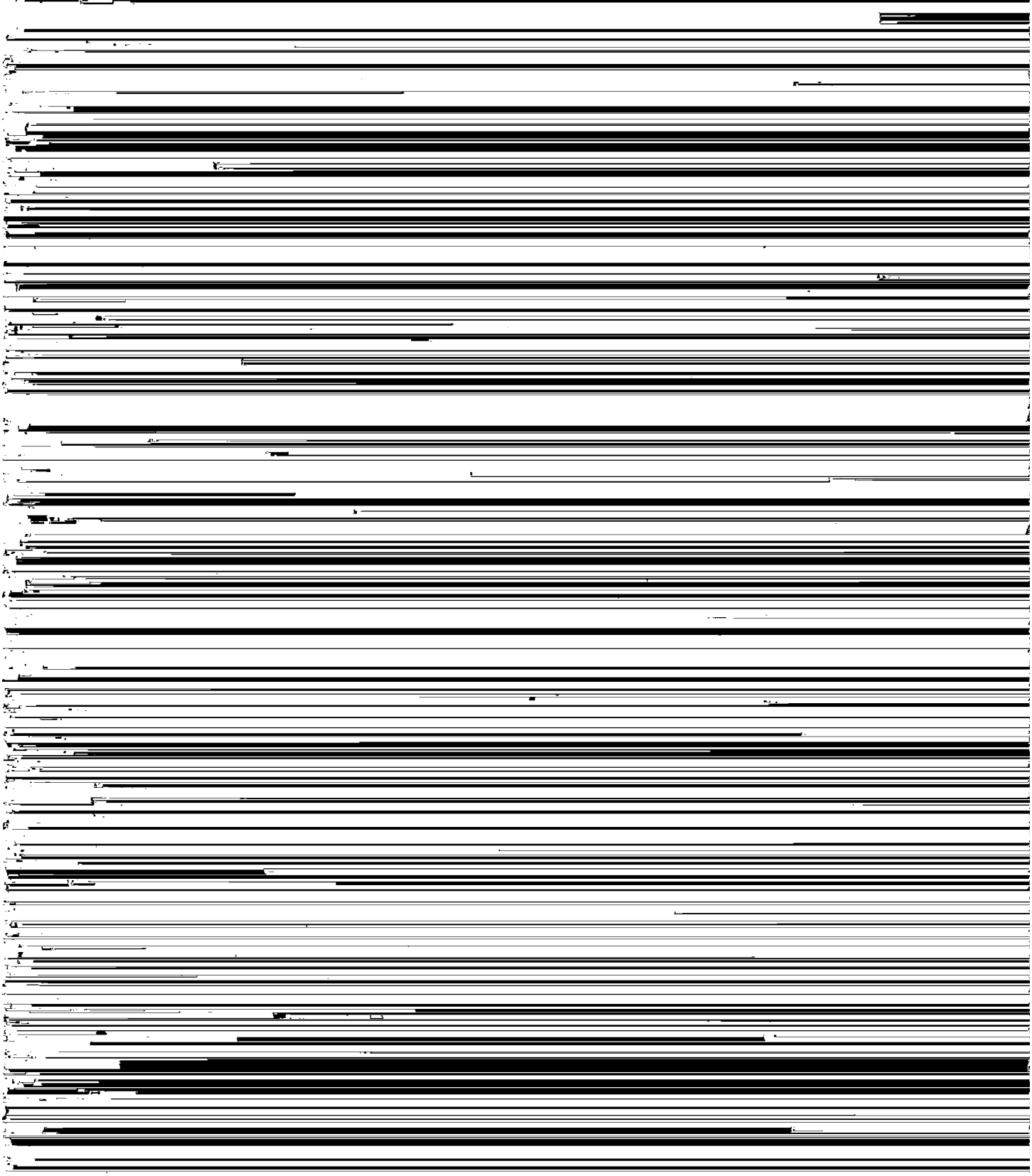
In 1954, 86.4 percent of the farms were operated by owners or part owners; 1 percent by managers, and 12.6 percent by tenants. About half of the tenants in 1954 paid rent for the farms they operated, and about half paid on a share basis.

The usual arrangement between owner and tenant is that the tenant supplies all of the seed, fertilizer, and labor, and the owner receives one-fourth of the cane and corn crops.

Tenancy in this parish declined from 27.7 percent in 1945 to 12.8 percent in 1950. In 1954, the proportion of tenancy was 12.6 percent.

machinery in this parish included 7 grain combines, 3 cornpickers, 31 pickup hay balers, and 12 forage harvesters. There were 545 tractors on 268 farms. Other equipment

and arrangement of soil layers, are normally designated as a soil series. In a given area, however, it frequently happens that a soil series is represented by only one soil



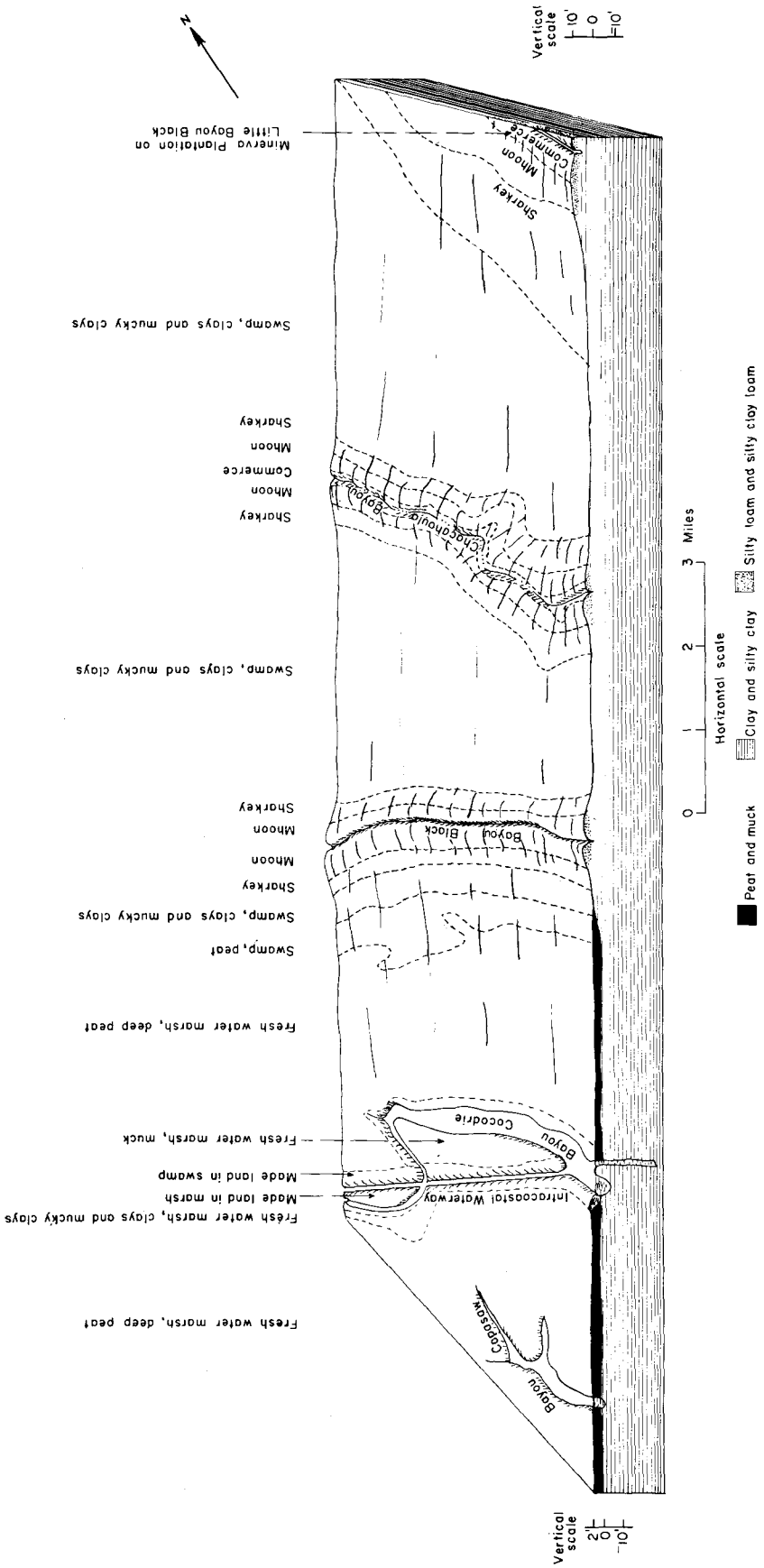


Figure 7.—Diagram showing the relationships of the soils in Terrebonne Parish from Minerva Plantation on Little Bayou Black in sec. 9, T. 16 S., R. 16 E., southwest to Bayou Copasaw in sec. 8, T. 18 S., R. 15 E.

Other distributary streams of this delta are Bayou Petit Caillou, Bayou Terrebonne, Bayou Barré, Bayou St. Jean Charles, and Bayou Blue.

The apex of another fan-shaped arrangement of bayous occurs near Humphreys and Waterproof on Bayou Black. These bayous flow in a southerly and southwesterly direction. They represent another deltaic fan that deposited sediments of the Red and Mississippi Rivers when the Mississippi River flowed in the course of the present Bayou Teche and Bayou Black. The boundaries of this older delta are Bayou Mauvais Bois on the west and traces of Bayou La Cache on the east. Bayou du Large and Bayous DeCade and Chauvin belong to this delta. These streams are part of the Teche-Mississippi River system that has not been buried by later deposits of the Lafourche-Mississippi River delta.

Several bayous in the western part of the parish were distributary streams of an older Mississippi River delta which had its apex near Maringouin in Iberville Parish.

Most of land area of Terrebonne Parish is coastal marsh. This wet area, at or only slightly above sea level, has been built up to its present elevation by stream alluvium and by accumulations of organic materials. The alluvium deposited near the coastline is reworked and redeposited by salty water waves and tides. In most places the coastal marsh is covered by recently accumulated organic materials that are classified as muck and peat (*6*).

Sections of the coastal marsh are under the dominant influence of water that contains different amounts of salt. Each area differs from the others in the amount of salt in the soil and in the soil and water combination. The kinds of plants growing on them are tolerant to varying degrees of salinity. Thus these areas are known as fresh-water, brackish-water, and salt-water marshes.

Soil Associations

Swamp Association

Forested soils of the swamps are usually wet and are frequently flooded to a depth of a few inches to 1 or 2 feet. The swamps occupy areas between the coastal marshes and the Sharkey-Swamp association of the lower areas bordering the natural levees. Over half of the soils are clays and mucky clays; the rest are peats and mucks.

Marsh Association

The coastal marshes in this association cover most of the land area of Terrebonne Parish. Large areas of these soils have a peat and muck surface layer, 2 to 5 feet thick, over alluvial clays and silty clays. This association occurs on a broad plain about level with the gulf, and the

TABLE 3.—*Acreage and proportionate extent of the soils*

Soil	Area	Extent
	Acres	*Percent*
Baldwin silty clay and silty clay loam	774	0. 1
Brackish marsh, clays and mucky clays	42, 595	4. 8
Brackish marsh, deep peat	43, 765	5. 0
Brackish marsh, muck	5, 470	. 6
Brackish marsh, peat	96, 275	11. 0
Commerce silt loam, level phase	3, 562	. 4
Commerce silt loam, low phase	802	. 1
Commerce silt loam, nearly level phase	651	. 1
Commerce silty clay loam, level phase	554	. 1
Cypremort silt loam and very fine sandy loam	268	(1)
Fresh water marsh, clays and mucky clays	29, 684	3. 3
Fresh water marsh, deep peat	207, 442	23. 3
Fresh water marsh, muck	14, 809	1. 7

16 to 30 inches, mottled grayish-brown and dark yellowish-brown plastic clay; a few, small, prominent mottles of dark reddish brown; strong fine blocky structure; neutral.
30 to 42 inches, gray, mottled dark-brown, plastic clay; contains a few, fine, prominent mottles of reddish brown; weak fine blocky to massive structure; neutral.

The surface soil ranges from strongly acid to slightly acid and the subsoil ranges from medium acid to mildly alkaline.

Use and management.—This soil is in management group IIIw–1. Most areas are in forest or in pastures of

lenses of fine sand occur at depths of 5 to 9 feet below the surface. The surface layer is neutral to mildly alkaline, and the substratum is neutral to moderately alkaline.

Use and management.—This mapping unit belongs in management group Vw–2. It is subject to inundation and is not suited to cultivated crops. Accessible areas are suitable for grazing during dry periods. Excellent grazing is provided seasonally if this soil is protected from burning and overgrazing.

Brackish marsh, muck (Bc).—The surface layer of this land type consists of well-decomposed organic materials

TABLE 4.—*Characteristics*

Soil series	Parent material	Position	Relief	Elevation	Drainage
				Feet	
Commerce	Slightly acid to moderately alkaline, medium-textured al-	Natural levees	Level to gently sloping	3–16	Moderately well drained.

of the soil series

Surface soil			Substratum		Consistence when wet
Color	Texture	Thickness	Color	Texture	
		Inches			
Brown, dark grayish brown.	Silt loam	6–10	Grayish brown mottled with yellowish brown and gray.	Silty clay loam	Friable.
Dark grayish brown, very dark grayish brown.	Silt loam, silty clay loam.	4–10	Mottled dark grayish brown, dark gray, yellowish brown, and gray.	Silt loam, silty clay loam, and silty clay.	Slightly plastic.
Black, very dark gray, very dark brown, dark brown.	Clay, silty clay	4–12	Gray or dark gray mottled with yellowish brown and brown.	Clay	Plastic.
			Subsoil		
Very dark grayish brown.	Silty clay, silty clay loam.	5–10	Gray mottled with yellowish brown and brownish yellow; very dark gray mottled yellowish brown.	Silty clay or clay	Slightly plastic to plastic.
Brown	Silt loam, very fine sandy loam.	8–10	Brown or dark grayish brown mottled with yellowish brown.	Silty clay loam	Friable.

and their height of growth are as follows: Couchgrass, 24 to 30 inches; three-cornergrass, 24 to 30 inches; salt marshgrass, 12 to 24 inches; and sand rush, 36 inches.

Representative profile:

0 to 6 inches, very dark brown muck matrix; contains 50 percent of coarse and medium fibrous vegetation.
6 to 16 inches, very dark brown, coarse and fine fibrous peat; slightly acid.
16 to 42 inches, very dark brown, medium and fine fibrous mucky peat; slightly acid.
42 to 60 inches, dark-gray, massive, plastic clay; mildly alkaline.
60 to 120 inches, dark olive-gray fine sand; moderately alkaline.

The surface layer is very dark brown, dark brown, or black in color and a peat or peaty muck in texture. The thickness of the organic surface layer ranges from 36 to 78 inches but is usually 36 inches. The peat and mucky peat are underlain by dark-gray or very dark gray clay. Thin lenses of muck or mucky clay occur in the substratum at depths of 4 feet and below. Thin and thick strata of dark olive-gray fine sand are below 5 feet in places. The organic surface layer is strongly acid to neutral, and the substratum is neutral to moderately alkaline.

Use and management.—Brackish marsh, deep peat, is in management group VIII–2. It is best suited to wildlife and recreation. This land type usually provides plenty of forage, and the water is favorable for muskrats. Muskrat houses are common in areas of couchgrass and three-cornergrass. There is an abundance of forage, but grazing is very limited because of the soft, unstable footing for livestock. Management practices should include protecting the area from storm tides and maintaining the salinity conditions favorable for muskrats.

Commerce series

These moderately well drained soils of the bottom lands are developing in medium-textured, slightly acid to moderately alkaline Mississippi River alluvium. The stratified silt loam, silty clay loam, and very fine sandy loam sediments were deposited at the crests of the nearly level and undulating natural levee ridges.

These soils occur on ridges in the northern, northeastern, eastern, and southeastern parts of the parish. Small areas are on narrow stream-facing slopes that have gradients of 2 to 3 percent.

In general, the Commerce soils are somewhat higher than the associated Mhoon soils. Throughout the parish, the elevation of the soils varies proportionately with the width of the natural levee ridges. In the northern part, the Commerce soils are 7 to 16 feet above the level of the gulf, and the natural levee ridges are 1.5 to 3.5 miles wide. In the southeastern part, the natural levee ridges of Commerce soils are associated with the distributary streams flowing into and through the area of coastal marsh soils. Here, the natural levee ridges have subsided, by their own weight, below the surface of the soft muck and peat soils or to an elevation a few feet or inches above them. In this subsided area, the Commerce soils range from near-marsh level to 3 or 4 feet above the gulf and are on ridges 0.1 mile or less in width.

Except for small areas of Cypremort soils, the Commerce soils are the best drained soils in the parish. They are slightly acid to moderately alkaline, whereas the Cypremort soils are medium to slightly acid. The Commerce soils are younger and less leached than the Cypremort soils. Soil horizons are less sharply defined in the Commerce than in the Cypremort soils. Commerce soils have a

lower water table and are more permeable than the associated Mhoon soils.

The Commerce soils have a brown, friable, slighly acid surface soil 6 to 10 inches thick. It is underlain by friable silty clay loam that is grayish brown, mottled with yellowish brown, and is neutral to mildly alkaline. At depths of 24 to 30 inches and below, the material is mottled gray and brown friable silty clay loam, silt loam, or very fine sandy loam that is mildly to moderately alkaline. The moderately low water table is usually in this mottled layer.

The soils are well supplied with minerals and contain moderate amounts of organic matter. Soil-moisture and soil-air relationships are very favorable for crops on the silt loam and silty clay loam types. These soils are cleared and used for cultivated crops.

Commerce soils on the subsided levee ridges are not so well suited to cultivated crops as the other areas of Commerce soils. These areas are often flooded during

thick. The color of the plowsole layer ranges from grayish brown to gray, the color depending on the length of time this very slowly permeable material has been undisturbed.

Use and management.—This soil is in management group I–1. All areas have been planted to row crops for 75 to 100 years. Commerce silt loam, level phase, produces good yields of sugarcane, corn, soybeans, and truck crops. It is easily tilled and requires only simple management to remove excess surface water. The planters consider it one of the best soils in the parish. It is suited to all crops grown in the parish except irrigated rice.

Excess water is easily removed from the surface by running the rows with the slope of the soil. Widely spaced open ditches divert the runoff and carry it through lower areas to the back swamps. The lower soils are thus protected from overwash.

The usual succession of crops is sugarcane for 3 years, followed by corn or soybeans or by plowed fallow land.

parts of the parish. This soil is on level and nearly level slopes of less than 1 percent. Elevations are about the same as for the associated Commerce silt loam, level phase, but are slightly greater than those of the associated Mhoon soils. They range from 5 to 15 feet above gulf level. Runoff and internal drainage are medium.

The water table is fairly low (20 to 24 inches below the surface) and soil-moisture and soil-air relationships are favorable for most crops grown in the area. This soil contains fair amounts of organic matter and large amounts of mineral plant nutrients. Tilth is generally good. The surface soil is slightly acid, and the substratum is neutral to moderately alkaline.

Use and management.—Commerce silty clay loam, level phase, is in management group I–1. Although the total area is small, this soil is agriculturally important and has been used for cultivated crops for about 100 years. The crops grown are sugarcane, corn, soybeans, and garden vegetables. Yields are generally good. Pasture and hay are produced on small areas. The soil is very productive, easily tilled, readily drained, and suited to intensive use.

Nitrogen fertilizer is commonly used on sugarcane and corn. Yields of these crops may be increased by heavier applications of nitrogen and complete fertilizers. Legume crops should be turned under for green manure when practicable in the sugarcane rotation. Increased yields of sugarcane and corn are obtained if these crops follow a well-sodded improved pasture. This soil is well suited to pasture and hay, but is too permeable for rice.

Commerce silt loam, low phase (Cc).—This soil occurs on areas near the level of the gulf where free water in the

Below 16 inches the substratum ranges from silt loam to very fine sandy loam and in places is stratified silt loam, silty clay loam, and very fine sand.

Use and management.—This soil is in management group IIIw–3. It occurs in long narrow areas, many of which are accessible only by boat. Commerce silt loam, low phase, is very fertile and easy to till. However, because of its inaccessibility, frequent high water level, and occasional floods, it is not commonly used for cultivated crops unless it is protected by levees and drained with pumps.

Small areas are planted to sugarcane and corn. Moderate to good yields are produced during seasons when the water level is unusually low. Because it is not practical to pump-drain this soil and construct levees to protect it from floods, Commerce silt loam, low phase, is best suited to native pasture, forest, and truck and corn crops.

Cypremort series

These brown, moderately well drained soils occur in the northwestern part of the parish on low terraces developed from older alluvium deposited by the Red and Mississippi Rivers. They have developed to the extent that distinct differences exist among the various horizons in the soil profile.

Cypremort soils are more acid and have better developed profiles than soils of the Commerce series. They differ from the Baldwin soils in having brown instead of very dark grayish-brown surface soil and in having friable silty clay loam instead of clay subsoil.

[redacted]

42 to 50 inches, stratified very dark brown silty clay and brown, mottled gray, silt loam and silty clay loam; slightly acid.

Use and management.—This soil is in management group I–1. Cypremort silt loam and very fine sandy loam soils are not extensive in this parish. They are in native pasture and forest. These soils are well suited to cultivated crops, but the areas are generally narrow and some are inaccessible.

Under good management, which includes fertilization with nitrogen or complete fertilizers, these soils produce

along the Lower Atchafalaya River that are composed of silt loam and silty clay loam.

Use and management.—This land type is in management group Vw–1. Because it is frequently flooded, it is not suited to cultivated crops. Most areas of Fresh water marsh, clays and mucky clays, are suited to seasonal grazing. If it has levee protection and pump drainage, this land type can be used for cultivated crops and pasture.

Fresh water marsh. muck (Fb).—The surface layer of

composed or partly decomposed organic residues. The surface layer is underlain by clay and silty clay sediments deposited by the Mississippi River.

Fresh water marsh, peat, occurs as broad flats and slightly depressed areas in the northern half of the parish. It is well removed from the influence of salt water. It receives the runoff from higher areas; some of it is frequently inundated by the overflow from fresh-water streams. Fresh water stands at or over the surface of this land [illegible] most of the time, and the decomposition

Typical plants and their height of growth are paille fine, 24 to 30 inches; cattail, 8 feet; bulrush, 7 feet; delta potato, 36 inches; sawgrass, 36 to 42 inches; and common reed, 10 to 12 feet.

Representative profile:

0 to 8 inches, black muck matrix; contains 30 percent of recently accumulated coarse fibrous organic materials; medium acid.
8 to 24 inches, black, coarse and medium fibrous peat; strongly acid.
24 to 48 inches, black muck matrix; contains 60 percent of

be used for crops if pump drained and protected by levees. Most areas are reached only by boat; the easily accessible areas are used for seasonal grazing.

Made land in swamp (Mc).—The soil material in this mapping unit includes clays and silty clays that have been pumped or excavated from the swamps during the construction of canals. Small and large areas occur in the northern, northeastern, and north-central parts of the parish along the Intracoastal Waterway. Elevations range from the level of the swamp to 3 or 4 feet above it. Trees growing on this land type include cypress, swamp maple, tupelo-gum, bay, and willow. Small areas are covered with volunteer grasses.

Use and management.—Made land in swamp is in management group Vw–1. The total area is small, and most of it is used for forest. The easily accessible areas provide some grazing during dry seasons. If cleared, pump drained, and protected from floods by levees, this land type may be used for cultivated crops and improved pasture.

Mhoon series

[redacted]

Mhoon silt loam (Md).—This soil is developing in stratified medium- and light-textured sediments deposited by the distributary streams of the delta systems of the Mississippi River. It occurs at elevations of 5 to 13 feet on the crests of the natural levee ridges in the northeastern, northern, and eastern parts of the parish. This soil has level and undulating slopes of 1 percent or less. It is associated with Mhoon silty clay loam but is slightly higher.

This soil contains moderate amounts of organic matter and mineral plant nutrients. Runoff and internal drainage are slow. The water table is 14 to 20 inches below the surface. The moisture range for suitable tillage is moderately wide. Soil-moisture and soil-air relationships are favorable for row crops if the areas are artificially drained.

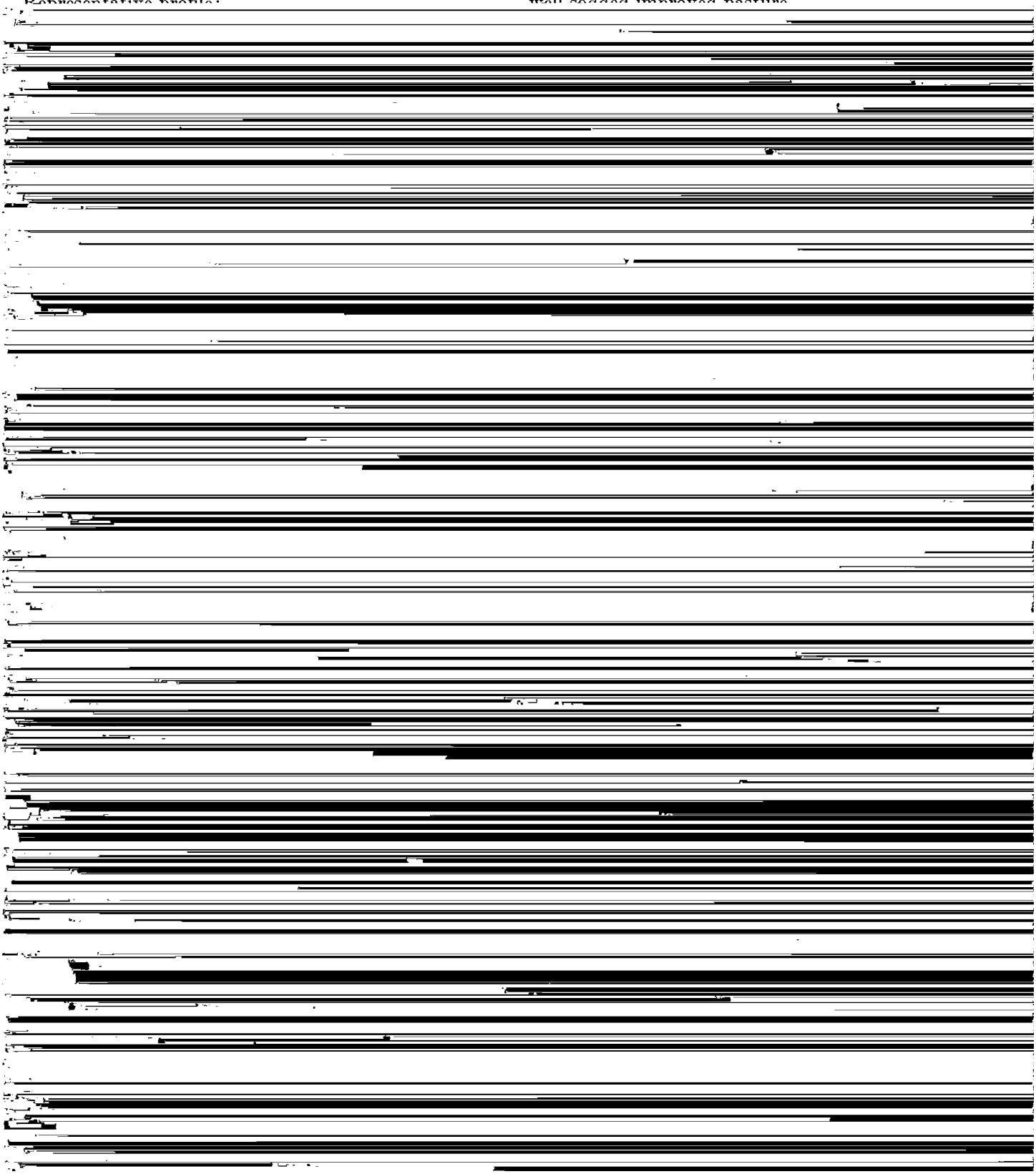
Representative profile:

0 to 6 inches, dark grayish-brown friable silt loam; moderate fine granular structure; mildly alkaline.
6 to 10 inches, dark grayish-brown compact silt loam; moderate thin and medium platy structure; mildly alkaline; plowsole.
10 to 16 inches, grayish-brown, mottled brown and yellowish-

and swamps is at the ends of the field rows, and artificial drainage by gravity is therefore not possible.

Representative profile:

and (3) use of green-manure crops wherever possible. Sugarcane and corn have better yields if they follow well-seeded improved pasture.



8 to 12 inches, dark grayish-brown plastic clay; contains a few mottles of yellowish brown; moderate to weak medium blocky structure; slightly acid.

12 to 18 inches, grayish-brown plastic silty clay, mottled yellowish brown; moderate medium blocky structure; neutral

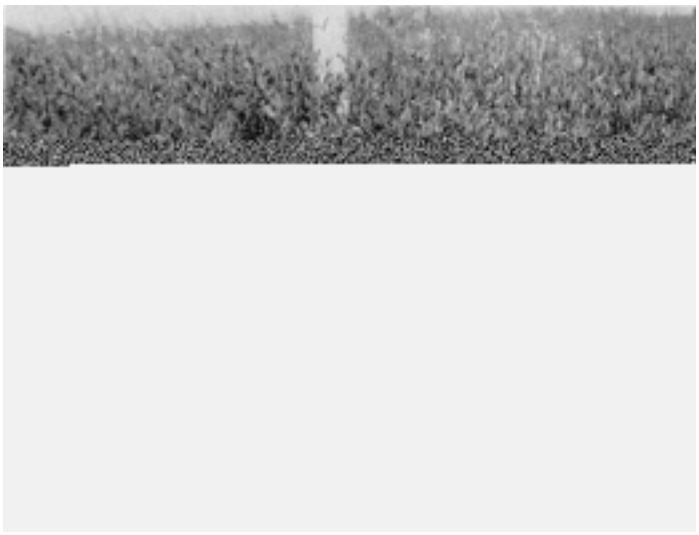


Figure 9.—**Black-mangrove growing on an area of Salt water marsh, clays and mucky clays, along Flat Bayou.**

Most areas producing black-mangrove and saltwort are clay soils and are slightly higher than the areas producing oystergrass and black rush.

Representative profile:

0 to 16 inches, very dark gray, plastic, mucky clay; coarse fibrous recent plant materials make up about 20 percent of the layer; neutral.
16 to 24 inches, black clay or silty clay; contains about 15 percent of coarse plant materials of recent origin; neutral.
24 to 42 inches, black clay; contains thin lenses of black fine granular muck; mildly alkaline.
42 to 84 inches, dark-gray, massive, plastic clay; moderately alkaline.
84 to 120 inches, gray or olive-gray fine sand; moderately alkaline.

The surface layer ranges from mucky clay or mucky silty clay to clay in texture. It is from 10 to 36 inches

A normal tide of 18 inches along the gulf coast is frequently carried inland by moderate to strong southerly winds and deposited over Salt water marsh, peat. Snails on the oystergrass and black rush, 18 to 24 inches above the soil surface, indicate the usual depth of salt water over large areas of this land type.

The salt content in the water from this soil ranges from 1.8 to 2.95 percent. The common marsh plants and their height are oystergrass, 12 to 30 inches; salt marshgrass, 12 to 42 inches; black rush, 36 to 52 inches; and glasswort, 18 to 24 inches.

Representative profile:

0 to 12 inches, very dark brown, medium and coarse fibrous peat; 20 percent of the mass is coarse, fibrous, recent plant materials; neutral.
12 to 24 inches, black, medium and coarse fibrous peat; contains 20 percent of muck; neutral.
24 to 48 inches, black muck, oozy and soft when wet; contains 20 percent of fine fibrous peat; mildly alkaline.
48 to 84 inches, dark-gray, massive, plastic clay; moderately alkaline.
84 to 156 inches, dark-gray plastic clay; contains thin lenses of fine sand; moderately alkaline.

The peaty muck or mucky peat surface layer is black, dark reddish brown, or very dark brown. The organic layer ranges from 24 to 60 inches in thickness but averages 36 inches. The massive plastic clay substratum has thin lenses of muck or mucky clay in places. In a few areas, thin and thick strata of fine sand occur at 7 to more than 11 feet below the surface. The surface layer is usually neutral but may be medium acid, and the substratum ranges from neutral to moderately alkaline.

Use and management.—Salt water marsh, peat, is in management group VIII–2. This land type is best suited to fishing, hunting, and recreation. It is used as a refuge for waterfowl and for the production of oil, gas, and sulfur.

Sand beaches

Sand beaches occur on a number of islands along the

fine shells. Sand dunes 2 to 3 feet high and 5 to 14 feet in diameter occur on some of these beaches.

Use and management.—Sand beaches are in management group VIII–3. Although they are distant from populated areas and often flooded, they are best suited to recreation. Brown pelicans nest on the inner side of some of the islands.

Sharkey series

The Sharkey series consists of dark-colored soils of the [illegible]

The forest cover of the Sharkey soils is cypress, water tupelo or tupelo-gum, red or swamp maple, ash, and swamp bay (*Persea palustris*).

Sharkey clay (Sd).—This poorly drained soil occurs along the lower borders of the natural levee ridges in the northern and northeastern parts of the parish. Areas are flat and undulating and are 2 to 7 feet above the level of the gulf. Runoff and internal drainage are slow to very slow.

Sharkey clay contains moderate to high amounts of [illegible]

Legume crops turned under for green manure and pasture in the rotation improve soil drainage, tilth, aeration, and structure and make this soil more desirable for row crops.

Sharkey clay, low phase (Se).—This soil occurs at 2 to 4 feet above the level of the gulf. It is frequently flooded by runoff from higher soils, by tides, and by water from catch basins in the swamps. Sharkey clay, low phase, has a higher water table and more restricted drainage and is more likely to be flooded than Sharkey clay. It differs from Swamp, clays and mucky clays, in having thicker dark-colored surface and substrata layers, and in having a better surface soil and substratum structure.

Swamp soils

Swamp soils occur in frequently flooded forest areas in the back swamps which border the natural levee ridges in the northern, northwestern, and northeastern parts of the parish. These soils include clay and silty clay sediments deposited primarily by the Mississippi River. They commonly occur on the landward border of the fresh-water marsh and are not generally affected by brackish and salty tidewaters. They are slightly lower than the associated Sharkey soils and slightly higher than the marshes. Small areas of swamp occur along bayous in the eastern and western parts of the parish.

ranges from medium acid to neutral, and the substratum from neutral to moderately alkaline. Most areas contain moderately low amounts of organic matter, but they are well supplied with mineral plant nutrients.

Use and management.—This soil is in management group

Large areas occur in the eastern, north-central, and northwestern parts of the parish. Small and narrow areas are along the bayous in the western and southwestern parts.

Swamp peat is lower than the associated Swamp

wet for natural or artificial seeding of trees. Swamp, deep peat, is best suited to its present uses, which are forest production, hunting, and trapping.

Use and Management of Soils

Most of the soils of Terrebonne Parish are wet, subject to flooding, and unsuitable for row crops. Only 8.5 percent of the acreage of the soils in this parish is used for cultivated crops. The natural drainage and the effectiveness of the artificial drainage determine whether the soils can be used successfully for row crops.

Some of the soils best suited to sugarcane are now idle or are used for pasture. Other soils now used for sugarcane produce variable or low yields and are better suited to rice and improved pasture.

Under the Federal acreage allotment program for sugarcane, part of the acreage of each sugarcane plantation has been taken from the normal sugarcane cropping system. These surplus acres should be used for other suitable crops.

The following is a discussion of some of the characteristics of the soils that affect use and management.

Drainage and permeability.—In this parish, the best drained and most permeable soils are in a narrow area on the crests of the natural levee ridges. Water penetrates the soils at a moderate rate, but there is usually enough moisture available for crops. These soils may be used for row crops with a minimum amount of artificial drainage.

In general, soils on the back slopes of the natural levee ridges are slowly permeable, and artificial drainage is [illegible] and drainage. They are best suited to pasture, corn, and truck crops.

Slope and erosion.—Small areas of soils near the crests of natural levee ridges have slopes of 1 to 3 percent. These areas may be used for row crops, with no appreciable soil losses, if the rows are run on the contour across the slope of the soil. The usual practice of running the rows down the slope provides good drainage, but it causes some loss of surface soil and plant nutrients.

Texture and tilth.—Texture influences the ease with which the plow layer can be worked, the length of time a soil remains wet after rains, and the amount of water that penetrates and is held by the soil. The silt loam and silty clay loam soils of the natural levee ridges are easily tilled. Water passes through them readily, but usually enough moisture is retained for plants. These soils dry out soon after rains. In these lighter textured soils, the relationship of soil, air, moisture, and plant roots is generally favorable for row crops.

The fine-textured soils of the back slopes and backswamp areas are hard to till. Water penetrates very slowly, and the water table is usually high. These soils dry out slowly after rains and become very hard when dry. They need artificial drainage to provide favorable moisture and aeration for the roots of row crops. These soils are suitable for rice, sugarcane, and pasture.

A plowsole, or traffic pan, occurs in most soils used for row crops. This compacted layer of the surface soil, 4 to 6 inches thick, commonly occurs in the middle of the rows (fig. 11). It develops particularly in soils planted to sugarcane as a result of repeated packing of the soil by tractor wheels during planting, tilling, and harvesting the cane under a system of 3-year sugarcane rotations. Water stands in the compacted middle of the row for long

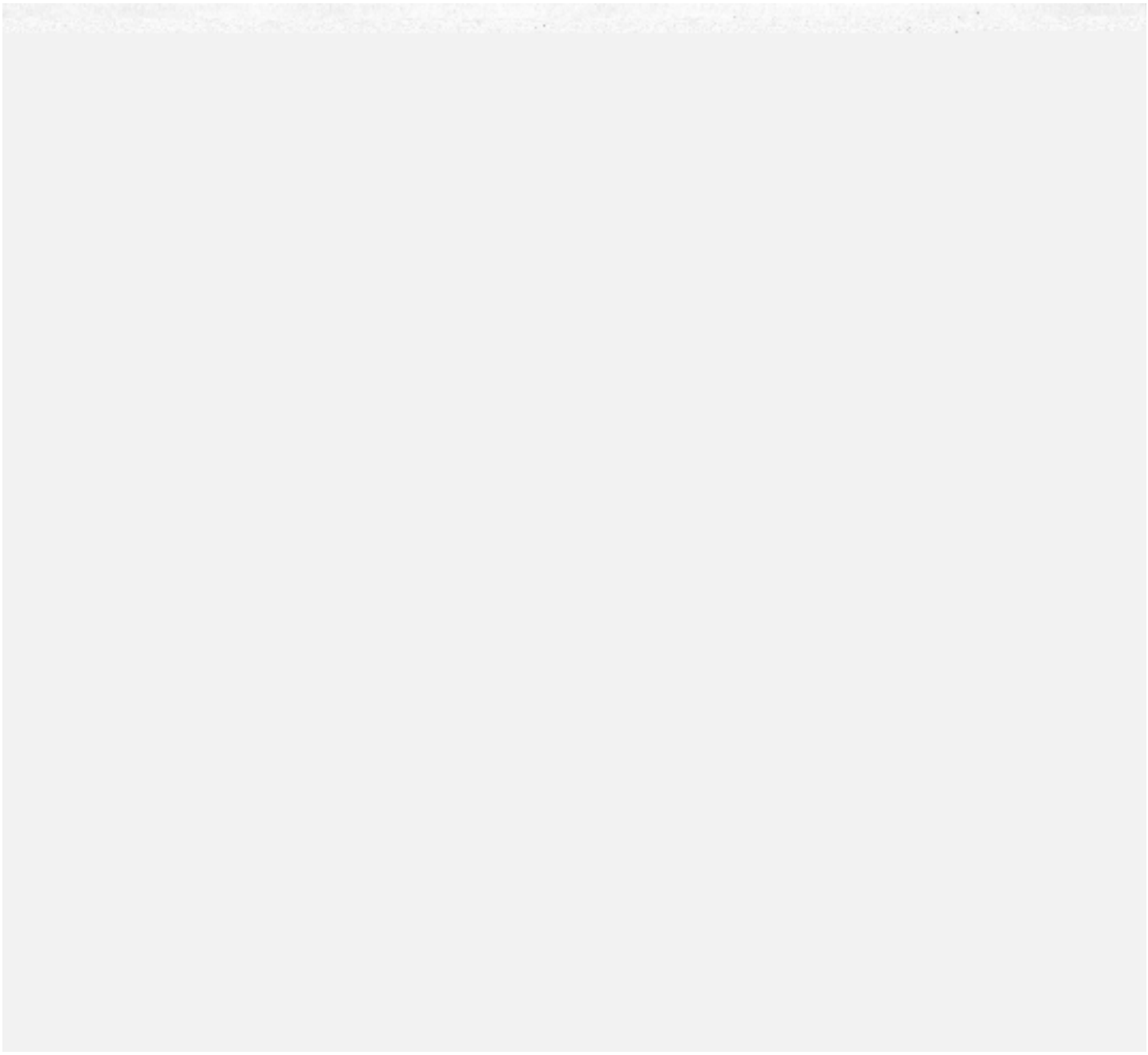


Figure 10.—**Water from heavy rain standing in the row middles and quarter drains on a field of stubble cane on the back slope of a natural levee ridge.**

Native pasture grasses are not usually fertilized. However, on the medium-textured, better drained soils, complete fertilizers are applied to improved pastures.

Most of the fertilizer purchased in Terrebonne Parish

Station will furnish up-to-date recommendations on the kinds and amounts of fertilizer needed for specific crops. The county agent or the local representative of the Lafourche-Terrebonne Soil Conservation District will help

Figure 11.—**The row middles have been compacted by heavy machinery on this soil. A preemergence spray is applied as a weed killer as the seeds germinate. The sugarcane in the background will be ready for harvest in a month or two.**

ment. There are three levels above the soil mapping unit in this grouping. They are the capability unit, subclass, and class.

The capability unit, which can also be called a management group of soils, is the lowest level of capability grouping. A capability unit is made up of soils similar in kind of management they need, in risk of damage, and in general suitability for use.

The next broader grouping, the subclass, is used to indicate the dominant kind of limitation. The letter symbol "e" indicates that the main limiting factor is risk of erosion if the plant cover is not maintained; "w" means excess water that retards plant growth or interferes with cultivation. In some parts of the country there are subclasses "s" and "c". The letter "s" is used for soils that are shallow, droughty, or unusually low in fertility and "c" for soils that are limited chiefly by a climate that is too cold or too dry.

The broadest grouping, the land capability class, is identified by Roman numerals. All the soils in one class have limitations and management problems of about the same degree, but may be of different kinds, as shown by the subclass. All the land classes except class I may have one or more subclasses.

In classes I, II, and III are soils that are suitable for annual or periodic cultivation of annual or short-lived crops.

Class I soils are those that have the widest range of use and the least risk of damage. They are level, or nearly level, productive, well drained, and easy to work. They can be cultivated with almost no risk of erosion and will remain productive if managed with normal care.

491658—60——3

Figure 12.—**Loading cane in the mud: Rainy weather, poor drainage, and muddy fields slow down the harvest. If mud gets into the juice, the crop may be refused at the mill.**

Class II soils can be cultivated regularly, but do not have quite so wide a range of suitability as class I soils. Some class II soils are gently sloping; consequently, they need moderate care to prevent erosion. Other soils in class II may be slightly droughty or slightly wet, or somewhat limited in depth.

Class III soils can be cropped regularly but have a narrower range of use. These need even more careful management.

In class IV are soils that have greater natural limitations than those in class III, but they can be cultivated for some crops under very careful management. There are no class IV soils in Terrebonne Parish.

In classes V, VI, and VII are soils that normally should not be cultivated for annual or short-lived crops, but they can be used for pasture or range, for woodland, or for wildlife. In Terrebonne Parish no soils are placed in class VI or VII.

Class V soils are nearly level and gently sloping but are droughty, wet, low in fertility, or otherwise unsuitable for cultivation.

Class VI soils are not suitable for crops because they are steep, or droughty, or otherwise limited, but they give fair yields of forage or forest products. Some soils in class VI can, without damage, be cultivated enough so that fruit trees or forest trees can be set out or pasture crops seeded.

Class VII soils provide only poor to fair yields of forage or forest products and have characteristics that limit them severely for these uses.

In class VIII are soils that have practically no agricultural use. Some of them have value as watersheds and wildlife habitats, or for scenery.

Following are the management groups of soils in Terrebonne Parish, arranged by capability classes and subclasses.

Class I.—Soils that have few limitations for use.
- Management group I–1.—Deep, moderately permeable, level or undulating soils.

Class II.—Soils that have some limitations that reduce the choice of plants or require some conservation practices.
- Subclass IIe.—Soils likely to erode if not protected.
  - Management group IIe–1.—Deep, moderately permeable, nearly level soils.
- Subclass IIw.—Soils somewhat limited by poor drainage and slow permeability.
  - Management group IIw–1.—Deep, level, slowly permeable soils.

Class III.—Soils that have severe limitations that reduce the choice of plants or require special conservation practices, or both.
- Subclass IIIw.—Soils severely limited by excess water.
  - Management group IIIw–1.—Deep, somewhat poorly drained, slowly permeable soils.
  - Management group IIIw–2.—Deep, poorly drained, very slowly permeable soils.
  - Management group IIIw–3.—Deep, moderately well to somewhat poorly drained soils that are subject to occasional flooding.

Class V.—Soils that have limitations, other than erosion hazard, that limit their use to permanent cover.
- Subclass Vw.—Wet soils that can be used for pasture or woodland.
  - Management group Vw–1.—Poorly drained soils that are frequently flooded by fresh water but provide firm footing for grazing animals and swamp areas capable

levee ridges. They contain moderately low amounts of organic matter. Water readily penetrates these soils, but enough moisture is usually retained for plants. Excess surface water is removed by the flow of gravity. These soils require a minimum amount of artificial drainage.

Present use and management.—The soils of management group I–1 are used for sugarcane, corn, soybeans, and truck crops. Nitrogen is commonly applied to all crops.

The cropping system generally used on the soils in this group is sugarcane for 3 years, followed by soybeans and corn, or by plowed land left fallow. Under average management, green-manure crops are planted only occasionally and the supply of organic matter is therefore low. Plant cane is usually fertilized with 40 to 50 pounds of nitrogen per acre, and stubble cane, with 60 pounds. Corn is fertilized with 200 pounds of complete fertilizer and side-dressed with 50 pounds of nitrogen.

The yields per acre under this management are in the order of 24 tons of plant cane, 20 tons of first-stubble cane, 18 tons of second-stubble cane, and 45 bushels of corn. From 100 to 200 pounds of complete fertilizer are generally applied to improved pastures.

Suitable use and management.—These soils are well suited to improved pasture but are too permeable for rice. Some areas do not have enough phosphorus and potassium for sugarcane. Soil tests are needed to determine how much and what kinds of fertilizers should be applied to crops and pasture.

Under good management, cropping systems are used

TABLE 5.—*Suitable crops, suggested cropping systems,*

Management group and soil	Suitable crops	Suggested cropping systems
I–1 Commerce silt loam, level phase. Commerce silty clay loam, level phase. Cypremort silt loam and very fine sandy loam.	Sugarcane, corn, soybeans, truck crops, alfalfa, clover, dallisgrass, bermudagrass, fescue.	Sugarcane 3 years, followed by corn and summer legumes. Sugarcane 3 years, followed by legumes. Sugarcane 3 years, improved pasture 3 years.
IIe–1 Commerce silt loam, nearly level phase.	Sugarcane, corn, soybeans, truck crops, alfalfa, clover, dallisgrass, bermudagrass, fescue.	Sugarcane 3 years, followed by corn and summer legumes. Sugarcane 3 years, followed by legumes. Sugarcane 3 years, improved pasture 3 years.
IIw–1 Mhoon silt loam. Mhoon silty clay loam. Made land, arable.	Sugarcane, corn, rice, soybeans, alfalfa, clover, dallisgrass, bermudagrass, fescue.	Sugarcane 3 years, followed by corn and legumes. Sugarcane 3 years, improved pasture 3 years. Rice 2 years, pasture 2 years.
IIIw–1 Mhoon-Sharkey clays. Baldwin silty clay and silty clay loam.	Sugarcane, corn, rice, soybeans, alfalfa, clover, dallisgrass, bermudagrass, fescue.	Sugarcane 3 years, followed by corn and legumes. Sugarcane 3 years, improved pasture 3 years. Rice 2 years, pasture 2 years.
IIIw–2 Sharkey clay.	Rice, sugarcane, corn, alfalfa, clover, dallisgrass, bermudagrass.	Sugarcane 3 years, improved pasture 3 years. Rice 2 years, pasture 2 years. Sugarcane 3 years, followed by summer legumes, and then by plant cane and winter legumes.
IIIw–3 Commerce silt loam, low phase. Mhoon silt loam, low phase. Mhoon silty clay loam, low phase.	Corn, truck crops, sugarcane, clover, dallisgrass, bermudagrass, volunteer grasses.	Improved pasture 3 years, corn 2 years. Improved pasture 3 years, volunteer grass pasture 2 years. Corn and truck crops 3 years, volunteer grass pasture 2 years.

This fertile soil occurs on slopes of 1 to 3 percent, at or near the crests of the natural levee ridges. It contains moderate amounts of plant nutrients. The content of organic matter is generally low. Water goes into the soil at a moderate rate, but much of the surface water runs off.

Present use and management.—This soil produces very good yields of sugarcane, corn, soybeans, truck crops, and pasture. Rice is not suited to this permeable soil.

Under average management, the rows are run down the slope, and as a result the losses of surface soil and plant nutrients are heavy. Depletion of the supply of organic matter lowers the available moisture-holding capacity of the soil, and the crops do not get enough moisture during occasional long, dry periods.

The usual crop rotation is sugarcane for 3 years, followed by corn or soybeans, or by plowed land left fallow. The same fertilizer applications are used on this soil as on those of group I–1, but the yields are somewhat lower.

Suitable use and management.—If Commerce silt loam, nearly level phase, is to be used for cultivated crops, the rows should be on the contour or across the slope to prevent erosion and to increase the intake of surface water. A crop rotation that includes sugarcane, fallow land, im-

[redacted]

MANAGEMENT GROUP IIw–1

The soils of this group are Mhoon silt loam, Mhoon silty clay loam, and Made land, arable. These imperfectly and somewhat poorly drained soils occur in level and nearly level areas on the crests and back slopes of the natural levee ridges. Slopes are 1 percent or less. Water penetrates the upper layers at a moderate rate, but the substrata layers are slowly permeable.

Present use and management.—These soils are used for sugarcane, corn, soybeans, and improved pasture. Rice is grown in a few small areas.

When used for row crops, the soils in group IIw–1 are artificially drained by row drainage and widely spaced lateral ditches. In this system, the rows follow the slope and the middle of each row serves as a drainage ditch. Open ditches, or laterals, are constructed parallel to the fields or cuts. They receive the drainage water from the rows and carry it to the back-swamp areas or to the main drainage ditches.

The usual cropping system for soils in management group IIw–1 is sugarcane for 3 years, followed by idle plowed fallow land, or by corn or soybeans. Occasionally,

[redacted]

Present use and management.—The soils are used for sugarcane, corn, soybeans, and pasture. They produce moderately good yields.

The usual management practices, including use of fertilizers, are the same for these soils as for those of group IIw–1, but the yields are generally somewhat poorer, especially for row crops.

Suitable use and management.—Good management practices are similar to those for group IIw–1. However, these soils have poorer soil tilth, are more difficult to work, and are somewhat less productive. More intense artificial drainage, with lateral ditches at moderately spaced intervals, is needed to prevent water from standing too long in the row middles.

A good cropping system for this soil is sugarcane for 3 years, followed by 3 years of improved pasture. On small farms, where this cropping system is not practical, 3 years of sugarcane may be followed by corn or legumes. Under good management, legumes are turned under for green manure as often as feasible.

With good management, including application of 60 pounds of nitrogen per acre to plant cane and 80 to 100 pounds to stubble cane, expected average acre yields are in the order of 30 tons of plant cane, 24 tons of first-stubble cane, and 20 tons of second-stubble cane.

Under good management, corn receives 50 pounds of nitrogen per acre at planting time and a sidedressing of 50 pounds of nitrogen. Yields are 75 to 85 bushels per acre.

samples should be analyzed to determine the amounts and kinds of fertilizers needed to establish improved pastures.

MANAGEMENT GROUP Vw–1

This group of low, frequently flooded and water-logged soils and land types includes areas suited to forest and those suited only to water-tolerant sedges, rushes, herbs, and grasses.

Sharkey clay, low phase, Mhoon-Sharkey clays, low phases, and Made land in swamp are usually forested. They are better suited to pasture, trees, and wildlife than to cultivated crops. Most areas are favorable sites for the natural reseeding of trees.

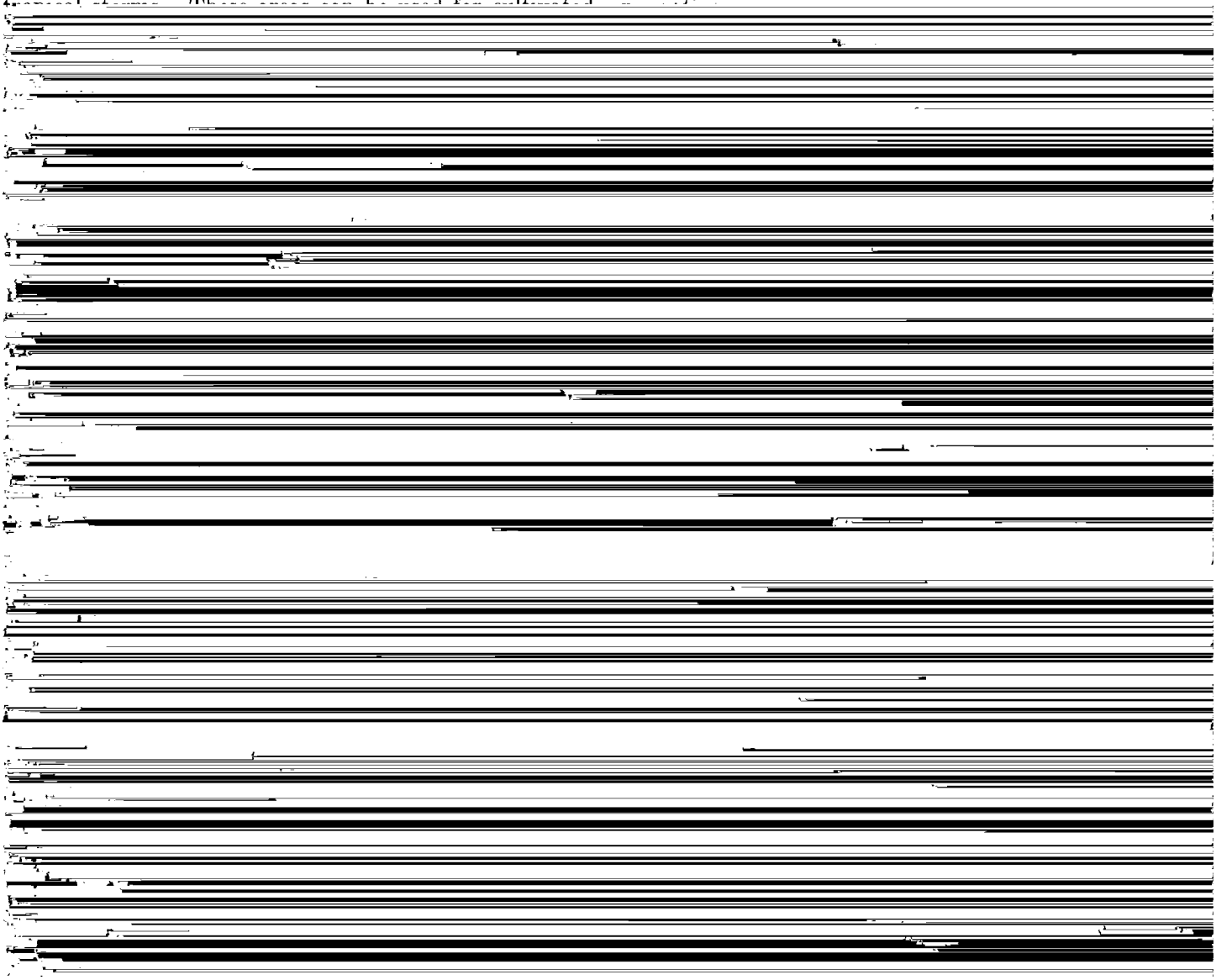
Fresh water marsh, clays and mucky clays, Fresh water marsh, muck, and Made land in marsh are land types that are also low and often flooded. These areas are better suited to native grass pasture and wildlife than to trees and cultivated crops. Some areas can be used for seasonal grazing.

Some areas of these land types and soils are in sites that are not flooded by the occasional high tides caused by tropical storms. These areas can be used for cultivated pasture. Very good pasture has been produced on this land when it is reclaimed. The cost of reclaiming large areas, however, may be prohibitive. Subsidence, flooding, and undesirable acidity after reclamation account for the failure of most drainage reclamation projects in the coastal marshes.

The land types in management group VIII–1 are best suited to wildlife and recreation.

MANAGEMENT GROUP VIII–2

This management group includes Brackish marsh, peat, Brackish marsh, muck, Brackish marsh, deep peat, Salt water marsh, clays and mucky clays, and Salt water marsh, peat. These land types are wet and frequently flooded. They contain moderate amounts of salt and are not suited to crops, improved pasture, or forest. They provide an abundance of native grass forage, but most areas are too inaccessible and have unstable, soft footing for grazing animals. Small, easily accessible areas furnish some seasonal grazing. The land types in this management group are best suited to wildlife and



Silt loam and silty clay loam were deposited on the natural levee ridges that parallel the streams; clay and silty clay sediments were left on the back-swamp borders of the ridges and in areas of marsh and swamp.

Most of the soils at an elevation of 4 feet or more are not flooded by normal tides and stream overflow. The only stream alluvium now being deposited to any extent consists of moderate quantities of silty clay and clay left by the Lower Atchafalaya River. These sediments are deposited in the marshes and swamps in the southwestern part of Terrebonne Parish.

The major streams that flow into and through the marshes deposit small amounts of clay and silty clay and build low, narrow natural levee ridges along their channels. Sediments carried by these streams include small amounts of alluvium from the narrow watersheds and larger amounts received from the marshes during high tides.

Considerable quantities of fine-textured sediments come from areas along the shore, from the shallow lakes and

lations of the undecomposed, or partly decomposed, organic materials in which the original plant parts can be identified are classified as peat.

Muck is formed in wet sites where the organic materials are exposed to air long enough to decompose the plant tissues, although the accumulations are protected from complete oxidation by water standing at or over the surface for long periods. The resulting muck is finely divided and generally has a strong fine granular structure. Most of the mucks contain various amounts of mineral soil.

The swamps of Terrebonne Parish have a dense growth of cypress and tupelo-gum trees. Marsh plants commonly grow in open areas of the swamps. The peats and mucks of the swamps generally are accumulations of woody organic materials derived from the remains of trees. However, some swamp soils have organic surface layers developed both from marsh and from swamp vegetation.

The better drained areas of the parish (the natural

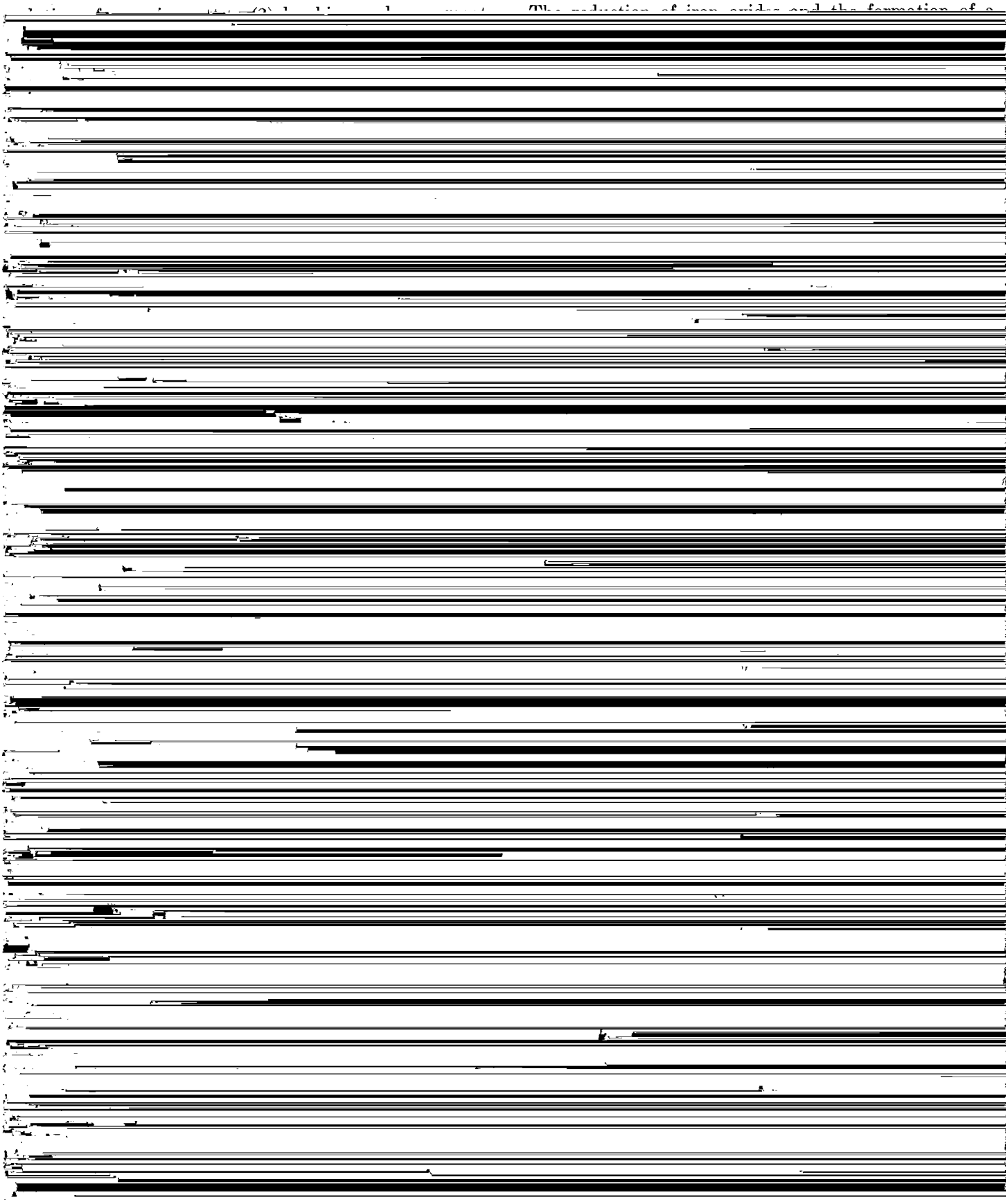


TABLE 7.—*Available (weak acid soluble [1]) nutrients and organic-matter content [2] of designated horizons of representative soil types [3]*

Soil type and sample number	Horizon	Depth	Ca	Mg	K	P	Organic matter
		Inches	*p. p. m.*	*p. p. m.*	*p. p. m.*	*p. p. m.*	*Percent*
Commerce silt loam:							
618	A_{1p}	0–10	1, 793	250	120	228	1. 59
619	A_{1ap}	10–16	2, 194	500	128	148	. 78
Mhoon silty clay loam:							
615	A_{1p}	0–6	2, 596	525	184	236	1. 83
616	A_{1ap}	6–10	2, 737	563	120	199	1. 73
Sharkey clay:							
661	A_{1p}	0–3	5, 103	1, 763	384	81	3. 15
662	A_{12p}	3–8	4, 108	1, 716	345	69	3. 09

[1] Soluble in 0.1 normal HCl with 1:25 ratio and 30 minutes equilibrium.

[2] Dry combustion method with carbon chain apparatus.

[3] Analyzed by B. N. Driskell, associate agronomist, Louisiana Agricultural Experiment Station, Baton Rouge, La.

TABLE 8.—*Chemical analyses [1] of representative soil types [2]*

Soil type and laboratory number	Horizon	Depth	SiO_2	TiO_2	Fe_2O_3	Al_2O_3	MnO	CaO	MgO	K_2O	Na_2O	P_2O_5	Ignition loss	Total
		Inches	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Commerce silt loam:														
618	A_{1p}	0–10	77. 46	0. 68	2. 32	9. 42	0. 03	0. 94	0. 59	2. 20	2. 22	0. 10	3. 57	99. 53
619	A_{1ap}	10–16	75. 62	. 74	3. 82	11. 65	. 05	1. 01	1. 24	2. 31	2. 01	. 09	1. 47	100. 01
620	C_1	16–36	78. 67	. 77	2. 76	9. 52	. 03	1. 04	. 91	2. 23	2. 12	. 08	1. 18	99. 31
621	C_2	36–40	71. 09	. 76	4. 15	14. 62	. 06	1. 09	1. 42	2. 44	2. 07	. 11	2. 27	100. 08
Mhoon silty clay loam:														
615	A_{1p}	0–6	73. 97	. 72	3. 24	11. 41	. 05	. 99	. 89	2. 46	1. 84	. 08	3. 81	99. 46
616	A_{1ap}	6–10	73. 92	. 73	3. 27	12. 04	. 05	1. 03	1. 06	2. 35	2. 12	. 11	3. 21	99. 83
617	C_g	10–36	72. 30	. 76	4. 09	13. 99	. 05	1. 04	. 95	2. 46	1. 97	. 13	1. 95	99. 69
Sharkey clay:														
661	A_{1p}	0–3	59. 02	. 83	6. 55	18. 86	. 07	1. 19	1. 68	2. 69	1. 05	. 15	7. 74	99. 83
662	[illegible]	[illegible]	59. 24	. 82	6. 65	18. 89	. 06	1. 17	1. 68	2. 69	1. 20	. 12	7. 55	100. 25

in the lower soil layer. This soil is generally somewhat less leached than the better drained and more permeable Commerce soils.

Sharkey clay.—This soil is widely distributed throughout the parish. It occurs on the higher parts of the back swamps that border the natural levee ridges. Sharkey clay has formed primarily from recent clay alluvium that has poor drainage.

The profile described was taken from an area of Sharkey clay located in sec. 57, T. 18 S., R. 18 E.:

in broader groupings for study and for comparison with the soils of other parishes in the State and with soils of other States.

In the highest category of classification are the zonal, intrazonal, and azonal orders. In the zonal order are soils that have developed distinct, genetically related horizons that show the influence of climate and living organisms in their formation. The intrazonal order consists of soils having genetically related horizons that have developed through the dominant influence of some local factor of relief, parent material, or time over the normal

classified in the intrazonal order. These soils are poorly to somewhat poorly drained. All show in their morphology the effects of gleying and the accumulation of organic matter. The Sharkey soils also show the effects of marked shrinking and swelling with changing moisture content, as indicated earlier. The intrazonal soils in this

B horizon of the Baldwin soils is finer textured than that of the A or C horizon. Clay films on the well-developed, strong structural particles of the B horizon indicate the accumulation of silicate clay minerals that have moved downward from the A horizon. The A horizon is leached of easily soluble carbonates and other salts and is strongly

TABLE 10.—*Chemical analyses of water samples collected from the clays, peats, and mucks listed in table 9*

Land type and laboratory number	pH	Water-soluble cations				Water-soluble salts			
		Ca	Mg	K	$Na \times 10^3$	Na_2CO_3	Na_2SO_4	NaCl	Total salts
Fresh water marsh, clays and mucky clays:		*p. p. m.*	*p. p. m.*	*p. p. m.*	*p. p. m.*	*Percent*	*Percent*	*Percent*	*Percent*
43		32	259	15	0. 02	0. 02	0	0. 32	0. 34
Fresh water marsh, muck:									
92		17	81	23	. 16	. 01	0	. 11	. 12
Fresh water marsh, peat:									
55		13	45	289	. 36	. 02	0	. 18	. 20
Brackish marsh, clays and mucky clays:									
322	7. 5	64	385	91	1. 06	. 03	0	. 75	. 78
471	7. 2	61	782	150	2. 15	. 03	. 03	1. 53	1. 59
Brackish marsh, muck:									
298	6. 9	73	568	161	1. 59	. 03	. 02	1. 20	1. 25
269		84	665	229	1. 96	. 03	0	1. 41	1. 44
Brackish marsh, peat:									
451	6. 7	124	711	183	1. 83	. 03	. 02	1. 40	1. 45
Salt water marsh, clays and mucky clays:									
352	7. 9	319	2, 565	612	5. 75	. 04	. 27	4. 96	5. 27
237		207	1, 783	450	4. 58	. 08	0	3. 61	3. 69
Salt water marsh, peat:									
76		295	741	206	2. 81	. 04	. 01	1. 93	1. 98

and commonly contain moderate to high amounts of organic matter. The soils are generally dark gray to depths of 6 to 13 feet. They have little indication of horizon differentiation except the darker color of the organic layer and the lighter color of the waterlogged, or gleyed, layer. The depth to the gleyed layer ranges from a few inches to several feet from the surface. Some areas of these soils that are low in organic matter have characteristics of the Low-Humic Gley group.

The organic soils of the swamps and marshes have a high content of organic matter and are classified as Bog soils. They are usually wet and waterlogged. The moderately thin to thick surface layer of mucks and peats is underlain by clays and silty clays, which are dark gray to very dark gray to depths of 6 to 12 feet from the surface. The gleyed gray clay layers commonly are below the dark-gray clay.

The azonal order in Terrebonne Parish includes soils of the Commerce and Mhoon series. These soils lack genetically related horizons or have only faintly distinguishable horizons. They are classed as Alluvial soils of the azonal order. However, the somewhat poorly drained Mhoon soils show some reduction and transfer of iron and therefore have the gray, gleyed layer characteristic of the Low-Humic Gley group. These soils lack well-developed horizons because the sediments from which they are developing have been in place a comparatively short time.

Laboratory Data on Coastal Marshes

Chemical analyses of representative land types of the coastal marshes are given in table 9, and laboratory analyses of samples of water taken from these soils are listed in table 10.

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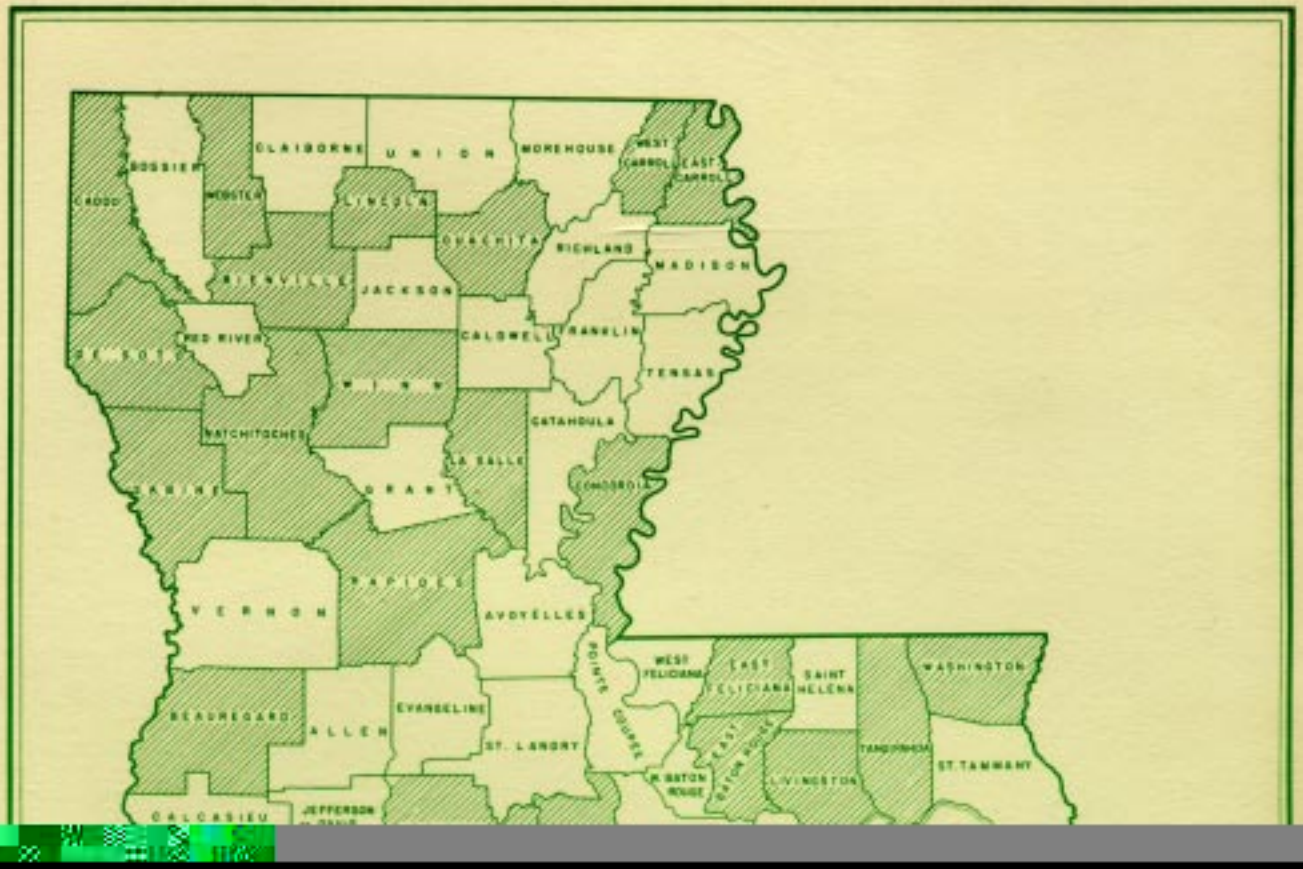
CLAIBORNE
UNION
MOREHOUSE
WEST CARROLL
EAST CARROLL
BOSSIER
CADDO
WEBSTER
LINCOLN
OUACHITA
RICHLAND
MADISON
JACKSON
RED RIVER
CALDWELL
FRANKLIN
TENSAS
DE SOTO
WINN
CATAHOULA
NATCHITOCHES
LA SALLE
SABINE
GRANT
CONCORDIA
RAPIDES
VERNON
AVOYELLES
POINTE COUPEE
WEST FELICIANA
EAST FELICIANA
SAINT HELENA
WASHINGTON
BEAUREGARD
ALLEN
EVANGELINE
ST. LANDRY
TANGIPAHOA
ST. TAMMANY
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W. BATON ROUGE
LIVINGSTON
CALCASIEU
JEFFERSON