

**Soil Survey
Laboratory Data and
Descriptions for
Some Soils of...**

...MISSISSIPPI

Soil Survey Investigations Report No. 13

**Soil Survey
Laboratory Data and
Descriptions for
Some Soils of...**

...MISSISSIPPI

MAY 1967

SOIL CONSERVATION SERVICE • U.S. DEPARTMENT OF AGRICULTURE
In cooperation with
MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

1. SAMPLE COLLECTION AND PREPARATION

- A. Field sampling
 - 1. Site selection
 - 2. Soil sampling
 - a. Stony soils
- B. Laboratory preparation
 - 1. Standard (airdry)
 - a. Square-hole 2-mm sieve
 - b. Round-hole 2-mm sieve
 - 2. Field moist
 - 3. Carbonate-containing material
 - 4. Carbonate-indurated material

2. CONVENTIONS

- A. Size-fraction base for reporting
 - 1. <2-mm
 - 2. <size specified
- B. Data-sheet symbols
 - tr: trace, not measurable by quantitative procedure used or less than reportable amount
 - tr(s): trace, detectable only by qualitative procedure more sensitive than quantitative procedure used
 - : analysis run but none detected
 - (s): none detected by sensitive qualitative test
 - blank: analysis not run
 - nd: analysis not run
 - <: less than reported amount or none present

3. PARTICLE-SIZE ANALYSES

- A. <2-mm fraction (pipet method)
 - 1. Airdry samples
 - a. Carbonate and noncarbonate clay
 - 2. Moist samples
 - a. Carbonate and noncarbonate clay
- B. >2-mm fraction
 - 1. Weight estimates
 - 2. Volume estimates

4. FABRIC-RELATED ANALYSES

- A. Bulk density
 - 1. Baran-coated clods
 - a. Field state
 - b. Airdry
 - c. 30-cm absorption
 - d. 1/3-bar desorption I
 - e. 1/3-bar desorption II
 - f. 1/3-bar desorption III
 - g. 1/10-bar desorption
 - h. Ovendry
 - 2. Paraffin-coated clods
 - a. Ovendry
 - 3. Cores
 - a. Field moist
- B. Water retention
 - 1. Pressure-plate extraction (1/3 or 1/10 bar)
 - a. Sieved samples
 - b. Soil pieces
 - c. Natural clods
 - d. Cores
 - 2. Pressure-membrane extraction (15 bars)
 - 3. Sand table absorption
 - 4. Field state
 - 5. Airdry
- C. Water-retention difference
 - 1. 1/3 bar to 15 bars
 - 2. 1/10 bar to 15 bars
- D. Coefficient of linear extensibility
 - 1. Dry to moist
- E. Micromorphology
 - 1. Thin sections
 - a. Preparation
 - b. Interpretation
 - c. Moved-clay percentage

5. ION-EXCHANGE PROPERTIES

- A. Cation-exchange capacity
 - 1. NH_4OAc , pH 7.0
 - a. Direct distillation
 - b. Displacement, distillation

5A. Cation-exchange capacity (cont.)

- 2. NaOAc , pH 8.2
 - a. Centrifuge method
- 3. Sum of cations
 - a. Acidify by $\text{BaCl}_2\text{-TEA}$, pH 8.2; bases by NH_4OAc , pH 7.0
- 4. KOAc , pH 7.0
- 5. BaCl_2 , pH 8.2
 - a. Barium by flame photometry
- B. Extractable bases
 - 1. NH_4OAc extraction
 - a. Uncorrected
 - b. Corrected (exchangeable)
 - 2. KCl-TEA extraction, pH 8.2
- C. Base saturation
 - 1. NH_4OAc , pH 7.0
 - 2. NaOAc , pH 8.2
 - 3. Sum of cations
- D. Sodium saturation (exchangeable Na pct.)
 - 1. NaOAc , pH 8.2
 - 2. NH_4OAc , pH 7.0
- E. Sodium adsorption ratio

6. CHEMICAL ANALYSES

- A. Organic carbon
 - 1. Acid-dichromate digestion
 - a. FeSO_4 titration
 - b. CO_2 evolution, gravimetric
 - 2. Dry combustion
 - a. CO_2 evolution I
 - b. CO_2 evolution II
 - 3. Ferrous digestion
 - a. Weight loss
- B. Nitrogen
 - 1. Kjeldahl digestion
 - a. Ammonia distillation
 - 2. Semimicro Kjeldahl
 - a. Ammonia distillation
- C. Iron
 - 1. Dithionite extraction
 - a. Dichromate titration
 - b. EDTA titration
 - 2. Dithionite-citrate extraction
 - a. Orthophenanthroline colorimetry
 - 3. Bithionite-citrate-bicarbonate extraction
 - a. Potassium-thiocyanate colorimetry
 - 4. Pyrophosphate-dithionite extraction
- D. Manganese
 - 1. Dithionite extraction
 - a. Permanganate colorimetry
- E. Calcium carbonate
 - 1. HCl treatment
 - a. Gas volumetric
 - b. Manometric
 - c. Weight loss
 - d. Weight gain
 - e. Titrimetric
 - 2. Sensitive qualitative method
 - a. Visual, gas bubbles
- F. Gypsum
 - 1. Water extract
 - a. Precipitation in acetone
- G. Aluminum
 - 1. KCl extraction I, 30 min
 - a. Aluminon I
 - b. Aluminon II
 - c. Aluminon III
 - d. Fluoride titration
 - 2. KCl extraction II, overnight
 - a. Aluminon I
 - 3. NH_4OAc extraction
 - a. Aluminon III
 - 4. NaOAc extraction
 - a. Aluminon III
- H. Extractable acidity
 - 1. $\text{BaCl}_2\text{-triethanolamine I}$
 - a. Back-titration with HCl
 - 2. $\text{BaCl}_2\text{-triethanolamine II}$
 - a. Back-titration with HCl
 - 3. $\text{KCl-triethanolamine}$
 - a. Back-titration with NaOH
- I. Carbonate
 - 1. Saturation extract
 - a. Acid titration

6. CHEMICAL ANALYSES (cont.)

- J. Bicarbonate
 - 1. Saturation extract
 - a. Acid titration
 - K. Chloride
 - 1. Saturation extract
 - a. Mohr titration
 - b. Potentiometric titration
 - L. Sulfate
 - 1. Saturation extract
 - a. Gravimetric, BaSO_4
 - 2. NH_4OAc extraction
 - a. Gravimetric, BaSO_4
 - M. Nitrate
 - 1. Saturation extract
 - a. PDS acid colorimetry
 - N. Calcium
 - 1. Saturation extract
 - a. EDTA titration
 - 2. NH_4OAc extraction
 - a. EDTA-alcohol separation
 - b. Oxalate-permanganate I
 - c. Oxalate-permanganate II
 - d. Oxalate-cerate
 - 3. $\text{NH}_4\text{Cl-EtOH}$ extraction
 - a. EDTA titration
 - 4. KCl-TEA extraction
 - a. Oxalate-permanganate
 - O. Magnesium
 - 1. Saturation extract
 - a. EDTA titration
 - 2. NH_4OAc extraction
 - a. EDTA-alcohol separation
 - b. Phosphate titration
 - c. Gravimetric, $\text{Mg}_2\text{P}_2\text{O}_7$
 - 3. $\text{NH}_4\text{Cl-EtOH}$ extraction
 - a. EDTA titration
 - P. Sodium
 - 1. Saturation extract
 - a. Flame photometry
 - 2. NH_4OAc extraction
 - a. Flame photometry
 - Q. Potassium
 - 1. Saturation extract
 - a. Flame photometry
 - 2. NH_4OAc extraction
 - a. Flame photometry
 - R. Sulfur
 - 1. NaHCO_3 extraction, pH 8.5
 - a. Methylene blue
 - S. Total phosphorus
 - 1. Perchloric-acid digestion
 - a. Molybdovanadophosphoric-acid colorimetry
- ## 7. MINERALOGY
- A. Instrumental analysis
 - 1. Preparation
 - a. Carbonate removal
 - b. Organic-matter removal
 - c. Iron removal
 - d. Particle-size fractionation
 - 2. X-ray diffraction
 - 3. Differential thermal analysis
 - B. Optical analysis
 - 1. Grain studies
 - C. Total analysis
 - 1. Chemical
 - 2. X-ray emission spectrography
 - D. Surface area
 - 1. Glycerol retention
- ## 8. MISCELLANEOUS
- A. Saturated paste, mixed
 - 1. Saturation extract
 - a. Conductivity
 - 2. Conductivity, saturated paste
 - B. Saturated paste, capillary rise
 - 1. Saturation extract
 - a. Conductivity
 - C. pH
 - 1. Soil suspensions
 - a. Water dilution
 - b. Saturated paste
 - c. KCl
 - D. Ratios
 - 1. To total clay
 - 2. To noncarbonate clay
 - 3. Ca to Mg (extractable)

PREFACE

This publication is one in a new U.S. Department of Agriculture series established to preserve and make available technical information resulting from soil survey investigations. These investigations have been going on for about two decades. Data from them have been distributed in unpublished form to those immediately concerned. Some of the data and descriptions have appeared in technical journals, in regional bulletins, in USDA technical bulletins, and in the text of published soil surveys. But most were not available to all who might use them.

We intend to publish in this series all data from the soil survey laboratories that form reasonably complete characterizations of soils. Already-assembled data and descriptions will be published just as rapidly as they can be prepared for printing. Fragmentary data collected as reference points for specific soil surveys will not be included.

While these data were being assembled, there were many changes in laboratory methods. Some were improved and some new ones were devised. Consequently, laboratory data for different soils cannot always be directly compared without allowance for the method.

The method used is indicated by symbol in the column headings of the data table. These symbols are identified in the code sheet on the opposite page. Each method is described in the first number of this series, "Soil Survey Laboratory Methods and Procedures for Collecting Soil Samples," SSIR No. 1.

Ways of describing soils have also changed. Soil descriptions have become explicit on more and more features. The systems for designating horizons and for classifying soils have been changed.

The soil descriptions published here were prepared as working documents to meet a specific need of a soil survey at the time the soil samples were collected. The soil scientists who wrote them had no idea they would be published. Editing has been limited for the most part to that necessary for conformance to the "Soil Survey Manual." Field textural estimates have been retained, even though some are at variance with the laboratory data, because the field estimates themselves are important data.

There were several reasons for sampling these soils. Some were sampled to study soil genesis, some to facilitate classification, and some to obtain data to permit more useful interpretations. Those sampled for genesis or classification studies do not always fit neatly into our present concepts of soil series. Partly because of these studies, our concepts of some soil series have been modified. As a consequence, the soil series name assigned a soil at the time of sampling is not always the name that would be assigned today. Soil series names in this publication follow 1965 series definitions.

*Soil Survey
Soil Conservation Service*

MISSISSIPPI

<u>Soil Series</u>	<u>County</u>	<u>Soil Survey No.</u>	<u>Page</u>	<u>Soil Series</u>	<u>County</u>	<u>Soil Survey No.</u>	<u>Page</u>
Adler	Leflore	S56Miss-42-1	3	Lynchburg	Lamar	S63Miss-37-3	93
Alligator	Leflore	S56Miss-42-3	5		Lamar	S63Miss-37-5	95
*Amagon	Bolivar	S51Miss-6-2	7	Mayhew	Noxubee	S58Miss-52-1	97
Amite	Pearl River	S56Miss-55-1	9		Noxubee	S58Miss-52-4	99
	Pearl River	S56Miss-55-2	11	Memphis	Hinds	S60Miss-25-1	101
	Monroe	S61Miss-48-1	13		Hinds	S60Miss-25-2	103
	Monroe	S61Miss-48-2	15		Warren	S56Miss-75-1	105
*Askew	Bolivar	S51Miss-6-1	17		Warren	S56Miss-75-2	107
	Quitman	D45Mi-012	19		Warren	S59Miss-75-1	109
	Tunica	D45Mi-009	21		Warren	S59Miss-75-2	111
	Tunica	D45Mi-010	23	Myatt	Lamar	S63Miss-37-2	113
Atwood	Pontotoc	S61Miss-58-1	25		Lamar	S63Miss-37-4	115
	Pontotoc	S61Miss-58-2	27	Ora	Covington	S56Miss-16-1	117
Bosket	Tallahatchie	D44M1-007	29		Covington	S56Miss-16-2	119
*Brookhaven	Lincoln	S59Miss-43-3	31	Pheba	Forrest	S63Miss-18-2	121
	Lincoln	S59Miss-43-4	33		Forrest	S63Miss-18-3	123
Bude	Tippah	S61Miss-70-3	35	Prentiss	Clarke	S61Miss-12-1	125
	Tippah	S61Miss-70-4	37	Providence	Lincoln	S59Miss-43-1	127
Calloway	DeSoto	S52Miss-17-1	39		Lincoln	S59Miss-43-2	129
	Panola	S59Miss-54-1	41	Rains	Forrest	S63Miss-18-1	131
	Panola	S59Miss-54-2	43		Lamar	S63Miss-37-1	133
Dubbs	Quitman	D44M1-006	45	Ruston	Jackson	S55Miss-30-3	135
	Quitman	D44M1-008	47		Jackson	S55Miss-30-4	137
	Tunica	D44M1-001	49	Savannah	Clarke	S61Miss-12-2	139
	Tunica	D44M1-003	51		Forrest	S56Miss-18-1	141
	Tunica	D44M1-004	53		Forrest	S56Miss-18-2	143
	Tunica	D44M1-005	55		Monroe	S61Miss-48-3	145
Dundee	Tallahatchie	D45Mi-013	57		Monroe	S61Miss-48-4	147
	Tate	D45Mi-015	59	Sharkey	Tunica	D45Mi-017	149
	Tunica	D45Mi-011	61		Tunica	D45Mi-018	151
Eustis	Jackson	S55Miss-30-1	63	Stough	Clarke	S61Miss-12-3	153
Eutaw	Jasper	S58Miss-31-1	65		Clarke	S61Miss-12-4	155
	Monroe	S58Miss-48-1	67	Sumter	Clay	S58Miss-13-1	157
	Monroe	S58Miss-48-2	69		Monroe	S58Miss-48-6	159
	Newton	S58Miss-51-1	71		Newton	S58Miss-51-2	161
Falkner	Tippah	S61Miss-70-1	73		Newton	S58Miss-51-3	163
	Tippah	S61Miss-70-2	75	Vaiden	Lowndes	S58Miss-44-1	165
Grenada	Hinds	S60Miss-25-3	77		Lowndes	S58Miss-44-2	167
Lakeland	Jackson	S55Miss-30-2	79		Monroe	S58Miss-48-3	169
Leaf	Jackson	S55Miss-30-7	81		Monroe	S58Miss-48-4	171
	Jackson	S55Miss-30-8	83		Newton	S55Miss-51-1	173
Loring	DeSoto	S52Miss-17-2	85		Newton	S55Miss-51-2	175
	Hinds	S56Miss-25-1	87	Vicksburg	Leflore	S56Miss-42-2	177
	Hinds	S56Miss-25-2	89	Wilcox	Noxubee	S58Miss-52-2	179
	Hinds	S60Miss-25-4	91		Noxubee	S58Miss-52-3	181

*Soil series names preceded by an asterisk are names of tentative series.

MISSISSIPPI

<u>County</u>	<u>Soil Series</u>	<u>Soil Survey No.</u>	<u>Page</u>	<u>County</u>	<u>Soil Series</u>	<u>Soil Survey No.</u>	<u>Page</u>
Bolivar	*Amagon	851Miss-6-2	7	Monroe	Eutaw	S58Miss-48-1	67
	*Askew	851Miss-6-1	17		Eutaw	S58Miss-48-2	69
Clarke	Prentiss	861Miss-12-1	125		Savannah	S61Miss-48-3	145
	Savannah	861Miss-12-2	139		Savannah	861Miss-48-4	147
	Stough	861Miss-12-3	153		Sumter	S58Miss-48-6	159
	Stough	861Miss-12-4	155		Vaiden	S58Miss-48-3	169
Clay	Sumter	S58Miss-13-1	157		Vaiden	S58Miss-48-4	171
Covington	Ora	S56Miss-16-1	117	Newton	Eutaw	S58Miss-51-1	71
	Ora	S56Miss-16-2	119		Sumter	S58Miss-51-2	161
DeSoto	Calloway	S52Miss-17-1	39		Sumter	S58Miss-51-3	163
	Loring	S52Miss-17-2	85		Vaiden	S55Miss-51-1	173
Forrest	Pheba	863Miss-18-2	121		Vaiden	S55Miss-51-2	175
	Pheba	863Miss-18-3	123	Noxubee	Mayhew	S58Miss-52-1	97
	Rains	863Miss-18-1	131		Mayhew	S58Miss-52-4	99
	Savannah	S56Miss-18-1	141		Wilcox	S58Miss-52-2	179
	Savannah	S56Miss-18-2	143		Wilcox	S58Miss-52-3	181
Hinds	Grenada	860Miss-25-3	77	Panola	Calloway	S59Miss-54-1	41
	Loring	S56Miss-25-1	87		Calloway	S59Miss-54-2	43
	Loring	S56Miss-25-2	89	Pearl River	Amite	S56Miss-55-1	9
	Loring	860Miss-25-4	91		Amite	S56Miss-55-2	11
	Memphis	860Miss-25-1	101	Pontotoc	Atwood	S61Miss-58-1	25
	Memphis	860Miss-25-2	103		Atwood	S61Miss-58-2	27
Jackson	Eustis	S55Miss-30-1	63	Quitman	*Askew	D45Mi-012	19
	Lakeland	S55Miss-30-2	79		Dubbs	D44Mi-006	45
	Leaf	S55Miss-30-7	81		Dubbs	D44Mi-008	47
	Leaf	S55Miss-30-8	83	Tallahatchie	Bosket	D44Mi-007	29
	Ruston	S55Miss-30-3	135		Dundee	D45Mi-013	57
	Ruston	S55Miss-30-4	137	Tate	Dundee	D45Mi-015	59
Jasper	Eutaw	S58Miss-31-1	65	Tippah	Bude	S61Miss-70-3	35
Lamar	Lynchburg	863Miss-37-3	93		Bude	S61Miss-70-4	37
	Lynchburg	863Miss-37-5	95		Falkner	S61Miss-70-1	73
	Myatt	863Miss-37-2	113		Falkner	S61Miss-70-2	75
	Myatt	863Miss-37-4	115	Tunica	*Askew	D45Mi-009	21
	Rains	863Miss-37-1	133		*Askew	D45Mi-010	23
Leflore	Adler	S56Miss-42-1	3		Dubbs	D44Mi-001	49
	Alligator	S56Miss-42-3	5		Dubbs	D44Mi-003	51
	Vicksburg	S56Miss-42-2	177		Dubbs	D44Mi-004	53
Lincoln	*Brookhaven	S59Miss-43-3	31		Dubbs	D44Mi-005	55
	*Brookhaven	S59Miss-43-4	33		Dundee	D45Mi-011	61
	Providence	S59Miss-43-1	127		Sharkey	D45Mi-017	149
	Providence	S59Miss-43-2	129		Sharkey	D45Mi-018	151
Lowndes	Vaiden	S58Miss-44-1	165	Warren	Memphis	S56Miss-75-1	105
	Vaiden	S58Miss-44-2	167		Memphis	S56Miss-75-2	107
Monroe	Amite	S61Miss-48-1	13		Memphis	S59Miss-75-1	109
	Amite	S61Miss-48-2	15		Memphis	S59Miss-75-2	111

*Soil series names preceded by an asterisk are names of tentative series.

SOIL Adler silt loam SOIL Nos. 856-Miss-42-1 LOCATION Leflore County, Mississippi
 SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 56579 - 56582

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1											3B2 Cm	3B1 Coarse fragments			
		Total		Sand					Silt					2A2 2-19	19-76		
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)				(2-0.1)	
Pct. of < 2 mm																	
0-6	Ap		92.0	7.7	-	-	-	-	0.3		32.5	59.7					
6-30	C1		92.2	7.0	-	-	-	0.8		40.6	52.4						
30-54	C2		90.1	9.8	-	-	-	0.1		50.4	39.8						
54+	D		75.6	23.9	-	-	-	0.2	0.3	63.0	12.9						
Depth (in.)	5A1a Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. Iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD H/in	pH			
						4A1a 1/2 bar	4A1b Oven dry	4A1c g/cc		4B1c 1/2 bar	4B2 15 bar	8C1c (1:1) KCl		8C1a (1:1) H ₂ O			
						Pct.	Pct.	Pct.		Pct.	Pct.	Pct.		Pct.			
0-6	0.62	0.069	9														
6-30	0.14	0.024														5.4	
30-54	0.23	0.033														6.7	
54+	0.32	0.051														7.2	
																6.0	
Depth (in.)	Extractable bases 5B1a					6H1a	CEC		6B1d	Ratios to clay			8D3	Bum saturation			
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	Ext. acidity	5A3a Sum cation	Ext. Al	CEC Sum	Ext. Iron	15-bar water	Ca/Mg	5C3 Sum options Pct.	5C1 NH ₄ OAc Pct.			
	mg/100 g																
0-6	3.6	1.1	0.2	0.2		4.0	9.1						56				
6-30	3.4	2.3	0.3	0.1		2.0	8.1						75				
30-54	5.4	3.7	0.4	0.2		1.6	11.4						86				
54+	7.7	5.2	0.5	0.4		5.1	18.9						73				
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite									
	7A2 X-ray				7A3												

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
 Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
 Relative amounts: blank = not determined, dash = not detected,
 tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Adler silt loam

Soil No.: S56Miss-42-1

Location: Leflore County, Mississippi, NE 1/4 of SW 1/4, Sec. 8, T 17N, R 1E, 1/2 mile east of

Highway No. 49E and 3/4 mile north of Abiacha Creek Diversion Canal. Photo AVI-2F-50

Collected by and date: Walter E. Keenan and W. M. Morris, 4/17/56

Horizon and

Beltsville

Lab. No.

- Ap 0 to 6 inches. Yellowish brown (10YR 5/4), very pale brown (10YR 7/3), dry; silt loam with weak fine granular structure; very friable; medium acid; boundary abrupt, smooth. Many fine roots are present in this horizon.
56579
- C1 6 to 30 inches. Yellowish brown (10YR 5/4), pale yellow (2.5Y 7/4), dry; very friable silt loam; with distinct common medium gray to brown mottles; massive structure; slightly acid; boundary abrupt, smooth. Many fine roots have penetrated to the lower depths of this horizon, and there are many decaying roots, parts of tree limbs and other decaying plant material present.
56580
- C2 30 to 54 inches. Yellowish brown (10YR 5/4), pale yellow (2.5Y 7/4), dry; slightly firm silt loam and brown mottles; massive structure; neutral reaction; boundary gradual, wavy. A few fine roots have penetrated the upper part of the horizon, and there is much decaying plant material present.
56581
- D 54+ inches. Brown (10YR 5/3) and grayish brown (10YR 5/2), white (N 8/) and pale yellow (2.5Y 7/4), dry; firm silty clay loam, with many medium distinct brown mottles; massive structure; slightly acid. The water table was slightly above the 54 inch level and no observation of this horizon in place could be made. The sample from this horizon was collected with a post hole auger.
56582

Notes: Colors refer to moist soil unless otherwise stated.

SOIL Alligator clay SOIL Nos. S56-Miss-42-3 LOCATION Leflore County, Mississippi

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 56586 - 56590

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) 3A1											3B2 Cm	3B1 Coarse fragments				
		Total			Sand					Silt				2A2 > 2	2-19	19-76		
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)					(2-0.1)	Pct.
0-4	Ap		33.4	63.7	0.2	0.3	0.4	1.0	1.0		27.7	7.2					tr.	
4-10	Clg		21.8	77.3	-	0.1	0.1	0.3	0.4		19.4	2.9					tr.	
10-27	C2g		26.0	73.4	-	-	0.1	0.2	0.3		23.3	3.1					tr.	
27-40	C3g		28.9	70.2	-	0.1	0.1	0.3	0.4		26.1	3.4					tr.	
40+	C4g		33.4	65.6	-	-	0.1	0.4	0.5		29.1	4.9					tr.	

Depth (in.)	6A1a Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH	
						4A1a 1/2 bar	4A1b Oven dry	4A1c g/cc		4B1c 1/2 bar	4B2 15 bar	4B1a KCl		4B1b H ₂ O	
						Pct.	Pct.	Pct.		Pct.	Pct.	Pct.		Pct.	
0-4	1.58	0.178	9												4.8
4-10	0.50	0.084	6												4.6
10-27	0.36	0.054													4.6
27-40	0.36	0.052													4.8
40+	0.36	0.059													6.4

Depth (in.)	Extractable bases 5B1a					6E1a	CEC		6G1d	Ratios to clay			8D3	Base saturation	
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	Ext. acidity	5A3a Sum cations	Ext. Al	CEC Sum	Ext. iron	15-bar water	Ca/Mg	5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.	
	meq/100 g														
0-4	21.4	10.7	0.4	1.0		15.1	48.6						69		
4-10	24.4	13.6	1.0	1.0		15.2	55.2						72		
10-27	23.0	15.5	1.7	1.0		12.1	53.3						77		
27-40	22.6	16.9	1.0	1.0		9.2	50.7						82		
40+	24.0	19.1	1.0	1.0		3.8	51.2						92		

Depth (in.)	Clay Fraction Analysis 7A1b-d							
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray				7A3			

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica.
 Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite
 Relative amounts: blank = not determined, dash = not detected,
 tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Alligator clay

Soil No.: S56Miss-42-3

Location: Leflore County, Mississippi, NE 1/4 of Sec. 11, T 20N, R 2E, 1 1/8 mile S. of Little Tippe Bayou and 1 1/8 mile SW of Goose Lake; 100 feet W. of field road. Photo AVI-2F-19

Collected by: Walter E. Keenan, 6/29/56

Horizon and
Beltsville
Lab. No.

Ap 0 to 4 inches. Dark grayish brown (10YR 4/2) firm clay; moderate fine granular structure; strongly acid; boundary abrupt, smooth.

C1g 4 to 10 inches. Gray (5Y 5/1) or (10YR 6/1) firm clay, very hard when dry and very plastic when wet; mottles are many, medium, distinct and prominent; weak fine subangular blocky structure; numerous fine pores; strongly acid; a few cores of dark grayish brown clay 5 to 15 mm in diameter extend down from Ap; boundary gradual, smooth. A few roots have penetrated to the lower part of this horizon.

C2g 10 to 27 inches. Gray (5Y 5/1) or (10YR 5/1), firm clay, very hard when dry and very plastic when wet; mottles are many, medium, distinct and prominent; weak fine subangular blocky structure; numerous fine pores; strongly acid; boundary gradual, smooth. Only a very few fine roots have penetrated this horizon.

C3g 27 to 40 inches. Gray (10YR 5/1), firm clay, very hard when dry and very plastic when wet; mottles are many, medium, distinct and prominent; massive structure; fine pores; strongly acid; boundary clear, smooth.

C4g 40+ inches. Dark gray (10YR 4/1) or (5Y 4/1), firm clay, very hard when dry and very plastic when wet; mottles are common, fine distinct; massive structure; fine pores; slightly acid.

Notes: Colors refer to moist soil unless otherwise stated.

SOIL * Amagon silt loam SOIL Nos. B51M156-6-2 LOCATION Bolivar County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 51806 - 51816

Depth (in.)	Horizon	Size class and particle diameter (mm) SA1											3B2 Cm	Coarse fragments 3B1		
		1B1b Total			Sand					Silt				2A2 ≥ 2 Pct.	2-10 Pct.	10-76 Pct. of ≤ 76mm
		Sand (2-0.05)	Silt (0.05- 0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III 0.05-0.02 (0.02- 0.002)	Int. II (0.2-0.02)	(0-0.1)				
Pct. of < 2 use																
0-3	A1	69.9	11.8	-	0.1	0.2	3.4	14.6		24.1	63.4					
3-6	A2	70.4	14.3	0.2	0.7	0.6	1.3	12.5		24.8	58.9					
6-16	A3	62.8	15.5	0.4	0.8	0.5	1.0	19.0		21.3	61.1					
16-20	B21tg	55.6	19.4	0.3	0.8	0.4	0.8	22.7		17.0	61.9					
20-28	B21tg	58.8	19.8	0.1	0.4	0.3	0.7	19.9		15.0	64.1					
28-34	B22t	72.3	17.4	0.1	0.6	0.4	0.6	8.6		25.6	55.7					
34-38	B22t	72.5	16.2	0.1	0.7	0.4	0.6	9.5		24.1	58.3					
38-45	B31g	67.4	26.2	0.4	0.9	0.4	0.6	4.1		36.1	35.7					
45-53	B32g	69.9	22.2	0.3	0.6	0.4	0.6	6.0		27.8	48.5					
53-72	IIC1g	49.1	48.9	-	0.1	0.2	0.8	0.9		34.4	16.1					
72+	IIC2g	69.5	24.7	-	0.3	0.4	0.9	4.2		33.4	40.9					
Depth (in.)	6A1a Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4D1 COLE	Water content			4G1 WRD In/in	pH		
						4A1a 1/2 bar	4A1b Oven dry	4D1 COLE		4B1c 1/2 bar	4B2 15 bar	8C1c (1:1) NCl		8C1a (1:1) H ₂ O		
0-3	1.75															5.6
3-6	0.67															5.4
6-16	0.28															5.4
16-20	0.19															5.3
20-28	0.19															5.3
28-34	0.18															5.4
34-38	0.16															5.4
38-45	0.16															5.2
45-53	0.16															5.4
53-72	0.19															5.2
72+	0.14															5.2
Depth (in.)	Extractable bases 5B1d					6H1a Ext. acidity	6C1d 5A1a Sum cations		6D1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation		
	8N2d Ca	8O2b Mg	8P2a Na	8Q2a K	Sum		5A1a Sum cations	Ext. Al		8E1c Sum	Ext. iron	15-bar water		Ca/Mg	8C3 Sum options Pct.	9C1 NH ₄ OAc Pct.
0-3	5.1	1.6	0.2	0.3		6.3	13.5							53		
3-6	5.0	1.5	0.2	0.2		5.6	12.5							55		
6-16	4.4	1.9	0.2	0.1		5.6	12.2							54		
16-20	5.0	2.7	0.4	0.2		5.9	14.2							58		
20-28	6.2	3.4	0.4	0.2		6.6	16.8							61		
28-34	6.4	3.7	0.5	0.2		6.5	17.3							62		
34-38	6.0	3.6	0.5	0.2		6.0	16.3							63		
38-45	9.0	5.2	0.8	0.3		8.1	23.4							65		
45-53	8.4	4.9	0.8	0.3		6.6	21.0							69		
53-72	14.4	8.4	1.3	0.5		9.4	34.0							72		
72+	7.1	4.0	0.8	0.2		5.9	18.0							67		
Depth (in.)	Clay Fraction Analysis 7A1b-d															
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kf.	Gibbsite								
	7A2 X-ray				7A3											

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kf. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: *Amagon silt loam
Soil No.: S51Miss-6-2
Location: Bolivar County, Mississippi
Collected by: George E. Rogers and party

Horizon and
Beltsville
Lab. No.:

- A1
51806 0 to 2 3/4 inches. Light gray (10YR 7/2) silt loam (dry); weak fine granular structure; friable; many fine roots; medium acid; clear smooth boundary.
- A2
51807 2 3/4 to 5 3/4 inches. Very pale brown (10YR 8/3) silt loam (dry) with common fine distinct mottles of yellowish brown (10YR 5/6); weak fine subangular blocky structure; friable; many fine roots; strongly acid; gradual, smooth boundary.
- A3
51808 5 3/4 to 16 inches. Very pale brown (10YR 7/3) silt loam (dry) with common fine distinct mottles of brownish yellow (10YR 6/8); weak fine subangular blocky structure; friable; common fine roots; few fine brown and black concretions; strongly acid; gradual smooth boundary.
- B21tg
51809 16 to 20 inches. Light brownish gray (10YR 6/2) silt loam (moist) with common fine distinct mottles of yellowish brown (10YR 5/8); weak fine and medium subangular blocky structure; friable; patchy clay films on ped; few fine vesicles; few fine roots; strongly acid; gradual smooth boundary.
- B21tg
51810 20 to 28 inches. Same as horizon above, divided for sampling purposes.
- B22t
(Ab?)
51811 28 to 34 inches. Pale brown (10YR 6/3) silt loam (moist) with common to many medium distinct mottles of yellowish brown (10YR 5/8) and yellowish red (5YR 5/8); weak fine granular structure; friable; few fine vesicles; few fine roots; few fine brown and black concretions; strongly acid; gradual smooth boundary.
- B22t
(Ab?)
51812 34 to 38 inches. Same as horizon above, divided for sampling purposes.
- B31g
(B21b?)
51813 38 to 44 3/4 inches. Light brownish gray (10YR 6/2) silty clay loam (moist) with common fine and medium distinct mottles of yellowish brown (10YR 5/8) and dark yellowish brown (10YR 4/4); weak medium subangular blocky structure; friable; few fine brown and black concretions; few fine roots; strongly acid; gradual wavy boundary.
- B32g
(B22b?)
51814 44 3/4 to 53 1/2 inches. Pale brown (10YR 6/3) silty clay loam (moist) with common fine and medium distinct mottles of yellowish brown (10YR 5/8); weak coarse subangular blocky structure grading to massive; friable; few fine brown and black concretions; few fine roots; strongly acid; gradual wavy boundary.
- IIC1g
51815 53 1/2 to 72 inches. Grayish brown (10YR 5/2) silty clay (moist) with common medium and coarse distinct mottles of strong brown (7.5YR 5/8) and brownish yellow (10YR 6/6); weak coarse subangular blocky structure; very firm; few to common fine brown and black concretions; few fine roots; strongly acid; gradual wavy boundary.
- IIC2g
51816 72+ inches. Light brownish gray (10YR 6/2) silty clay loam (moist) with common medium strong brown (7.5YR 5/8) mottles; weak coarse subangular blocky structure; friable; few soft manganese concretions; few fine roots; strongly acid.

SOIL Amite fine sandy loam SOIL Nos. 856Mia-55-1 LOCATION Fearl River County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 56562 - 56570

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1													3B2 Cm	3B1 Coarse fragments		
		Sand											Silt			2A2 > 2 Pct.	2-19 Pct.	19-76 Pct.
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (< 0.002)	Vary coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Vary fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)					
Pct. of < 2 mm																		
0-6	Ap	30.9	9.8	0.6	13.6	21.7	19.6	3.8		18.0	23.7							
6-10	B1	33.6	22.9	0.4	9.8	15.9	14.4	3.0		21.7	20.5							
10-19	B21t	29.3	29.1	0.7	9.4	15.1	13.6	2.8		18.7	18.3							
19-27	B22t	22.4	28.4	1.0	11.0	17.5	16.3	3.4		14.8	16.8							
27-34	B23t	18.9	28.6	0.8	10.6	19.1	18.2	3.8		11.2	18.2							
34-43	B24t	48.5	13.4	8.4	7.9	4.2	7.5	10.1		29.8	32.8							
43-52	B25t	64.5	16.6	3.0	3.2	2.0	3.9	6.8		28.8	44.7							
52-60	B31t	65.1	12.2	2.2	2.6	1.9	4.7	11.3		35.7	43.7							
60-72+	B32t	55.1	21.6	2.9	2.9	2.3	5.8	9.4		34.5	33.4							
Depth (in.)	6A1a Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH				
						4A1a 1/2 bar	4A1b Oven dry	4A1c		4B2 15 bar	4B1c 1/2 bar	4B1d 15 bar		8C1a (1:1) KCl	8C1a (1:1) H ₂ O			
						g/cc	g/cc	g/cc		Pct.	Pct.	Pct.						
0-6	0.93	0.072	13												5.4			
6-10	0.24														5.6			
10-19	0.08														5.4			
19-27	0.02														4.9			
27-34	0.00														4.8			
34-43	0.04														4.7			
43-52	0.02														4.6			
52-60	0.00														4.5			
60-72+	0.00														4.5			
Depth (in.)	Extractable bases 5B1a					6H1a	CEC		6Q1d	Ratios to clay			8D3	Base saturation				
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	Ext. acidity	5A3e Sum cations	Ext. Al	CEC Sum	Ext. iron	15-bar water	Ca/Mg	5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.				
	mg/100 g																	
0-6	2.7	0.8	tr.	0.1		5.2	8.8							41				
6-10	2.5	0.9	tr.	0.1		3.3	6.8							51				
10-19	2.9	1.2	tr.	0.1		3.8	8.0							52				
19-27	1.1	1.1	tr.	0.1		4.8	7.1							32				
27-34	0.7	0.8	tr.	0.1		4.8	6.4							25				
34-43	0.6	0.7	tr.	0.1		4.8	6.2							22				
43-52	0.4	0.6	tr.	0.1		5.0	6.1							18				
52-60	0.2	0.7	tr.	0.1		4.6	5.6							18				
60-72+	0.4	0.5	tr.	0.1		4.4	5.4							18				
Depth (in.)	Clay Fraction Analysis 7A1b-d																	
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite										
	7A2 X-ray																	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant

Soil Type: Amite fine sandy loam
 Soil No.: 856Miss-55-1
 Location: Pearl River County, Mississippi, 3/8 mile south of main house on McNeil Experiment Station in open grazing plot. Photo GZL-ME-36
 Vegetation and land use: Oats for winter and spring grazing
 Slope and land form: Gently sloping
 Drainage: Well drained
 Parent Material: Sandy Coastal Plain material
 Collected by and date: I. L. Martin and Y. H. Havens, April 17, 1956
 Described by: Y. H. Havens

Horizon and
 Beltsville
 Lab. No.

- Ap
 56562 0 to 6 inches. Dark brown (7.5YR 3/2) very friable fine sandy loam; weak medium and fine granular structure; few worm and root channels filled with material from lower horizons. Abundant fine fibrous roots throughout the Ap; abrupt smooth boundary.
- B1
 56563 6 to 10 inches. Red (2.5YR 4/6) friable light sandy clay loam; weak medium and coarse subangular blocky structure; few thin clay skins in old root channels; dark brown sandy loam material in root and worm channels from horizon above; plentiful fine fibrous roots; abrupt wavy boundary.
- B21t
 56564 10 to 19 inches. Dark red (2.5YR 3/6) firm heavy clay loam; moderate medium and coarse subangular blocky structure; numerous clay skins on ped faces and in root channels; few to plentiful fine fibrous roots; clear smooth boundary.
- B22t
 56565 19 to 27 inches. Dark red (2.5YR 3/6) firm clay loam; moderate medium and coarse subangular blocky structure; clay skins numerous on ped faces and in worm and root channels; few manganese concretions and few dark coatings on ped faces; few fine fibrous roots; gradual boundary.
- B23t
 56566 27 to 34 inches. Dark red (2.5YR 3/6) firm to friable light clay loam; moderate medium and coarse subangular blocky structure; discontinuous clay skins between sand grains; some thin clay skins on ped faces; few fine fibrous roots; diffuse boundary.
- B24t
 56567 34 to 43 inches. Dark red (2.5YR 3/6) friable to firm sandy clay loam; moderate medium and coarse subangular blocky structure. Few thin discontinuous clay skins on ped faces and between sand grains; few medium and coarse rounded quartz; diffuse boundary.
- B25t
 56568 43 to 52 inches. Dark red (2.5YR 3/6) friable sandy clay loam; weak to moderate medium and coarse subangular blocky structure; thin and discontinuous clay skins on ped faces; few medium and coarse rounded quartz; diffuse boundary.
- B31t
 56569 52 to 60 inches. Dark red (10R 3/6-4/6) friable sandy clay loam; weak medium and coarse subangular blocky structure; discontinuous clay skin bridges between the coarse sand grains; diffuse boundary.
- B32t
 56570 60 to 72+ inches. Dark red (10R 3/6-4/6) friable light sandy clay loam; weak medium and coarse subangular blocky structure; numerous coarse rounded quartz grains.

Notes: Colors of soils moist unless otherwise stated.

SOIL Amite fine sandy loam SOIL Nos. 856-Miss-55-2 LOCATION Pearl River County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 56571 - 56578

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SAI													3B2 Cm	3B1 Coarse fragments SBI		
		Total											2A2 ≥ 2	2-19		19-76		
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)					(2-0.1)	Pct.
Pct. of < 2 mm																		
0-6	Ap		5.4	35.5	1.2	13.4	20.2	19.7	4.5		12.1	5.4		tr.				
6-11	B1		11.3	32.3	1.3	12.0	19.3	19.6	4.3		13.4	9.7		-				
11-22	B21t		28.9	26.2	0.0	10.0	15.8	15.6	3.5		11.4	26.8		tr.				
22-33	B22t		4.6	35.1	0.1	13.8	20.7	21.0	4.7		15.4	1.7		tr.				
33-44	B23t		26.5	24.7	0.9	9.7	17.7	17.1	3.4		10.5	25.6		tr.				
44-53	B24t		5.5	31.5	0.6	13.1	23.5	21.6	4.7		11.9	5.5		-				
53-64	B31t		17.3	24.2	1.0	12.8	21.7	19.4	3.6		11.4	16.6		tr.				
64-72+	B32t		19.3	22.9	0.7	12.5	21.7	19.2	3.7		10.8	19.3		tr.				
Depth (in.)	6A1a Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4B1 COLE	Water content			4C1 WRD in/in	pH				
						g/cc	4A1a 1/2 bar	4A1h Oven dry		4B1c 1/2 bar	4B2 15 bar	8C1a (1:1) NCl		8C1b (1:1) H ₂ O				
															Pct.	Pct.	Pct.	
0-6	0.17	0.028	6														5.3	
6-11	0.82	0.045	18														5.1	
11-22	0.06																4.9	
22-33	0.02																4.8	
33-44	0.00																4.7	
44-53	0.00																4.8	
53-64	0.00																4.8	
64-72+	0.02																4.5	
Depth (in.)	Extractable bases 5B1a					5B1d Ext. acidity	CEC		5B1e Ext. Al	Ratio to clay			5B3 Ca/Mg	Base saturation				
	5B2d Ca	5B2b Mg	5B2a Na	5B2c K	Sum		5B3a Sum cations	CEC		Ext. iron	15-bar water	8C3 Sum cations Pct.		5C1 NH ₄ OAc Pct.				
															mg/100 g			
0-6	2.2	0.7	tr.	0.1		4.4	7.0								40			
6-11	1.6	0.5	tr.	0.1		4.8	7.4								31			
11-22	2.0	1.3	tr.	0.1		5.1	8.5								50			
22-33	0.7	0.9	tr.	0.1		5.0	6.7								25			
33-44	0.5	0.7	tr.	0.1		5.0	6.4								22			
44-53	0.4	0.5	0.1	0.1		5.0	6.1								18			
53-64	0.3	0.5	0.1	0.1		5.0	6.0								17			
64-72+	0.2	0.5	0.1	0.1		5.0	5.9								15			
Depth (in.)	Clay Fraction Analysis 7A1b-d																	
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite										
	7A2 X-ray																	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Amite fine sandy loam
 Soil No.: S56Miss-55-2
 Location: Pearl River County, Mississippi, Zell Barker farm, 1.5 miles NW of Carriere Con. School,
 250 feet west of Mr. Barker's home in oat field. Photo CZL-3H-200
 Vegetation and land use: Oats for winter grazing and grain
 Slope and land form: Nearly level
 Drainage: Surface drainage is rather slow. Internal water movement is good. This is a well drained
 profile
 Parent Material: Sandy Coastal Plain material
 Collected by and date: I. L. Martin and Y. H. Havens, April 18, 1956
 Described by: Y. H. Havens

Horizon and
 Beltsville
 Lab. No.

- Ap
 56571 0 to 6 inches. Dark brown (7.5YR 3/2 - 7.5YR 4/2 dry) friable fine sandy loam; weak fine granular structure (has thin layer of weak platy structure on surface); has pockets of yellowish red (5YR 4/8) from B1 horizon; abundant fibrous roots; abrupt wavy boundary; weak plow sole present.
- B1
 56572 6 to 11 inches. Yellowish red (5YR 4/8) friable light sandy clay loam; worm and root channels filled with dark brown (7.5YR 3/2-4/2); pockets of dark brown sandy material from Ap horizon; weak fine and medium subangular blocky structure; plentiful fine fibrous roots; clear smooth boundary.
- B21t
 56573 11 to 22 inches. Dark red (2.5YR 3/6) firm clay loam or sandy clay; moderate to strong medium and coarse subangular blocky structure; clay skins thin but continuous on ped faces and in root channels and wormholes; fine fibrous roots are plentiful; clear smooth boundary.
- B22t
 56574 22 to 33 inches. Dark red (2.5YR 3/6) friable to firm clay loam; moderate medium and coarse subangular blocky structure; thin clay skins on a majority of ped faces; few small manganese concretions; few fine fibrous roots; gradual wavy boundary.
- B23t
 56575 33 to 44 inches. Dark red (2.5YR 3/6) friable to firm clay loam; weak to moderate medium and coarse subangular blocky structure; thin discontinuous clay skins on ped faces; few fine fibrous roots; gradual boundary.
- B24t
 56576 44 to 53 inches. Dark red (2.5YR 3/6) friable to firm sandy clay loam; weak to moderate medium and coarse subangular blocky structure; thin discontinuous clay skins on ped faces; few scattered quartz grains; gradual wavy boundary.
- B31t
 56577 53 to 64 inches. Dark red (10R 3/6) friable sandy clay loam; weak medium and coarse subangular blocky structure; few discontinuous clay skins on ped faces and in pore and root channels; few rounded coarse quartz.
- B32t
 56578 64 to 72+ inches. Dark red (10R 3/6) friable sandy clay loam; weak medium and coarse subangular blocky structure; few coarse rounded quartz; few thin clay skins in pores.

Notes: Colors of soil moist unless otherwise stated.

SOIL TYPE Amite LOCATION Monroe County, Mississippi
 silt loam

SOIL NOS. S61Miss-48-1 LAB. NOS. 15158-15164

DEPTH INCHES	HORIZON	1B1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										2A2 > 2	TEXTURAL CLASS
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	3A1				
		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002			
0-6	Ap	0.3 _a	1.6	5.2	18.6	4.3	59.9	10.1	42.8	29.4	-	s11	
6-10	A3	<0.1	0.8	2.9	10.6	2.5	58.2	25.0	28.1	37.2	-	s11	
10-23	B21t	<0.1	1.2	3.9	14.4	3.2	46.4	30.9	26.6	29.1	-	cl	
23-37	B22t	<0.1	0.8	2.9	10.2	2.4	54.0	29.7	26.4	34.5	-	sic1	
37-50	B23t	<0.1	1.2	4.8	17.7	3.7	39.3	33.3	26.7	23.7	-	cl	
50-65	B24t	<0.1	1.3	4.8	19.2	3.9	35.7	35.1	25.8	21.8	-	cl	
65-80	B25t	0.1 _a	1.7	6.4	23.4	4.3	28.9	35.2	25.4	17.4	-	cl	
pH		Organic Matter				Bulk Density				MOISTURE TENSIONS			
8C1a H ₂ O	8C1c KCl	6A1a O.C.	6B1a N	C/N	Field Moist		30 cm.		A. D.	4B1b 1/3 ATMOS.	4C1 1/3-to 15-Atm.	4B2 15 ATMOS. Sieved	
1:1	1:1	%	%		4B1a % M.	4A1a g/cc	4B3 % M.	4A1c g/cc	4A1b g/cc	4B1b Pieces	in./in	%	
5.5	4.8	0.57	0.048	12	13.5	1.61	20.5	1.59	1.61	13.0	.14	4.2	
5.5	4.4	0.26	0.044	6								8.9	
5.8	4.8	0.19	0.038		16.5	1.56	20.7	1.52	1.60	21.6	.16	10.8	
5.2	3.8	0.06	0.029									11.0	
4.6	3.6	0.06			16.2	1.71	19.1	1.68	1.75	18.9	.12	11.8	
4.6	3.4	0.05										12.7	
4.8	3.6	0.04										12.9	
5A1a		EXTRACTABLE CATIONS				5B1a		Base Sat. %	5A3a	5C3	Sum Ext. Bases and Al	8D3	6C1a
CATION EXCHANGE CAPACITY		Ext. Bases				6H1a	6O2a	NH ₄ OAc Exch.	Sum Ext. Cations	Sum Ext. Bases		Ca/Mg	Free Iron (Fe ₂ O ₃) %
NH ₄ OAc		Co 6N2b	Mg 6O2b	Na 6P2a	K 6Q2a	H	Al	5C1	Sum Ext. Cations	Sum Ext. Bases			
		milliequivalents per 100g. soil							← me/100g. →				
4.6	2.6	0.2	<0.1	0.4	4.2	-	70	7.4	43	3.2		1.0	
6.9	3.8	1.0	<0.1	0.4	5.6	0.1	75	10.8	48	5.3	3.8	2.0	
8.4	5.4	1.6	0.1	0.2	4.7	-	87	12.0	61	7.3	3.4	2.4	
9.1	3.0	1.8	0.2	0.2	6.3	0.5	57	11.5	45	5.7	1.7	2.8	
7.6	0.6	1.3	0.1	0.3	8.4	2.5	30	10.7	21	4.8		2.9	
9.1	0.4	1.4	0.1	0.4	7.9	2.6	25	10.2	23	4.9		2.9	
8.8	1.6	2.2	0.1	0.4	6.3	1.2	49	10.6	40	5.5	0.7	3.0	
a.		Many Fe/Mn-bearing aggregates.											

Soil Type: Amite silt loam

Soil Nos.: S61Miss-48-1

Location: Monroe County, Mississippi, 3½ miles east of Amory on U. S. Highway 278 and ¾ mile north on gravel road and 250 feet west of road. SE¼ NW¼, Sec. 4, T13S, R8E.

Vegetation and Use: Cotton.

Slope and Land Form: Nearly level (1 percent slope).

Drainage and Permeability: Well drained with medium to rapid runoff and medium internal drainage. Permeability is moderate.

Parent Material: Moderately fine textured Coastal Plain.

Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 17, 1961.

Described by: L. C. Murphree and R. C. Carter, May 17, 1961.

Horizon and

Lincoln

Lab. No.

Ap 15158	0 to 6 inches. Dark brown (7.5YR 3/2) silt loam with high sand content; weak fine and medium granular structure; friable; few fine roots; few worm casts; clear smooth boundary.
A3 15159	6 to 10 inches. Dark reddish brown (5YR 3/4) silt loam or loam; weak fine and medium granular and medium subangular blocky structure; friable; few fine roots; material from Ap horizon in root and worm-holes; few worm casts; clear smooth boundary.
B21t 15160	10 to 23 inches. Dark reddish brown (2.5YR 3/4) light clay loam; moderate fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few fine soft black concretions and coatings; few worm casts; material from Ap horizon in root and worm channels; gradual smooth boundary.
B22t 15161	23 to 37 inches. Dark reddish brown (2.5YR 3/4) clay loam; moderate medium subangular blocky structure; friable; slightly plastic; few fine roots; common fine soft black concretions and coatings; patchy clay films on ped faces and in cracks; gradual smooth boundary.
B23t 15162	37 to 50 inches. Dark reddish brown (2.5YR 3/4) to dark red (2.5YR 3/6) clay loam; moderate coarse and medium angular and subangular blocky structure; friable; slightly plastic; few fine roots; few fine soft black concretions and coatings; patchy clay films on ped faces and in cracks; diffuse smooth boundary.
B24t 15163	50 to 65 inches. Same as above horizon - divided for characterization.
B25t 15164	65 to 80 inches. Dark red (10R 3/6) light sandy clay loam; moderate coarse and medium angular blocky structure; friable; slightly plastic; few fine roots; patchy clay films on ped faces and in cracks.

Remarks: The B21t and B23t horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): The mineralogy is uniform throughout. Quartz and feldspar dominate the very fine sand, with small amounts of kyanite, zircon, and tourmaline present.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1962

SOIL TYPE Amite LOCATION Monroe County, Mississippi
 silt loam

SOIL NOS. S61Mss-48-2 LAB. NOS. 15165-15171

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)								2A2 > 2	TEXTURAL CLASS	
		1B1a VERY COARSE SAND	1.0-5 COARSE SAND	0.5-0.25 MEDIUM SAND	0.25-0.10 FINE SAND	0.10-0.05 VERY FINE SAND	0.05-0.002 SILT	< 0.002 CLAY	0.2-0.02 3A1			0.02-0.002
0-6	Ap	0.1 a	2.1	7.0	23.2	5.4	50.4	11.8	42.7	22.5	-	sil/1
6-9	A3	0.1 a	1.1	3.5	13.0	2.9	54.8	24.6	29.0	33.9	-	sil
9-21	B21t	0.1 a	1.3	3.8	12.8	2.8	49.9	29.3	27.3	30.5	-	cl/sicl
21-35	B22t	<0.1	1.8	5.1	17.0	3.7	43.0	29.4	27.7	25.7	-	cl
35-48	B23t	0.1 a	2.0	6.6	21.6	4.5	33.1	32.1	25.6	20.4	-	cl
48-61	B24t	0.2 a	2.2	8.0	23.8	4.6	29.4	31.8	28.2	15.0	-	cl
61-80	B25t	0.2 a	2.7	9.2	28.4	5.1	22.8	31.6	24.7	13.8	-	scl

pH		Organic Matter		Bulk Density				MOISTURE TENSIONS				
8C1a H ₂ O	8C1c KCl	6A1a O.C.	6B1a N	C/N	Field Moist	30 cm.		A.D.	4B1b 1/3 ATMOS.	4C1 1/3 to 15-Atm	4B2 15 ATMOS. Sieved	
1:1	1:1	%	%		% M.	g/cc	% M.	g/cc	g/cc	Pieces	%	
5.3	4.5	0.44	0.044	10	14.6	1.42	18.5	1.40	1.42	12.0	.10	4.5
5.7	4.8	0.32	0.044	7								9.1
5.8	5.0	0.16	0.036		16.6	1.60	20.4	1.56	1.67	21.1	.16	11.0
5.6	4.9	0.07	0.027									10.9
5.3	4.5	0.06			15.8	1.74	18.4	1.70	1.79	18.3	.11	11.7
5.3	3.8	0.05										11.6
4.8	3.3	0.03										11.1

5A1a CATION EXCHANGE CAPACITY NH ₄ OAc		EXTRACTABLE CATIONS				5B1a		Base Sat. % NH ₄ OAc Exch.	5A3a Sum Ext. Cations	5C3 Base Sat. % Sum Ext.	Sum Ext. Bases and Al	8D3 Ca/Mg	6C1a Free Iron (Fe ₂ O ₃)
←	Co 6M2b	Mg 6O2b	Na 6P2a	K 6Q2a	H	Al	5C1	←	←	←	←	←	
	milliequivalents per 100g. soil												
4.5	2.6	0.8	<0.1	0.4	4.2	-	84	8.0	48	3.8		1.0	
7.2	4.8	1.1	<0.1	0.3	6.5	-	86	12.7	49	6.2	4.4	2.1	
8.6	5.7	1.6	0.1	0.2	4.9	-	90	12.6	61	7.7	3.6	2.5	
8.3	4.5	1.9	0.1	0.2	4.4	-	81	11.1	60	6.7	2.4	2.7	
7.6	3.2	2.0	0.1	0.3	5.6	0.1	74	11.2	50	5.7	1.6	2.5	
7.8	2.6	2.0	0.1	0.3	5.4	0.3	64	10.4	48	5.3	1.3	2.6	
7.0	0.9	1.2	0.1	0.2	7.4	2.4	34	9.8	24	4.8		2.7	

a. Many Fe/Mn-bearing aggregates.

Soil Type: *Asite silt loam*

Soil No.: 851Miss-48-2

Location: Monroe County, Mississippi, $3\frac{1}{2}$ miles east of Amory on U. S. Highway 278 and about $\frac{1}{2}$ mile south on gravel road and 250 feet west of road. NE $\frac{1}{4}$ NW $\frac{1}{4}$, Sec. 8, T138, R8E.

Vegetation and Use: Cotton.

Slope and Land Form: Nearly level (1 percent slope).

Drainage and Permeability: Well drained with medium to rapid runoff and medium internal drainage. Permeability is moderate.

Parent Material: Moderately fine textured Coastal Plain.

Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 17, 1961.

Described by: L. C. Murpree and R. C. Carter, May 17, 1961.

Horizon and

Lincoln

Lab. No.

Ap 15165	0 to 6 inches. Dark brown (7.5YR 3/2) silt loam with high sand content; weak fine and medium granular structure; very friable; few fine roots; few worm casts; abrupt smooth boundary.
A3 15166	6 to 9 inches. Dark reddish brown (5YR 3/4) loam; weak fine and medium granular and medium subangular blocky structure; friable; few fine roots; few worm casts; clear smooth boundary.
B21t 15167	9 to 21 inches. Dark reddish brown (2.5YR 3/4) light clay loam; moderate fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few fine soft black concretions and coatings; few worm casts; gradual smooth boundary.
B22t 15168	21 to 35 inches. Dark reddish brown (2.5YR 3/4) clay loam; moderate fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; common fine soft black concretions; common fine and medium black coatings; few fine quartz gravel; gradual smooth boundary.
B23t 15169	35 to 48 inches. Dark reddish brown (2.5YR 3/4) to dark red (2.5YR 3/6) clay loam; moderate coarse and medium angular and subangular blocky structure; friable; slightly plastic; few fine soft black concretions and coatings; few fine quartz gravels; patchy clay films on ped faces and in cracks; diffuse smooth boundary.
B24t 15170	48 to 61 inches. Same as above horizon - divided for characterization.
B25t 15171	61 to 80 inches. Dark red (10R 3/6) sandy clay loam; moderate coarse angular and subangular blocky structure; friable; slightly plastic; few fine quartz gravel; patchy clay films in cracks and on ped faces.

Remarks: The B21t and B24t horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): The mineralogy is uniform throughout. Quartz and feldspar dominate the very fine sand, with small amounts of kyanite, zircon, and tourmaline present.

SOIL *Askev silt loam SOIL No. B51M55-6-1 LOCATION Bolivar County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 51793 - 51805

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SAI											S82 Cm	Coarse fragments 8B1			
		Total					Sand							S81	2A2 ≥ 2	2-19	19-76
		Sand (2-0.06)	Silt (0.05- 0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	(0.02- 0.002)	Int. III (0.2-0.02)					
Pct. of < 2 mm													Pct.	Pct. of < 76mm			
0-3	Ap1	71.7	7.2	-	0.1	0.3	1.3	19.4		17.2	75.0		-				
3-6	Ap2	71.7	8.2	-	0.1	0.2	1.0	18.8		18.1	73.2		tr.				
6-10	B21t	68.8	18.3	-	-	0.1	0.6	12.2		22.1	59.4		-				
10-16	B22t	64.5	22.7	-	-	0.1	0.7	12.0		21.0	56.1		-				
16-23	B22t	65.0	23.1	-	-	0.1	0.5	11.3		25.2	51.5		-				
23-27	B23t	65.2	22.4	-	-	0.1	0.6	11.7		26.0	51.3		-				
27-30	B3t	64.5	19.2	-	-	0.1	0.8	15.4		21.7	58.9		-				
30-35	B3t	63.0	18.6	-	-	0.1	1.3	17.0		23.4	57.7		-				
35-43	1C1	53.3	14.7	-	-	0.1	2.7	29.2		17.4	67.5		-				
43-48	1C2	50.5	15.3	-	-	0.2	3.6	30.4		17.0	67.2		-				
48-53	1C3	44.2	12.5	-	0.1	0.3	5.0	37.9		11.0	75.6		-				
53-68	1C4	27.9	6.8	-	0.1	0.4	19.7	45.1		5.9	85.5		-				
68+	1C5	26.6	27.6	0.3	0.6	0.5	1.6	12.8		22.4	48.2		-				
Depth (in.)	8A1a Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH			
						4A1a 1/2 bar	4A1b Oven dry	4A1c g/cc		4B1c 1/2 bar	4B2 15 bar	8C1c (1:1) KCl		8C1a (1:1) H ₂ O			
						Pct.	Pct.	Pct.		Pct.	Pct.	Pct.		Pct.			
0-3	0.47														5.4		
3-6	0.50														5.4		
6-10	0.18														5.0		
10-16	0.18														4.8		
16-23	0.15														4.8		
23-27	0.14														4.8		
27-30	0.11														4.9		
30-35	0.08														5.0		
35-43	0.07														5.0		
43-48	0.09														5.2		
48-53	0.10														5.2		
53-68	0.12														5.5		
68+	0.12														5.2		
Depth (in.)	Extractable bases 8B1a					6H1a	CEC		6G1a	Ratio to clay			8D3	Base saturation			
	8N2a Ca	8O2b Mg	8P2a Na	8Q2a K	Sum	Ext. acidity	8A2a Sum cations	Ext. Al	CEC Sum	Ext. Iron	15-bar water	Ca/Mg	8C3 Sum cations Pct.	8C1 NH ₄ OAc Pct.			
	meq/100 g																
0-3	2.7	0.5	0.1	0.2		3.8	7.3						48				
3-6	3.1	0.5	0.1	0.1		3.8	7.6						50				
6-10	5.8	0.8	0.1	0.2		6.3	13.2						52				
10-16	6.0	1.3	0.2	0.2		10.3	18.0						43				
16-23	7.0	1.6	0.2	0.2		10.4	19.4						46				
23-27	7.7	2.1	0.2	0.2		9.3	19.5						52				
27-30	7.5	1.9	0.2	0.2		7.6	17.4						56				
30-35	8.3	2.0	0.3	0.3		6.5	17.4						63				
35-43	7.6	1.9	0.2	0.2		5.1	15.0						66				
43-48	8.4	2.0	0.2	0.2		4.7	15.5						70				
48-53	7.7	1.8	0.2	0.2		4.0	13.9						71				
53-68	5.8	1.3	0.2	0.1		3.1	10.5						70				
68+	14.5	4.3	0.3	0.4		4.3	23.8						82				
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite									
	7A2 X-ray				7A3												

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: *Askew silt loam
 Soil No.: S51Miss-6-1
 Location: Bolivar County, Mississippi
 Collected by: George E. Rogers and party

Horizon and
 Beltsville
 Lab. No.

Ap1
 51793 0 to 3 1/2 inches. Very pale brown (10YR 7/3) silt loam; weak fine and medium granular structure; many fine roots; friable; strongly acid; clear smooth boundary.

Ap2
 51794 3 1/2 to 6 inches. Light yellowish brown (10YR 6/4) silt loam mottled with very pale brown (10YR 7/3); moderate platy structure; friable; strongly acid; abrupt smooth boundary.

B21t
 51795 6 to 10 1/2 inches. Yellowish brown (10YR 5/6) heavy silt loam mottled with light gray (10YR 7/2); moderate to strong medium subangular blocky structure; friable; patchy clay films on ped faces; strongly acid; clear, smooth boundary.

B22t
 51796 10 1/2 to 16 1/2 inches. Dark yellowish brown (10YR 4/4) heavy silt loam mottled with light gray (10YR 7/2); moderate to strong fine and medium subangular blocky structure; friable; patchy dark brown (10YR 4/3) clay films on ped faces; very strongly acid. Clear smooth boundary.

B22t
 51797 16 1/2 to 23 inches. Horizon same as above. Divided for sampling purposes.

B23t
 51798 23 to 27 inches. Yellowish brown (10YR 5/4) heavy silt loam mottled with light gray (10YR 7/2); moderate fine to coarse subangular blocky structure; friable; patchy dark brown (10YR 4/3) clay films on ped faces; very strongly acid; clear smooth boundary.

B3t
 51799 27 to 30 1/2 inches. Yellowish brown (10YR 5/8) heavy silt loam mottled with light gray (10YR 7/2); weak medium and coarse subangular blocky structure; friable; patchy clay films on peds; very strongly acid; clear smooth boundary.

B3t
 51800 30 1/2 to 35 1/2 inches. Horizon same as above. Divided for sampling purposes.

IIC1
 51801 35 1/2 to 43 inches. Yellowish brown (10YR 5/4) silt loam with high sand content mottled with light gray (10YR 7/2); weak coarse subangular blocky structure; friable; strongly acid; gradual smooth boundary.

IIC2
 51802 43 to 48 inches. Dark yellowish brown silt loam or loam; weak medium granular structure; very friable; strongly acid; gradual smooth boundary.

IIC3
 51803 48 to 53 inches. Dark yellowish brown loam; weak medium granular structure; very friable; strongly acid; gradual smooth boundary.

IIC4
 51804 53 to 68 inches. Yellowish brown (10YR 5/6) light sandy loam splotted with very pale brown (10YR 6/3); structureless; loose; strongly acid; clear wavy boundary.

IIC5
 51805 68+ inches. Pale brown (10YR 6/3) silty clay loam with thin lenses of sand; mottled with light brownish gray (10YR 6/2) and brown (10YR 5/3); weak coarse subangular blocky structure; friable; strongly acid.

SOIL *Askey fine sandy loam SOIL Nos. D45-MI-012 LOCATION Quitman County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 451A18 - 451A23

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1											SB2 Cm	3B1 Coarse fragments			
		Total				Sand				Silt				2A2 > 2 Pct.	2-19 Pct.	19-75 Pct. of < 76mm	
		Sand (2-0.05)	Silt (0.05-0.002)	Clay ($<$ 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02)	Int. II (0.02-0.002)	(2-0.1)					
Pct. of $<$ 2 mm																	
0-5	Ap		36.7	10.5	0.1	0.4	0.3	16.0	36.0								
5-9	B21t		32.2	27.3	-	0.1	0.2	11.9	28.3								
9-14	B22t		28.6	28.4	-	0.1	0.2	13.3	29.4								
14-22	B31		24.5	25.4	-	0.1	0.1	12.9	37.0								
22-30	B32g		34.4	20.7	-	0.3	0.3	9.7	34.6								
30-60	Clg		17.7	13.0	0.1	0.3	0.4	39.2	29.3								
6A3a Organic Matter																	
Depth (in.)	Nitrogen Pct.	C/N Pct.	Carbonate as CaCO ₃ Pct.	Ext. Iron as Fe Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD In/in	pH				
					4A1e 1/2 bar g/cc	4A1h Oven dry g/cc	4D1		4B1c 1/2 bar Pct.	4B2 15 bar Pct.	8C1c (1:1) KCl		8C1e (1:1) H ₂ O				
0-5	0.7																5.1
5-9	0.5																4.8
9-14	0.5																4.4
14-22	0.1																4.4
22-30	0.1																4.4
30-60	0.1																4.6
Extractable bases 5B1e																	
Depth (in.)	6N2d Ca				6P2a Mg				6M1a Ext. acidity meq/100 g	CEC		6B1d Ext. Al	Ratio to clay			Base saturation	
	6O2b Mg	6P2a Na	6Q2a K	Sum	5A5a Sum cations	Sum	CEC Sum	Ext. iron		15-bar water	Ca/Mg		5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.			
0-5	3.6	1.0		.1		2.9	7.6										62
5-9	3.5	1.9		.2		6.6	17.2										62
9-14	6.9	2.1		.3		12.0	21.3										44
14-22	5.4	2.3		.3		12.0	20.0										40
22-30	5.2	2.4		.2		8.6	16.4										48
30-60	4.4	2.2		.2		4.8	11.6										59
Clay Fraction Analysis 7A1b-d																	
Depth (in.)	Mt.	Chl.	Vm.	Ml.	Int.	Qtz.	Kl.	Gibbsite	7A2 X ray		7A3						

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, ml = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, s = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: *Askew fine sandy loam

Soil No.: D45M1-012

Location: Quitman County, Mississippi, few rods north of grove of scattered walnut trees. NW 1/4, NE 1/4, Sec. 4, T 26N, R 1W.

Collected by: R. W. Simonson, H. B. Vanderford, and C. B. Melton

Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and

Beltsville

Lab. No.

Ap 451418	0 to 5 inches. Brown (10YR 4/3) fine sandy loam; weak, fine granular structure; very friable; few fine roots; abrupt smooth boundary.
B21t 451419	5 to 9 inches. Brown (10YR 4/3) fine sandy clay loam; common, fine and faint yellowish brown (10YR 5/4) mottles; moderate, fine and medium subangular blocky structure; firm; slightly plastic, slightly sticky; patchy clay films on peds; few fine roots; clear smooth boundary.
B22t 451420	9 to 14 inches. Mottled brown (10YR 4/3) and dark yellowish brown (10YR 4/4) heavy sandy clay loam; moderate, medium and coarse subangular blocky structure; firm; slightly plastic, slightly sticky; clay films on most of peds; few fine roots; clear smooth boundary.
B31 451421	14 to 22 inches. Mottled brown (10YR 4/3) and dark grayish brown (10YR 4/2) heavy fine sandy loam; weak, medium and coarse subangular blocky structure; friable; patchy clay films on peds and in pores; few fine brown black concretions; gradual smooth boundary.
B32g 451422	22 to 30 inches. Mottled light brownish gray (10YR 6/2) and yellowish brown (10YR 5/6) fine sandy loam; weak, coarse subangular blocky structure; friable; few fine black brown concretions; gradual smooth boundary.
C1g 451423	30 to 60 inches. Light brownish gray (10YR 6/2) fine sandy loam; common, fine and medium distinct strong brown (7.5YR 5/8) mottles; structureless; very friable.

SOIL *Askew loam SOIL No. D45-NI-009 LOCATION Tunica County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 451398 - 451404

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) 3A1													3B2 Cm	3B1 Coarse fragments		
		Total			Sand						Silt					2A2 ≥ 2 Pct.	2-19 Pct.	19-76 Pct. of ← 76mm →
		Sand (2-0.05)	Silt (0.05- 0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02- 0.002)	Int. II (0.2-0.02)	(2-0.1)					
0-5	Ap	29.5	12.4	0.1	0.3	0.8	17.6	39.3										
5-11	B21t	27.9	35.5	0.1	0.1	0.2	6.5	29.7										
11-16	IB22t	21.8	32.1	-	0.2	0.2	12.7	33.0										
16-23	IB31	23.1	25.3	0.1	0.3	0.2	15.4	35.6										
23-30	IB32g	37.1	26.1	0.1	0.4	0.4	14.4	21.5										
30-43	IIIC1	41.4	41.4	-	0.2	0.4	10.4	6.2										
43-56	IVC2	27.8	18.7	-	0.1	0.1	31.5	20.8										

Depth (in.)	6A3a Organic Matter	Nitrogen Pct.	C/N Pct.	Carbonate as CaCO ₃ Pct.	Ext. iron as Fe Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH	
						4A1a ½ bar g/cc	4A1b Oven dry g/cc	4B1 ½ bar Pct.		4B2 16 bar Pct.	8C1c (1:1) KCl	8C1e (1:1) H ₂ O			
						g/cc	g/cc	Pct.		Pct.					
0-5	0.8														5.8
5-11	1.4														4.8
11-16	0.9														4.6
16-23	0.6														4.7
23-30	0.3														4.7
30-43	0.6														4.6
43-56	-														4.9

Depth (in.)	Extractable bases 5B1a					5HLx Ext. acidity meq/100 g	CEC		5G1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation	
	5N2d Ca	5O2b Mg	5P2a Na	5Q2a K	Sum		5A3a Sum cations	Ext. CEC		CEC Sum	Ext. iron	15-bar water		5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.
0-5	5.8	1.4		.2	2.6	10.0								74	
5-11	11.8	3.1		.3	9.3	24.5								62	
11-16	9.6	2.9		.3	11.4	24.2								53	
16-23	8.0	2.6		.3	9.1	20.0								54	
23-30	8.4	2.7		.2	7.8	19.1								59	
30-43	13.3	4.4		.4	10.8	28.9								63	
43-56	7.9	2.2		.2	5.2	15.5								66	

Depth (in.)	Clay Fraction Analysis 7A1b-d							
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray				7A3			

Mt. = Montmorillonite, Chl. = chlorite, Vm = Vermiculite, mi = mica,
Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant

Soil Type: *Askew loam
 Soil No.: D45M1-009
 Location: Tunica County, Mississippi, SW 1/4, SE 1/4, Sec. 10 T 6S, R 11E
 Collected by: R. W. Simonson, H. B. Vanderford, and C. B. Melton
 Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and
 Beltsville
 Lab. No.

Ap 451398	0 to 5 inches. Dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; few fine roots; clear smooth boundary.
B2t 451399	5 to 11 inches. Dark brown (10YR 3/3) light silty clay; many fine and medium distinct strong brown (7.5YR 5/6) mottles; strong fine and medium subangular blocky structure; firm; plastic, sticky; peds covered with clay films; gradual smooth boundary.
IIB2t 451400	11 to 16 inches. Mottled dark brown (10YR 3/3) strong brown (7.5YR 5/6) and brown (10YR 5/3) sandy clay loam; moderate medium and coarse subangular blocky structure; friable to firm; slightly plastic; slightly sticky; clay films on most peds; few fine brown and black concretions; gradual smooth boundary.
IIB3t 451401	16 to 23 inches. Mottled dark brown (10YR 3/3), dark grayish brown (10YR 4/2) strong brown (7.5YR 5/6) and grayish brown (2.5Y 5/2) light sandy clay loam; weak medium and coarse subangular blocky structure; friable; slightly plastic; patchy clay films on peds; few fine brown and black concretions; gradual smooth boundary.
IIB3tg 451402	23 to 30 inches. Grayish brown (2.5Y 5/2) heavy sandy loam; many fine and medium faint mottles of dark grayish brown (10YR 4/2) and distinct strong brown (7.5YR 5/6) mottles; weak, medium and coarse subangular blocky structure; friable; patchy clay films on peds; few fine brown and black concretions; clear smooth boundary.
IIIC1 451403	30 to 43 inches. Dark gray (10YR 4/1) clay; weak medium and coarse subangular blocky structure; firm; very plastic; very sticky; clear smooth boundary.
IVC2 451404	43 to 56 inches. Mottled brown (10YR 4/3) strong brown (7.5YR 5/6) and grayish brown (10YR 5/2) heavy sandy loam; structureless; friable.

SOIL *Askew loam SOIL Nos. D45-M1-010 LOCATION Tunica County, Mississippi

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 451405 - 451411

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1											3B2 Cm	3B1 Coarse fragments				
		Total			Sand				Silt					2A2 > 2 Pct.	2-19 Pct.	19-76 Pct.		
		Sand (2-0.05)	Silt (0.05- 0.002)	Clay (= 0.002)	Vary coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Vary fine (0.1-0.05)	Int. III (0.05-0.02)	Int. II (0.2-0.02)	(2-0.1)						
Pct. of < 2 mm																		
0-5	Ap	45.9	9.3	0.1	0.7	0.5	0.8	42.7										
5-10	B21t	45.5	25.4	-	0.3	0.2	0.3	28.3										
10-14	B22t	45.9	25.8	-	0.2	0.2	1.6	26.3										
14-22	II B3g	44.4	24.2	-	0.2	0.2	0.5	30.5										
22-32	II C1g	52.6	18.4	0.1	0.2	0.2	1.1	27.4										
32-42	II C2g	37.2	15.9	0.1	0.3	0.2	1.6	28.7										
42-60	II C3g	69.9	13.6	-	0.2	0.1	0.9	15.3										
Depth (in.)	6A3a Organic Matter	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. iron as Fe Pct.	Bulk density			401 COLE	Water content			4C1 WRD in/in	pH				
						4A1a 1/2 bar g/cc	4A1b Oven dry g/cc	401		4B1c 1/2 bar Pct.	4B2 15 bar Pct.	4C1		8C1c (1:1) KCl	8C1a (1:1) H ₂ O			
0-5	0.8																	7.0
5-10	1.0																	5.0
10-14	0.5																	4.8
14-22	0.4																	4.8
22-32	0.3																	5.0
32-42	-																	5.1
42-60	-																	6.4
Depth (in.)	Extractable bases 5B1a					6B1a Ext. acidity meq/100 g	CEC		6B1d Ext. Al	Ratio to clay			8D3 Ca/Mg	Base saturation				
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		5A3a Sum cations	CEC Sum		Ext. iron	15-bar water	8C3 Sum cations Pct.		8C1 NH ₄ OHc Pct.				
0-5	8.0	1.4		.2		1.0	10.6							91				
5-10	10.5	2.5		.2		5.9	19.1							69				
10-14	10.3	3.0		.3		6.9	20.5							66				
14-22	9.9	3.1		.2		6.6	19.8							67				
22-32	9.9	3.3		.2		4.2	17.6							76				
32-42	11.5	3.8		.2		2.5	18.0							86				
42-60	9.5	4.3		.3		1.3	15.4							92				
Depth (in.)	Clay Fraction Analysis 7A1b-d																	
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	W.	Gibbsite										
	7A2 X-ray				7A3													

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi. = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: *Askew loam

Soil No.: D45M1-010

Location: Tunica County, Mississippi, near center of quarter section, 10 rods north of gravelled road.
NE 1/4, SW 1/4, Sec. 22, T 7S, R 12W.

Collected by: R. W. Simonson, H. B. Vanderford, and C. B. Melton

Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and

Beltsville

Lab. No.

Ap 451405	0 to 5 inches. Dark brown (10YR 3/3) fine sandy loam; weak, fine granular structure; with thin, weak, coarse platy structure at bottom of horizon (plow layer); friable; abrupt smooth boundary.
B2t 451406	5 to 10 inches. Dark brown (10YR 3/3) silty clay loam; common fine faint dark yellowish brown (10YR 4/4) and few fine distinct grayish brown (10YR 5/2) mottles; moderate, fine and medium subangular blocky structure; friable to firm; slightly plastic, slightly sticky; clay films on most of peds; gradual smooth boundary.
B22t 451407	10 to 14 inches. Brown (10YR 4/3) light silty clay loam; many fine faint dark yellowish brown (10YR 4/4) and many fine distinct grayish brown (10YR 5/2) mottles; weak medium subangular blocky structure; friable; patchy clay films on peds; clear smooth boundary.
IIB3g 451408	14 to 22 inches. Grayish brown (10YR 5/2) light sandy clay loam; many fine distinct brown (10YR 4/3) and dark yellowish brown (10YR 4/4) mottles; weak, coarse subangular blocky structure; friable; few clay films in pores; gradual smooth boundary.
IIC1g 451409	22 to 32 inches. Grayish brown (10YR 5/2) fine sandy loam with many fine distinct dark yellowish brown (10YR 4/4) mottles; structureless to weak, coarse subangular blocky structure; very friable; few fine dark brown concretions; gradual smooth boundary.
IIC2g 451410	32 to 42 inches. Light brownish gray (10YR 6/2) very fine sandy loam; common fine distinct yellowish brown (10YR 5/6) mottles; structureless; single grain; very friable; few fine brown, black concretions; diffuse smooth boundary.
IIC3g 451411	42 to 60 inches. Light brownish gray (10YR 6/2) very fine sandy loam with few fine distinct yellowish brown (10YR 5/6) mottles; structureless; single grain; very friable; few fine brown, black concretions.

SOIL SURVEY LABORATORY Lincoln, Nebr.

August 1962

SOIL TYPE Atwood
silt loam

LOCATION Pontotoc County, Mississippi

SOIL NOS. S61Miss-58-1

LAB. NOS. 15186-15192

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1a											3A1
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2		
	2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	> 2			
0-6	Ap	0.5a	3.3	2.0	1.7	1.3	76.0	15.2	43.0	35.0	-	sil	
6-11	B1	0.5a	2.3	1.6	1.3	0.9	68.7	24.7	29.0	41.1	-	sil	
11-23	E21t	0.6a	2.9	1.4	1.2	0.8	63.8	29.3	27.1	38.0	-	sic1	
23-37	E22t	0.7a	3.9	2.2	1.9	1.3	60.3	29.7	28.0	34.4	-	sic1	
37-49	II23t	1.4b	6.6	3.2	2.8	1.7	52.4	31.9	24.7	30.6	-	sic1	
49-60	II23t	2.5b	3.6	3.7	3.2	1.8	46.1	34.1	20.8	28.5	-	sic1/cl	
60-75	II24t	1.9a	8.0	3.6	3.1	1.9	48.3	33.2	23.1	28.4	-	sic1	
pH		Organic Matter			Bulk Density					MOISTURE TENSIONS			
8C1a	8C1c	6A1a	6B1a	C/N	Field Moist		30 cm.		A.D.	4B1b	4C1	4B2	
H ₂ O	KCl	O.C.	N		4B4	4A1a	4B3	4A1c	4A1b	1/3	1/3-to	15	
1:1	1:1	%	%		% M.	g/cc	% M.	g/cc	g/cc	ATMOS. Pieces	15-Atm	ATMOS. Sieved	
6.8	6.0	0.72	0.072	10	16.7	1.45	23.8	1.42	1.46	21.3	.22	5.7	
6.0	5.2	0.32	0.055	6								9.2	
5.7	4.8	0.17	0.046		19.2	1.57	24.2	1.53	1.64	24.4	.20	11.1	
4.7	3.7	0.08	0.041		20.1	1.56	24.9	1.52	1.62	25.1	.22	10.8	
4.8	3.7	0.11			18.3	1.62	21.0	1.58	1.66	20.9	.15	11.3	
4.8	3.7	0.11										12.3	
4.7	3.8	0.09										12.6	
5A1a		EXTRACTABLE CATIONS				5B1a		5C1	5A3a	5C3	Sum	8D3	6C1a
CATION EXCHANGE CAPACITY		Ext. Bases				6H1a	6G2a	Base	Sum	Base	Ext.	Ca/Mg	Free Iron
NH ₄ OAc		Ca	Mg	Na	K	H	Al	Sat. %	Ext.	Sat. %	Bases		Fe ₂ O ₃
←		6N2b	6O2b	6P2a	6Q2a	→		NH ₄ OAc Exch.	←	Sum Cat and Al	me/100g		%
6.3	6.0	0.8	<0.1	0.2	3.2	-	-	111	10.2	69	7.0		1.5
7.7	5.1	1.4	0.1	0.2	4.7	-	-	88	11.5	59	6.8	3.6	2.1
10.6	4.8	3.0	0.1	0.2	5.4	-	-	76	13.5	60	8.1	1.6	2.7
8.8	1.2	2.3	0.1	0.2	10.0	2.8		43	13.8	28	6.6	0.5	3.0
8.9	0.6	1.9	0.1	0.2	10.5	2.7		31	13.3	21	5.5		2.8
9.0	0.6	2.2	0.1	0.2	9.4	2.2		34	12.5	25	5.3		3.2
9.4	0.8	2.4	0.1	0.2	8.4	1.9		37	11.9	29	5.4		2.9
<p>a. Few Fe/Mn-bearing aggregates.</p> <p>b. Common Fe/Mn-bearing aggregates.</p>													

Soil Type: Atwood silt loam
 Soil Nos.: S61Miss-58-1
 Location: Pontotoc County, Mississippi, on Experiment Station 7 miles south of Pontotoc on Highway 15 and about $\frac{1}{2}$ mile east on gravel road. S $\frac{1}{2}$ W $\frac{1}{4}$ N $\frac{1}{4}$, Sec. 10, T11S, R3E.
 Vegetation and Use: Alfalfa hay.
 Slope and Land Form: Nearly level (2 percent slope).
 Drainage and Permeability: Well drained. Runoff medium to rapid and internal drainage medium. Permeability is moderate.
 Parent Material: Thin loess over Coastal Plain.
 Collected by: J. S. Allan and Dean C. McMurtry, May 18, 1961.
 Described by: E. A. Perry and R. C. Carter, May 18, 1961.

Horizon and
 Lincoln
 Lab. No.

Ap 15186	0 to 6 inches. Dark brown to brown (7.5YR 3/2 and 4/4) silt loam; weak, fine and medium granular structure; friable; common fine roots; few worm casts; clear, smooth boundary.
B1 15187	6 to 11 inches. Dark reddish brown (5YR 3/4) heavy silt loam; weak, fine and medium subangular blocky structure; friable; few fine roots; few worm casts; some mixing of Ap material in root and worm holes; clear, smooth boundary.
B21t 15188	11 to 23 inches. Dark reddish brown (5YR 3/4) silty clay loam; moderate, fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few fine black concretions and fine and medium coatings; gradual, smooth boundary.
B22t 15189	23 to 37 inches. Dark reddish brown (5YR 3/4) silty clay loam; moderate, medium and coarse subangular blocky structure; friable; slightly plastic to plastic; few fine roots; common fine to coarse black coatings and common, fine, black concretions; patchy clay films on peds and in cracks; gradual, smooth boundary.
IIB23t 15190	37 to 49 inches. Dark reddish brown (2.5YR 3/4) clay loam; moderate, medium and coarse subangular blocky structure; friable; slightly plastic to plastic; few fine roots; many fine to coarse black coatings and many fine black concretions; clay films on ped faces and in cracks; gradual, smooth boundary.
IIB23t 15191	49 to 60 inches. Same as horizon above. Horizon divided for characterization.
IIB24t 15192	60 to 75 inches. Dark red (10R 3/6) clay loam; moderate, coarse and medium subangular blocky structure; friable; slightly plastic; few fine black concretions and coatings; patchy clay films on ped faces and in cracks.

Remarks: The B21t and IIB23t horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): Quartz and feldspar dominate the very fine sands of the coastal plain sediments and the loess mantle. The quartz to feldspar ratio is higher, and kyanite is present in the coastal plain sediments. The quantity of tourmaline, pyroxene, and plant opal is higher in the loess. Plant opal is virtually absent in the coastal plain sediments. Thin patchy clay films are present in the B22t and IIB23t horizons, confined mostly to red mottles in the IIB23t. The clay films, observed under a stereoscopic microscope, might be overlooked in the field.

SOIL TYPE Atwood silt loam LOCATION Pontotoc County, Mississippi

SOIL NOS. S61Ms3-58-2 LAB. NOS. 15193-15198

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)									2A2 > 2	TEXTURAL CLASS
		1B1a					3A1					
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002		
0-6	Ap	0.3	3.8	3.8	3.5	1.7	70.9	16.0	40.4	33.4	-	sil
6-18	B21t	<0.1	1.9	1.5	1.4	0.7	60.5	34.0	26.2	35.5	-	sic1
18-31	B22t	0.2a	3.9	3.1	3.1	1.4	57.0	31.3	27.2	32.3	-	sic1
31-45	11B23t	0.6a	5.5	4.1	4.6	2.1	48.1	35.0	24.6	27.3	-	sic1
45-57	11B23t	0.4a	5.3	4.0	4.9	2.2	48.2	35.0	27.1	25.2	-	sic1
57-79	11B24t	1.2a	8.2	5.9	8.1	3.5	36.7	36.4	22.0	21.5	-	cl

pH		Organic Matter		Bulk Density			MOISTURE TENSIONS					
8C1a H ₂ O	8C1c KCl	6A1a O.C.	6B1a N	C/N	Field Moist		30 cm.		A.D.	4B1b 1/3 Atmos. Pieces	4C1 1/3-to 5-Atm. in/in	4B2 15 Atmos. Sieved
1:1	1:1	%	%		4B1 g/g	4A1a g/cc	4B3 g/g	4A1c g/cc	4A2b g/cc	%	%	%
6.6	6.0	0.53	0.061	9	13.7	1.60	21.1	1.56	1.63	19.4	.21	6.0
6.5	5.3	0.18	0.046		17.6	1.58	24.7	1.52	1.64	24.7	.19	13.8
6.3	5.3	0.10	0.043		16.0	1.64	21.3	1.58	1.70	20.1	.10	12.4
6.3	5.4	0.07										13.7
4.9	3.8	0.06										13.4
6.3	5.3	0.06										14.2

5A1a CATION EXCHANGE CAPACITY NH ₄ OAc	EXTRACTABLE CATIONS				5B1a		5C1	5A3a	5C3	Sum	8D3	6C1a Free Iron (Fe ₂ O ₃)
	Ext. Bases				6H1a	6G2a	Base Sat. % NH ₄ OAc Exch.	Sum Ext. Cations	Base Sat. % Sum Cations	Ext. Bases and Al	Ca/Mg	%
	Ca 6N2b	Mg 6O2b	Na 6P2a	K 6Q2a	H	Al		me/100g	me/100g			
7.0	6.2	0.8	<0.1	0.3	2.8	-	104	10.1	72	7.3		1.9
13.4	10.0	1.2	0.1	0.3	6.1	-	86	17.7	66	11.6	8.3	3.4
10.7	7.8	1.6	0.1	0.4	4.7	-	92	14.6	68	9.9	4.9	3.4
10.1	6.1	2.3	<0.1	0.6	4.4	-	89	13.4	67	9.0	2.6	3.5
9.4	3.4	2.4	<0.1	0.5	7.0	0.6	67	13.3	47	6.9	1.4	3.6
10.0	3.7	3.9	<0.1	0.6	4.4	-	82	12.6	65	8.2	0.9	4.1

a. Few Fe/Mn-bearing aggregates.

Soil Type: Atwood silt loam
 Soil Nos.: 851Mis-58-2
 Location: Pontotoc County, Mississippi, 2 1/2 miles south of Pontotoc on State Highway 15 and 1/4 mile west on gravel road. SW1/4 NE1/4, Sec. 17, T10S, R3E.
 Vegetation and Use: Alfalfa for hay.
 Slope and Land Form: Nearly level (2 percent slope).
 Drainage and Permeability: Well drained - runoff medium to rapid and internal drainage medium. Permeability is moderate.
 Parent Material: Thin loess over Coastal Plain.
 Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 18, 1961.
 Described by: E. A. Perry and R. C. Carter, May 18, 1961.

Horizon and
 Lincoln
 Lab. No.

Ap
 15193 0 to 6 inches. Dark brown to brown (7.5YR 3/2 and 4/4) silt loam; weak, fine and medium granular structure; friable; common fine roots; few worm casts; some mixing of material from B horizon in worm and root holes; abrupt, smooth boundary.

B2t
 15194 6 to 18 inches. Dark reddish brown (5YR 3/4) silty clay loam; moderate, fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few fine black concretions; few old root channels filled with material from Ap horizon; patchy clay films on ped faces and in root channels; gradual, smooth boundary.

B2t
 15195 18 to 31 inches. Dark reddish brown (2.5YR 3/4) silty clay loam; moderate, medium and coarse subangular and angular blocky structure; friable; slightly plastic to plastic; few fine roots; many fine to coarse black coatings and many fine black concretions; clay films on ped faces and in cracks; few old root channels and wormholes filled with material from Ap horizon; gradual, smooth boundary.

IIB23t
 15196 31 to 45 inches. Dark reddish brown (2.5YR 3/4) clay loam; moderate, medium and coarse subangular and angular blocky structure; friable; slightly plastic to plastic; few fine roots; common fine to coarse black coatings and common fine black concretions; clay films on ped faces and in cracks; few root channels filled with material from horizon above; gradual, smooth boundary.

IIB23t
 15197 45 to 57 inches. Same as horizon above. Horizon divided for characterization.

IIB24t
 15198 57 to 79 inches. Dark red (10R 3/6) clay loam; moderate, medium and coarse subangular and angular blocky structure; friable; slightly plastic; few fine black coatings and concretions; patchy clay films on ped faces and in cracks.

Remarks: The B2t and IIB23t horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): Quartz and feldspar dominate the very fine sands of the coastal plain sediments and the loess mantle. The quartz to feldspar ratio is higher and kyanite is present in the coastal plain sediments. The quantity of tourmaline, pyroxene, and plant opal is higher in the loess. Plant opal is virtually absent in the coastal plain sediments.

SOIL Bosket fine sandy loam SOIL Nos. D44-MI-007 LOCATION Tallahatchie County, Mississippi

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. D4392 - D4396

Depth (in.)	Horizon	181b Size class and particle diameter (mm) 3A1											3B2 Cm	3B1 Coarse fragments			
		Total			Sand					Silt				2A2 Pct.	2-19 Pct.	19-76 Pct.	
		Sand (2-0.05) (0.05-0.002)	Silt (= 0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02)	Int. II (0.2-0.02)	(2-0.1)					
0-4	Ap	59.5	27.6	12.9	0.1	0.3	2.7	26.4	30.0								29.5
4-8	B21t	46.1	28.6	25.3	-	0.2	3.0	20.7	22.2								23.9
8-14	B22t	46.5	24.8	23.7	-	0.2	3.1	22.4	20.8								25.7
14-20	B3t	53.6	21.4	25.0	-	0.4	4.4	30.0	18.8								34.8
20-28	C1	70.9	13.8	15.3	-	0.7	7.2	47.4	15.6								55.3
28-36	IC2	89.1	5.7	5.2	-	0.9	9.8	65.8	12.6								76.5
36-60	IC3	68.0	23.0	9.0	-	0.1	1.0	25.2	41.7								26.3

Depth (in.)	6A3a Organic Matter	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH	
						4A1e 1/2 bar	4A1h Oven dry			4B1c 1/2 bar	4B2 15 bar			8C1c (1:1) KCl	8C1a (1:1) H ₂ O
						g/cc	g/cc	g/cc		Pct.	Pct.	Pct.			
0-4	0.78														
4-8	0.82														6.2
8-14	0.74														5.4
14-20	0.45														5.1
20-28	0.28														5.2
28-36															5.3
36-60															5.6

Depth (in.)	Extractable bases 5B1a					6X1a Ext. acidity		CEC		6G1d Ext. Al	Ratios to clay			8B3 Ca/Mg	Base saturation	
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6A3a Sum cations	CEC Sum	Ext. Iron	15-bar water		CEC Sum	Ext. Iron	15-bar water		5C3 Sum cations Pct.	5C1 NH ₄ QAc Pct.
	meq/100 g															
0-4	6.9	1.6		0.4	2.8	11.7									76	
4-8	9.1	2.6		0.4	6.4	18.5								65		
8-14	11.9	1.4		0.5	8.5	22.3								62		
14-20	10.2	1.9		0.4	7.2	19.7								64		
20-28	5.6	1.8		0.3	8.1	15.8								49		
28-36	2.6	0.9		0.1	2.2	5.8								63		
36-60	5.3	1.6		0.3	3.1	10.3								70		

Depth (in.)	Clay Fraction Analysis 7A1b-d							
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray				7A3			

Mt. = Montmorillonite, Chl. = chlorite, Vm = Vermiculite, Mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Best fine sandy loam

Soil No.: D44M1-007

Location: Tallahatchie County, Mississippi, NE 1/4, R 1E

Collected by: R. W. Simonsen, H. B. Vanderford, and C. B. Melton

Described by: R. C. Carter, W. A. Cole and Frank Scott

Horizon and

Beltsville

Lab. No.

- Ap
D4392 0 to 4 inches. Dark grayish brown (10YR 4/2) fine sandy loam; weak, fine granular structure; very friable; abrupt smooth boundary.
- B21t
D4393 4 to 8 inches. Dark brown (10YR 3/3) clay loam; interior of peds brown (10YR 4/3) moderate, medium subangular blocky structure; friable to firm; continuous clay films on peds; gradual smooth boundary.
- B22t
D4394 8 to 14 inches. Variegated dark brown (10YR 3/3) and brown (10YR 4/3) sandy clay loam; moderate, medium to coarse subangular blocky structure; friable to firm; clay films on most peds; gradual smooth boundary.
- B3t
D4395 14 to 20 inches. Brown (10YR 4/3) loam; weak to moderate medium subangular blocky structure; friable; patchy clay films on peds; gradual smooth boundary.
- C1
D4396 20 to 28 inches. Yellowish brown (10YR 5/6) sandy loam; structureless; single grain; very friable; gradual smooth boundary.
- IIC2
D4397 28 to 36 inches. Yellowish brown (10YR 5/6) loamy sand; single grain; very friable; diffuse smooth boundary.
- IIC3
D4398 36 to 60 inches. Yellowish brown (10YR 5/6) loamy fine sand; single grain; very friable.

SOIL SURVEY LABORATORY

Lincoln, Nebr.

July 1959

OIL TYPE *Brookhaven
silt loam

LOCATION Lincoln County, Mississippi

SOIL NOS. 859Miss-43-3

LAB. NOS. 9902-9910

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1a					3A1						2A2
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY					> 2
2-1	1.0-5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.25-0.02	0.02-0.002					
0-1	A1	0.4a	1.4a	2.7a	4.4a	2.8a	81.3	7.0	47.7	38.4	-	si	
1-4 1/2	B & A	0.2a	1.1a	2.5a	3.8a	2.0a	81.4	9.0	43.9	41.2	-	si	
4 1/2-6	B1	0.1a	0.6a	1.4a	2.2a	1.4a	71.3	23.0	34.3	39.4	-	sil	
6-10	B21	<0.1	0.4a	1.0a	1.5a	1.1a	63.8	32.2	28.2	37.4	-	sic1	
10-13	B22	0.1b	0.5b	1.1b	1.6b	1.3b	64.7	30.7	28.6	38.2	-	sic1	
13-17	B23	<0.1	0.6b	1.1b	1.9b	1.4b	68.4	26.6	30.1	40.6	-	sil/sic1	
17-28	See	0.1c	0.6c	1.6c	2.7c	1.8c	65.7	27.5	31.7	37.1	-	sic1/sil	
28-42	Desc.	0.3c	1.7c	3.9c	6.8c	3.9c	61.8	21.6	35.2	33.7	-	sil	
42-51		0.3c	1.6c	4.8c	8.2c	5.0c	58.1	22.0	36.7	30.3	-	sil	
pH		ORGANIC MATTER					Free Iron	BULK DENSITY			MOISTURE TENSIONS		
8C1a	1:5	1:10	6A1a	6B1a		Fe ₂ O ₃ %	4A1a	4A1c	4A1d	4B1	4B3	4B2	
			ORGANIC CARBON	NITROGEN	C/N		Field State	30-cm	O. D.	Field State	30-cm	15 ATMOS.	
	1:1		%	%		6C1a	g/cc	g/cc	g/cc	%	%	%	
5.1			1.68	0.076	22	0.8						3.9	
5.0			0.60	0.037	16	0.9	1.38	1.38	1.38d	18	26	3.5	
5.0			0.49	0.046	11	2.2						9.3	
5.1			0.40	0.052	8	3.2	1.35	1.32	1.41	18	28	13.3	
5.0			0.26	0.042	6	3.2						13.1	
5.3			0.16	0.035		3.0						11.6	
5.4			0.09	0.028		2.5	1.51	1.48	1.55	20	27	11.6	
5.5			0.06			2.0	1.71	1.64	1.72	12	19	9.4	
5.5			0.05			2.2	1.75	1.66	1.75	9	18	9.4	
5A1a	EXTRACTABLE CATIONS					5B1a	BASE SAT. %	Base Sat. %	Sum Ext. Bases	Sum Ext. Cations	Ca/Mg		
CATION EXCHANGE CAPACITY	6N2b	6O2b	6H1a	6P2a	6Q2a		NH ₄ Ac EXCH.	on Sum Cations					
NH ₄ Ac	Ca	Mg	H	Na	K								
	milliequivalents per 100g. soil					5C1	5C3	5H1a	5A3a	8D3			
6.8	1.5	0.4	6.1	<0.1	0.2	31	26	2.1	8.2				
4.3	0.1	0.4	4.8	<0.1	0.1	14	4	0.2	5.0				
8.9	1.1	0.9	8.9	0.1	0.2	26	20	2.3	11.2				
12.5	1.9	2.0	9.8	<0.1	0.3	34	30	4.2	14.0	1.0			
12.1	0.6	2.2	12.2	0.1	0.2	26	20	3.1	15.3				
11.8	0.1	2.4	12.2	0.1	0.2	24	19	2.8	15.0				
12.3	<0.1	3.2	10.6	0.3	0.2	30	26	3.7	14.3				
9.4	<0.1	3.6	6.5	0.3	0.1	42	38	4.0	10.5				
8.6	<0.1	4.0	5.2	0.3	0.1	51	46	4.4	9.6				

- a. Trace light and dark brown concn. (Fe?)
- b. Common light brown concn. (Fe?); trace dark brown concn. (Fe?)
- c. Few light brown concn. (Fe?); trace dark brown concn. (Fe?)
- d. Average of 2 clods.

Soil Type: Brookhaven silt loam

Soil Nos.: 899Miss-43-3

Location: Lincoln County, Mississippi, southeast of Brookhaven. 217 feet west and 100 feet south of northeast corner of NW 1/4 NE 1/4, Sec. 11, T5N, R8E. Aerial photo CJL-4K-38.

Vegetation and Use: Mixed pine and hardwoods with pinehill bluestem. Been in timber for a long period of years.

Slope and Land Form: Nearly level (1 percent) broad ridge in nearly level to sloping topography.

Drainage and Permeability: Somewhat poorly drained. Permeability is moderate in the horizons above the fragipan and slow in that layer.

Parent Material: Thin loess and Coastal Plain material.

Collected by: J. S. Allen, January 27, 1959.

Described by: R. C. Carter, January 27, 1959.

Horizon and
Lincoln
Lab. No.

- O1 ½ to 0 inch. Mixed hardwood leaves, pine needles and bluestem grass.
- A1
9902 0 to 1 inch. Very dark gray (5Y 3/1) to gray (5Y 5/1) silt loam with weak medium granular structure; very friable; numerous fine grass roots and some larger roots; boundary clear and smooth.
- B & A
9903 1 to 4½ inches. Pale olive (5Y 6/3) silt loam with weak fine subangular blocky structure to structureless; very friable; numerous grass roots and some fine tree roots; boundary clear and smooth.
- B1
9904 4½ to 6 inches. Mixed strong brown (7.5YR 5/6) and olive (5Y 5/3) silt loam with weak fine subangular blocky structure; friable, slightly sticky; numerous grass roots and some fine tree roots; boundary clear and smooth.
- B21
9905 6 to 10 inches. Strong brown (7.5YR 5/6) heavy silt loam with weak fine subangular blocky structure with few thin clay films on ped faces; friable, slightly sticky; many grass roots and few fine tree roots; boundary gradual and wavy.
- B22
9906 10 to 13 inches. Strong brown (7.5YR 5/6) silt loam with few fine faint mottles of light yellowish brown (10YR 6/4); weak fine and medium subangular blocky structure with few thin clay films on peds; friable, slightly sticky; few fine roots; few fine soft iron concretions; boundary clear and smooth.
- B23
9907 13 to 17 inches. Yellowish brown (10YR 5/6) silt loam with common fine faint mottles of very pale brown (10YR 7/3); weak fine and medium subangular blocky structure; friable, slightly sticky; few roots; many fine soft iron concretions; few fine pores; boundary clear and smooth.
- B'24tx
& A'2x
9908 17 to 28 inches. Mottled dark brown (7.5YR 4/4) to strong brown (7.5YR 5/6) brown (10YR 5/3) and very pale brown (10YR 7/3) heavy silt loam; weak thick platy peds breaking into moderate medium subangular blocky structure with few clay films on peds; firm, slightly sticky; many iron-enriched spots; very pale brown (10YR 7/3) in cracks and coatings around ped faces; many pores; boundary arbitrary. This horizon wet and free moisture seeped out along face of pit.
- IIB'25tx
9909 28 to 42 inches. Mottled yellowish brown (10YR 5/6) light yellowish brown (10YR 6/4) and light brownish gray (2.5Y 6/2) heavy silt loam; weak thick platy peds breaking down to weak medium angular blocky structure with few thin clay films on peds; firm; no roots; many incipient iron concretions; few fine manganese concretions; light brownish gray (2.5Y 6/2) silt coatings on ped faces and in cracks; many fine pores; boundary gradual and wavy.
- IIB'26tx
9910 42 to 51 inches. Strong brown (7.5YR 5/6) to yellowish brown (10YR 5/6) silty clay loam with many fine faint mottles of light gray (10YR 7/2); structureless; few thin clay films on faces; firm to extremely firm; few manganese concretions; many incipient iron concretions; light gray (10YR 7/2) coatings around peds and in cracks; many fine pores.

Remarks: Colors are for moist soil.

Stereoscopic microscope observations:

B21: A very few scattered patches of clay film on void walls; no clay films observed on ped surfaces.

SOIL SURVEY LABORATORY Lincoln, Nebr. July 1959

SOIL TYPE *Brookhaven silt loam LOCATION Lincoln County, Mississippi

SOIL NOS. S59Miss-43-4 LAB. NOS. 9911-9920

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)							3A1			TEXTURAL CLASS	
		1B1a	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)				2A2	> 2					
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	
0-2	A1	0.2a	1.0a	1.7a	3.2a	2.6a	84.0	7.3	45.1	43.0	-	si	
2-6	A2	0.1a	0.7a	1.5a	2.5a	2.2a	83.7	9.3	42.4	44.6	-	si	
6-9	B&A	0.1a	0.5a	0.9a	1.5a	1.5a	76.9	18.6	36.2	42.9	-	sil	
9-13	B21	0.1a	0.3a	0.6a	1.1a	1.0a	64.5	32.4	27.4	38.6	-	sic1	
13-17	B22	0.1b	0.5b	0.8b	1.3b	1.5b	67.0	28.8	28.8	40.3	-	sic1	
17-23	See	0.1b	0.5b	0.9b	1.6b	1.8b	69.5	25.6	30.6	41.5	-	sil	
20-23	Desc.	0.1c	0.6c	1.1c	2.1c	1.9c	64.5	29.7	30.4	37.0	-	sic1	
23-34	B'24tx	0.3c	1.2c	2.1c	3.6c	3.7c	64.8	24.3	34.1	36.1	-	sil	
34-48	See	1.3c	2.2c	3.9c	6.9c	6.8c	55.9	23.0	38.3	27.6	Tr.	sil	
43-54	Desc.	0.3c	1.8c	2.9c	5.7c	6.4c	51.9	31.0	34.6	26.5	-	sic1	
pH		ORGANIC MATTER			Free Iron	MILK DENSITY			MOISTURE TENSIONS				
8C1a	1:5	1:10	6A1a	6B1a	Fe ₂ O ₃ %	4A1a	4A1c	4A1h	4B4	4B3	4B2		
			ORGANIC CARBON %	NITRO-GEN %	C/N	Field State	30-cm	O. D.	Field State	30-cm	15 ATMOS.		
4.6			4.31	0.168		6C1a	g/cc	g/cc	g/cc	%	%		
4.9			0.50	0.026	19		1.35	1.34	1.35	20	27		
4.9			0.41	0.044	9		1.7						
5.1			0.38	0.048	10		1.42	1.41	1.49	19	27		
5.3			0.25	0.037	7		1.44	1.41	1.50	22	28		
5.4			0.13	0.029									
5.4			0.11	0.025									
5.5			0.10	0.016									
5.3			0.05				1.73	1.68d	1.74	11	19d		
5.1			0.05				1.76	1.67	1.76	10	19		
5A1a		EXTRACTABLE CATIONS				5B1a	BASE SAT. %	Base Sat. %	Sum Ext. Bases	Sum Ext. Cations	Ca/Mg		
CATION EXCHANGE CAPACITY		6N2b	6O2b	6H1a	6P2a	6Q2a	NH ₄ Ac EXCH.	on Sum Cations					
NH ₄ Ac		Ce	Mg	H	No	K							
		milliequivalents per 100g. soil						5C1	5C3	5B1e	5A3a	8D3	
14.0	2.9	0.9	17.0	<0.1	0.3		29	19	4.1	21.1			
4.2	0.4	0.8	6.0	<0.1	0.1		31	18	1.3	7.3			
7.2	0.6	1.0	8.9	<0.1	0.2		25	17	1.8	10.7			
12.4	1.2	2.2	12.2	0.1	0.2		30	23	3.7	15.9	0.5		
11.6	1.0	2.5	11.8	0.2	0.2		34	25	3.9	15.7	0.4		
11.5	0.3	2.8	11.0	0.2	0.2		30	24	3.5	14.5			
13.4	0.1	4.2	11.8	0.4	0.2		36	29	4.9	16.7			
11.9	0.1	5.2	9.7	0.4	0.2		50	38	5.9	15.6			
8.9	0.1	5.3	6.1	0.5	0.1		67	50	6.0	12.1			
10.9	0.7	5.4	7.3	0.7	0.1		63	48	6.9	14.2			

- a. Trace light and dark brown coner. (Fe?)
- b. Common light brown coner. (Fe?); trace dark brown coner. (Fe?)
- c. Few light brown coner. (Fe?).
- d. Average of 2 clods.

Soil Type: Brookhaven silt loam
 Soil Nos.: 859Miss-43-4
 Location: Lincoln County, Mississippi, southeast of Brookhaven. 412 feet west and 246 feet south of northeast corner SW 1/4 SW 1/4, Sec. 29, T7N, R3E. Photo No. CUL-17K-40.
 Vegetation and Use: Mixed pine and hardwoods approximately 25 years old or more.
 Slope and Land Form: Nearly level ($\frac{1}{2}$ percent) broad ridge in nearly level to sloping topography.
 Drainage and Permeability: Somewhat poorly drained. Permeability is moderate in the horizons above the fragipan and slow in that layer.
 Parent Material: Thinloam and Coastal Plain material.
 Collected by: J. S. Allen, January 27, 1959.
 Described by: R. C. Carter, January 27, 1959.

Horizon and
 Lincoln
 Lab. No.

- O1 $\frac{1}{2}$ to 0 inch. Mixed hardwood leaves and pine needles.
- A1 0 to 2 inches. Black (10YR 2/1) to very dark gray (5Y 3/1) silt loam with weak medium granular structure; very friable; numerous fine roots; boundary clear and smooth.
- 9911
- A2 2 to 6 inches. Gray (5Y 6/1) to dark gray (5Y 4/1) silt loam; structureless to weak granular structure; very friable; numerous fine roots; boundary clear and smooth.
- 9912
- B & A 6 to 9 inches. Mixed very pale brown (10YR 7/4) and yellowish red (5YR 5/6) silt loam with weak fine subangular blocky structure; moist, friable, and wet, slightly sticky; numerous fine roots; boundary clear and smooth.
- 9913
- B21 9 to 13 inches. Yellowish red (5YR 4/6) heavy silt loam to silty clay loam with weak fine and medium subangular blocky structure; friable, slightly sticky; numerous fine roots; boundary gradual and wavy.
- 9914
- B22 13 to 17 inches. Mixed strong brown (7.5YR 5/6) to yellowish red (5YR 5/6) and brownish yellow (10YR 6/6) heavy silt loam; weak fine and medium subangular blocky structure with few thin clay films on ped; friable, slightly sticky, numerous fine roots; few small chert pebbles and quartz gravel; boundary clear and smooth.
- 9915
- B'23tx 17 to 23 inches. Strong brown (7.5YR 5/6) silt loam with many fine distinct mottles of yellowish red (5YR 4/6) and very pale brown (10YR 7/4); weak fine and medium subangular blocky structure with few clay films on ped; friable, slightly sticky; few roots; some iron-enriched spots; many voids. Discontinuous layer (pocket) from 20 to 23 inches of mottled strong brown (7.5YR 5/6) and light gray (5Y 7/2) heavy silt loam; weak thick platy structure which breaks into weak fine and medium subangular blocky structure with few clay films on ped; friable, slightly sticky; few roots; many pores; many iron concretions; boundary gradual and irregular. (20- to 23-inch pocket sampled separately - LBL 9917.)
- 9916
- B'24tx 23 to 34 inches. Mottled strong brown (7.5YR 5/6) and light gray (5Y 7/1) silt loam; breaks out in very thick plates and then into weak medium angular blocky structure with many thin clay films on ped; extremely firm; few roots; light gray (5Y 7/1) silt coatings in cracks and on ped faces; some iron-enriched spots; many pores; clear wavy boundary.
- 9918
- IIB'25tx 34 to 48 inches. Mottled strong brown (7.5YR 5/6) yellow (10YR 7/8) white (10YR 8/1) and yellowish red (5YR 4/6) silty clay loam; breaks into angular blocky ped with many clay skins on ped; extremely hard, extremely firm; no roots; many iron-enriched spots; some pores; white silt in crack and channels; boundary clear and wavy.
- 9919
- IIB'26tx 48 to 54 inches. Mottled strong brown (7.5YR 5/6) yellow (10YR 7/6) and red (2.5YR 4/8) silty clay loam; structureless, breaking into thick platy blocks with many clay films on faces; extremely hard, extremely firm; no roots; many iron-enriched spots; many voids; white silt in crack.
- 9920

Remarks: Colors are of moist soil.

Stereoscopic microscope observations:

- B21: Ped and large noncapillary void walls slightly more reflective and one-half color chip darker in value, probably indicating very thin clay films.
- B22: A very few thin and patchy clay films. (Probably fewer than in the B21 horizon.)

SOIL SURVEY LABORATORY Lincoln, Nebr.

August 1962

SOIL TYPE Bude LOCATION Tippah County, Mississippi
silt loam

SOIL NOS. S61Miss-70-3

LAB. NOS. 15216-15224

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1a		PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)					3A1		2A2		
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	0.2-0.075	0.075-0.002	> 2		
2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.075	0.075-0.002					
0-5	Ap	0.7a	5.5	5.2	8.6	3.6	66.9	9.5	43.5	31.3	-	sil	
5-13	B21	0.8a	3.7	3.6	5.9	2.8	64.0	19.2	34.2	35.6	-	sil	
13-19	B22	1.0a	3.3	3.1	5.3	2.5	63.1	21.7	33.4	34.9	-	sil	
19-23	See	0.7b	3.6b	3.5a	5.9a	2.8a	64.5	19.0	32.4	37.9	-	sil	
23-27	Desc.	1.2b	3.4b	3.2b	5.7a	2.7a	65.9	17.9	33.6	37.9	-	sil	
27-29		0.7b	2.8a	2.7a	4.1a	2.2a	64.3	23.2	31.9	36.6	-	sil	
29-44		0.7b	4.0a	3.4	5.7	2.7	55.0	28.5	30.4	30.2	-	sic1	
44-57		0.8a	4.3	3.9	6.6	3.2	55.9	25.3	29.7	32.8	-	sil	
57-63		1.0a	4.6	4.5	7.9	4.0	50.2	27.8	29.1	29.2	-	sic1	
pH		Organic Matter			Bulk Density					MOISTURE TENSIONS			
8C1a	8C1c	6A1a	6B1a	C/N	Field Moist		30 cm.		A.D.	4E1b	4C1	4B2	
H ₂ O	KCl	O.C.	N		4B4	4A1a	4B3	4A1c	4A1b	1/3	1/3-to	15	
1:1	1:1	%	%		% M.	g/cc	% M.	g/cc	g/cc	ATMOS. Pieces	15-Atm	ATMOS. Sieved	
5.6	4.9	1.69	0.131	13	28.1	1.41	28.4	1.40	1.45	24.1	.25	6.0	
4.8	3.7	0.30	0.037	8								7.8	
4.6	3.4	0.14	0.026		20.9	1.50	25.0	1.46	1.54	20.9	.18	8.8	
4.8	3.3	0.10	0.023									8.6	
4.6	3.1	0.05	0.016									8.2	
4.7	2.8	0.04										10.0	
4.4	2.6	0.04			18.6	1.70	23.1	1.60	1.76	18.6	.10	12.6	
4.7	2.6	0.02			16.6	1.75	21.8	1.64	1.79	18.8	.11	11.8	
4.8	3.1	0.02										11.9	
5A1a		EXTRACTABLE CATIONS					5B1a	Base Sat. %	5A3a	5C3	Sum Ext.	8D3	6C1a
CATION EXCHANGE CAPACITY		Ext. Bases			6B1a	6C2a	NH ₄ OAc	Sum	Base Sat. %	Sum Cations	Sum Cations	Ca/Mg	Free Iron (Fe ₂ O ₃)
NH ₄ OAc		Cs	Mg	Na	K	H	Al	Exch.	← me/100g	→			
		6N2b	6O2b	6P2a	6Q2a			5C1					
		milliequivalents per 100g. soil											
6.6	3.4	0.5	0.1	0.1	6.2	-		62	10.3	40		6.8	1.1
7.2	0.9	0.6	0.1	0.1	8.6	3.3		24	10.3	16		1.5	1.8
8.4	1.0	0.6	0.1	0.1	9.8	4.3		21	11.6	16		1.7	2.2
8.5	0.7	0.6	0.1	0.1	9.5	4.1		18	11.0	14		1.2	2.7
7.8	0.8	0.9	0.2	0.1	8.8	4.0		26	10.8	18		0.9	2.6
11.1	1.4	1.9	0.3	0.2	10.8	5.6		34	14.6	26	9.4	0.7	2.0
14.3	2.4	2.9	0.4	0.2	12.6	6.4		41	18.5	32	12.3	0.8	1.9
12.9	2.8	3.3	0.4	0.2	10.5	4.7		52	17.2	39	11.4	0.8	1.8
13.3	3.6	3.6	0.4	0.2	9.4	3.8		59	17.2	45	11.6	1.0	2.3
a.		Few Fe/Mn-bearing aggregates.											
b.		Common Fe/Mn-bearing aggregates.											

Soil Type: Bude silt loam

Soil Nos.: S51Mss-70-3

Location: Tippah County, Mississippi, 1½ miles north of Falkner on State Highway 15 and 300 feet east of highway. S1/4 SW1/4, Sec. 31, T28, N4E.

Vegetation and Land Use: Bermudagrass pasture.

Slope and Land Form: Nearly level (1 percent slope).

Drainage and Permeability: Somewhat poorly drained with slow to medium runoff and slow internal drainage. Permeability is moderate in the upper part of the solum and slow in the lower part.

Parent Material: Thin loess over Coastal Plain.

Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 19, 1961.

Described by: W. I. Smith and R. C. Carter, May 19, 1961.

Horizon and

Lincoln

Lab. No.

- Ap
15216 0 to 5 inches. Mottled brown to dark brown (10YR 4/3) pale brown (10YR 6/3) and dark grayish brown (10YR 4/2) silt loam; mottles are many, fine, faint; weak, fine and medium granular structure; friable; common fine roots; few fine black and brown concretions; brown stains around roots; few worm and root channels filled with material from B horizon; clear, smooth boundary.
- B21
15217 5 to 13 inches. Yellowish brown (10YR 5/6) silt loam; weak, fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few fine, soft brown and black concretions; few root and worm channels filled with material from Ap horizon; clear, smooth boundary.
- B22
15218 13 to 19 inches. Mottled yellowish brown (10YR 5/6) strong brown (7.5YR 5/6) pale brown (10YR 6/3) and light yellowish brown (10YR 6/4) heavy silt loam; mottles are many, fine, faint and distinct; weak, fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few fine soft brown and black concretions; clear, smooth boundary.
- A'21x
and B'21tx
15219 19 to 23 inches. Mottled yellowish brown (10YR 5/6) light yellowish brown (2.5Y 6/4) and light brownish gray (2.5Y 6/2) silt loam; mottles are many, fine, faint and distinct; weak, fine and medium subangular blocky structure; friable; few fine roots; common fine brown and black concretions; common medium black coatings; common fine voids; clear smooth boundary.
- A'22x
and B'22tx
15220 23 to 27 inches. Mottled light olive brown (2.5Y 5/4) light brownish gray (2.5Y 6/2) and light yellowish brown (2.5Y 6/4) silt loam; mottles are many, fine, faint and distinct; weak, fine and medium subangular blocky structure; friable; few fine roots; many fine brown and black concretions; many fine voids; clear, smooth boundary.
- B'23tx
15221 27 to 29 inches. Mottled light gray to gray (5Y 6/1) yellowish brown (10YR 5/6) and light gray (10YR 7/1) heavy silt loam; mottles are many fine faint and distinct; moderate fine and medium subangular blocky structure; friable; few fine roots; many fine brown and black concretions; many fine voids; peds covered with gray silt (10YR 7/1); clear smooth boundary.
- IIB'24tx
15222 29 to 44 inches. Gray (5Y 5/1) silty clay loam with many fine, distinct strong brown (7.5YR 5/6) mottles; moderate, medium and coarse angular and subangular blocky structure; friable to firm; plastic; few fine roots; common fine soft brown and black concretions; patchy clay films in root channels and cracks; common vertical cracks up to 2 inches wide filled with gray (5Y 5/1) heavy silty clay loam; light gray (10YR 7/1) silt coatings on ped faces; gradual, smooth boundary.
- IIB'25tx
15223 44 to 57 inches. Mottled yellowish brown (10YR 5/6) light olive brown (2.5Y 5/4) and gray (10YR 5/1) clay loam; mottles are many, fine to coarse and distinct; moderate, coarse, angular blocky structure; friable to firm; slightly plastic; few fine roots; common fine, soft brown and black concretions; patchy clay films in cracks; common vertical cracks less than one inch wide filled with gray (5Y 5/1) heavy silty clay loam; gradual, smooth boundary.
- IIB'26tx
15224 57 to 63 inches. Mottled yellowish brown (10YR 5/6) strong brown (7.5YR 5/6) and gray (10YR 5/1) clay loam; mottles are many, fine to coarse, faint and distinct; weak to moderate coarse angular blocky structure; friable to firm; slightly plastic; common fine brown and black concretions; few cracks filled with gray (5Y 5/1) material.

Remarks: The B22, A'22x and B'22tx, and IIB'24tx horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): Quartz and feldspar dominate the very fine sands of the coastal plain sediments and the loess mantle. The quartz to feldspar ratio is higher and kyanite is present in the coastal plain sediments. The quantity of tourmaline, pyroxene, and plant opal is higher in the loess. Plant opal is virtually absent in the coastal plain sediments. The IIB'24tx horizon marks the upper limit of uncontaminated coastal plain material but the B'23tx horizon appears to be a mixture of loess and coastal plain materials.

SOIL TYPE Bu1e LOCATION Tippah County, Mississippi
 silt loam

SOIL NOS. S61Miss-70-4

LAB. NOS. 15225-15231

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1A1a											2A2
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	3A1		> 2		
2.1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	3A1				
0-7	Ap	1.2a	3.8a	4.7	11.1	4.4	64.2	10.6	42.3	32.1	-	sil	
7-12	B21	0.5a	2.3a	2.7	7.0	3.0	65.1	19.4	35.5	36.3	-	sil	
12-20	B22	0.6a	2.3a	2.8	6.8	2.6	64.5	20.4	33.4	37.1	-	sil	
20-24	See	0.4b	2.2b	2.8a	6.9a	2.5a	63.5	21.7	31.9	37.4	-	sil	
24-28	Desc.	0.4b	1.8b	2.3a	5.5a	2.2a	57.9	29.9	28.8	33.9	-	sic1	
28-46	B'23tex	0.6b	2.3a	2.8a	6.6	2.7	52.3	32.7	27.5	30.8	-	sic1	
46-62	B'24tex	0.6	3.5	4.7	12.2	4.7	48.3	26.0	30.4	28.8	-	1	
pH		Organic Matter				Bulk Density				MOISTURE TENSIONS			
8C1a	8C1c	6A1a	6B1a	C/N	Field Moist		30 cm.		A. D.	4B1b	4C1	4B2	
H ₂ O	KCl	O.C.	N		4B1	4A1a	4B3	4A1c	4A1b	1/3 to	15	15	
%	%	%	%	%	% M.	% M.	% M.	% M.	ATMOS.	ATMOS.	ATMOS.	Sieved	
5.5	4.3	0.91	0.076	12	18.6	1.62	21.9	1.59	1.63	22.5	.28	4.6	
5.0	3.5	0.30	0.039	8								7.3	
4.8	3.3	0.13	0.022		20.3	1.56	23.4	1.52	1.60	22.1	.21	8.3	
5.2	3.2	0.09	0.019									8.4	
5.0	3.1	0.10	0.020									11.9	
4.7	3.0	0.06			18.1	1.68	21.3	1.60	1.80	26.1	.19	14.0	
5.0	3.2	0.02										11.0	
5A1a		EXTRACTABLE CATIONS				5B1a		Base	5A3a	5C3	Sum	8D3	6C1a
CATION EXCHANGE CAPACITY NH ₄ OAc		Ext. Bases				6H1a	6G2a	Sat. % NH ₄ OAc Exch.	Sum Ext. Cations	Base Sat. %	Sum Ext. Bases and Al	Ca/Mg	Free Iron (Fe ₂ O ₃) %
6N2b		6O2b	6P2a	6Q2a	H	Al	5C1	mg/100g	mg/100g	mg/100g			
5.6	2.1	0.7	<0.1	0.6	5.3	0.1	61	8.7	39	3.5		1.0	
7.2	2.4	0.8	0.1	0.1	6.7	1.7	47	10.1	34	5.1		1.3	
7.8	1.4	0.9	0.1	0.1	7.9	3.7	32	10.4	24	6.2		1.7	
8.7	1.0	1.2	0.2	0.1	9.3	4.7	29	11.8	21	7.2	0.8	2.2	
13.9	1.4	2.3	0.3	0.2	13.6	7.1	30	17.8	24	11.3	0.6	2.3	
17.3	2.4	4.1	0.5	0.2	14.3	7.8	42	21.5	33	15.0	0.6	2.0	
12.1	2.6	4.1	0.5	0.2	8.2	3.5	61	15.6	47	10.9	0.6	1.0	

a. Few Fe/Mn?-bearing aggregates.
 b. Common Fe/Mn?-bearing aggregates.

Soil Type: Bude silt loam
 Soil Nos.: 851Miss-70-4
 Location: Tippah County, Mississippi, 2½ miles southwest of Falkner about 250 feet north of gravel road. SKL/4
 S41/4, Sec. 10, T38, R3E.
 Vegetation and Land Use: Bermudagrass pasture.
 Slope and Land Form: Nearly level (1 percent slope).
 Drainage and Permeability: Somewhat poorly drained with slow to medium runoff and slow internal drainage. Permeability is moderate in the upper part of the solum and slow in the lower part.
 Parent Material: Thinbess over Coastal Plain.
 Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 19, 1961.
 Described by: W. I. Smith and R. C. Carter, May 19, 1961.

Horizon and
 Lincoln
 Lab. No.

Ap
 15225 0 to 7 inches. Mottled dark grayish brown (10YR 4/2) brown (10YR 5/3) and pale brown (10YR 6/3) silt loam; mottles are many, fine, faint; weak, fine and medium granular structure; friable; few fine roots; few fine black and brown concretions; brown stains around roots; clear, smooth boundary.

B21
 15226 7 to 12 inches. Yellowish brown (10YR 5/4) silt loam; weak, fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few root and wormholes filled with material from Ap horizon; few fine black and brown concretions; clear, smooth boundary.

B22
 15227 12 to 20 inches. Mottled yellowish brown (10YR 5/6) light gray (10YR 7/1) and strong brown (7.5YR 5/6) heavy silt loam; mottles are many, fine and medium, faint and distinct; moderate, fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few fine, soft brown and black concretions; clear, smooth boundary.

A'2x
 and B'21tx
 15228 20 to 24 inches. Mottled pale olive (5Y 6/3) yellowish brown (10YR 5/6) and light brownish gray (2.5Y 6/2) heavy silt loam; mottles are many, fine and medium distinct; weak, fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; common fine brown and black concretions; few fine voids; clear, smooth boundary.

B'22tx
 15229 24 to 28 inches. Light gray (10YR 7/1) heavy silt loam; many fine, distinct pale olive (5Y 6/3) and yellowish brown (10YR 5/6) mottles; moderate fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; common fine brown concretions; common fine voids; common fine seams less than 1 inch wide of gray (10YR 6/1) silty clay loam; overall peds are coated with light gray (10YR 7/1) silt; clear, irregular boundary.

B'23tx
 15230 28 to 46 inches. Gray (N 6/) silty clay loam; many fine and medium, distinct mottles of yellowish brown (10YR 5/6); moderate, medium and coarse angular blocky structure; plastic; firm; few fine roots; common fine brown concretions; patchy clay films in cracks; light gray (10YR 7/1) silt coatings on few of peds and in few cracks; common vertical cracks filled with gray (N 6/) silty clay; gradual, irregular boundary.

B'24tx
 15231 46 to 62 inches. Gray (N 6/) clay loam with many fine and medium, distinct yellowish brown (10YR 5/6) mottles; moderate, coarse angular blocky structure; friable to firm; slightly plastic; few fine roots; common fine brown concretions; patchy clay films in cracks; common vertical cracks less than 1 inch wide filled with gray (N 6/) silty clay.

Remarks: The B22, A'2x and B'21tx, and B'23tx horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

SOIL Calloway silt loam SOIL Nos. 820Miss-17-1 LOCATION DeBoto County, Mississippi

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 52400 - 52404

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1											3B2 Cm	Coarse fragments 3B1			
		Total		Sand								Silt		Clay	2A2	2-19	19-76
		Sand (2-0.06)	Silt (0.05-0.002)	Clay (\leq 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002	Int. III (0.2-0.02)		Int. II (2-0.1)	Pct.	Pct. of \leq 76mm	Pct.
0-4	Ap		85.8	10.6	0.4	0.6	0.5	0.6	1.5		29.2	58.5					
4-10	B21		78.8	18.8	0.2	0.8	0.4	0.4	0.6		41.0	38.6					
10-16	B22		80.5	15.6	0.4	1.3	0.6	0.6	1.0		43.8	38.1					
16-24	A'2x+B'21xt		76.6	20.0	0.3	1.1	0.5	0.6	0.9		40.9	36.9					
24-36	B'22xt		71.3	25.6	0.1	0.7	0.5	0.8	1.0		37.8	35.0					
Pct. of \leq 2 mm																	
Depth (in.)	6A1a Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH			
						4A1a 1/2 bar	4A1b Oven dry	4A1c 1/2 bar		4B2 15 bar	8C1c (1:1) KCl	8C1a (1:1) H ₂ O					
						g/cc	g/cc	Pct.		Pct.							
0-4	0.64														4.8		
4-10	0.30														4.7		
10-16	0.05														4.6		
16-24	0.11														4.6		
24-36															4.7		
Depth (in.)	Extractable bases 6B1a					6E1a	CEC		6E1d	Ratios to clay			8D3	Base saturation			
	6M2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	Ext. acidity	6A3a Sum cations	Ext. Al	CEC Sum	Ext. iron	15-bar water	Ca/Mg	8C3 Sum cations Pct.	8C1 RW ₄ OAc Pct.			
	mg/100 g																
0-4	1.7	1.0	0.1	0.2		6.5	9.5						32				
4-10	2.3	1.5	0.2	0.1		9.0	13.1						31				
10-16	1.0	1.2	0.3	0.1		9.0	11.6						22				
16-24	2.1	3.0	0.6	0.1		10.3	16.1						36				
24-36	3.7	5.8	0.8	0.1		10.6	21.0						50				
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite									
	7A2 X-ray				7A3												
0-4																	
4-10																	
10-16																	
16-24																	
24-36																	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Calloway silt loam
 Soil No.: S52Miss-17-1
 Location: De Soto County, Mississippi, 1 1/2 miles northwest of Cockrum, Mississippi
 Collected by and date: E. J. McNutt and A. H. Hasty, March 19, 1952

Horizon and
 Beltsville
 Lab. No.

Ap 52400	0 to 4 inches. Yellowish brown (10YR 5/4) friable moderate medium granular silt loam; very strongly acid.
B21 52401	4 to 10 inches. Yellowish brown (10YR 5/8) friable moderate medium granular silt loam; very strongly acid.
B22 52402	10 to 16 inches. Light yellowish brown (10YR 6/4) friable weak fine blocky light silty clay loam; very strongly acid.
A'2x B'2Lxt 52403	16 to 24 inches. Mottled brownish yellow (10YR 6/6), light gray (10YR 7/2) and very dark grayish brown (10YR 3/2), (very dark grayish brown comes from the soft concretions in horizon) firm to very firm medium blocky silty clay loam; very strongly acid.
B'22xt 52404	24 to 36 inches. Brownish yellow (10YR 6/6) faintly mottled with medium areas of light gray (10YR 7/2) and very dark grayish brown (10YR 3/2) firm to very firm silty clay loam. This layer is just a little less firm than layer above; very strongly acid.

Notes: Area appears to be a severely eroded stream terrace on which loess material has been blown.

SOIL SURVEY LABORATORY Lincoln, Nebr. July 1959

SOIL TYPE Calloway LOCATION Panola County, Mississippi
silt loam

SOIL NOS. S59Miss-54-1 LAB. NOS. 9938-9944

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1a					3A1						2A2 > 2
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002			
0-6	Ap	0.3a	0.4a	0.3a	0.5a	0.8a	87.4	10.3	45.7	42.7	-	s1	
6-11	B1	0.2b	0.6b	0.4b	0.6b	0.7b	78.2	19.3	42.1	37.1	-	s11	
11-16	B2	0.5b	1.0b	0.6b	0.8b	1.0b	73.4	22.7	38.1	36.7	-	s11	
16-29	See	0.2b	0.7b	0.5b	0.8b	1.3b	76.2	20.3	41.1	36.8	-	s11	
29-39	Desc.	0.1b	0.4b	0.3b	0.6b	1.0b	77.3	20.3	39.5	39.1	-	s11	
39-50	B'23tx	0.2b	0.3b	0.2b	0.4b	0.8b	80.0	18.1	41.4	39.8	-	s11	
50-60	B'3tx	<0.1b	0.2b	0.2b	0.4b	0.7b	81.8	16.7	42.3	40.4	-	s11	

8C1a	pH		ORGANIC MATTER			Free Iron	BULK DENSITY			MOISTURE TENSIONS		
	1:5	1:10	6A1a ORGANIC CARBON	6B1a NITRO-GEN	C/N	Fe ₂ O ₃ %	4A1a Field State	4A1c 30-cm	4A1h O.D.	4B1 Field State	4B3 30-cm	4B2 15 ATMOS.
			%	%		6C1a	g/cc	g/cc	g/cc	%	%	%
5.5			0.97	0.090	11	1.2	1.43	1.42	1.44	23	28	5.5
5.6			0.37	0.053	7	2.0						6.7
5.4			0.28	0.045	6	2.8	1.43	1.41	1.47	23	28	10.4
5.4			0.15	0.030		2.6						10.0
5.3			0.09			2.6	1.52	1.47	1.58	20	27	10.3
5.4			0.07			2.2						9.3
5.5			0.05			1.9	1.55	1.47	1.61	19	26	8.6

5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS					5B1a BASE SAT. % NH ₄ Ac EXCH.	Base Sat. % on Sum Cations	Sum Ext. Bases	Sum Ext. Cations	Ca/Mg
	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1	5C3	5H1a	5A3a	8D3
	milliequivalents per 100g. soil									
7.7	3.2	1.0	6.9	0.1	0.1	57	39	4.4	11.3	3.2
9.0	4.2	1.5	6.1	0.1	0.1	66	49	5.9	12.0	2.8
11.7	4.2	2.2	7.7	0.1	0.2	57	46	6.7	14.4	1.9
11.9	3.0	3.1	9.3	0.2	0.2	55	41	6.5	15.8	1.0
12.4	1.9	3.2	11.4	0.3	0.2	45	33	5.6	17.0	0.6
11.9	1.8	3.7	9.3	0.4	0.2	51	40	6.1	15.4	0.5
11.5	2.4	4.4	7.3	0.4	0.2	64	50	7.4	14.7	0.5

a. Few smooth and irregular dark brown to black coner. (Fe-Mn?)
b. Many smooth and irregular dark brown to black coner. (Fe-Mn?)

Soil Type: Calloway silt loam

Soil Nos.: S59Miss-54-1

Location: Panola County, Mississippi on Judge Kyle farm 5 miles east of Batesville on Sardis Lake road. 1,320 feet west of half section line and 87 feet south of NE 1/4 SE 1/4, Sec. 19, T8S, R6W. Photo NK-4E-137.

Vegetation and Use: Poor native pasture. Been in pasture 5 years or more.

Slope and Land Form: Nearly level (1 percent) broad flat in nearly level to gently sloping terrace topography.

Drainage and Permeability: Somewhat poorly drained. Permeability is moderate in the horizons above the fragipan and slow in that horizon.

Parent Material: Loess.

Collected by: J. S. Allen, January 29, 1959.

Described by: R. C. Carter, January 29, 1959.

Horizon and

Lincoln

Lab. No.

- Ap 9938 0 to 6 inches. Mottled gray (5Y 5/1) and very dark grayish brown (10YR 3/2) silt loam; mottles are many fine and distinct; weak thick platy structure breaking down into weak fine and coarse crumb; very friable; numerous fine grass roots; many fine manganese and iron concretions; boundary clear and smooth.
- B1 9939 6 to 11 inches. Yellowish brown (10YR 5/6) silt loam with many fine faint mottles of dark yellowish brown (10YR 4/4); weak fine subangular blocky structure; friable, slightly sticky; much earthworm activity, and channels are filled with soil from Ap; many fine roots; many soft manganese and iron concretions; boundary clear and smooth.
- B2 9940 11 to 16 inches. Yellowish brown (10YR 5/6) heavy silt loam with many fine faint mottles of dark brown (10YR 4/3); weak fine subangular blocky structure; friable, slightly sticky; many fine roots; many soft iron and manganese concretions; boundary abrupt and wavy.
- A'21x & B'21tx 9941 16 to 29 inches. Mottled yellowish brown (10YR 5/6) and light olive gray (5Y 6/2) silt loam; mottles are many medium and distinct; yellowish red (5YR 5/6) spots around iron concretions; weak to moderate medium and coarse angular blocky structure; friable, slightly sticky; few roots; many soft manganese and iron concretions; many pores; light olive gray (5Y 6/2) silt coatings in cracks and on peds; boundary gradual and wavy. This horizon wet, and free moisture seeped out along face of pit.
- B'22tx & A'22x 9942 29 to 39 inches. Mottled reddish yellow (7.5YR 6/6) and gray (5Y 6/1) silt loam; mottles are many medium and distinct; yellowish red (5YR 5/6) spots around iron concretions; weak coarse angular blocky structure; friable; no roots; many soft iron and manganese concretions; many pores; several large vertical cracks filled with light gray (5Y 7/2) silty clay loam; boundary gradual and wavy.
- B'23tx 9943 39 to 50 inches. Mottled strong brown (7.5YR 5/8) yellowish red (5YR 4/6) and light olive gray (5Y 6/2) silt loam; mottles are many medium and prominent; weak medium and coarse angular blocky structure; friable; few iron and manganese concretions; some pores; several large vertical cracks filled with light gray (5Y 7/2) silty clay loam and some with silt loam; boundary gradual and wavy.
- B'3tx 9944 50 to 60 inches. Mottled yellowish red (5YR 4/6) reddish yellow (7.5YR 6/6) and light gray (5Y 7/1) silt loam; mottles are many medium and prominent; structureless; firm; some iron and manganese concretions; few pores; much light gray (5Y 7/1) silt coatings on peds and in cracks.

Remarks: The Ap, A'21x and B'21tx, and B'3tx horizons were sampled for the Bureau of Public Roads.

Stereoscopic microscope observations:

B'21tx and A'22t: A very few thin patchy clay films.

OIL SURVEY LABORATORY Lincoln, Nebr. July 1959

SOIL TYPE Calloway LOCATION Panola County, Mississippi
silt loam

SOIL NOS. S59Miss-54-2 LAB. NOS. 9945-9951

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		1B1a					3A1					
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2	
2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	> 2			
0-7	Ap	0.2a	0.3a	0.1a	0.3a	0.7a	91.1	7.3	57.3	34.7	-	s1
7-11	B2	0.2a	0.6a	0.3a	0.4a	0.5a	77.6	20.4	39.9	38.4	-	s11
11-20	B & A	0.3a	0.6a	0.4a	0.5a	0.7a	75.7	21.8	38.4	38.2	-	s11
20-30	A'21x	0.8a	1.4a	0.6a	0.8a	0.9a	79.0	16.5	39.6	40.7	-	s11
30-37	See	<0.1	0.6a	0.5a	0.8a	1.0a	76.1	21.0	40.5	37.0	-	s11
37-47	Desc.	0.1a	0.2a	0.2a	0.5a	0.9a	73.2	24.9	38.2	36.2	-	s11
47-57	B'3tx	<0.1	<0.1	0.1a	0.3a	0.7a	78.9	20.0	41.6	38.2	-	s11

pH	ORGANIC MATTER			Free Iron Fe ₂ O ₃ %	BULK DENSITY			MOISTURE TENSIONS			
	1:1	6A1a	6B1a		4A1a Field State	4A1c	4A1h	4B4 Field State	4B3	4B2	
		ORGANIC CARBON %	NITROGEN %			C/N	30-cm		O.D.	30-cm	15 ATMOS.
5.7		1.00	0.091	11	1.0	1.42	1.41b	1.42	25	28b	4.0
5.3		0.34	0.054	6	1.7	1.34	1.33b	1.37	24	30b	8.1
5.2		0.26	0.046	6	1.9	1.39	1.36	1.43	24	30	9.2
5.3		0.13	0.034		1.9	1.53	1.50	1.57	20	25	4.2
5.2		0.08			1.8	1.45	1.42	1.51	24	29	9.9
5.1		0.08			2.2						11.8
5.1		0.07			2.2	1.48	1.43b	1.53	22	28b	9.4

5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS 5B1a					BASE SAT. % NH ₄ Ac EXCH.	Base Sat. % on Sum Cations	Sum Ext. Bases	Sum Ext. Cations	Ca/Mg
	6N2b Ca	6O2b Mg	6H1a H	6P2a No	6Q2a K					
	milliequivalents per 100g. soil									
6.1	2.9	1.3	4.8	<0.1	0.3	74	48	4.5	9.3	2.2
8.5	3.2	1.3	6.5	<0.1	0.2	55	42	4.7	11.2	2.5
9.8	2.9	2.2	7.3	0.1	0.2	55	42	5.4	12.7	1.3
8.7	1.7	2.2	6.9	0.1	0.2	48	38	4.2	11.1	0.8
12.6	2.0	4.0	9.7	0.2	0.3	52	40	6.5	16.2	0.5
16.0	2.8	4.6	12.2	0.3	0.3	50	40	8.0	20.2	0.6
12.9	2.5	3.7	9.3	0.2	0.2	51	42	6.6	15.9	0.7

a. Many smooth and irregular dark brown to black concr. (Fe-Mn?)
b. Average of 2 clods.

Soil Type: Calloway silt loam

Soil Nos.: 859Miss-24-2

Location: Panola County, Mississippi, Son Harmon farm, 1½ miles east of Batesville on Sardis Lake Road, 61½ feet south and 1,102 feet west of NE 1/4 NE 1/4, Sec. 34, T8S, R7W. Photo No. NK-28-1B.

Vegetation and Use: Pasture of bermudagrass and white clover. Been in pasture for probably 10 years.

Slope and Land Form: Nearly level (½ percent) broad flat in nearly level to gently sloping terrace topography.

Drainage and Permeability: Somewhat poorly drained. Permeability is moderate in the horizons above the fragipan and slow in that horizon.

Parent Material: Loess.

Collected by: J. S. Allen, January 29, 1959.

Described by: R. C. Carter, January 29, 1959.

Horizon and
Lincoln
Lab. No.

- Ap
9945 0 to 7 inches. Mottled dark grayish brown (10YR 4/2) and grayish brown (2.5Y 5/2) silt loam; mottles are many medium and faint; weak fine and coarse crumb structure; very friable; numerous grass roots; many fine soft manganese and iron concretions; boundary clear and smooth.
- B2
9946 7 to 11 inches. Mixed yellowish brown (10YR 5/4) and brown (10YR 4/3) silt loam; weak fine and medium subangular blocky structure; moist very friable and wet slightly sticky; much earthworm activity, channels filled with Ap soil material many grass roots; few fine manganese and iron concretions; boundary clear and smooth.
- B & A
9947 11 to 20 inches. Mottled dark brown (7.5YR 4/4) and grayish brown (2.5Y 5/2) heavy silt loam; mottles are many fine and prominent; weak fine and medium subangular blocky structure; moist friable and wet slightly sticky; channels filled with material from overlying horizons; many fine roots; many soft iron concretions and few fine manganese concretions; few pores; boundary clear and wavy.
- A'21x
9948 20 to 30 inches. Olive (5Y 5/3) to light olive gray (5Y 6/2) silt loam with many fine distinct mottles of brown (10YR 4/3 and 5/3); weak medium and coarse angular blocky structure; friable, slightly sticky; few roots; many soft iron and manganese concretions; many medium-sized pores; vertical cracks filled with light olive gray (5Y 6/2) silty clay loam; boundary gradual and wavy. This horizon wet, and free moisture seeped out along face of pit.
- B'21tx
& A'22x
9949 30 to 37 inches. Mottled light olive gray (5Y 6/2) and dark brown (7.5YR 4/4) silt loam; mottles are many medium and prominent; weak medium and coarse angular blocky structure; friable, slightly sticky; few roots; many soft iron and manganese concretions; many pores; vertical cracks filled with light olive gray (5Y 6/2) silty clay loam; boundary gradual and irregular. This horizon wet, and free moisture seeped out along face of pit.
- B'22tx
9950 37 to 47 inches. Dark brown (7.5YR 4/4) silt loam with many medium prominent mottles of olive gray (5Y 5/2); structureless; friable; few grass roots in cracks; small manganese and iron concretions; many vertical cracks filled with light olive gray (5Y 6/2) silty clay loam; boundary arbitrary.
- B'3tx
9951 47 to 57 inches. Dark brown (7.5YR 4/4) to strong brown (7.5YR 5/6) silt loam with common fine prominent mottles of olive gray (5Y 5/2); structureless; friable; no roots; light olive gray (5Y 6/2) vertical cracks continue from above but are smaller in size; many soft manganese and iron concretions; light olive gray (5Y 6/2) coatings on faces.

Remarks: The Ap, A'21x, and B'3tx horizons were sampled for the Bureau of Public Roads. Colors are for moist soil.

Stereoscopic microscope observations:

B & A: No clay films on ped surfaces observed. A few large channels have thin clay films on walls.

B'21tx & A'22x: A very few thin patchy clay films.

SOIL Dubbs fine sandy loam SOIL No. D44-MI-006 LOCATION Quitman County, Mississippi

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. D4385 - D4391

Depth (in.)	Horizon	3B1b											3B2				3B3		
		Total			Sand								Silt		Clay	Coarse fragments	2-2	2-10	10-75
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (< 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)	Int. I (2-0.1)	Coarse fragments					
Pct. of < 2 mm																			
0-4	Ap	23.8	16.2	-	0.7	0.7	10.4	48.2											
4-9	B21t	24.3	31.1	-	0.8	0.8	4.9	38.1											
9-15	B22t	23.2	26.8	0.1	0.9	0.8	5.7	40.5											
15-23	B3	19.9	22.3	-	0.7	0.7	10.2	46.2											
23-30	G1	16.9	18.6	-	0.6	0.6	13.8	49.5											
30-50	G2	20.4	11.8	0.1	4.5	4.4	9.7	49.1											
50-60	IIC3	6.7	2.3	0.2	36.2	40.3	15.9	4.4											

Depth (in.)	6A3a Organic Matter	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH	
						4A1a	4A1b	4D1		4B1c	4B2	8C1c		8C1a	
						g/cc	g/cc	g/cc		g bar	g bar	(1:1)		(1:1)	
0-4	1.0														6.4
4-9	1.0														4.6
9-15	0.8														4.6
15-23	0.4														4.9
23-30	0.3														5.4
30-50	0.1														6.5
50-60	-														6.2

Depth (in.)	Extractable bases 5B1a				6H1a Ext. acidity	CEC		6D1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation	
	6N2d	6O2b	6P2a	6Q2a		5A3a	5A3b		CEC	Ext. Iron	15-bar water		5C3	5E1
	Ca	Mg	Na	K		Sum	Sum carbonates		Sum	Sum	Sum		Sum cations	Sum cations
0-4	7.9	1.4		.4	2.9	12.6							77	
4-9	7.7	2.0		.4	11.3	21.4							47	
9-15	5.3	2.2		.5	12.3	20.3							39	
15-23	6.9	3.2		-	7.1	-							-	
23-30	7.5	3.0		.3	4.6	15.4							70	
30-50	6.1	1.9		.3	2.7	11.0							75	
50-60	1.2	0.3		.1	0.8	2.4							65	

Depth (in.)	Clay Fraction Analysis 7A1b-d							
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	M.	Gibbsite
	7A2 X-187				7A3			

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, M. = Kaolinite
 Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Dubbs fine sandy loam
 Soil No.: D44M1-006
 Location: Quitman County, Mississippi, NW 1/4, SW 1/4, Sec. 23?, T 28N, R 1W
 Collected by: R. W. Simonson, H. B. Vanderford, and C. B. Melton
 Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and
 Beltsville
 Lab. No.

Ap D4385	0 to 4 inches. Dark brown (10YR 4/3) fine sandy loam; weak, fine granular structure; very friable; abrupt smooth boundary.
B21t D4386	4 to 9 inches. Dark yellowish brown (10YR 4/4) fine sandy clay loam; moderate, fine and medium subangular blocky structure; friable; patchy clay films on peds; gradual smooth boundary.
B22t D4387	9 to 15 inches. Dark yellowish brown (10YR 4/4) sandy clay loam; moderate medium subangular blocky structure; friable; patchy clay films on peds; common fine soft brown concretions; clear smooth boundary.
B3 D4388	15 to 23 inches. Yellowish brown (10YR 5/4) loam to fine sandy loam; weak medium and coarse subangular blocky structure; friable; gradual smooth boundary.
C1 D4389	23 to 30 inches. Yellowish brown (10YR 5/6) fine sandy loam; structureless; very friable; gradual smooth boundary.
C2 D4390	30 to 50 inches. Light yellowish brown (10YR 6/4) fine sandy loam; structureless; very friable; gradual smooth boundary.
IIC3 D4391	50 to 60 inches. Mixed pale brown (10YR 6/3) and dark grayish brown (10YR 4/2) sand; single grain; very friable.

Soil Type: Dubbs fine sandy loam
 Soil No.: D44MI-008
 Location: Quitman County, Mississippi, SE 1/4, NW 1/4, Sec. 29, T 27N, R 1E
 Collected by: R. W. Simonson, H. B. Vanderford, and C. B. Melton
 Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and
 Beltsville
 Lab. No.

Ap
 D4399 0 to 4 inches. Very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; abrupt smooth boundary.

B1
 D4400 4 to 10 inches. Brown (10YR 5/3) loam; weak, medium subangular blocky structure; friable; clear smooth boundary.

B21t
 S4401 10 to 15 inches. Yellowish brown (10YR 5/6) fine sandy clay loam; moderate, medium subangular blocky structure; friable; patchy clay films on peds; gradual smooth boundary.

B22t
 D4402 15 to 22 inches. Yellowish brown (10YR 5/6) fine sandy clay loam; moderate medium subangular blocky structure; friable; patchy clay films on peds; gradual smooth boundary.

B3
 D4403 22 to 28 inches. Variegated yellowish brown (10YR 5/6) and brown (10YR 4/3) loam; weak, coarse subangular blocky structure; few clay films in pores and on peds; friable; gradual smooth boundary.

C1
 D4404 28 to 36 inches. Yellowish brown (10YR 5/6) fine sandy loam; structureless; very friable; diffuse smooth boundary.

IIC2
 D4405 36 to 60 inches. Yellowish brown (10YR 5/6) fine sandy loam to loamy fine sand; structureless; very friable; some stratification with a thin band of sandy clay loam in this horizon.

Soil Type: Dubbs silt loam
 Soil No.: D44M1-001
 Location: Tunica County, Mississippi, NW 1/4, Sec. 6, T 6S, R 11W
 Collected by: R. W. Simonsen, H. B. Vanderford, and C. B. Melton
 Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and
 Beltsville
 Lab. No.

Ap D4354	0 to 4 inches. Very dark grayish brown (10YR 3/2) silt loam; weak to moderate medium granular structure; friable; neutral; abrupt smooth boundary.
B21t D4355	4 to 9 inches. Dark brown (10YR 3/3-4/3) silty clay loam; moderate, fine and medium subangular blocky structure; clay films on most peds; friable; plastic, slightly sticky; slightly acid; gradual smooth boundary.
B22t D4356	9 to 20 inches. Dark brown (10YR 3/3-4/3) heavy silt loam; moderate, fine and medium subangular blocky structure; friable; slightly plastic, slightly sticky; clay films on peds; strongly acid; gradual smooth boundary.
IIB3 D4357	20 to 30 inches. Brown (10YR 4/3) loam; weak, coarse subangular blocky structure; friable; slightly plastic, slightly sticky; patchy clay films on peds; strongly acid; gradual smooth boundary.
IIC1 D4358	30 to 36 inches. Brown (10YR 5/3) very fine sandy loam; structureless to weak, coarse subangular blocky structure; very friable; few clay films in pores and in root channels; strongly acid; gradual smooth boundary.
IIC2 D4359	36 to 48 inches. Brown (10YR 5/3) loam; structureless; single grain; very friable; strongly acid; diffuse smooth boundary.
IIC3 D4360	48 to 56 inches. Brown (10YR 5/3) very fine sandy loam with a few fine faint pale brown (10YR 6/3) mottles; structureless; very friable; strongly acid.

SOIL Dubbe loam SOIL Nos. D44-MI-003 LOCATION Tunica County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. D4367 - D4372

Depth (in.)	Horizon	181b Size class and particle diameter (mm) SA1											3B2 Cm	3B1 Coarse fragments			
		Total					Sand				Silt			3B2 Cm	2A2	2-19	19-76
		Sand (2-0.06)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)			(2-0.1)	2A2 Pct.	2-19 Pct.
Pct. of < 2 mm																	
0-5	Ap		48.2	16.3	0.1	0.2	0.2	3.5	33.5								
5-12	B21t		38.2	35.2	-	0.1	0.1	1.2	25.2								
12-19	B22t		25.3	26.4	-	-	-	1.6	46.7								
19-26	B3		15.0	16.8	-	0.1	0.1	2.7	65.3								
26-36	T1C1		8.7	7.4	-	-	-	13.7	70.2								
36-60	T1C2		5.2	2.7	-	-	-	42.2	49.9								
Pct. of < 2 mm																	
Depth (in.)	6A3a Organic Matter	Nitrogen Pet	C/N	Carbonate as CaCO ₃ Pct.	Ext. iron as Fe Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH			
						4A1a 1/2 bar g/cc	4A1b Oven dry g/cc	4A1c 15 bar g/cc		4B1c 1/2 bar Pct.	4B1d 15 bar Pct.	8C1c (1:1) NCl		8C1d (1:1) H ₂ O			
0-5		1.7														5.4	
5-12		1.6														4.6	
12-19		1.3														4.8	
19-26		0.7														4.9	
26-36		0.2														5.2	
36-60																5.8	
Depth (in.)	Extractable bases 5B1a					6H1a Ext. acidity	CEC		6B1d Ext. Al	Ratios to clay			8D8 Ca/Mg	Base saturation			
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		5A3a Sum cations	Ext. Al		CEC Sum	Ext. iron	15-bar water		5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.		
	meq/100 g																
0-5	7.2	1.6		.6		5.2	14.6									64	
5-12	9.2	2.3		.4		11.6	23.5									51	
12-19	8.4	2.5		.3		10.7	21.9									51	
19-26	6.1	2.0		.2		6.7	15.1									56	
26-36	3.9	1.2		.2		2.9	8.2									65	
36-60	3.1	0.8		.2		1.6	5.7									72	
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite									
	7A2 X-ray				7A3												

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Dubbs loam
 Soil No.: D44M1-003
 Location: Tunica County, Mississippi, NW 1/4, NW 1/4, Sec. 17, T 6S, R 11W
 Sampled by: R. W. Simonson, H. B. Vanderford, and C. B. Melton
 Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horison and
 Beltsville
 Lab. No.

Ap
 D4367 0 to 5 inches. Dark grayish brown (10YR 4/2) to dark brown (10YR 3/3) loam; weak fine and medium granular structure; very friable; strongly acid; abrupt smooth boundary.

B21t
 D4368 5 to 12 inches. Dark brown (10YR 3/3) clay loam; interior peds brown (10YR 4/3); moderate fine and medium subangular blocky structure; firm; plastic, sticky; continuous clay films on peds; very strongly acid; gradual smooth boundary.

B22t
 D4369 12 to 19 inches. Dark brown (10YR 3/3) sandy clay loam; interior peds brown (10YR 4/3); moderate fine and medium subangular blocky structure; friable; slightly plastic, slightly sticky; films on most of peds; very strongly acid; gradual smooth boundary.

B3
 D4370 19 to 26 inches. Dark yellowish brown (10YR 3/4) heavy very fine sandy loam; weak coarse subangular blocky structure; friable; patchy clay films on peds; gradual smooth boundary.

IIC1
 D4371 26 to 36 inches. Dark yellowish brown (10YR 3/4) loamy fine sand; structureless; single grain; very friable; strongly acid; diffuse smooth boundary.

IIC2
 D4372 36 to 60 inches. Brown (10YR 4/3) fine sand; structureless; single grain; very friable; medium acid.

SOIL Dubbs loam SOIL Nos. D44-MI-004 LOCATION Tunica County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. D4373 - D4378

Depth (in.)	Horizon	191b Size class and particle diameter (mm) SA1											3B2 Cm	3B1 Coarse fragments			
		Total												2A2 ≥ 2	2-19	19-76	
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02)	Int. II (0.02-0.002)	(2-0.1)					Pct.
0-5	Ap		55.5	15.1	0.1	0.3	0.6	3.2	25.2								
5-11	B21t		42.6	28.5	-	0.1	0.1	0.7	28.0								
11-14	B22t		38.4	24.4	-	0.1	0.1	1.0	36.0								
14-21	B3		31.9	16.8	-	0.1	0.1	1.6	49.5								
21-33	C1		39.6	16.5	-	0.2	0.2	1.1	42.4								
33-60	C2		40.4	12.9	-	0.2	0.2	0.9	45.4								

Depth (in.)	6A3a Organic Matter	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. Iron as Fe Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD In/in	pH		
						4A1e 1/2 bar g/cc	4A1h Oven dry g/cc	4B1c 1/2 bar Pct.		4B2 15 bar Pct.	8C1c (1:1) KCl	8C1e (1:1) H ₂ O				
0-5	1.0															
5-11	0.7															6.2
11-14	0.6															4.6
14-21	0.2															4.7
21-33	0.2															4.8
33-60	-															5.0

Depth (in.)	Extractable bases 5B1a					6H1a Ext. acidity	CEC		6G1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation		
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		5A3a Sum cations	Ext. Al		CEC Sum	Ext. Iron	15-bar water		5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.	
	mg/100 g															
0-5	8.0	1.8		.8		4.2	14.8								72	
5-11	6.2	3.2		.5		10.7	22.6								53	
11-14	7.7	3.0		.4		9.4	20.5								54	
14-21	6.1	2.9		.4		9.1	18.4								50	
21-33	7.3	2.9		.4		4.9	15.5								68	
33-60	7.8	2.6		.4		3.2	14.0								77	

Depth (in.)	Clay Fraction Analysis 7A1b-d							
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-181							

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, s = small, xx = moderate, xxx = abundant, xxx = dominant.

Soil Type: Dubbs loam
 Soil No.: D44M1-004
 Location: Tunica County, Mississippi, SE 1/4, NE 1/4, Sec. 13, T 6S, R 12W
 Collected by: R. W. Simonsen, H. B. Vanderford, and C. B. Melton
 Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and
 Beltsville
 Lab. No.

Ap
 D4373 0 to 5 inches. Dark brown (10YR 3/3) silt loam with a high sand content; weak, fine granular structure; friable; slightly acid; abrupt smooth boundary.

B21t
 D4374 5 to 11 inches. Dark brown (10YR 3/3) clay loam; moderate, fine and medium subangular blocky structure; friable to firm; plastic; slightly sticky; clay films on most of the peds; very strongly acid; gradual smooth boundary.

B22t
 D4375 11 to 14 inches. Brown (10YR 4/3) heavy loam; moderate, fine and medium subangular blocky structure; friable; slightly plastic; clay films on most of the peds; very strongly acid; gradual smooth boundary.

B3
 D4376 14 to 21 inches. Brown (10YR 4/3) fine sandy loam with few fine faint pale brown (10YR 6/3) mottles; weak, medium and coarse subangular blocky structure; very friable; patchy clay films on peds and in pores; very strongly acid; gradual smooth boundary.

C1
 D4377 21 to 33 inches. Brown (10YR 5/3) loam; common, fine, faint pale brown (10YR 6/3) and brown (10YR 4/3) mottles; structureless; single grain; very friable; common fine brown black concretions; very strongly acid; diffuse smooth boundary.

C2
 D4378 33 to 60 inches. Brown (10YR 5/3) fine sandy loam; common, fine, faint pale brown (10YR 6/3) mottles; structureless; single grain; very friable; common, fine brown black concretions; strongly acid.

SOIL Dubbe fine sandy loam SOIL Nos. D44-MI-005 LOCATION Tunica County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. D4379 - D4384

Depth (in.)	Horizon	IB1b Size class and particle diameter (mm) SA1											SB2 Cm	Coarse fragments SB1			
		Total			Sand					Silt				2A2 ≥ 2 Pct.	2-19 Pct.	19-76 Pct. of ≤ 75µm	
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02)	Int. II (0.02-0.002)	(2-0.1)					
Pct. of < 2 mm																	
0-5	A0	32.4	9.1	0.3	3.0	2.1	2.7	50.4									
5-10	B1	32.7	13.9	-	0.2	0.2	1.7	51.3									
10-18	B2t	42.8	18.9	-	0.2	0.3	0.8	37.0									
18-28	B3	38.6	15.9	-	0.6	0.4	1.7	42.6									
28-44	C1	38.6	10.2	-	1.2	1.5	5.6	42.7									
44-60	TTC2	11.5	2.1	2.5	43.6	35.5	8.3	6.5									
Depth (in.)	G3a Organic Matter	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. Iron as Fe Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH			
						4A1a ½ bar g/cc	4A1b Oven dry g/cc	4D1 g/cc		4B1c ½ bar Pct.	4B2 15 bar Pct.	8C1c (1:1) KCl		8C1a (1:1) H ₂ O			
0-5	0.6															5.9	
5-10	0.5															5.9	
10-18	0.3															5.3	
18-28	0.2															5.2	
28-44	-															5.4	
44-60	-															6.0	
Depth (in.)	Extractable bases SB1a					GH1a Ext. acidity	CEC		4G1a Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation			
	6N2a Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		5A2a Sum cations	Ext. Al		CEC Sum	Ext. Iron	15-bar water		5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.		
0-5	5.3	1.3		.4		2.1	9.1							77			
5-10	8.0	2.1		.4		3.1	13.6							77			
10-18	8.9	2.5		.4		4.5	16.3							73			
18-28	7.5	1.8		.4		4.5	14.2							68			
28-44	6.0	1.3		.4		2.8	10.5							78			
44-60	1.1	0.2		.1		0.5	1.8							75			
Depth (in.)	Clay Fraction Analysis 7A6-d																
	MI.	CH.	VM.	MI.	Int.	Qtz.	SI.	Gibbsite									
7A2 1-100								7A3									

MI. = Illite-montmorillonite, CH. = chlorite, VM. = Vermiculite, MI. = mica,
Int. = interstratified layer, Qtz. = quartz, SI. = kaolinite
Relative amounts: blank = not determined, dash = not detected,
t. = trace, s = small, m = moderate, x = abundant, xx = dominant.

Soil Type: Dubbs fine sandy loam

Soil No.: D44Mi-005

Location: Tunica County, Mississippi, NW 1/4, NW 1/4, Sec. 25, T 58, R 12W

Collected by: R. W. Simonson, H. B. Vanderford, and C. B. Melton

Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and
Beltsville
Lab. No.

Ap D4379	0 to 5 inches. Brown (10YR 4/3) fine sandy loam; weak medium granular structure; very friable; clear smooth boundary.
B1 D4380	5 to 10 inches. Dark brown (10YR 3/3) fine sandy loam; weak medium subangular blocky structure; friable; gradual smooth boundary.
B2t D4381	10 to 18 inches. Dark brown (10YR 3/3) loam; moderate medium coarse subangular blocky structure; friable; patchy clay films on peds; gradual smooth boundary.
B3 D4382	18 to 28 inches. Brown (10YR 4/3) fine sandy loam or loam; weak medium and coarse subangular blocky structure; very friable; few clay films on peds and in pores; gradual smooth boundary.
C1 D4383	28 to 44 inches. Brown (10YR 4/3) fine sandy loam; structureless; very friable; gradual smooth boundary.
IIC2 D4384	44 to 60 inches. Dark grayish brown (10YR 4/2) sand; single grain; very friable.

SOIL Dundee fine sandy loam SOIL Nos. D45-MI-013 LOCATION Tallahatchie County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 46298 - 46293

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SAI											3B2 Cm	3B1 Coarse fragments			
		Total			Sand						Silt			3B2	2A2	2-18	19-76
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (< 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)			(2-0.1)	Pct. of >= 2	Pct. of 2-18
Pct. of <= 2 mm																	
0-5	Ap	41.5	42.7	15.8	0.2	0.9	1.0	12.6	26.8	24.9	17.8	62.5	14.7				
5-10	B21t	32.9	37.3	29.8	0.1	0.3	0.4	7.7	24.4	18.6	18.7	50.2	8.5				
10-18	B22t	31.3	36.6	28.1	-	0.1	0.1	7.4	23.7	21.1	15.5	51.8	7.6				
18-29	B3tg	49.3	24.9	25.8	-	0.1	0.2	16.0	33.0	13.6	11.3	61.5	16.3				
29-42	II01g	53.2	26.5	20.3	0.1	0.3	0.3	18.3	34.2	16.9	9.6	68.5	19.0				
42-56	II02g	47.4	31.6	21.0	-	0.4	0.3	5.8	40.9	19.5	12.1	65.9	6.5				
Pct. of <= 2 mm																	
Pct. of <= 75 microns																	
Depth (in.)	6A3a Organic Matter	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH			
						4A1a kg bar	4A1b Oven dry	4A1c g/cc		4B1c kg bar	4B2 15 bar	4C1c (1:1) KCl		4C1a (1:1) H ₂ O			
						Pct.	Pct.	Pct.		Pct.	Pct.	Pct.					
0-5	0.9															6.5	
5-10	1.0															5.2	
10-18	0.5															4.1	
18-29	0.4															4.8	
29-42	0.3															5.0	
42-56	0.1															5.1	
Depth (in.)	Extractable bases 5B1a				6F1a Ext. acidity	CEC		6G1d Ext. Al	Ratio to clay			8D3 Ca/Mg	Base saturation				
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K		Sum	5A3a Sum cations		CEC Sum	Ext. Iron	15-bar water		5C3 Sum cations	5C1 NH ₄ OAc			
	mg/100 g												Pct.	Pct.			
0-5	8.6	1.7		0.3	2.6	13.2							80				
5-10	10.3	2.5		0.3	5.4	18.5							71				
10-18	10.6	3.2		0.3	7.8	21.9							64				
18-29	9.7	3.1		0.3	6.2	19.3							68				
29-42	8.3	2.7		0.2	4.9	16.1							70				
42-56	9.3	3.7		0.3	4.6	17.9							74				
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite									
	7A2 X-ray				7A3												

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Dundee fine sandy loam
 Soil No.: D494-013
 Location: Tallahatchie County, Mississippi, T, R1E
 Collected by: R. W. Simonsen, E. B. Vanderrford, and C. B. Melton
 Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and
 Beltsville
 Lab. No.

Ap 46238	0 to 5 inches. Dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; abrupt smooth boundary.
B21t 46239	5 to 10 inches. Dark grayish brown (10YR 4/2) silty clay loam; common medium faint mottles of dark yellowish brown (10YR 4/4); moderate fine and medium subangular blocky structure; friable; slightly plastic; slightly sticky; clay films on most of peds; gradual smooth boundary.
B22t 46240	10 to 18 inches. Mottled dark grayish brown (10YR 4/2) light brownish gray (10YR 6/2) and strong brown (7.5YR 5/6) silty clay loam; moderate medium and coarse subangular blocky structure; friable; slightly plastic; slightly sticky; clay films on most of peds; few fine brown and black concretions; clear smooth boundary.
B3tg 46241	18 to 29 inches. Light brownish gray (10YR 6/2) fine sandy clay loam with many fine distinct dark yellowish brown (10YR 4/4) and strong brown (7.5YR 5/6) mottles; weak coarse subangular blocky structure; friable; patchy clay films on peds and in pores; few fine brown and black concretions; gradual smooth boundary.
IIC1g 46242	29 to 42 inches. Gray (10YR 5/1) fine sandy loam with many fine distinct dark yellowish brown (10YR 4/4) and strong brown (7.5YR 5/6) mottles; structureless; very friable; few fine brown and black concretions; gradual smooth boundary.
IIC2g 46243	42 to 56 inches. Gray (10YR 6/1) heavy sandy loam with many fine distinct strong brown (7.5YR 5/6) mottles; structureless; very friable; few fine brown black concretions.

SOIL Dune fine sandy loam SOIL No. D5-MI-015 LOCATION Tate County, Mississippi
SOIL SURVEY LABORATORY Beltville, Maryland LAB. Nos. 46252 - 46258

Depth (in.)	Horizon	101b Size class and particle diameter (mm) SA1											982 Ca	981 Coarse fragments			
		Total		Sand							Silt			982 Ca	2A2	2-10	19-75
		Sand (2-0.05) (0.05-0.002)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02)	Int. II (0.02-0.002)	(2-0.1)			> 2 Pct.	2-10 Pct.	19-75 Pct. of < 76mm
0-5	Ap	58.7	7.9	0.4	0.5	0.4	3.0	29.1									
5-11	B21t	54.5	22.6	0.5	0.9	0.4	2.3	18.8									
11-15	B22t	49.8	21.5	0.4	1.1	0.6	2.2	24.4									
15-28	IB31g	45.9	25.4	0.1	0.2	0.2	1.3	26.9									
28-38	IB32g	-	-	-	-	-	-	-									
38-48	IC1g	41.5	17.4	0.1	0.4	0.3	4.0	36.3									
48-60	IC2g	46.8	17.6	-	0.3	0.3	2.5	32.5									

Depth (in.)	6A3a Organic Matter	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. iron as Fe Pct.	Bulk density			401 COLE	Water content			401 WRD in/in	pH		
						4A1a lb bar	4A1b Oven dry g/cc	401 COLE		4B1c lb bar	4B2 16 bar	401 WRD in/in		8C1c (1:1) KCl	8C1a (1:1) H ₂ O	
						g/cc	g/cc	Pct.		Pct.	Pct.	Pct.		Pct.		
0-5	0.6															6.1
5-11	0.9															5.0
11-15	0.8															4.9
15-28	0.4															4.3
28-38	-															5.4
38-48	-															5.4
48-60	0.4															5.7

Depth (in.)	Extractable bases 5B1a				5B1a Ext. acidity	5B1c		5B1d Ext. Al	Residue for clay			5D3 Ca/Mg	Base saturation			
	5B1a Ca	5B1b Mg	5B1c Na	5B1d K		Sum	5B1c Sum cations		5B1d Sum cations	CEC Sum	Ext. iron		15-bar water	5D3 Ca/Mg	5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.
	mg/100 g															
0-5	4.6	1.4		.1	2.0	8.1							75			
5-11	8.5	2.4		.2	5.6	16.7							66			
11-15	6.2	2.0		.1	7.0	15.3							54			
15-28	3.7	3.6		.3	6.9	19.5							65			
28-38	-	-		-	-	-							-			
38-48	8.2	3.7		.2	3.9	16.0							76			
48-60	9.1	4.3		.2	3.0	16.6							82			

Depth (in.)	Clay Fraction Analysis 7A1b-4							
	Ill.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray				7A3			

Ill. = Illite/Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = indurified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected, tr. = trace, s = small, m = moderate, abx = abundant, domx = dominant.

Soil Type: Dundee fine sandy loam

Soil No.: D45M1-015

Location: Tate County, Mississippi, about 50 rods southwest of IC depot, Savage, Mississippi.

T 5S, R 10W

Collected by: R. W. Simonson, H. B. Vanderford, and C. B. Melton

Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and
Beltsville
Lab. No.

- Ap
46252 0 to 5 inches. Dark grayish brown (10YR 4/2) to brown (10YR 4/3) very fine sandy loam; weak, fine granular structure; with lower part of horizon being weak, coarse platy; (plow layer); very friable; abrupt smooth boundary.
- B21t
46253 5 to 11 inches. Dark grayish brown (10YR 4/2) silty clay loam; few fine faint dark yellowish brown (10YR 4/4) mottles; moderate, medium subangular blocky structure; friable to firm; slightly plastic; slightly sticky; patchy clay films on peds and in pores; clear smooth boundary.
- B22t
46254 11 to 15 inches. Dark grayish brown (10YR 4/2) silt loam with common fine and medium faint mottles of dark yellowish brown (10YR 4/4); weak, fine and medium subangular blocky structure; friable to firm; slightly plastic, slightly sticky; patchy clay films on peds and in pores; gradual smooth boundary.
- IIB31g
46255 15 to 28 inches. Mottled light brownish gray (10YR 6/2) and grayish brown (10YR 5/2) heavy fine sandy loam; weak, fine and medium subangular blocky structure; friable; few brown, black concretions; patchy clay films on peds and in pores; gradual smooth boundary.
- IIB32g
46256 28 to 38 inches. Mottled light brownish gray (10YR 6/2) and grayish brown (10YR 5/2) heavy fine sandy loam; structureless to weak, coarse subangular blocky structure; friable; patchy clay films on peds and in pores; few fine brown and black concretions; gradual smooth boundary.
- IIC1g
46257 38 to 48 inches. Mottled light gray (10YR 6/1) and brown (10YR 5/3) fine sandy loam; structureless; single grain; very friable; few fine brown, black concretions; diffuse smooth boundary.
- IIC2g
46258 48 to 60 inches. Mottled light gray (10YR 6/1) and brown (10YR 5/3) fine sandy loam; structureless; single grain; very friable; few fine brown, black concretions.

SOIL Duques loan SOIL Nos. D45-M1-011 LOCATION Tunica County, Mississippi

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 451412 - 451417

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1											3B2 Cm	3B1 Coarse fragments			
		Total												2A2 ≥ 2	2-10	19-76	
		Sand (2-0.06)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.06)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)		(2-0.1)	Pct. of Pct.	Pct. of Pct.	Pct. of Pct.
0-5	Ap		48.0	18.8	0.6	0.9	0.6	5.7	25.4								
5-12	B21t		37.1	41.2	-	0.2	0.3	5.0	16.2								
12-20	B22t		37.7	38.6	-	0.3	0.2	6.0	17.2								
20-29	B3g		30.8	32.7	-	0.2	0.2	9.5	26.6								
29-43	T1C1g		29.7	16.8	-	0.2	0.1	13.2	40.0								
43-60	T1C2g		29.7	9.5	-	0.2	0.2	6.4	54.0								
Pct. of < 2 mm																	
Pct. of < 75µm																	
Depth (in.)	6A3a Organic Matter	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. iron as Fe Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH			
						4A1a ½ bar g/cc	4A1b Oven dry g/cc			4B1c ½ bar Pct.	4B2 15 bar Pct.	8C1c (1:1) KCl		8C1a (1:1) H ₂ O			
0-5	1.5															6.2	
5-12	1.5															5.0	
12-20	1.2															4.6	
20-29	0.8															4.7	
29-43	0.8															4.8	
43-60	0.2															5.4	
Depth (in.)	Extractable bases 5B1a					6H1a Ext. acidity mag/100 g	CEC 3A3a Sum cations	6D1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation				
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum				CEC Sum	Ext. iron	15-bar water		5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.			
0-5	9.0	2.5		.4		2.9	15.6							81			
5-12	15.0	5.1		.4		7.4	27.9							73			
12-20	13.0	5.8		.4		8.0	27.2							71			
20-29	12.1	5.3		.4		7.3	25.1							71			
29-43	8.5	3.6		.2		3.8	16.1							76			
43-60	6.5	2.7		.2		2.3	11.7							80			
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite									
	7A2 X-ray				7A3												

Mt. = Montmorillonite, Chl. = chlorite, Vm = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant

Soil Type: Dundee loam

Soil No.: D45M1-011

Location: Tunica County, Mississippi, about 80 rods E-NE of gin. SE 1/4, NW 1/4, Sec. 3, T 6S, R 11W

Collected by: R. W. Simonson, H. B. Vanderford, and C. B. Melton

Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and

Beltville

Lab. No.

Ap 451412	0 to 5 inches. Dark grayish brown (10YR 4/2) loam; weak, fine granular structure; very friable; few fine roots; abrupt smooth boundary.
B21t 451413	5 to 12 inches. Dark grayish brown (10YR 4/2) silty clay; many fine distinct mottles of strong brown (7.5YR 5/6); strong fine and medium subangular blocky structure; firm; very plastic, sticky; continuous clay films on peds; gradual smooth boundary.
B22t 451414	12 to 20 inches. Mottled dark grayish brown (10YR 4/2) and strong brown (7.5YR 5/6) light silty clay; moderate, medium and coarse subangular blocky structure; firm; plastic, sticky; continuous clay films on peds; gradual smooth boundary.
B3g 451415	20 to 29 inches. Mottled gray (10YR 5/1), yellowish brown (10YR 5/6) and grayish brown (2.5Y 5/2) heavy fine sandy clay loam; moderate medium and coarse subangular blocky structure; firm; slightly plastic, slightly sticky; patchy clay films on peds and in pores; few fine brown black concretions; gradual smooth boundary.
IIC1g 451416	29 to 43 inches. Grayish brown (2.5Y 5/2) very fine sandy loam; common fine distinct yellowish brown (10YR 5/6) mottles; structureless; single grain; very friable; few fine brown and black concretions; gradual smooth boundary.
IIC2g 451417	43 to 60 inches. Mottled grayish brown (2.5Y 5/2) and yellowish brown (10YR 5/6) very fine sandy loam; structureless; single grain; very friable.

SOIL Buffie loamy sand SOIL No. 855Mias-30-1 LOCATION Jackson County, Mississippi

SOIL SURVEY LABORATORY Beltville, Maryland LAB. Nos. 561 - 566

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1											3B2 Cm	3B1 Coarse fragments		
		Total		Sand					Silt					2A2 > 2 Pct.	2-19 Pct.	19-76 Pct.
		Sand (2-0.05) (0.05-0.002)	Silt (0.05-0.002)	Clay (< 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Inf. III (0.02-0.002)	Inf. II (0.2-0.02)				
0-4	A1	15.8	3.2	0.2	4.9	16.0	47.6	12.3		8.7	45.0		-	-	-	
4-9	A2	16.7	4.7	0.1	4.9	16.2	46.3	11.1		9.7	42.1		-	-	-	
9-13	A3	16.9	5.9	0.2	4.5	15.3	45.3	11.9		9.8	43.2		tr.	-	-	
13-17	B1	18.2	6.4	0.2	4.1	14.3	44.9	11.9		10.8	43.1		-	-	-	
17-40	B2t	17.8	6.4	0.5	4.9	14.8	45.3	10.3		12.2	39.4		tr.	-	-	
40-72+	C	13.0	2.5	0.3	4.7	15.2	51.2	13.1		7.7	46.0		tr.	-	-	

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. iron as Fe Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD In/in	pH	
						4A1a 1/2 bar g/cc		4A1b Oven dry g/cc		4B1c 1/2 bar Pct.		4B2 15 bar Pct.		8C1c (1:1) KCl	8C1a (1:1) H ₂ O
0-4	1.12	0.047	23												5.1
4-9	0.35	0.022													5.1
9-13	0.15	0.014													5.0
13-17	0.06	0.009													5.0
17-40	0.06	0.010													4.9
40-72+	0.02	0.040													5.1

Depth (in.)	Extractable bases 8B1a					6B1a Ext. acidity mg/100 g	CEC	8B1d Ext. Al	Ratio to clay			8D3 Ca/Mg	Base saturation	
	8N2d Ca	8O2b Mg	8P2a Na	8Q2a K	Sum				CEC Sum	Ext. iron	15-bar water		8C3 Sum cations Pct.	8C1 NH ₄ OAc Pct.
0-4	0.7	0.1	tr.	0.1		5.3	6.2						14	
4-9	0.1	0.2	tr.	0.1		3.5	3.9						10	
9-13	0.1	0.2	0.1	0.1		2.9	3.4						15	
13-17	0.1	0.1	tr.	0.1		2.0	2.3						13	
17-40	0.1	0.1	0.1	0.1		2.2	2.6						15	
40-72+	0.1	0.2	tr.	tr.		0.8	1.1						27	

Depth (in.)	Clay Fraction Analysis 7A1b-d							
	Mt.	Chl.	Vm.	Mt.	Int.	Qtz.	Kl.	Gibbsite
	7A2 K-fst				7A3			

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, ml = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Eustis loamy sand
 Soil No.: 855Miss-30-1
 Location: Jackson County, Mississippi, NW 4, SE 4, Sec. 16, T 5S, R 5W, 2 1/2 miles S. Hurley.
 Vegetation: Scrub oak and longleaf pine

Horizon and
 Beltsville
 Lab. No.

- A1 0 to 4 inches. Very dark gray (10YR 3/1) very friable loamy sand, weak medium crumb structure; many roots and some earthworm casts; clear smooth boundary; very strongly acid.
 561
- A2 4 to 9 inches. Dark grayish brown (10YR 4/2) with common fine distinct mottles of yellowish brown (10YR 5/4) very friable loamy sand, moderate medium crumb structure; many roots and some worm casts; gradual smooth boundary; very strongly acid.
 562
- A3 9 to 13 inches. Light yellowish brown (10YR 6/4) with few fine distinct mottles of very dark gray (10YR 3/1) very friable loamy sand; weak medium subangular blocky structure; some roots; gradual smooth boundary; very strongly acid.
 563
- B1 13 to 17 inches. Yellowish brown (10YR 5/6) very friable loamy sand; weak fine and medium subangular blocky structure; some roots; gradual smooth boundary; very strongly acid.
 564
- B2t 17 to 40 inches. Strong brown (7.5YR 5/6) with few fine distinct mottles of very pale brown (10YR 7/3) very friable loamy sand; weak, fine and medium subangular blocky structure; some roots; gradual smooth boundary; very strongly acid.
 565
- C 40 to 72+ inches. Reddish yellow (7.5YR 6/6) with many medium prominent mottles of very pale brown (10YR 7/3) loose loamy sand; single grain; very strongly acid.
 566

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Eutaw LOCATION Jasper County, Mississippi
 silty clay loam

SOIL NOS. S58Miss-31-1 LAB. NOS. 8269-8274

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1a					3A1						2A2 > 2
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002			
0-2	A11	0.3a	1.5a	1.8a	1.6a	2.0a	45.1	47.7	13.7	33.5	-	sic	
2-6	A12g	0.4a	1.5a	1.8a	1.5a	2.0a	44.1	48.7	12.5	33.7	-	sic	
6-17	A13g	0.3a	1.8a	2.2a	1.5a	1.6a	36.2	56.4	11.2	26.6	Tr.	c	
17-34	ACg	1.9b	2.2b	1.9c	1.4c	1.8c	28.0	62.8	9.1	20.7	4	c	
34-46	Clg	0.6b	1.5b	1.7c	1.3c	1.4c	26.2	67.3	8.2	19.5	Tr.	c	
46-72	C2g	1.4b	1.1b	1.0c	1.2c	3.1c	32.6	59.6	8.9	27.2	Tr.	c	

8C1a	pH		ORGANIC MATTER			Free Iron Fe ₂ O ₃ %	6B1a CaCO ₃ equivalent %	6A1a BULK DENSITY		WATER RETENTION	
	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N			4A1a Field State	O. D.	15	4B2 State Bar
	1:1							6C1a g/cc	g/cc	%	%
5.4			3.88	0.216	18	1.8				20.9	
4.7			1.64	0.119	14	2.1				20.3	
4.5			0.47	0.032	15	2.1		1.25		21.7	
7.6			0.19	0.011		2.2				24.1	
7.6			0.18			2.0	7	1.38h		25.5	
7.6			0.07			3.2	30	1.40		23.2	

5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS					5B1a BASE SAT. % NH ₄ Ac EXCH.	5C1 Base Sat. % on Sum	5E1a Base Sum	5A3a Sum	Ca/Mg
	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K					
	milliequivalents per 100g. soil									
39.2	30.0	3.2	15.8	-	0.5	86	68	33.7	49.5	9.4
34.8	22.3	2.5	19.4	0.1	0.3	72	56	25.2	44.6	8.9
36.0	25.8	1.6	16.8	0.1	0.2	77	62	27.7	44.5	16.1
43.2		1.9	<0.1	0.2	0.4					
46.8		2.4		0.6	0.4					
33.9		2.4		1.3	0.4					

a. Common smooth light brown to black coner. (Fe-Mn)
 b. Many CaCO₃ coner.
 c. Many CaCO₃ coner. Also, common, smooth light brown to black coner. (Fe-Mn)
 d. Samples taken between the AC11 and AC12 horizons.

Soil Type: Butaw silty clay loam
 Soil Nos.: S58Miss-31-1
 Location: 0.6 mile south of (Newton County, Mississippi) line on Highway 15, 140 feet west of road (in woods).
 NE 1/4 SW 1/4, Sec. 3, T4N, R11E.
 Area: Jasper County, Mississippi.
 Use: Mixed hardwoods and pine.
 Relief: Level (Gilgai relief).
 Drainage: Poorly drained.
 Parent Material: Marly clays.
 Ground Water: Deep.
 Moisture: Soil was moist to wet when samples were taken.
 Root Distribution: Good.
 Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 23, 1958.
 Described by: Y. H. Havens.

Horizon and
 Lincoln
 Lab. No.

- A11
 8269 0 to 2 inches. Black (10YR 2/1) silt loam; weak fine granular structure; friable when moist, slightly plastic, slightly sticky when wet; many fine roots, root channels and wormholes filled with gray (10YR 5/1) silty clay loam; gradual smooth boundary.
- A12g
 8270 2 to 6 inches. Gray (10YR 5/1) and dark gray (10YR 4/1) silty clay loam; moderate fine granular and weak fine subangular blocky structure; friable when moist, plastic and sticky when wet; many fine roots; few manganese concretions; gradual wavy boundary.
- A13g
 8271 6 to 17 inches. Gray (10YR 6/1) silty clay to clay with many fine and medium distinct yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) mottles; moderate fine and medium angular and subangular blocky structure; friable when moist, very plastic and very sticky when wet; many fine roots; few manganese concretions and few scattered weak slickensides in lower part of horizon; clear wavy boundary.
- ACg
 8272 17 to 34 inches. Light olive brown (2.5Y 5/4) clay with many fine and medium distinct yellowish brown (10YR 5/8) and few fine prominent gray (5Y 6/1) mottles; slickensides break to moderate very fine to medium angular blocky and subangular blocky peds; few lime nodules and few fine roots; friable when moist, very plastic and very sticky when wet; gradual wavy boundary.
- Clg
 8273 34 to 46 inches. Light olive brown (2.5Y 5/4) clay with many fine and medium distinct and prominent brownish yellow (10YR 6/6) yellowish brown (10YR 5/8) and gray (5Y 6/1) mottles; many slickensides which break into moderate very fine and medium angular blocky and subangular blocky peds; friable when moist; very sticky and very plastic when wet; many lime nodules; few fine roots; abrupt irregular boundary.
- C2g
 8274 46 to 72 inches. Mottled yellowish brown (10YR 5/8) gray (10YR 6/1) and light gray (10YR 7/1) clay; mottles are many coarse distinct and prominent; large slickensides break to moderate very fine and medium angular blocky and subangular blocky peds; friable when moist, very sticky and very plastic when wet; many lime nodules; few fine roots and old root channels; many large slickensides.

Remarks: Thin covering of leaves and straw on surface. Boundary between A13g and ACg horizons clear and wavy to irregular. Alkaline or lime pockets (10 inches in diameter) appear in one end of pit in A13g horizon. Old root channels and wormholes filled with gray clay (10YR 6/1). Slickensides are more prominent in ACg and Clg horizons than in C2g horizon. Bottom of A13g horizon in pit ranges in depth from 18 to 43 inches. The A13g and C2g horizons were sampled for the Bureau of Public Roads.

OIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Eutay LOCATION Monroe County, Mississippi
 silty clay loam (deep phase)

SOIL NOS. S58Miss-48-1 LAB. NOS. 8200-8207

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)								2A2 > 2	TEXTURAL CLASS	
		1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 0.2-0.02 0.02-0.002			
0-1	All	0.2a	0.7a	0.6b	0.8b	5.1b	51.6	41.0	29.8	27.0	-	sic
1-5	A12	0.2a	0.6a	0.6b	0.7b	5.2b	46.5	46.2	26.8	25.0	-	sic
5-9	ACg	0.1a	0.4a	0.4b	0.6b	4.0b	43.2	51.3	24.0	23.4	-	sic
9-21	Clg	0.2a	0.2a	0.3b	0.4b	2.8b	36.6	59.5	18.6	20.8	-	c
21-41	C2g	0.1a	0.2a	0.2b	0.4b	2.8b	36.2	60.1	18.4	20.7	-	c
41-58	C3g	<0.1	0.1a	0.2b	0.8b	2.4b	37.5	59.0	18.1	22.3	-	c
58-72	C4g	0.1a	0.1a	0.2b	0.8b	2.3b	39.7	56.8	19.8	22.7	-	c
72-82	C5g	<0.1	0.1a	0.2b	1.0b	2.7b	40.0	56.0	20.4	22.9	-	sic/c

8C1a	pH		ORGANIC MATTER			Free Iron Fe ₂ O ₃ %	CaCO ₃ equiv. percent	BULK DENSITY WATER RETENT.			
	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITRO-GEN %	C/N			6C1a %	4A1a Field State g/cc	4A1h O. D. g/cc	4B4 Field State %
4.8			3.74	0.223	17	1.4		1.5	1.69	8	16.9
4.4			1.18	0.075	14	1.4		1.42	1.72	21	17.5
4.3			0.51	0.033	13	1.4		1.34	1.78	34	21.7
4.3			0.18	0.015		1.2		1.36	1.78	32	22.0
4.4			0.13	0.007		1.0		1.50	1.84	23	21.9
4.4			0.10			1.2		1.52	1.88	27	20.1
4.6			0.10			2.0		1.7	1.90	8	20.1
6.6			0.06			2.2					

5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS					5B1a BASE SAT. % NH ₄ Ac EXCH.	5C3 Base Sat. % on Sum	5B1a Sum % Bases	5A3a Sum Cations	Ca/mg
	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K					
28.9	14.7	4.3	19.3	0.1	0.5	68	50	19.6	38.9	3.4
28.6	6.1	2.2	28.9	0.1	0.3	30	23	8.7	37.6	2.8
31.5	4.3	2.1	34.3	0.1	0.3	22	16	6.8	41.1	2.0
35.8	7.5	1.9	35.6	0.3	0.3	28	22	10.0	45.6	3.9
37.9	13.8	2.5	28.4	0.6	0.3	45	38	17.2	45.6	5.5
38.0	21.8	3.2	20.2	1.1	0.3	69	57	26.4	46.6	6.8
32.8	30.0	4.4	10.6	1.9	0.3	112	78	36.6	47.2	6.8
32.7		4.6	6.2	2.0	0.4					

a. Many smooth black to dark brown concr. (Mn-Fe)
 b. Few smooth black to dark brown concr. (Mn-Fe)
 c. 6.1 kg/m² to 60 inches (Method 6A).

Soil Type: Butaw silty clay loam

Soil Nos.: 858Miss-48-1

Location: 465 feet south and 165 feet east of the northwest corner of the NW 1/4 of the NE 1/4 of Sec. 7, T15S, R7E. 3.5 miles east of the cross roads in Prairie, Mississippi, and 465 feet south of Highway 382.

Area: Monroe County, Mississippi.

Photograph NG-3F-93.

Use: Was cleared of post oak and mixed hardwoods within last five years, but it was not cultivated.

Relief: Nearly level (gigai relief).

Drainage: Poorly drained.

Parent Material: Acid clays over marl.

Ground Water: Deep.

Moisture: Soil was moist to wet when sampled.

Root Distribution: Good.

Collected by: J. S. Allen, K. W. Flach, and Y. E. Havens, May 19, 1958.

Described by: Y. E. Havens.

Horizon and

Lincoln

Lab. No.

- A11 0 to 1 inch. Very dark gray (10YR 3/1) silty clay loam; weak fine granular structure; friable when moist; slightly plastic when wet; many fine roots; abrupt smooth boundary.
- A12 1 to 5 inches. Grayish brown (2.5Y 5/2) silty clay loam with common fine distinct yellowish brown (10YR 5/8) and brownish yellow (10YR 6/6) mottles; weak to moderate fine subangular blocky structure friable when moist; slightly plastic when wet; many fine roots; many old root and worm channels filled with material from layer above; abrupt smooth boundary.
- A0g 5 to 9 inches. Mottled light yellowish brown (2.5Y 6/4) olive yellow (2.5Y 6/6) gray (5Y 6/1) and brownish yellow (10YR 6/8) silty clay; mottles are many, fine, distinct and prominent; moderate very fine and fine subangular and angular blocky structure; friable when moist, very plastic and very sticky when wet; many fine and coarse roots; clear wavy boundary.
- C1g 9 to 21 inches. Gray (5Y 6/1) clay with many fine prominent brownish yellow (10YR 6/8) mottles; moderate to strong very fine and fine subangular and angular blocky structure; friable when moist, very plastic and very sticky when wet; common fine roots; gradual wavy boundary.
- C2g 21 to 41 inches. Light gray (5Y 7/1 and 7/2) clay with many fine prominent brownish yellow (10YR 6/8) mottles; moderate to strong very fine to medium subangular and angular blocky structure; friable when moist, very plastic and very sticky when wet; numerous slickensides (up to 2 inches in size); fine roots are common; gradual wavy boundary.
- C3g 41 to 58 inches. Mottled light yellowish brown (2.5Y 6/4) and gray (5Y 6/1) clay; mottles are many, fine and medium and distinct; moderate to strong fine to coarse angular blocky structure; numerous large slickensides that break into fine and medium angular and subangular blocky peds; friable when moist, very sticky and very plastic when wet; fine roots along ped faces; few coarse roots; root channels filled with bluish gray (10BG 5/1) clay; gradual irregular boundary.
- C4g 58 to 72 inches. Brownish yellow (10YR 6/8) clay with many fine and medium prominent gray (5Y 6/1) mottles; moderate to strong very fine to medium subangular and angular blocky structure; numerous slickensides that are oriented both vertically and horizontally (2 to 3 inches across); gray on faces of slickensides; friable when moist, very sticky and very plastic when wet; few fine roots and few manganese coatings on ped faces.
- C5g 72 to 82 inches. Mottled gray (5Y 6/1) and yellowish brown (10YR 5/8) clay; mottles are many, coarse and prominent; numerous slickensides that break into very fine to medium subangular and angular blocky peds; friable when moist; very sticky and very plastic when wet; few lime concretions; few fine roots on ped faces.

Remarks: Colors are of moist soil unless otherwise stated. The A2, C2g, and C4g horizons were sampled for the Bureau of Public Roads.

Clay Mineralogy (Method 7A)^a.

Depth (Inches)	Fraction	Minerals in order of abundance
0-2	< 0.2 μ	Mt, Kl
	2-0.2 μ	Mt, Kl, Il, Vm, Q
	5-2 μ	Il, Kl, Q
21-41	< 0.2 μ	Mt, Kl
	2-0.2 μ	Mt, Kl, Il, Vm, Q
	5-2 μ	Il, Vm, Q, Kl, Mt
72-84	< 0.2 μ	Mt, Kl
	2-0.2 μ	Mt, Kl, Il, Vm, Q
	5-2 μ	Il, Q, Mt, Kl

Legend: Mt = montmorillonite, Kl = kaolinite, Il = illite, Vm = Vermiculite, Q = quartz. The most distinctive feature of the clays examined was the dominance of montmorillonite.

a. Data furnished by L. E. DeMambum, Department of Agronomy, Mississippi State University.

SOIL TYPE Butaw LOCATION Monroe County, Mississippi
silty clay loam (deep phase)

SOIL NOS. S58Miss-48-2 LAB. NOS. 8208-8214

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)								2A2 > 2	TEXTURAL CLASS	
		1B1a					3A1					
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY				
		2.0	0.6	0.4-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002		
0-1	A11	0.9a	1.2a	0.8b	3.0c	5.3c	54.8	34.0	32.5	29.4	Tr.	sic1
1-5	A12	0.2d	0.6b	0.8b	2.6c	5.7c	50.9	39.2	32.7	25.4	-	sic1
5-11	ACg	0.1d	0.4b	0.6b	2.1c	4.6c	45.7	46.5	28.6	22.9	-	sic
11-27	C1g	<0.1	0.2b	0.3b	0.6c	3.9c	37.8	57.2	21.8	19.9	-	c
27-37	C2g	0.2d	0.3b	0.3b	1.3c	3.0c	38.1	56.8	21.1	20.8	-	c
37-53	C3g	0.1d	0.3b	0.4b	0.6c	2.4c	40.7	55.5	20.4	22.7	-	sic
53-65+	C4g	<0.1	0.2b	0.3b	1.3c	3.0c	40.2	55.0	20.8	23.2	-	sic
pH		ORGANIC MATTER				Free Iron	BULK DENSITY WATER RETENT.					
8C1a		6A1a	6B1a		6C1a	4A1a	4A1h	4B1	4B2			
	1:5	1:10	ORGANIC CARBON	NITRO-GEN	C/N	Fe ₂ O ₃ %	CaCO ₃ equiv- alent	Field	O.D. Field	15		
			%	%		%	%	State	State	Bar		
								g/cc	g/cc	%	%	
5.3			8.25	0.502	16	1.1					20.1	
4.3			1.10	0.084	13	1.4					15.1	
4.3			0.43	0.042	10	1.7					17.7	
4.3			0.22	0.016		1.8		1.45	1.74	23	21.9	
4.5			0.07			1.5		1.44	1.86	29	21.0	
4.4			0.08			1.4		1.52	1.90	26	20.4	
4.2			0.09			1.5		1.5	1.89	29	20.6	
5A1a		EXTRACTABLE CATIONS				5B1a	BASE SAT. %	5C3	5B1a	5A3a	Ca/Mg	
CATION EXCHANGE CAPACITY NH ₄ Ac		6N2b	6O2b	6H1a	6P2a	6Q2a	NH ₄ Ac EXCH.	Base Sat. % on Sum	Sum	Sum		
		Ca	Mg	N	No	K		% Bases	Cations			
		milliequivalents per 100g soil →					5C1	Cations < me/100g >	8D3			
29.2	20.4	5.2	23.7	0.1	0.6	90	53	26.3	50.0	3.9		
21.6	6.2	2.2	23.0	<0.1	0.2	40	27	8.6	31.6	2.8		
23.2	4.4	1.9	28.0	0.1	0.2	28	19	6.6	34.6	2.3		
29.5	7.7	2.3	30.3	0.1	0.3	35	26	10.4	40.7	3.3		
30.5	11.8	2.8	27.0	0.4	0.3	50	36	15.3	42.3	4.2		
29.5	16.3	3.4	20.7	0.8	0.3	70	50	20.8	41.5	4.8		
29.2	20.2	4.0	15.2	1.0	0.3	87	63	25.5	40.7	5.0		
<p>a. Some organic matter. Also, many smooth black to dark brown concr. (Mn-Fe)</p> <p>b. Common smooth black to dark brown concr. (Mn-Fe)</p> <p>c. Few smooth black to dark brown concr. (Mn-Fe)</p> <p>d. Many smooth black to dark brown concr. (Mn-Fe)</p>												

Soil Type: Butaw silty clay loam

Soil Nos.: S50Miss-48-2

Location: 160 feet east and 165 feet south of the northwest corner of NW 1/4 of the NE 1/4 of Sec. 4, T16S, R7E.
6 miles due east of Highway 45W at Maldon and 165 feet south of local road. Photograph NG-3F-55.

Area: Monroe County, Mississippi.

Use: Mixed hardwood - post oak, hickory, red oak.

Relief: Nearly level (Gilgai relief).

Drainage: Poorly drained.

Parent Material: Acid clay over marl.

Ground Water: Deep.

Moisture: Soil was moist to wet when sampled.

Root Distribution: Good.

Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 19, 1958.

Described by: Y. H. Havens.

Horizon and

Lincoln

Lab. No.

- A11
8208 0 to 1 inch. Very dark grayish brown (10YR 3/2) silty clay loam; weak fine granular structure; friable when moist; slightly plastic when wet; many fine roots; abrupt smooth boundary.
- A12
8209 1 to 5 inches. Mottled brownish yellow (10YR 6/8) light brownish gray (2.5Y 6/2) silty clay loam; weak to moderate fine subangular blocky structure; friable when moist; slightly plastic and slightly sticky when wet; many fine roots; many old root and worm channels filled with material from layer above; abrupt smooth boundary.
- ACg
8210 5 to 11 inches. Mottled light brownish gray (2.5Y 6/2) yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) silty clay; moderate fine subangular blocky structure; friable when moist, very plastic and very sticky when wet; many fine roots, few large roots, few old root channels; clear smooth boundary.
- C1g
8211 11 to 27 inches. Gray (5Y 6/1) clay with many fine and medium distinct and prominent yellowish brown (10YR 5/8) and few red (10R 5/8) mottles; moderate to strong fine to medium subangular blocky structure; friable when moist, very sticky and very plastic when wet; many fine roots, few large roots, few old root channels; gradual wavy boundary.
- C2g
8212 27 to 37 inches. Gray (5Y 6/1) clay with many fine and medium prominent dark red (10R 3/6) and yellowish brown (10YR 5/8) mottles; moderate to strong, fine to coarse angular blocky structure; few scattered slickensides; friable when moist, very sticky and very plastic when wet; few roots; clear wavy boundary.
- C3g
8213 37 to 53 inches. Gray (5Y 6/1) clay with many medium distinct light olive brown (2.5Y 5/6) mottles; moderate to strong coarse angular blocky and fine subangular blocky structure; large slickensides (4 inches wide, 6 inches long), common slickensides break into very fine and fine angular blocky and subangular blocky peds; friable to firm when moist, very sticky and very plastic when wet; numerous roots, root channels filled with bluish gray (5B 5/1) clay; clear wavy boundary.
- C4g
8214 53 to 65 inches plus. Mottled yellowish brown (10YR 5/6) and gray (5Y 6/1) clay; mottles are many, coarse, and prominent; many large slickensides which break into moderate to strong fine to coarse angular blocky and subangular blocky peds; firm when moist, very sticky and very plastic when wet; few roots, few old root channels.

Remarks: The ACg, C2g, and C4g horizons were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Eutaw LOCATION Newton County, Mississippi
 silty clay loam

SOIL NOS. S58Miss-51-1 LAB. NOS. 8275-8281

DEPTH INCHES	HORIZON	1B1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										2A2 > 2	TEXTURAL CLASS
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	3A1				
		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002			
0-2	A11	0.9a	0.7a	0.5a	0.6a	1.5a	53.6	42.2	18.6	36.6	-	sic	
2-5	A12	0.3a	0.9a	0.6a	0.6a	1.8a	52.5	43.3	18.6	35.7	-	sic	
5-14	A13g	0.3a	0.7a	0.5a	0.5a	1.1a	44.3	52.6	14.7	30.8	-	sic	
14-22	ACg	0.2a	0.3a	0.2a	0.3a	0.4a	27.5	71.1	8.7	19.3	-	c	
22-32	Clg	0.1a	0.3a	0.2a	0.3a	0.7a	32.8	65.6	10.9	22.7	-	c	
32-40	C2g	0.1a	0.3a	0.2a	0.3a	0.8a	33.3	65.0	11.3	22.9	-	c	
40-59	C3g	0.4a	0.6a	0.4a	0.3a	0.9a	37.1	60.3	10.6	27.4	Tr.	c	

8C1a	pH	ORGANIC MATTER			Free Iron Fe ₂ O ₃ %	6E1a BULK DENSITY WATER RETENT.						
		6A1a	6B1a	C/N		6C1a	CaCO ₃ equiv- alent %	Field State g/cc	O. D. State g/cc	Field State %	4F2 15 Bar %	
		ORGANIC CARBON %	NITRO-GEN %									
1.1	1.5	1.10										
5.4			7.83	0.416	19	1.8						22.9
5.1			2.52	0.174	14	2.3						19.4
4.7			0.86	0.064	13	2.3						20.5
4.4			0.23	0.012		2.5						26.9
4.7			0.19	0.011		2.4						25.2
5.6			0.19			2.3						24.6
7.6			0.18			2.3		2				24.8

5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS					5B1a BASE SAT. % NH ₄ Ac EXCH.	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	Ca/Mg
	6N2b	6O2b	6H1a	6P2a	6Q2a					
	Co	Mg	H	No	K					
	milliequivalents per 100g. soil					5C1				8D3
41.8	30.8	4.6	18.6	0.1	0.6	86	66	36.1	54.7	6.7
33.1	20.6	3.9	16.5	0.1	0.4	76	60	25.0	41.5	5.3
33.4	18.4	3.9	18.1	0.2	0.4	68	56	22.9	41.0	4.7
44.9	29.2	4.6	19.4	0.6	0.4	78	64	34.8	54.2	6.3
43.5	31.2	4.3	14.0	0.8	0.5	84	72	36.8	50.8	7.2
42.6	37.6	5.1	6.3	1.2	0.4	104	88	44.3	50.6	7.4
44.6		5.9		2.2	0.4					

a. Common smooth light brown to black coner. (Fe-Mn)

Soil Type: Entaw silty clay loam
 Soil No.: S5SMiss-51-1
 Location: SW 1/4 SE 1/4, Sec. 2, T5N, R10E. 2.1 miles south of Lawrence, Mississippi, on Highway 905, 200 feet west of road in woods, Newton County, Mississippi.
 Use: Mixed hardwood and some pine.
 Relief: Level (Gilgai relief).
 Drainage: Poorly drained.
 Parent Material: Marly clays.
 Ground Water: Deep.
 Moisture: Soil was moist to wet when sampled.
 Root Distribution: Good.
 Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 23, 1958.
 Described by: Y. H. Havens.

Horizon and
 Lincoln
 Lab. No.

A11 8275	0 to 2 inches. Black (10YR 2/1) silt loam; weak fine granular structure; friable when moist, slightly plastic, slightly sticky when wet; few manganese concretions; many fine roots; abrupt smooth boundary.
A12 8276	2 to 5 inches. Very dark gray (10YR 3/1) silty clay loam; friable when moist, plastic and sticky when wet; moderate fine granular and weak fine subangular blocky structure; many fine roots, few coarse roots; few manganese concretions; abrupt wavy boundary.
A13g 8277	5 to 14 inches. Gray (10YR 5/1) silty clay or clay with common fine distinct strong brown (7.5YR 5/6) mottles; moderate to strong fine and medium subangular blocky structure; friable when moist, very plastic and very sticky when wet; common fine roots; abrupt irregular boundary.
ACg 8278	14 to 22 inches. Mottled gray (10YR 6/1) yellowish brown (10YR 5/8) and light yellowish brown (10YR 6/4) clay; mottles are many, fine, medium and distinct; weak to moderate fine and medium angular and subangular blocky structure; friable when moist, very plastic and very sticky when wet; few thin (weak) slickensides; few fine manganese concretions; roots are common; clear wavy boundary.
C1g 8279	22 to 32 inches. Mottled gray (10YR 6/1) and yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) clay; mottles are many, medium to coarse, and distinct; numerous slickensides present which break into weak to moderate fine to coarse angular blocky peds; friable when moist, very plastic, very sticky when wet; common fine roots; gradual wavy boundary.
C2g 8280	32 to 40 inches. Mottled pale olive (5Y 6/4) yellowish brown (10YR 5/8) gray (6/0) and light gray (7/0) clay; massive structure with large slickensides which break into weak fine angular blocky peds; very plastic and very sticky when wet; many lime nodules; few fine roots, root channels filled with gray (5Y 6/1) clay; clear wavy boundary.
C3g 8281	40 to 59 inches. Light olive brown (2.5Y 5/4) clay with few fine prominent gray (10YR 6/1 and 5/0) mottles; massive structure with large slickensides, faces of slickensides are light olive brown (2.5Y 5/4); many lime nodules, few manganese concretions; very plastic and very sticky when wet; few fine roots.

Remarks: This soil has a thin covering of leaves, twigs, and straw. Gray clay (5Y 6/1) along big roots and old root channels. Depressions are grayer in color, ridges have higher degree of yellow mottles. Lime nodules and carbonate vary in depth from 24 to 42 inches in open pit. High calcium horizon at 68 inches. The A13g, C1g, and C3g horizons were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1962

SOIL TYPE Walker LOCATION Tippah County, Mississippi
silt loam

SOIL NOS. S61Miss-70-1 LAB. NOS. 15199-15207

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1a					3A1						2A2 > 2
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002			
0-1/2	A1	0.2a	1.0	0.6	1.1	1.8	78.4	16.9	38.5	42.2	-	sil	
1-5	A2	0.4b	0.7b	0.4b	0.6b	1.4c	82.5	14.0	42.6	41.6	-	sil	
5-14	B2H	0.4b	0.8b	0.4b	0.6b	0.8e	67.6	29.4	31.5	37.2	-	sic1	
14-18	B2t	0.5b	0.8b	0.4b	0.5b	0.8b	66.1	30.9	29.3	37.9	-	sic1	
18-24	B23t	0.4b	0.9b	0.4b	0.5b	1.0b	67.7	29.1	30.6	38.4	-	sic1	
24-26	See	0.2b	0.6b	0.4b	0.5b	1.0b	54.2	43.1	26.0	29.5	-	sic	
26-33	Desc.	0.1b	0.5b	0.3b	0.5b	1.0b	55.1	42.5	25.9	30.5	-	sic	
33-44	IIC2g	1.0c	0.7c	0.4c	0.7c	2.0c	48.4	46.8	25.8	25.0	-	sic	
44-60	IIC3	0.1d	0.6d	0.7d	1.5d	2.8	34.9	59.4	9.4	29.1	35	c	
pH		Organic Matter			Bulk Density					MOISTURE TENSIONS			
8C1a H ₂ O	8C1c KCl	6A1a O.C.	6B1a N	C/N	Field Moist			30 cm.	A.D.	4B1b 1/3 ATMS.	4C1 1/3-tc 15-Atm.	4B2 15 ATMOS. Sieved	
1:1	1:1	%	%		4B4 % M.	4A1a g/cc	4B3 % M.	4A1c g/cc	4A1b g/cc	Pieces	in / in		
5.8	4.9	8.26	0.478	17								14.8	
4.7	3.7	1.38	0.121	11								6.5	
4.7	3.3	0.34	0.056	6	25.3	1.40	29.1	1.38	1.48	24.2	.16	12.3	
4.7	2.8	0.24	0.047									13.5	
4.8	2.8	0.17	0.034									13.0	
4.6	2.6	0.17	0.036									18.8	
4.4	2.5	0.12										19.0	
3.9	2.7	0.07			28.1	1.42	32.7	1.32	1.88	36.1	.18	22.8	
4.0	2.8	0.10										49.6	
5A1a CATION EXCHANGE CAPACITY NH ₄ OAc	EXTRACTABLE CATIONS				5B1a	Base Sat. %	5A3a Sum	503 Base Sat. %	Sum Ext.	8D3 Ca/Mg	6C1a Free Iron (Fe ₂ O ₃)		
	Ext. Bases				6H1a H	6G2a Al	NH ₄ OAc Exch. 5C1	Sum Ext. Cations me/100g	Sum Ext. and Al				
	Ca 6N2b	Mg 6O2b	Na 6P2a	K 6Q2a									
	milliequivalents per 100g. soil												
24.9	15.5	4.1	0.1	0.6	18.5	-	82	38.8	52	20.3	3.8	1.3	
8.9	0.8	1.4	<0.1	0.2	11.6	2.1	27	14.0	17	4.5		1.6	
13.1	0.8	1.6	0.1	0.2	15.5	7.2	21	18.2	15	9.9		2.9	
15.7	1.1	2.3	0.2	0.2	17.7	8.8	24	21.5	18	12.6	0.5	3.3	
16.3	1.8	2.8	0.2	0.2	16.5	8.7	31	21.5	23	13.7	0.6	3.1	
28.0	4.5	6.3	0.4	0.4	22.3	13.1	41	33.9	34	24.7	0.7	1.7	
28.5	5.5	7.0	0.6	0.4	21.3	12.3	47	34.8	39	25.8	0.8	1.8	
34.4	8.2	10.0	0.7	0.4	22.5	12.5	56	41.8	46	31.8	0.8	2.3	
47.4	13.9	15.5	1.3	0.5	28.4	12.9	66	59.6	52	44.1	0.9	2.4	

- a. Many organic matter fragments.
- b. Many Fe/Mn-bearing aggregates.
- c. Common Fe/Mn-bearing aggregates.
- d. Common sandstone and/or shale fragments.

Soil Type: Falkner silt loam
 Soil Nos.: S61Mss-70-1
 Location: Tippah County, Mississippi, 2½ miles south of Blue Mountain on State Highway 15 about 1,000 feet east of highway. NE¼ NE¼, Sec. 19, T58, R3E.
 Vegetation and Use: Hardwood forest.
 Slope and Land Form: Nearly level (1 percent slope).
 Drainage and Permeability: Somewhat poorly drained with slow to medium surface runoff and slow internal drainage. Permeability is moderate in the upper part of solum and very slow in the D.
 Parent Material: Thin loess over Coastal Plain clays.
 Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 19, 1961.
 Described by: W. E. Bright and R. C. Carter, May 19, 1961.

Horizon and
 Lincoln
 Lab. No.

O2 ½ to 0 inch. Oak leaves.

A1 0 to ½ inch. Very dark gray (10YR 3/1) silt loam; weak fine granular structure; friable; common fine and medium roots; abrupt wavy boundary.
 15199

A2 ½ to 5 inches. Dark grayish brown (10YR 4/2) silt loam; weak fine and medium granular structure; friable; common fine and medium roots; few fine manganese concretions; root and worm holes filled with material from A1; clear smooth boundary.
 15200

B2t 5 to 14 inches. Yellowish brown (10YR 5/6) light silty clay loam; moderate fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few fine black concretions; clear smooth boundary.
 15201

B22t 14 to 18 inches. Yellowish brown (10YR 5/4) silty clay loam with many fine, faint and distinct mottles of light gray to gray (10YR 6/1) and brown to dark brown (7.5YR 4/4); moderate fine subangular blocky structure; plastic; friable; few fine and medium roots; clear smooth boundary.
 15202

B23t 18 to 24 inches. Mottled light gray to gray (10YR 6/1) yellowish brown (10YR 5/4) and brown to dark brown (7.5YR 4/4) silty clay loam; mottles are many, fine, faint and distinct; moderate fine subangular blocky structure; friable; plastic; few fine roots; few fine soft black concretions; clear smooth boundary.
 15203

IB24tg 24 to 26 inches. Gray (10YR 5/1) heavy silty clay loam with many fine distinct mottles of yellowish brown (10YR 5/4); moderate very fine and fine subangular blocky structure; friable; plastic; few fine roots; common fine soft brown concretions; light gray (10YR 7/1) silt coatings on ped faces; abrupt smooth boundary.
 15204

IIC1g 26 to 33 inches. Gray (10YR 5/1) clay; many fine distinct mottles of yellowish brown (10YR 5/4); massive; very plastic; sticky; few medium and fine roots; few fine iron concretions; gradual smooth boundary.
 15205

IIC2g 33 to 44 inches. Grayish brown (2.5Y 5/2) clay; few fine distinct mottles of yellowish brown (10YR 5/4); massive; very plastic; sticky; common fine and medium, and few coarse hard iron concretions; clear wavy boundary.
 15206

IIC3 44 to 60 inches. Light brownish gray (2.5Y 6/2) clay shales; mottled with grayish brown (2.5Y 5/2); breaks into fine to coarse angular blocks up to 3 inches in diameter; some blocks are coated with strong brown (7.5YR 5/6) iron stains.
 15207

Remarks: The B2t, IIC2g, and IIC3 horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): Quartz and feldspar dominate the very fine sands of the coastal plain sediments and the loess mantle. The quartz to feldspar ratio is higher, and kyanite is present in the coastal plain sediments. The quantity of tourmaline, pyroxene, and plant opal is higher in the loess. Plant opal is virtually absent in the coastal plain sediments. A considerable amount of weathered biotite is present in the coastal plain sediments. Occasional thin clay films observed in the IIC2g horizon under a stereoscopic microscope.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1962

SOIL TYPE Falkner LOCATION Tippah County, Mississippi
silt loam

SOIL NOS. S61Miss-70-2 LAB. NOS. 15208-15215

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (p.w. cont)								2A2 > 2	TEXTURAL CLASS	
		1B1a		3A1								
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY				
		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002		
0-1/2	A1	0.7a	2.2a	1.6a	2.4	1.8	77.7	13.6	36.3	44.3	-	sil
1/2-6	A2	1.1b	1.5b	1.2d	1.4c	1.1c	76.2	17.5	35.8	42.1	-	sil
6-12	B21t	0.2b	0.9b	0.9b	0.9c	0.9c	66.5	29.7	29.7	38.1	-	sic1
12-18	B22t	0.7b	1.5b	0.9b	1.1c	1.0c	70.0	24.8	31.4	40.1	-	sil
18-23	B23tg	0.1b	0.5b	0.6c	0.8c	1.0c	63.5	33.5	28.0	36.9	-	sic1
23-28	See	0.1b	0.4b	0.5c	0.7d	0.8d	50.9	46.6	22.2	29.8	-	sic
28-41	Desc.	0.2b	0.5c	0.6c	0.7d	0.8d	51.9	45.3	24.4	28.6	-	sic
41-61	IIC2g	0.2c	0.6c	0.8c	1.0d	1.2d	57.1	39.1	26.0	32.8	-	sic1

pH		Organic Matter			Bulk Density			MOISTURE TENSIONS			
8C1a	8C1c	6A1a	6B1a	C/N	Field Moist		30 cm.	A.D.	4B1b	4C1	4B2
H ₂ O	KCl	O.C.	N		% M.	g/cc	% M.	g/cc	1/3	1/3-to	15
1:1	1:1	%	%						Atmos.	15-Atm	ATMOS.
									Pieces	in/in	Sieved
5.2	4.7	8.69	0.380	23							14.3
4.9	4.0	1.47	0.102	14							7.9
4.8	3.4	0.33	0.032	10	24.3	1.38	30.8	1.34	1.42	26.6	12.5
4.5	3.5	0.20	0.030							.19	10.5
4.6	3.1	0.14	0.025								14.3
4.2	2.9	0.12	0.027								20.5
4.0	2.8	0.10			26.7	1.46	30.8	1.36	1.88	30.8	20.6
3.9	2.8	0.09								.14	19.3

5A1a EXTRACTABLE CATIONS					5B1a		Base Sat. %	5A3a	5C3	Sum	8D3	6C1a
CATION EXCHANGE CAPACITY					6H1a	6G2a		Sum	Base	Sum	Ca/Mg	Free
NH ₄ OAc					H	Al	NH ₄ OAc Exch.	Ext.	Sat. %	Ext. and Al		Iron
milliequivalents per 100g. soil							5C1	me/100g				(Fe ₂ O ₃)
21.0	10.1	2.6	<0.1	0.5	20.5	0.1	63	33.7	39	13.3	3.9	1.1
9.8	0.3	1.0	<0.1	0.2	13.5	3.6	15	15.0	10	5.1		1.7
15.4	0.1	2.5	0.2	0.2	17.0	9.7	19	20.0	15	12.7		2.0
12.6	0.1	1.9	0.1	0.1	14.5	7.5	17	16.7	13	9.7		2.6
19.3	1.1	4.0	0.2	0.2	19.0	11.0	28	24.5	22	16.5	0.3	2.5
30.0	2.8	8.5	0.5	0.4	25.0	16.0	41	37.2	33	28.2	0.3	1.8
29.6	3.4	9.3	0.6	0.3	24.1	13.8	46	37.7	36	27.4	0.4	1.5
27.4	4.7	11.7	1.0	0.3	16.6	7.9	64	34.3	52	25.6	0.4	1.4

a. Common Fe/Mn-bearing aggregates. Common Organic Matter fragments.
 b. Many Fe/Mn-bearing aggregates.
 c. Common Fe/Mn-bearing aggregates.
 d. Few Fe/Mn-bearing aggregates.

Soil Type: Falkner silt loam

Soil No.: 851Miss-70-2

Location: Tippah County, Mississippi, 3 miles east of Blue Mountain, 300 feet south of local road. SW1/4 SW1/4, Sec. 10, T38, R3E.

Vegetation and Use: Hardwood forest.

Slope and Land Form: Nearly level (1 percent slope).

Drainage and Permeability: Somewhat poorly drained with slow to medium surface runoff and slow internal drainage. Permeability is moderate in the upper part of solum and very slow in the D.

Parent Material: Thin loess over Coastal Plain clays.

Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 19, 1961.

Described by: W. E. Bright and R. C. Carter, May 19, 1961.

Horizon and

Lincoln

Lab. No.

- O2 ½ to 0 inch. Hardwood leaves.
- A1
15208 0 to ½ inch. Very dark gray (10YR 3/1) silt loam; weak fine granular structure; friable; common fine and few coarse roots; abrupt smooth boundary.
- A2
15209 ½ to 6 inches. Mottled yellowish brown (10YR 5/4) and brown (10YR 5/3) silt loam; mottles are many, fine, faint; weak fine and medium granular and medium subangular blocky structure; friable; common fine and few medium and coarse roots; few fine black concretions; root and worm holes filled with material from A and B horizons; clear smooth boundary.
- B21t
15210 6 to 12 inches. Yellowish brown (10YR 5/4) heavy silt loam; weak fine and medium subangular blocky structure; friable; few fine to coarse roots; few fine black concretions; clear smooth boundary.
- B22t
15211 12 to 18 inches. Mottled yellowish brown (10YR 5/4) light brownish gray (10YR 6/2) and yellowish red (5YR 4/8) silty clay loam; mottles are many fine, distinct, and prominent; moderate medium and fine subangular blocky structure; friable; plastic; few fine to coarse roots; few fine black concretions; clear smooth boundary.
- B23tg
15212 18 to 23 inches. Light brownish gray (2.5Y 6/2) silty clay loam with many fine distinct and prominent mottles of yellowish brown (10YR 5/4) and yellowish red (5YR 4/8); moderate very fine and fine subangular blocky structure; plastic; friable; few fine and coarse roots; few fine black concretions; common fine soft red concretions; clear smooth boundary.
- IIE24tg
15213 23 to 28 inches. Gray (5Y 5/1) clay with many fine and medium prominent mottles of yellowish red (5YR 4/8); and strong brown (7.5YR 5/6); moderate medium angular blocky structure; very plastic; sticky; few fine and coarse roots; few fine soft red concretions; gradual smooth boundary.
- IIC1g
15214 28 to 41 inches. Gray (5Y 5/1) clay with many fine and medium distinct yellowish brown (10YR 5/4) mottles; massive; very plastic; sticky; few fine roots; few fine black hard concretions; few slickensides about 1 inch wide; gradual smooth boundary.
- IIC2g
15215 41 to 61 inches. Mottled gray (10YR 5/1) and yellowish brown (10YR 5/4) clay; mottles are many fine and medium distinct; massive; very plastic; sticky; few fine roots; few fine black, brown and red concretions; few small slickensides about 1 inch wide.

Remarks: The B22t and IIC2g horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): Quartz and feldspar dominate the very fine sands of the coastal plain sediments and the loess mantle. The quartz to feldspar ratio is higher and kyanite is present in the coastal plain sediments. The quantity of tourmaline, pyroxene, and plant opal is higher in the loess. Plant opal is virtually absent in the coastal plain sediments. A considerable amount of weathered biotite is present in the coastal plain sediments.

SOIL TYPE Grenada LOCATION Hinds County, Mississippi
silt loam

SOIL NOS. S60Miss-25-3 LAB. NOS. 14519-14524

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1a					3A1						
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2		
0-5	Ap	0.1a	0.2a	0.2b	0.4c	1.0c	89.8	8.3	56.7	34.3	-	s1	
5-17	B21	<0.1	<0.1	0.1b	0.2b	0.5c	77.5	21.7	40.8	37.3	-	s11	
17-24	B22	<0.1	<0.1	0.1b	0.2b	0.7c	74.5	24.5	42.2	33.1	-	s11	
24-29	See	<0.1	0.1b	0.1b	0.2b	0.8c	76.8	22.0	42.4	35.3	-	s11	
29-44	Desc.	<0.1	0.1b	0.1b	0.3b	0.8c	74.9	23.8	43.2	32.7	-	s11	
44-62	B'23tz	<0.1	<0.1	<0.1	0.1b	1.0c	76.8	22.1	45.2	32.7	-	s11	
pH		ORGANIC MATTER				Free Iron	MOISTURE TENSIONS						
8C1a	1:5	1:10	6A1a ORGANIC CARBON	6B1a NITROGEN	C/N	Fe ₂ O ₃ %	CaCO ₃ equiv- alent	1/10 ATMOS.	1/3 ATMOS.	4B2 15 ATMOS.			
1:1			%	%		6C1a	%	%	%	%			
5.9			1.22	0.106	12	0.7				4.7			
4.9			0.23	0.040		1.6				8.4			
4.9			0.11	0.032		2.0				10.6			
5.0			0.08	0.027		1.8				9.9			
5.2			0.06			2.0				11.4			
7.5			0.04			1.6				11.4			
5A1a CATION EXCHANGE CAPACITY NH ₄ OAc		EXTRACTABLE CATIONS					5B1a	BASE SAT. % NH ₄ OAc EXCH.	Base Sat. % on Sum Cations	Bulk Density			
	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K				Field Moist		30 cm.	4A1h O.D.	
	milliequivalents per 100g. soil								4B4 % M.	4A1a g/cc	4B3 % M.	4A1c g/cc	
						5C1	5C3						
6.5	3.3	0.8	4.0	<0.1	0.6	72	54						
9.5	2.3	1.8	8.3	0.2	0.3	48	36	20.0	1.42	26.4	1.39	1.44	
12.5	1.6	2.5	12.2	0.4	0.4	39	29						
12.2	1.6	2.6	11.2	0.5	0.3	41	31						
13.6	3.8	4.7	7.9	0.9	0.4	72	55	16.1	1.58	26.4	1.50	1.60	
16.0	7.4	7.0	2.4	1.2	0.4	100	87	19.7	1.54	29.5	1.42	1.58	

- a. Many organic matter fragments. Few Fe-Mn? concr.
- b. Many Fe-Mn? concr.
- c. Few Fe-Mn? concr.

Location: Hinds County, Mississippi, 3/4 mile south of Smith's station on Pickett farm. Center of W $\frac{1}{2}$ of SW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 25, T16N, R5E.

Vegetation and Use: Bermuda pasture.

Slope and Land Form: Nearly level. One percent slope.

Drainage and Permeability: Moderately well drained with medium runoff and medium internal drainages. Permeability is moderate in the upper solon and slow in the fragipan.

Parent Material: Loess.

Samples Collected by: R. R. Covell, W. A. Cole, V. H. McGehee, and Y. H. Havens, December 6, 1960.

Profile Described by: V. H. McGehee and Y. H. Havens, December 6, 1960.

LAB. NO.	HORIZON	DEPTH (inches)	DESCRIPTION
14519	A ₂	0-5	Brown to dark brown (10YR 4/3) silt loam with many fine faint and distinct mottles of light brownish gray (10YR 6/2) and dark brown (7.5YR 3/2); (part of mottling appears to be from root stains); weak fine subangular blocky and weak fine granular structure; friable; many fine roots; few soft fine black concretions; abrupt smooth boundary.
14520	B ₂₁	5-17	Brown to dark brown (7.5YR 4/4) heavy silt loam; moderate fine and medium subangular blocky structure; friable, slightly plastic; thin clay films on ped faces; few fine soft black concretions; few fine voids; few root or worm channels filled with light brownish gray (10YR 6/2) (dry) silt loam; common fine roots; clear smooth boundary.
14521	B ₂₂	17-24	Brown to dark brown (7.5YR 4/4) silt loam with common fine and medium distinct light brownish gray (10YR 6/2) mottles; moderate fine and medium subangular blocky structure; friable; few fine and medium manganese concretions; few manganese coatings on ped faces; few fine roots; gradual smooth boundary.
14522	A'21x and B'21x	24-29	Mottled dark brown (7.5YR 4/4), pale brown (10YR 6/3), and light brownish gray (10YR 6/2) silt loam; mottles are many, fine to coarse, distinct; moderate fine and medium subangular and angular blocky structure; friable; few fine roots; light brownish gray (10YR 6/2) silt coatings on all ped faces and in cracks and root channels; few manganese concretions; few fine voids; clear smooth boundary.
14523	B'22tx	29-44	Mottled light brownish gray (10YR 6/2), dark brown (7.5YR 4/4), and yellowish brown (10YR 5/6) silt loam; mottles are many, fine to coarse, distinct; moderate fine subangular blocky structure; firm; friable when crushed; few fine roots; few manganese concretions; few fine voids; gradual smooth boundary.
14524	B'23tx	44-62	Brown to dark brown (10YR 4/3) to dark brown (7.5YR 4/4) silt loam with many medium distinct mottles of light brownish gray (10YR 6/2) and pale brown (10YR 6/3); weak fine and medium subangular blocky structure; firm, friable when crushed; common fine soft black concretions; light brownish gray (10YR 6/2) silt in cracks and root channels; few fine roots.

Remarks: Colors given are for moist soil.

SOIL Lakeland sandy loam SOIL Nos. 855Mia-30-2 LOCATION Jackson County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 567 - 5611

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1											3B2 Cm	3B1 Coarse fragments SBI		
		Total		Sand					Silt					2A2 2-19	19-76	
		Sand (2-0.06)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.8)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)				(2-0.1)
Pct. of < 2 mm																
0-3	A1		8.7	2.5	0.3	9.1	30.7	43.8	4.9		6.1	25.8				
3-13	A3		9.7	3.6	0.5	13.6	31.2	37.6	3.8		7.3	21.2				
13-30	C1		12.0	3.9	0.7	11.2	26.3	41.0	4.9		8.4	26.4				
30-50	O2		11.6	4.2	0.5	10.2	25.1	43.1	5.3		8.2	27.7				
50-72+	O3		7.0	2.5	1.1	11.7	28.1	44.8	4.8		4.5	26.4				
Depth (in.)	SA1s Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Soil density			4D1 COLE	Water content			4C1 WRD in/in	pH		
						4A1s kg bar	4A1h Oven dry	4D1 g/cc		4B1c kg bar	4B2 15 bar	4C1 in/in		8C1c (1:1) KCl	8C1e (1:1) H ₂ O	
0-3	0.84	0.040	21													4.9
3-13	0.14	0.011														5.1
13-30	0.06	0.009														5.1
30-50	0.04	0.008														5.0
50-72+	0.02	0.004														5.1
Depth (in.)	Extractable bases 8B1s				8H1a Ext. acidity	CEC		8G1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation			
	8N2d Ca	8O2b Mg	8P2a Na	8Q2a K		Sum	5A3a Sum cations		Ext. acid	CEC Sum	Ext. iron		15-bar water	8C3 Sum cations Pct.	8C1 NH ₄ OAc Pct.	
0-3	0.3	0.1	tr.	tr.		3.9	4.3						9			
3-13	0.1	0.2	tr.	0.1		1.8	2.2						18			
13-30	0.1	0.2	tr.	0.1		1.0	1.4						26			
30-50	0.2	0.1	tr.	tr.		1.2	1.5						20			
50-72+	0.1	0.2	tr.	tr.		0.8	1.1						27			
Depth (in.)	Clay Fraction Analysis 7A1b-d															
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite								
	7A2 K-FS				7A3											

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Lakeland sandy loam

Soil No.: 852Miss-30-2

Location: Jackson County, Mississippi, 2 1/4 miles W. Hurley, NW 4, NE 4, Sec. 31, T 4S, R 5W

Vegetation: Longleaf pine, occasional scrub oak

Horizon and
Beltsville
Lab. No.

- A1
567 0 to 3 inches. Very dark gray (10YR 3/1) very friable sandy loam; weak medium crumb structure; gradual smooth boundary; numerous roots, and worm casts; very strongly acid.
- A3
568 3 to 13 inches. Brown (10YR 5/3) with many medium faint mottles of light gray (10YR 7/2) and worm casts of very dark gray (10YR 3/1); very friable sandy loam; weak medium crumb structure, gradual smooth boundary; some roots; very strongly acid.
- C1
569 13 to 30 inches. Yellowish brown (10YR 5/4) very friable sandy loam single grain with a tendency towards medium subangular blocky structure; gradual wavy boundary; few worm casts and channels of light brownish gray (10YR 6/2), some roots; very strongly acid.
- C2
5610 30 to 50 inches. Strong brown (7.5YR 5/8) with few distinct mottles of light yellowish brown (10YR 6/4) very friable sandy loam; essentially structureless with tendency towards medium subangular blocky, gradual wavy boundary; some roots; very strongly acid. The mottles appear to be caused by old channels or small pockets of sand.
- C3
5611 50 to 72+ inches. Reddish yellow (7.5YR 7/8) with many coarse distinct mottles of very pale brown (10YR 7/3-7/4) very friable structureless loamy sand; very strongly acid.

SOIL Leaf silt loam SOIL No. 855N15-30-7 LOCATION Jackson County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 5635 - 5638

Depth (in.)	Horizon	Size class and particle diameter (mm) 2A1											3B2 Cn	Coarse fragments 3B1			
		JB1B Total				Sand				Silt				2A2 ≥ 2	2-19	19-76	
		Sand (2-0.08)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02)	Int. II (0.2-0.02)	(2-0.1)					
Pct. of < 2 mm																	
0-3	A1	71.2	9.7	0.2	0.6	0.4	3.8	14.1	35.2	52.7				tr.			
3-5	A2	67.7	14.2	0.8	1.0	0.5	3.2	12.6	35.5	47.1				1			
5-7	B1	63.8	20.5	1.0	0.8	0.4	2.5	11.0	36.0	30.6				tr.			
7-72+	B2t	49.7	44.9	-	-	-	0.6	4.8	33.4	21.5				-			
Bulk density																	
Depth (in.)	6A1a Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			Water content			4C1 WRD In/in	pH				
						4A1a 1/2 bar g/cc	4A1b Oven dry g/cc	4D1 DOLE g/cc	4B1c 1/2 bar Pct.	4B2 15 bar Pct.	4C1 Pct.		5C1c (1:1) KCl	5C1a (1:1) H ₂ O			
0-3	3.06	0.167	18														4.5
3-5	1.66	0.107	16														4.5
5-7	0.95	0.079	12														4.5
7-72+	0.21	0.035															4.5
Depth (in.)	Extractable bases 5B1a					5C1a Ext. acidity	CEC		6A1d Ext. Al	Ratios to clay			5D3 Ca/Mg	Base saturation			
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		5A3a Sum cations	Ext. CEC		Ext. Iron	15-bar water	5C3 Sum cations Pct.		5C1 NH ₄ OAc Pct.			
0-3	1.3	0.5	0.1	0.2		12.0	14.1							15			
3-5	0.6	0.4	0.1	0.1		11.0	12.2							10			
5-7	0.4	0.2	0.1	0.1		9.9	10.7							7			
7-72+	0.5	1.2	0.1	0.2		10.2	12.2							16			
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kf.	Gibbsite									
7A2 X-191																	
7A3																	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kf. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, s = small, x = moderate, xxx = abundant, xxxxx = dominant.

Soil Type: Leaf silt loam
Soil No.: 855Miss-30-7
Location: Jackson County, Mississippi, SE 4, NW 4, Sec. 5, T7S, R5W, 2 miles NE Escatawpa.
Vegetation: Wiregrass

Horizon and
Beltsville
Lab. No.

A1
5635 0 to 3 inches. Very dark gray (10YR 3/1) friable silt loam; moderate medium crumb structure; abrupt smooth boundary; many grass roots; strongly acid.

A2
5636 3 to 5 inches. Yellowish brown (10YR 5/4) to light yellowish brown (10YR 6/4) firm silt loam; moderate subangular blocky structure; clear smooth boundary; numerous grass roots; very strongly acid.

B1
5637 5 to 7 inches. Light brownish gray (2.5Y 6/2) with many fine distinct mottles of red (7.5YR 4/8) firm silty clay loam to clay loam; weak medium angular blocky structure; clear smooth boundary; very strongly acid.

B2t
5638 7 to 72+ inches. Gray (10YR 6/1) with many medium prominent mottles of red (2.5YR 4/8) and yellow (10YR 7/8) very firm clay; strong medium angular blocky structure; very strongly acid.

SOIL Leaf silt loam SOIL Nos. S5Miss-30-B LOCATION Jackson County, Mississippi

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 5639 - 5642

Depth (in.)	Horizon	Size class and particle diameter (mm) 3A1											3B2 Cm	Coarse fragments 3B1			
		Total				Sand				Silt				2A2 ≥ 2 Pct.	2 - 19 Pct.	19-76 Pct. of < 76mm	
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (\leq 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)					(2-0.1)
0-2	A1		63.4	17.9	0.1	0.5	0.5	5.7	11.9		43.9	35.8					
2-6	A2		58.9	20.0	0.7	1.3	0.6	6.3	12.2		40.2	35.9					
6-12	B21t		46.4	46.9	0.1	0.2	0.2	1.8	4.4		37.4	15.0					
12-72+	B22t		40.3	54.5	-	0.1	0.1	1.5	3.5		32.6	12.5					
Depth (in.)	6A1e Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH			
						4A1e 1/2 bar	4A1b Oven dry	4D1		4B1c 1/2 bar	4B2 15 bar	8C1c (1:1) KCl		8C1a (1:1) H ₂ O			
						Pct.	Pct.	Pct.		Pct.	Pct.	Pct.		Pct.			
0-2	4.83	0.251	19													4.3	
2-6	2.54	0.133	19													4.2	
6-12	0.72	0.076	9													4.5	
12-72+	0.31	0.048														4.1	
Depth (in.)	Extractable bases 5B1e					6H1e Ext. acidity	CEC		6G1d Ext Al	Ratios to clay			8D3 Ca/Mg	Base saturation			
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		5A3a Sum cations	Ext Al		CEC Sum	Ext. iron	15-bar water		5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.		
	meq/100 g																
0-2	1.3	0.7	0.1	0.2		21.7	24.0							10			
2-6	0.6	0.7	0.1	0.1		15.9	17.4							9			
6-12	0.5	1.0	0.1	0.1		17.4	19.1							9			
12-72+	1.5	2.6	0.1	0.2		21.4	25.8							17			
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite									
	7A2 X-ray				7A3												

Mt. = Montmorillonite, Chl = chlorite, Vm = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, s = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Leaf silt loam

Soil No.: S55Miss-30-8

Location: Jackson County, Mississippi, SW 4, SE 4, Sec. 30, T 6S, R 5W, 2 miles SW of Helena.

Vegetation: The area was in wiregrass that appeared to have been burned regularly.

Horizon and

Beltsville

Lab. No.

- | | |
|--------------|---|
| A1
5639 | 0 to 2 inches. Black (10YR 2/1) friable silt loam to silty clay loam; moderate medium crumb structure; clear smooth boundary; numerous grass roots and worm casts; very strongly acid. |
| A2
5640 | 2 to 6 inches. Brown (10YR 5/3) with many medium distinct mottles of yellowish brown (10YR 5/8) very dark gray (10YR 3/1) and yellow (10YR 7/8) friable silty clay loam of moderate medium subangular blocky structure, clear smooth boundary; many roots and worm casts; very strongly acid. |
| B21t
5641 | 6 to 12 inches. Light brownish gray (10YR 6/2) with many medium and coarse mottles of red (2.5YR 4/8) firm silty clay of strong medium angular and subangular blocky structure; gradual wavy boundary; few roots; very strongly acid. |
| B22t
5642 | 12 to 72+ inches. Gray (N 5/) with many medium prominent mottles of red (2.5YR 4/8) and few medium distinct mottles of strong brown (7.5YR 5/8) firm clay of strong medium angular and subangular blocky structure. Very strongly acid. |

SOIL Loring silt loam SOIL No. 852Miss-17-2 LOCATION DeSoto County, Mississippi

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 52405 - 52411

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1											3B2 Gm	3B1 Coarse fragments		
		Total			Sand					Silt				2A2 ≥ 2	2-19	19-76
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)		(2-0.1)	Pct.	Pct. of ← < 76mm →
0-4	A1	84.0	11.7	0.3	0.6	0.5	0.8	2.1		29.0	57.5		-			
4-8	B1	75.1	22.8	0.1	0.3	0.2	0.3	1.2		34.4	42.2		-			
8-16	B21t	74.2	23.2	0.1	0.3	0.3	0.4	1.5		32.6	43.4		-			
16-24	B22t	75.3	21.9	0.1	0.3	0.3	0.4	1.7		33.4	43.8		-			
24-32	B23xt	78.3	17.9	0.1	0.7	0.4	0.6	2.0		35.0	45.6		-			
32-38	B24xt	78.6	17.5	-	0.4	0.4	0.7	2.4		36.9	44.4		-			
38-42	B25xt	78.0	19.2	-	0.2	0.3	0.5	1.8		37.1	43.0		-			

Depth (in.)	6A1e Organic carbon Pct.	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. Iron as Fe Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD In/in	pH	
						4A1e 1/2 bar g/cc	4A1b Oven dry g/cc	4D1		4B1c 1/2 bar Pct.	4B2 15 bar Pct.	8C1c (1:1) KCl		8C1a (1:1) H ₂ O	
0-4	0.28														6.0
4-8	0.18														4.6
8-16	0.07														4.6
16-24	0.08														4.6
24-32	0.04														4.6
32-38	-														4.6
38-42	-														4.6

Depth (in.)	Extractable bases 5B1a					5B1a Ext. acidity	CEC		6D1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation	
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		5A3e Sum cations	Ext. Al		CEC Sum	Ext. Iron	15-bar water		Sum cations Pct.	5C1 NH ₄ OAc Pct.
0-4	5.6	0.9	0.1	0.1		4.6	11.3							59	
4-8	3.4	1.5	0.2	0.1		10.3	15.5							34	
8-16	2.6	1.9	0.2	0.1		11.8	16.6							29	
16-24	2.0	1.7	0.2	0.1		12.5	16.5							24	
24-32	1.5	1.4	0.3	0.1		12.0	15.3							22	
32-38	1.3	1.4	0.3	0.2		12.2	15.4							21	
38-42	1.9	1.9	0.3	0.2		12.6	16.9							25	

Depth (in.)	Clay Fraction Analysis 7A1b-d							
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray				7A3			

Mt. = Montmorillonite, Chl. = chlorite, Vm = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xv = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Loring silt loam

Soil No.: 852Miss-17-2

Location: De Soto County, Mississippi, about 3/4 mile southwest of Cublake, Mississippi

Collected by and date: E. J. McWitt and A. H. Hasty, March 20, 1952

Horizon and

Beltsville

Lab. No.

A1 52405	0 to 4 inches. Grayish brown (2.5Y 5/2) friable moderate fine granular silt loam; medium acid. (Probably been limed.)
B1 52406	4 to 8 inches. Yellowish brown (10YR 5/6) friable moderate fine granular silt loam; strongly acid.
B21t 52407	8 to 16 inches. Yellowish brown (10YR 5/6) friable to firm moderate fine granular silt loam; strongly acid.
B22t 52408	16 to 24 inches. Yellowish brown (10YR 5/4) firm weak medium granular light silty clay loam; strongly acid.
B23xt 52409	24 to 32 inches. Yellowish brown (10YR 5/4) mottled distinctly with dark grayish brown (10YR 4/2) and very pale brown (10YR 7/3) firm weak medium granular light silty clay loam; strongly acid. (Beginning of pan.)
B24xt 52410	32 to 38 inches. Mottled light yellowish brown (10YR 6/4), light gray (10YR 7/2), and dark grayish brown (10YR 4/2) firm to very firm weak subangular blocky silty clay loam; strongly acid. (This is a pan layer.)
B25xt 52411	38 to 42+ inches. Brownish yellow (10YR 6/6), light gray (10YR 7/2) and dark grayish brown (10YR 4/2) firm light silty clay loam; strongly acid.

SOIL TYPE Ioring LOCATION Hinds County, Mississippi
silt loam

SOIL NOS. S56Miss25-1 LAB. NOS. 8941-8949

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)									TEXTURAL CLASS	
		1B1a	3A1							2A2		
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY		> 2		
		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.20-0.02	0.02-0.002		
1-6	A2	0.1a	0.2a	0.2a	0.4a	0.5b	88.2	10.4	51.7	37.2	-	sl
6-9	B1	<0.1	0.1	0.1	0.2c	0.3c	74.5	24.8	39.6	35.3	-	sil
9-21	B21t	<0.1	<0.1	<0.1	<0.1	<0.1	69.8	30.2	32.1	37.7	-	silcl
21-27	B22t	<0.1	<0.1	0.1	0.2c	0.4c	74.6	24.7	34.4	40.7	-	sil
27-34	B23tx	<0.1	0.1a	0.2a	0.3a	0.5a	77.9	21.0	35.1	43.5	-	sil
34-42	B24tx	<0.1	0.1a	0.3a	0.6a	0.7a	81.3	17.0	37.6	44.8	-	sil
42-52	B25tx	<0.1	0.1a	0.2a	0.4a	0.5a	78.5	20.3	35.7	43.5	-	sil
52-64	B31tx	<0.1	0.1a	0.2a	0.4a	0.4a	79.5	19.4	36.5	43.6	-	sil
64-74+	B32tx	<0.1	0.3a	0.4a	0.8b	0.5b	79.2	18.8	38.0	42.1	-	sil
pH		ORGANIC MATTER					Free Iron	MOISTURE TENSIONS				
8C1a	1:5	1:10	6A1a	6B1a		6C1a						
			ORGANIC CARBON	NITROGEN	C/N	% Fe ₂ O ₃		CoCO ₃ equiv. elem.	1/10 ATMOS.	1/3 ATMOS.	4 2/5 15 ATMOS.	
			%	%		%		%	%	%	%	
5.0			1.18	0.092	13	0.9						4.1
4.8			0.43	0.051	8	2.0						9.5
4.7			0.21	0.044		2.8						11.8
4.9			0.13	0.033		2.5						10.3
5.1			0.12			2.4						9.0
5.2			0.10			2.2						8.4
5.2			0.08			2.1						9.5
5.5			0.08			2.0						9.2
6.0			0.08			1.7						8.3
5A1a	EXTRACTABLE CATIONS					5B1a	BASE SAT. %	5C3	5B1a	5A3a	Ca/Mg	
CATION EXCHANGE CAPACITY	6N2b	6O2b	6H1a	6P2a	6Q2a		NH ₄ Ac EXCH.	Base Sat. % on Sum	Sum	Sum	8D3	
← NH ₄ Ac	milliequivalents per 100g. soil								me/100g	me/100g		
6.3	0.8	0.4	6.8	<0.1	0.4	25		19	1.6	8.4		
9.7	0.6	2.4	9.2	0.1	0.5	37		28	3.6	12.8		
12.8	0.9	3.6	11.6	0.1	0.4	39		30	5.0	16.6		
11.7	0.6	2.7	10.6	0.2	0.3	32		26	3.8	14.4		
10.5	0.5	2.5	9.6	0.2	0.3	33		27	3.5	13.1		
9.6	0.9	2.6	7.8	0.4	0.2	43		34	4.1	11.9		
11.5	1.2	4.5	6.0	0.6	0.2	56		52	6.5	12.5	0.3	
12.2	4.4	5.7	3.7	1.1	0.2	93		75	11.4	15.1	0.8	
11.3	4.6	5.4	2.7	1.0	0.2	99		80	11.2	13.9	0.8	

- a. Many smooth light brown coner. (Fe?)
- b. Common smooth light brown coner. (Fe?)
- c. Few smooth light brown coner. (Fe?)

Soil Type: Loring silt loam

Soil Nos.: 856Miss25-1

Location: Hinds County, Mississippi, 6 miles north of Jackson, Mississippi on George S. Hamilton farm, northeast quarter of northwest quarter of Sec. 4, T6N, R1E, photo 3G-175.

Vegetation and Use: Hardwood forest with undercover of huckleberry, crabapple, honeysuckle, laurel, ivy, broomsedge and other native grasses.

Slope and Land Form: Gently sloping 2 to 5 percent. Loess uplands with undulating topography.

Drainage and Permeability: Moderately well drained. Permeability is moderate in the horizons above the fragipan and slow in that layer.

Parent Material: Loess.

Collected and Described by: Joe Kubota and V. H. McGehee, April 18, 1956.

Horizon and

Lincoln

Lab. No.

- 01-02 1 to 0 inch. Thin litter of hardwood leaves.
- A1 0 to 1 inch. Very dark grayish brown (10YR 3/2 moist) silt loam; weak fine granular structure; very friable; many fine roots; there is material from the A2 and B1 horizons intermixed in this horizon.
- A2 1 to 6 inches. Dark brown (10YR 4/3 moist) silt loam; fine granular structure; very friable; many fine and medium roots; clear wavy boundary.
8941
- B1 6 to 9 inches. Dark brown (7.5YR 4/4 moist) silt loam; weak fine granular structure; friable; slightly sticky, slightly plastic when wet; many fine and medium roots; clear wavy boundary.
8942
- B2t 9 to 21 inches. Dark brown (7.5YR 4/4 moist) silty clay loam; weak to moderate medium subangular blocky structure; friable; slightly plastic, slightly sticky when wet; numerous fine and medium roots; clear smooth boundary.
8943
- B22t 21 to 27 inches. Dark brown (7.5YR 4/4 moist) silt loam; weak medium subangular blocky structure; friable; slightly plastic, slightly sticky when wet; numerous pin holes; few fine roots; clear smooth boundary.
8944
- B23tx 27 to 34 inches. Dark reddish brown, dark brown (5YR 3/4 and 7.5YR 4/4 moist) and yellowish brown (10YR 5/4 moist) in intricate pattern of mottled colors; silt loam; moderate medium to coarse subangular blocky structure; slightly plastic, slightly sticky when wet; friable to firm when moist; few fine roots; clear smooth boundary.
8945
- B24tx 34 to 42 inches. Mottled dark brown (7.5YR 4/4 moist) and light brownish gray (10YR 6/2 moist) silt loam; medium prismatic structure which breaks into moderate fine and medium subangular blocky peds; firm to friable; manganese coatings on ped faces; numerous fine roots; clear smooth boundary.
8946
- B25tx 42 to 52 inches. Mottled dark yellowish brown, gray and reddish brown silt loam with gray more prominent than in horizons below; silt loam hard when dry; firm slightly plastic, slightly sticky when wet; medium prismatic structure; few fine roots; clear smooth boundary.
8947
- B31tx 52 to 64 inches. Dark yellowish brown (10YR 4/4 moist) with some reddish brown (5YR 4/3 moist) and gray, silt loam; medium prismatic structure that breaks into medium and coarse subangular blocky peds; hard when dry; firm when moist; slightly plastic, slightly sticky when wet; manganese coatings on ped faces; clear smooth boundary.
8948
- B32tx 64 to 74 inches plus. Dark yellowish brown (10YR 4/4 moist) white (10YR 8/1 dry) silt loam; moderate very coarse columnar to prismatic structure; moist firm; dry slightly hard; slightly sticky, slightly plastic when wet; few thin manganese coatings; few fine roots; this horizon is dry.
8949

SOIL TYPE Loring LOCATION Hinds County, Mississippi
silt loam

SOIL NOS. 856Maa25-2 LAB. NOS. 8950-8960

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		1A1a		3A1						2A2		
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	> 2	> 2		
		2.1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002		
0-1	A1	0.2	1.1	0.8	2.3	2.2	83.2	10.2	50.4	36.3	-	s1
1-5	A2	<0.1	0.2a	0.3a	0.7a	1.0a	86.0	11.8	49.0	38.4	-	s1
5-7	B1	<0.1	0.1a	0.1a	0.4a	0.5a	76.5	22.4	38.6	38.6	-	s1l
7-12	B21t	<0.1	<0.1	0.1a	0.2a	0.3a	68.3	31.1	30.4	38.3	-	s1cl
12-18	B22t	<0.1	<0.1	0.1b	0.2b	0.3b	69.5	29.9	29.7	40.2	-	s1cl
18-25	B23t	<0.1	<0.1	0.1b	0.3b	0.6b	75.1	23.9	31.6	44.3	-	s1l
25-31	See	<0.1	<0.1	0.1b	0.3b	0.4b	75.8	23.4	31.6	44.8	-	s1l
31-38	Desc.	<0.1	0.1b	0.1b	0.5c	0.7c	77.9	20.7	33.7	45.2	-	s1l
38-52	B26tx	<0.1	0.4b	0.4b	1.3c	2.1c	77.8	18.0	39.2	41.6	-	s1l
52-65	B31t	0.4	1.7b	0.7b	2.7a	3.9a	73.9	17.5	30.6	39.8	-	s1l
65-77+	B32t	<0.1	0.3a	0.4a	1.8b	3.9b	66.9	26.7	35.3	36.8	-	s1l
pH		ORGANIC MATTER					Free Iron	MOISTURE TENSIONS		412		
8C1a		6A1a	6B1a			% Fe ₂ O ₃	CaCO ₃ equiv- alent	1/10 ATMOS.	1/3 ATMOS.	15 ATMOS.		
	1:5	1:10	ORGANIC CARBON	NITRO-GEN	C/N	6C1a	%	%	%	%		
5.5			7.97	0.328	24	1.0					9.4	
4.7			1.19	0.068	18	1.1					4.4	
4.7			0.56	0.047	12	2.1					8.3	
4.7			0.46	0.050	9	3.1					11.8	
4.8			0.31	0.039	8	3.2					12.1	
4.9			0.17	0.026		2.8					10.3	
5.1			0.15			2.4					10.4	
5.2			0.08			2.0					9.8	
5.3			0.08			1.6					9.2	
5.8			0.07			1.3					7.8	
5.9			0.08			2.5					11.1	
5A1a	EXTRACTABLE CATIONS					BASE SAT. %	5C3	5B1a	5A3a	Ca/Mg		
	6N2b	6O2b	6H1a	6P2a	6Q2a	NH ₄ Ac EXCH.	Base Sat. %	Sum	Sum	8D3		
	Ca	Mg	H	No	K		on Sum	Cations				
	milliequivalents per 100g. soil					5C1	Cations me/100gme/100g					
18.0	9.7	2.2	11.0	0.1	0.6	70	53	12.6	23.6	4.4		
6.2	1.3	0.6	6.3	0.1	0.3	37	27	2.3	8.6			
9.0	0.5	1.2	9.2	0.1	0.4	24	19	2.2	11.4			
11.7	0.5	2.6	12.0	0.1	0.6	32	24	3.8	15.8			
12.1	0.2	3.0	11.6	0.1	0.5	31	25	3.8	15.4			
10.7	0.4	3.2	9.7	0.1	0.4	38	30	4.1	13.8			
11.9	1.4	4.5	8.3	0.4	0.3	55	44	6.6	14.9	0.3		
12.5	2.8	6.0	5.5	0.7	0.2	78	64	9.7	15.2	0.5		
11.1	3.4	5.4	3.6	0.9	0.2	89	73	9.9	13.5	0.6		
8.0	3.0	3.0	1.8	0.6	0.1	84	79	6.7	8.5	1.0		
10.3	4.4	4.4	2.3	1.1	0.2	98	81	10.1	12.4	1.0		
<p>a. Few smooth light to dark brown coner. (Fe?) b. Many smooth light to dark brown coner. (Fe?) c. Common smooth light to dark brown coner. (Fe?)</p>												

Soil Type: Loring silt loam

Soil No.: 8956Miss25-2

Location: Hinds County, Mississippi, 12 miles southwest of Jackson, Mississippi on the Randolph Smith farm. North-east quarter of northeast quarter of Sec. 30, T4N, R1W, photo 3G-59, dtd. 12-29-49.

Vegetation and Use: Hardwood forest with undercover of huckleberry, crabapple, honeysuckle, broomsedge and other native grasses.

Slope and Land Form: Gently sloping 2 to 5 percent. Loess uplands with undulating topography.

Drainage and Permeability: Moderately well drained. Permeability is moderate in the horizons above the fragipan and slow in that layer.

Parent Material: Loess.

Collected and Described by: Joe Kubota and V. H. McGehee, April 18, 1956.

Horizon and
Lincoln
Lab. No.

- A1
8950 0 to 1 inch. Very dark grayish brown (10YR 3/2 and 3/3 moist) silt loam; weak fine granular structure; very friable; many fine roots; abrupt smooth boundary.
- A2
8951 1 to 5 inches. Yellowish brown (10YR 5/4 and 5/6 moist) silt loam; weak fine granular structure; very friable to friable; many fine roots; numerous fine fingers of A1 material from above; clear smooth boundary.
- B1
8952 5 to 7 inches. Dark brown to strong brown (7.5YR 4/4 and 5/5 moist) silt loam; moderate fine granular and weak fine subangular blocky structure; friable; slightly plastic, slightly sticky when wet; many fine and medium roots; clear smooth boundary.
- B2t
8953 7 to 12 inches. Dark brown (7.5YR 4/4 moist) silty clay loam; weak fine granular structure and weak fine subangular blocky structure; friable; plastic and sticky when wet; many fine and few very coarse roots; clear smooth boundary.
- B2bt
8954 12 to 18 inches. Dark brown (7.5YR 4/4 moist) silty clay loam; moderate medium subangular blocky structure; friable; plastic and sticky when wet; many fine and few medium roots; clear smooth boundary.
- B2bt
8955 18 to 25 inches. Yellowish brown (10YR 4/4 and 5/4 moist) heavy silt loam; weak to moderate medium subangular blocky structure; friable; plastic and sticky when wet; few firm manganese concretions and coatings; numerous fine roots; clear wavy boundary.
- B2bt
and A'2x
8956 25 to 31 inches. Mottled dark brown (7.5YR 4/4 moist) brown (7.5YR 5/4 moist) and pale brown (10YR 6/3 moist) silt loam; coarse prismatic peds break into moderate medium to coarse subangular blocky structure; friable; slightly plastic, slightly sticky when wet; gray coatings on ped faces; dark stains and manganese coatings on ped faces; numerous fine roots; clear smooth boundary.
- B2bt
8957 31 to 38 inches. Mottled dark brown (7.5YR 4/4 moist) brown (7.5YR 5/2 moist) and pale brown (10YR 6/3 moist) heavy silt loam; moderate very coarse prismatic structure that breaks into moderate medium subangular blocky structure; slightly plastic, slightly sticky; moist friable to firm; numerous fine roots; clear smooth boundary.
- B2bt
8958 38 to 52 inches. Mottled dark brown to brown (7.5YR 4/4 moist) yellowish brown (10YR 5/4 moist) and pale brown (10YR 6/3 moist) silt loam; massive and firm in place; breaks out in very coarse columnar to prismatic peds; friable; slightly plastic, slightly sticky; few roots; few dark stains; clear smooth boundary.
- B3t
8959 52 to 65 inches. Yellowish brown (10YR 5/6 moist) silt loam; soil appears massive and firm in place but very coarse columnar to prismatic peds exist; friable; numerous dark stains; numerous roots; few concretions; clear smooth boundary.
- B3bt
8960 65 to 77 inches plus. Yellowish brown (10YR 5/6 moist) heavy silt loam; soil massive in place but clods tend to break into coarse platy structure; firm to friable; plastic and sticky when wet; few faint yellowish red mottles and black manganese coatings; few fine roots; thin ($\frac{1}{8}$ inch) gray streaks 18 inches apart; roots in these channels.

OIL SURVEY LABORATORY Lincoln, Nebr. August 1961

OIL TYPE Loring LOCATION Hinds County, Mississippi
silt loam

SOIL NOS. S60Miss-25-4 LAB. NOS. 14525-14531

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)								3A1		TEXTURAL CLASS
		1B1a		2A2		3A1		3A1		> 2		
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	0.25-0.075		0.075-0.002	
2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.25-0.075	0.075-0.002				
0-7	Ap	<0.1	0.1a	0.1a	0.2a	0.8b	89.5	9.3	61.3	29.1	-	s1
7-11	B1	<0.1	<0.1	<0.1	0.1b	1.2b	86.0	12.7	54.5	32.8	-	s11/s1
11-23	B21t	<0.1	<0.1	<0.1	0.1a	0.6b	73.1	26.2	38.5	35.3	-	s11
23-28	B22t	<0.1	<0.1	0.1a	0.2a	0.7b	74.3	24.7	37.8	37.3	-	s11
28-36	B23tx	<0.1	<0.1	0.1a	0.2a	0.7b	75.8	23.2	40.2	36.4	-	s11
36-52	B24tx	<0.1	0.1a	0.2a	0.5a	0.9b	76.0	22.3	44.0	33.2	-	s11
52-66	B3tx	<0.1	<0.1	<0.1	0.1a	1.0b	77.6	21.3	45.2	33.5	-	s11
pH		ORGANIC MATTER				Free Iron			MOISTURE TENSIONS			
8C1a	1:5	1:10	6A1a ORGANIC CARBON	6B1a NITRO-GEN	C/N	Fe ₂ O ₃ ^b	CoCO ₂ equiv- alent	1/10 ATMOS.	1/3 ATMOS.	4B2 18 ATMOS.		
!!			%	%		6C1a	%	%	%	%		
5.3			0.99	0.096	10	0.8						4.6
5.6			0.28	0.037	8	1.0						5.6
4.9			0.29	0.036	8	1.8						10.7
4.8			0.10	0.033		1.7						10.4
4.9			0.08			1.8						10.7
5.0.			0.05			1.8						10.8
5.2			0.05			1.7						11.0
5A1a CATION EXCHANGE CAPACITY NH ₄ OAc	EXTRACTABLE CATIONS 5B1a					BASE SAT. % NH ₄ OAc EXCH.	Base Sat. % on Sum Cations	Bulk Density				4A1b O.D.
	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K			4B1 % M.	4A1a g/cc	4B3 % M.	4A1c g/cc	g/cc
	milliequivalents per 100g. soil					5C1	5C3					
6.6	3.0	0.6	5.2	<0.1	0.3	59	43					
5.8	3.3	0.8	3.6	<0.1	0.2	74	54					
10.9	3.7	1.9	8.3	0.1	0.3	55	42	17.2	1.47	23.8	1.44	1.52
11.7	2.5	2.0	10.2	0.1	0.4	43	33					
12.5	2.5	2.2	11.0	0.2	0.4	42	32					
12.9	3.2	3.2	9.3	0.3	0.4	55	43	19.7	1.56	26.0	1.49	1.59
14.2	5.7	4.7	6.4	0.4	0.4	79	64	19.8	1.56	27.0	1.46	1.58

a. Many Fe-Mn⁺ concn.
b. Few Fe-Mn⁺ concn.

Location: Hinds County, Mississippi, 1 mile east of Smith's station, 440 feet south of railroad tracks, 150 feet west of pond. NW corner of $E\frac{1}{2}$ of NE $\frac{1}{4}$, S8E $\frac{1}{4}$, Sec. 25, T16N, R5E.

Vegetation and Use: Permanent pasture.

Slope and Land Form: Nearly level. Approximately 2 percent slope.

Drainage and Permeability: Moderately well drained with medium runoff and medium internal drainage. Permeability is moderate in the upper solum and slow in the fragipan.

Parent Material: Loess.

Samples Collected by: R. N. Covall, W. A. Cole, V. H. McGehee, R. C. Carter, and Y. H. Havens, December 7, 1960.

Profile Described by: R. C. Carter and Y. H. Havens, December 7, 1960.

<u>LINCOLN</u> <u>LAB. NO.</u>	<u>HORIZON</u>	<u>DEPTH</u> <u>(inches)</u>	<u>DESCRIPTION</u>
14525	A _p	0-7	Brown to dark brown (10YR 4/3) silt loam with many fine faint pale brown (10YR 6/3) mottles; weak fine and medium granular and weak fine subangular blocky structure; friable; common fine roots; few fine soft brown concretions; few worm casts; clear smooth boundary.
14526	B ₁	7-11	Brown to dark brown (7.5YR 4/4) silt loam; weak fine medium subangular blocky structure; friable; root and worm channels filled with material from A _p horizon; few fine black concretions; few fine roots; clear smooth boundary.
14527	B _{21t}	11-23	Brown to dark brown (7.5YR 4/4) heavy silt loam or light silty clay loam; moderate fine and medium subangular blocky structure; friable; slightly plastic; few soft fine black concretions; few manganese coatings on ped faces; light gray (10YR 7/2) (dry) silt coatings on ped faces; clay films on ped faces; few fine roots; gradual smooth boundary.
14528	B _{22t}	23-28	Brown to dark brown (7.5YR 4/4) heavy silt loam with common fine and medium distinct pale brown (10YR 6/3) mottles; moderate fine and medium subangular and angular blocky structure; firm to friable, slightly plastic; common light gray (10YR 7/2) silt coatings on ped faces and in cracks; few fine roots; few fine soft manganese concretions and coatings; gradual smooth boundary.
14529	B _{23tx}	28-36	Mottled brown to dark brown (7.5YR 4/4), light brownish gray (10YR 6/2), and pale brown (10YR 6/3) silt loam; mottles are many, fine and medium, distinct; moderate medium and coarse subangular blocky structure; firm, friable when crushed; slightly plastic; common fine soft black concretions; few fine manganese coatings; gray silt coatings in cracks and on ped faces; few fine voids; few fine roots; gradual smooth boundary.
14530	B _{24tx}	36-52	Mottled brown to dark brown (7.5YR 4/4), light brownish gray (10YR 6/2), and pale-brown (10YR 6/3) silt loam; mottles are many, fine, distinct; moderate coarse prismatic structure which breaks to weak coarse subangular blocky; firm; friable when crushed; slightly plastic; common fine voids; few manganese coatings on ped faces; few fine manganese concretions; few fine roots; gradual smooth boundary.
14531	B _{3tx}	52-66	Brown to dark brown (7.5YR 4/4) silt loam with common fine and medium distinct light brownish gray (10YR 6/2) mottles; weak coarse subangular blocky structure; firm, friable when crushed, slightly plastic; few fine voids; few fine roots; common manganese coatings on ped faces; few fine manganese concretions.

Remarks: Colors given are for moist soil.

Soil Type: Lynchburg very fine sandy loam

Soil No.: 563Miss-37-3

Location: 5.9 miles north of Purvis, on Highway 589, east one mile on gravel road; SE of road 300 feet, Township 3N, Range 14W, Section 20, Lamar County, Mississippi, aerial photo: CLQ-6V-200.

Vegetation and land use: Longleaf pine, occasional black gum, bluestem.

Slope and land form: 0 to 2 percent

Horizon and
Beltsville
Lab. No.

- A1
63273 0 to 4 inches. Very dark gray (10YR 3/1) very fine sandy loam; weak fine granular structure; very friable; few pieces of charcoal; few fine dark brown (7.5YR 4/4) root stains; common fine roots; mixing from A2 by earthworms; strongly acid; clear wavy boundary.
- A2
63274 4 to 10 inches. Light gray (2.5Y 7/2) very fine sandy loam with few medium faint mottles of light yellowish brown (2.5Y 6/4); weak medium granular and subangular blocky structure; friable; few fine roots; dark brown (7.5YR 4/4) root stains; some mixing by earthworms; strongly acid; clear wavy boundary.
- B1
63275 10 to 14 inches. Pale yellow (2.5Y 7/4) loam with common fine distinct mottles of brownish yellow (10YR 6/6) and light gray (2.5Y 7/2); weak medium subangular blocky structure; friable; few small voids; few small roots; strongly acid; clear wavy boundary.
- B2
63276 14 to 22 inches. Light yellowish brown (2.5Y 6/4) loam with many medium distinct yellowish brown (10YR 5/8), light gray (10YR 7/1), and few medium prominent red (2.5YR 5/8), mottles; weak medium subangular blocky structure; friable; few gray (N 7/) prism faces, coatings much thinner than in B3g; few small voids; few coarse quartz grains; few fine roots; strongly acid; clear wavy boundary.
- B3g
63277 22 to 37 inches. Strong brown (7.5YR 5/8) heavy sandy loam with common medium distinct light gray (N 7/) and few fine prominent yellowish red (5YR 5/8); mottles; massive; friable; prism faces light gray (N 7/) sandy loam; the brown is sandy clay loam; strongly acid; gradual wavy boundary.
- C1g
63278 37 to 57 inches. Mottled strong brown (7.5YR 5/8) and light gray (N 7/) heavy loam; massive; friable; brown is 70 percent of mass; gray is 30 percent; the gray is sandy loam, the brown sandy clay loam; few pressure faces; strongly acid; gradual wavy boundary.
- C2g
63279 57 to 65+inches. Coarse mottled light gray (N 7/), yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) sandy loam; massive; friable; large peds of brown to dark brown (7.5YR 4/4); texture variable from sandy loam to light sandy clay loam; strongly acid.

Note: This area floods yearly.

Soil Type: Lynchburg very fine sandy loam

Soil No.: 863Miss-37-5

Location: 4.4 miles west of Belview Baptist Church on Hwy 98; 1.1 mile north on paved road; West 0.3 mile on gravel road; N. 300 feet in pasture, Township 4 N, Range 15 W., Section 18. Lamar County, Mississippi, serial photo: CLQ-1V-122.

Vegetation and land use: Pasture, carpetgrass.

Slope and land form: 0 to 2 percent.

Horizon and

Beltsville

Lab. No.

- Ap
63280 0 to 5 inches. Very dark gray (10YR 3/1) very fine sandy loam; weak medium granular structure; very friable; many fine roots; brown to dark brown (7.5YR 4/4) stains around fine root channels; few earthworm casts from A2, very strongly acid; abrupt wavy boundary.
- A2g
63281 5 to 10 inches. Light brownish gray (2.5Y 6/2) fine sandy loam with few fine faint mottles of olive yellow (2.5Y 6/6); weak fine and medium subangular blocky structure; very friable; few fine roots; brown to dark brown (7.5YR 4/4) stains around fine roots and in root channels; few earthworm casts from Ap; very strongly acid; clear wavy boundary.
- B2
63282 10 to 20 inches. Light yellowish brown (2.5Y 6/4) heavy sandy loam or light sandy clay loam with common medium distinct mottles of yellowish brown (10YR 5/8), strong brown (7.5YR 5/8), light gray (2.5Y 7/2) and few medium prominent red (2.5YR 4/8); weak medium subangular blocky structure; friable; few fine roots; strongly acid; clear wavy boundary.
- B3
63283 20 to 39 inches. Medium and coarse mottled light yellowish brown (2.5Y 6/4) strong brown (7.5YR 5/8) gray (10YR 6/1) and few medium prominent red (2.5YR 5/8) heavy sandy loam; massive, friable; variable texture includes sandy loam and sandy clay loam (with fine sandy) tonguing streaks of gray; few fine voids or channels and cracks filled with silt and fine sand; very strongly acid; clear wavy boundary.
- C1g
63284 39 to 50 inches. Light gray (2.5Y 7/2) sandy loam with many coarse prominent mottles of strong brown (7.5YR 5/8) and few fine prominent red (2.5YR 4/8); massive; friable; some peds are sandy clay loam; few fine voids; few fine crooks and channels filled with fine sand; strongly acid; clear wavy boundary.
- C2g
63285 50 to 61 inches. Light gray (2.5Y 7/2) sandy loam with many coarse prominent mottles of yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6); massive; friable; some coarse polygonal structure; few crooks and channels filled with gray fine sand; strongly acid.

Notes: Subject to overflow two to three times yearly.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Mayhew LOCATION Noxubee County, Mississippi
silt loam

SOIL NOS. S58-Mss-52-1 LAB. NOS. 8215-8221

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)								2A2 > 7	TEXTURAL CLASS	
		1B1a VERY COARSE SAND 2-1	COARSE SAND 1.0-5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VEPY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 0.2-0.02			0.02-0.002
0-1	A11	2.3a	2.0b	1.3c	2.0c	3.4c	61.0	27.2	20.1	44.7	Tr.	silcl
1-4	A12	1.7a	2.5b	1.4b	3.5c	2.0c	59.4	29.5	19.3	44.0	Tr.	silcl
4-7	A3	2.5a	3.2b	1.4b	3.4c	2.0c	56.3	31.2	17.8	42.4	Tr.	silcl
7-14	B1g	2.4a	2.9b	1.6b	3.6c	2.0c	53.1	34.4	16.6	40.4	Tr.	silcl
14-22	B21g	1.4a	2.7b	1.4b	1.5c	3.6c	51.0	38.4	15.9	38.8	Tr.	silcl
22-48	B22g	2.0a	2.4b	1.2b	1.4c	3.1c	47.9	42.0	14.1	36.9	Tr.	sic
48-71	Cg	1.8a	1.9b	1.1b	2.5c	1.5c	43.1	48.1	13.1	32.9	Tr.	sic
pH		ORGANIC MATTER				Free Iron	BULK DENSITY WATER RETENT.					
8C1a	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Fe ₂ O ₃ ⁶	CaCO ₃ equiv-alent %	4A1a Field State	4A1h O.D.	4B4 Field State	4B2 15 Bar	
1:1						6C1a		g/cc	g/cc	%	%	
5.3			3.61	0.181	20	4.8						13.6
4.7			0.87	0.072	12	4.6						12.9
4.7			0.45	0.068	7	4.5						13.3
4.8			0.33	0.049	7	4.4		1.38	1.46	5		14.6
4.6			0.26	0.049	5	4.4		1.45	1.56	7		15.9
4.9			0.14	0.034		4.5		1.39	1.54	11		16.7
4.5			0.08			4.3		1.52	1.67	10		19.7
5A1a CATION EXCHANGE CAPACITY	6N2b	6O2b	6H1a	6P2a	6Q2a	BASE SAT. Na4Ac EXCH.	5C3 Base Sat. % on Sum	5B1a Sum	5A3a Sum	Ca/Mg		
me/100g soil	Ca	Mg	H	Na	K		5C1 Cations	me/100g	8D3			
19.0	4.9	5.9	15.4	0.1	0.4	59	42	11.3	26.7	0.8		
15.6	2.2	3.4	15.8	0.1	0.2	38	27	5.9	21.7	0.6		
15.6	1.5	3.1	16.2	0.1	0.2	31	23	4.9	21.1	0.5		
18.4	1.6	3.6	16.8	0.1	0.3	30	25	5.6	22.4	0.4		
19.8	1.6	3.9	18.8	0.2	0.3	30	24	6.0	24.8	0.4		
21.9	1.5	4.6	18.8	0.4	0.3	31	26	6.8	25.6	0.3		
27.1	2.3	6.7	21.6	0.8	0.4	38	32	10.2	31.8	0.3		

- a. Many smooth light brown to black coner. (Fe-Mn)
- b. Common smooth light brown to black coner. (Fe-Mn)
- c. Few smooth light brown to black coner. (Fe-Mn)

Soil Type: Mayhew silt loam
 Soil Nos.: 856Miss-52-1
 Location: 825 feet south and 396 feet east of northwest corner of the SW 1/4 of the SW 1/4 of Sec. 5, T4N, R15E.
 1.35 miles east of Winston County line and 160 feet south of Highway 14. Photograph NI-3H-154.
 Area: Noxubee County, Mississippi.
 Use: Mixed hardwood and pine.
 Relief: Nearly level (Gilgai relief).
 Drainage: Poor drainage.
 Parent Material: Acid clay (Porters Creek clay).
 Ground Water: Deep.
 Moisture: Moist to wet.
 Root Distribution: Good in first 48 inches.
 Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 20, 1958.
 Described by: Y. H. Havens.

Horizon and
 Lincoln
 Lab. No.

- O₂ 1½ to 0 inch. Partially decayed leaves, pinestraw and small twigs.
- A11 0 to 1 inch. Dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; friable when moist; abrupt smooth boundary; many fine root and worm holes.
- A12 1 to 4 inches. Yellowish brown silt loam (10YR 5/4) with common fine distinct gray (10YR 6/1) and strong brown (7.5YR 5/8) mottles; moderate fine granular and weak fine subangular blocky structure; friable when moist, slightly plastic when wet; many fine root and worm channels, and many fine roots; abrupt smooth boundary.
- A3 4 to 7 inches. Mottled yellowish brown (10YR 5/8) to brownish yellow (10YR 6/8) and gray (10YR 6/1) silty clay loam; weak fine subangular blocky and moderate fine granular structure; friable when moist, slightly plastic, slightly sticky when wet; many fine roots, root holes and wormholes; abrupt wavy boundary.
- B₁g 7 to 14 inches. Light brownish gray (10YR 6/2) to gray (10YR 6/1) silty clay loam with many medium distinct yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) mottles; moderate very fine to medium subangular blocky structure; friable when moist, slightly plastic and slightly sticky when wet; numerous fine manganese concretions; many fine roots; clear wavy boundary.
- B₂1g 14 to 22 inches. Gray (10YR 6/1) to light brownish gray (2.5Y 6/2) silty clay with many fine distinct yellowish brown (10YR 5/6) and (10YR 5/4) mottles; moderate fine to medium subangular blocky structure; friable when moist, plastic and slightly sticky when wet; few fine manganese concretions and few manganese coatings; numerous fine roots; gradual wavy boundary.
- B₂2g 22 to 48 inches. Gray (10YR 6/1) clay with many medium distinct yellowish brown (10YR 5/8) mottles; moderate and strong fine and medium subangular blocky and angular blocky structure; firm when moist, plastic, slightly sticky when wet; few scattered thin slickensides; few roots, root channels filled with gray (10YR 6/0) clay; few manganese concretions and few coatings; gradual wavy boundary.
- C_g 48 to 71 inches. Gray (10YR 6/1) clay with many medium distinct and prominent yellowish brown (10YR 5/8) to brownish yellow (10YR 6/6) and few light olive brown (2.5Y 6/6) and red (10R 4/8) mottles; moderate to strong fine to coarse subangular and angular blocky structure; firm when moist, plastic and slightly sticky when wet; few weak slickensides; few fine gravel, few manganese coatings on ped faces and few manganese concretions; few fine roots.

Remarks: Very dark gray shale (10YR 3/1) at 85 inches. The A3, B₂2g, and C_g horizons were sampled for the Bureau of Public Roads.

Clay Mineralogy (Method 7A)^a.

Depth (Inches)	Fraction	Minerals in order of abundance
1-5	< 0.2 μ	Mt, Il, Kl
	2-0.2 μ	Il, Mt, Kl, Q
	5-2 μ	Il, Kl, Q, Mt
80	Porters Creek clay	< 2 μ Mt, Il, Q, Kl

* Legend: Mt - montmorillonite, Kl - kaolinite, Il - illite, Vn - vermiculite, Q - quartz.
 The most distinctive feature of the clays examined was the dominance of montmorillonite.

a. Data furnished by L. E. DeMunbrum, Department of Agronomy, Mississippi State University.

SOIL TYPE Mayhev LOCATION Neshobee County, Mississippi
silt loam

SOIL NOS. S5811ss-52-4 LAB NOS. 8235-8241

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	3A1		2A2	
		2-1	0.85	0.54-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	> 2	
0-2	A11	3.3a	8.8a	9.7a	11.4a	3.2a	43.3	20.3	24.1	26.8	Tr.	1
2-5	A12	3.6b	11.9a	9.5a	11.0a	2.9a	41.1	20.0	23.2	25.2	Tr.	1
5-11	A3	3.2b	9.2a	8.2a	9.4a	3.3a	40.4	26.3	22.5	24.8	Tr.	1
11-24	B21g	2.5b	8.4a	7.4a	9.5a	2.7a	36.5	33.0	19.5	23.7	Tr.	cl
24-40	B22g	2.4b	7.9a	7.2a	9.0a	2.4a	36.1	35.0	18.8	23.4	Tr.	cl
40-56	B3g	3.1b	7.6a	6.8a	8.2a	2.3a	34.6	37.4	17.8	22.6	Tr.	cl
56-72	Cg	2.4b	6.6a	5.7a	7.2a	2.0a	32.5	43.6	16.1	21.4	Tr.	c

pH	ORGANIC MATTER			Free Iron Fe ₂ O ₃ %	BULK DENSITY WATER RETENT.							
	1:5	1:10	ORGANIC CARBON % C		6A1a	6B1a	6C1a	4A1a	4A1h	4B4	4B2	
5.5			4.44	0.217	20	2.3			1.4	1.5	3	11.6
5.1			1.23	0.092	13	2.8			1.51	1.60	5	9.1
4.8			0.45	0.052	9	3.1			1.48	1.6	8	10.9
4.8			0.26	0.039	7	3.2			1.52	1.66	11	13.6
4.8			0.14			3.3			1.60	1.77	10	14.2
4.7			0.10			3.4			1.64	1.76	5	15.2
4.6			0.08			3.2						17.6

5A1a	EXTRACTABLE CATIONS					5B1a	BASE SAT. %	5C3	5B1a	5A3a	Ca/Mg
6N2b	6O2b	6H1a	6P2a	6Q2a	6Q2a	5C1	Base Sat. % on Sum	Base Sum	Sum	Sum	
Co	Mg	H	Na	K				me/100g			8D3
20.8	9.9	3.2	12.0	0.1	0.4	65	53	13.6	25.6	3.1	
13.2	4.8	3.0	10.1	<0.1	0.2	61	44	8.0	18.1	1.6	
15.1	3.3	2.7	12.0	0.1	0.2	42	34	6.3	18.3	1.2	
17.9	2.6	3.4	14.8	0.1	0.3	36	30	6.4	21.2	0.8	
18.9	2.0	4.0	15.8	0.2	0.3	34	29	6.5	22.3	0.5	
20.5	2.6	5.0	16.3	0.4	0.3	40	34	8.3	24.6	0.5	
25.0	4.4	7.2	17.4	0.6	0.4	50	42	12.6	30.0	0.6	

a. Few smooth light brown to black concr. (Fe-Mn)
 b. Common smooth light brown to black concr. (Fe-Mn)
 c. 8.2 kg/m² to 60 inches. (Method 6A).

Soil Type: Mayhew silt loam

Soil Nos.: 858Miss-52-4

Location: 480 feet west and 300 feet south of northeast corner of the SE 1/4 of the SE 1/4 of Sec. 28, T14N, R16E.
1.2 miles northeast of Macedonia Church and 150 feet southeast of local road.

Area: Noxubee County, Mississippi.

Use: Mixed hardwood and pine.

Relief: Nearly level (Oligai relief).

Drainage: Poorly drained.

Parent Material: Acid clay (Porters Creek clay).

Ground Water: Deep.

Moisture: Moist to wet.

Root Distribution: Good.

Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 21, 1958.

Described by: Y. H. Havens.

Horizon and

Lincoln

Lab. No.

- O2 2 to 0 inch. Partially decayed leaves, pine straw, grass and small twigs.
- A11 0 to 2 inches. Very dark gray (10YR 3/1) silt loam; moderate fine granular structure; friable when moist; many fine roots, root and worm holes and few small manganese concretions; abrupt smooth boundary.
8235
- A12 2 to 5 inches. Mottled light yellowish brown (10YR 6/4) and dark brown (10YR 4/3) silt loam with some gray; moderate fine granular and weak fine subangular blocky structure; friable when moist, slightly plastic when wet; many fine roots, root and worm channels filled with very dark gray (10YR 3/1) silt loam; few quartz gravel and coarse clean sand grains; many small manganese concretions; abrupt smooth boundary.
8236
- A3 5 to 11 inches. Mottled yellowish brown (10YR 5/4 to 10YR 5/8) and light brownish gray (10YR 6/2) silty clay loam; mottles are many, fine and distinct; weak fine and very fine subangular blocky and moderate fine granular structure; friable when moist, slightly sticky, slightly plastic when wet; many fine roots; many small manganese concretions, few quartz gravel and coarse clean sand grains; clear smooth boundary.
8237
- B21g 11 to 24 inches. Light yellowish brown (10YR 6/4) to light brownish gray (10YR 6/2) silty clay with many fine and medium distinct yellowish brown (10YR 5/8) mottles; moderate fine and medium subangular blocky structure; friable when moist, plastic and slightly sticky when wet; many small manganese concretions; many fine roots and root channels; gradual smooth boundary.
8238
- B22g 24 to 40 inches. Gray (10YR 6/1) clay with common fine and medium distinct brownish yellow (10YR 6/8) and yellowish brown (10YR 5/8) mottles; moderate to strong fine to coarse subangular blocky and angular blocky structure; friable when moist, plastic and sticky when wet; few manganese concretions and many fine roots; gradual wavy boundary.
8239
- B3g 40 to 56 inches. Gray (10YR 6/1) clay with many fine and medium prominent and distinct red (10R 4/8) yellow (10YR 7/8) brownish yellow (10YR 6/8) mottles; moderate to strong fine to coarse angular and sub-angular blocky structure; firm when moist, plastic and sticky when wet; many small manganese concretions; few small quartz gravel and few fine roots; clear wavy boundary.
8240
- Cg 56 to 72 inches. Gray (10YR 6/1) clay with fine and medium faint and distinct grayish brown (10YR 5/2) and yellowish brown (10YR 5/8) mottles; moderate to strong medium prismatic structure which breaks to moderate and strong fine and medium subangular and angular blocky structure; firm when moist, plastic and sticky when wet; many small manganese concretions; few fine roots; few small slickensides.
8241

Remarks: Shale at 90 inches.

The A3, B22g, and Cg horizons were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1961

SOIL TYPE Memphis LOCATION Hinds County, Mississippi
silt loam

SOIL NOS. S60Miss-25-1 LAB. NOS. 14507-14512

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		1B1a					3A1					
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	2A2 > 2			
2-8	Ap2	<0.1	0.1a	0.2b	0.4b	1.2	85.1	13.0	58.3	28.2	-	s11
8-21	B21t	<0.1	0.1a	<0.1	0.2b	0.6	70.4	28.7	40.0	31.1	-	s1c1
21-30	B22t	<0.1	<0.1	0.1a	0.2b	0.7	74.3	24.7	40.2	34.9	-	s11
30-40	B22t	<0.1	<0.1	<0.1	<0.1	0.9	75.7	23.4	42.7	33.9	-	s11
40-50	B23t	<0.1	<0.1	<0.1	<0.1	0.8	78.9	20.3	40.6	39.1	-	s11
50-62	B23t	<0.1	<0.1	<0.1	<0.1	0.6	79.8	19.6	39.1	41.3	-	s11
pH		ORGANIC MATTER			Free Iron	MOISTURE TENSIONS						
8C1a	1:5	1:10	6A1a ORGANIC CARBON	6B1a NITRO-GEN	C/N	Fe ₂ O ₃ %	CoCO ₃ equiv- alent	1/10 ATMOS.	1/3 ATMOS.	4B2 15 ATMOS.		
	1:1		%	%		6C1a	%	%	%	%		
6.2			0.72	0.083	9	1.2				5.5		
5.1			0.22	0.036		2.3				12.0		
5.1			0.11	0.026		2.1				10.4		
5.2			0.08			2.0				10.3		
5.1			0.07			2.1				9.3		
5.2			0.07			2.0				9.1		
5A1a CATION EXCHANGE CAPACITY NH ₄ OAc		EXTRACTABLE CATIONS				5B1a BASE SAT. % NH ₄ OAc EXCH.	Base Sat. % on Sum Cations	Bulk Density				
	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1	4B4 % N	Field Moist		30 cm.		4A1h O.D. g/cc
	milliequivalents per 100g. soil							4A1a g/cc	4B3 % M.	4A1c g/cc		
7.6	5.1	1.3	3.6	0.1	0.3	89	65					
13.3	5.1	3.0	9.3	0.2	0.4	65	48	18.6	1.54	24.2	1.50	1.61
12.9	4.4	3.2	9.6	0.3	0.4	64	46					
12.7	4.7	3.4	8.4	0.3	0.4	69	51	13.2	1.56	26.3	1.48	1.56
12.1	5.1	3.4	7.4	0.2	0.4	75	55	13.2	1.54	26.7	1.46	1.54
12.2	5.6	3.5	6.4	0.2	0.4	80	60	14.2	1.52	26.7	1.46	1.54

a. Many Fe-Mn? concn.
b. Few Fe-Mn? concn.

Location: Hinds County, Mississippi, on old U. S. Highway #80, one mile west of Mt. Beulah Institute and 165 feet south of highway. SE corner of the NE 1/4 of NW 1/4, Sec. 30, T6N, R4W.

Vegetation and Use: Bermudagrass pasture.

Slope and Land Form: Nearly level. One percent slope.

Drainage and Permeability: Well drained, with medium runoff and medium internal drainage. Permeability is moderate.

Parent Material: Loess.

Samples Collected by: R. R. Covell, W. A. Cole, V. H. McGehee, and Y. H. Havens, December 6 and 7, 1960.

Profile Described by: Y. H. Havens, December 6, 1960.

<u>LINCOLN</u>		<u>DEPTH</u>	
<u>LAB. NO.</u>	<u>HORIZON</u>	<u>(inches)</u>	<u>DESCRIPTION</u>
	A _{p1}	0-2	Very dark grayish brown (10YR 3/2) silt loam with weak fine granular structure; friable; few fine roots; clear smooth boundary. (Not sampled)
14507	A _{p2}	2-8	Brown to dark brown (10YR 4/3) to dark yellowish brown (10YR 4/4) silt loam; weak fine crumb structure; friable; common fine roots; abrupt smooth boundary.
14508	B _{21t}	8-21	Brown to dark brown (7.5YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; few fine dark coatings on ped faces; clear smooth boundary.
14509	B _{22t}	21-30	Brown to dark brown (7.5YR 4/4) heavy silt loam; macro-structure moderate coarse prismatic which breaks into moderate fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; common fine manganese coatings on ped faces; few fine soft manganese concretions; common light-gray (10YR 7/2) silt coatings on ped faces and in cracks; diffuse smooth boundary.
14510	B _{22t}	30-40	Same as above horizon. Horizon divided for characterization purposes only.
14511	B _{23t}	40-50	Brown to dark brown (7.5YR 4/4) silt loam; macro-structure is moderate coarse prismatic which breaks into weak to moderate fine medium subangular blocky; friable; slightly plastic; few fine roots; light gray (10YR 7/2) silt coatings on ped faces and in cracks and root channels; few very fine voids or pores; diffuse smooth boundary.
14512	B _{23t}	50-62	Same as above horizon. Horizon divided for characterization purposes only.

Remarks: Colors given are for moist soil.

SOIL TYPE Memphis silt loam LOCATION Hinds County, Mississippi

SOIL NOS. S60Miss-25-2 LAB. NOS. 14513-14518

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		1B1a					3A1					
		VERY COARSE SAND 2.1	COARSE SAND 1.0-5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2	
0-7	Ap	0.1a	0.1a	0.6	1.1	1.5	84.6	12.0	60.6	25.9	-	s11/s1
7-17	B21t	<0.1	<0.1	<0.1	<0.1	0.9	70.4	28.7	39.7	31.6	-	s1c1
17-25	B21t	<0.1	<0.1	<0.1	<0.1	0.9	73.7	25.4	40.2	34.4	-	s11
25-37	B22t	<0.1	<0.1	<0.1	<0.1	0.7	78.4	20.9	42.2	36.9	-	s11
37-49	B23t	<0.1	<0.1	<0.1	<0.1	0.5	80.8	18.7	41.2	40.1	-	s11
49-64	B23t	<0.1	<0.1	<0.1	<0.1	0.4	81.2	18.4	40.3	41.3	-	s11
pH		ORGANIC MATTER				Free Iron	MOISTURE TENSIONS					
8C1a	1:5	1:10	6A1a ORGANIC CARBON	6B1a NITROGEN	C/N	Fe ₂ O ₃ %	CoCO ₃ equivalent	1/10 ATMOS.	1/3 ATMOS.	15 ATMOS.	4B2	
1:1			%	%		6C1a	%	%	%	%		
5.7			0.69	0.069	10	1.1					5.6	
6.0			0.16	0.030		2.3					12.8	
4.9			0.09	0.024		2.2					11.0	
4.9			0.21			2.1					9.6	
5.0			0.06			2.0					9.0	
5.2			0.07			2.0					8.9	
5A1a	EXTRACTABLE CATIONS					5B1a	BASE SAT. %	Base Sat. % on Sum Cations	Bulk Density			
6N2b	6O2b	6H1a	6P2a	6Q2a		BASE SAT. %	5C1	4B4 % M.	4A1a g/cc	4B3 % M.	4A1c g/cc	4A1h O.D. g/cc
milliequivalents per 100g. soil						NEH ₂ OAc EXCH.	5C3					
7.4	4.8	1.1	4.3	<0.1	0.5	86	60					
14.8	9.8	3.0	6.0	0.2	0.5	91	69	20.0	1.52	24.8	1.48	1.60
13.0	4.7	2.2	10.5	0.2	0.4	58	42					
11.7	3.3	2.4	10.5	0.3	0.4	55	38	14.8	1.56	25.7	1.50	1.58
11.6	4.3	2.8	7.9	0.3	0.4	67	50	15.5	1.56	26.3	1.49	1.56
12.2	5.7	3.5	6.7	0.3	0.4	81	60					

a. Many Fe-Mn? concn.

Location: Hinds County, Mississippi, on old U. S. Highway 80, 1,000 feet north of highway at Smith's station. Center $W\frac{1}{2}$, $SW\frac{1}{4}$ of the $SW\frac{1}{4}$, Sec. 24, T16N, R5E.

Vegetation and Use: Hay meadow.

Slope and Land Form: Nearly level. One percent slope.

Drainage and Permeability: Well drained, with medium runoff and medium internal drainage. Permeability is moderate.

Parent Material: Loess.

Samples Collected by: R. R. Covell, W. A. Cole, V. H. McGehee, R. C. Carter, and Y. H. Havens, December 7, 1960.

Profile Described by: R. C. Carter and Y. H. Havens, December 7, 1960.

<u>LINCOLN</u> <u>LAB.NO.</u>	<u>HORIZON</u>	<u>DEPTH</u> <u>(inches)</u>	<u>DESCRIPTION</u>
14513	A _p	0-7	Brown to dark brown (10YR 4/3) silt loam; weak fine and medium granular structure; friable; few fine roots; abrupt smooth boundary.
14514	B _{21t}	7-17	Brown to dark brown (7.5YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable to firm, slightly plastic; few fine roots; few fine dark soft concretions; clay films on ped faces; few thin light brownish gray (10YR 6/2) silt coatings; gradual smooth boundary.
14515	B _{21t}	17-25	Same as above horizon. Horizon divided for characterization purposes only.
14516	B _{22t}	25-37	Brown to dark brown (7.5YR 4/4) heavy silt loam; macrostructure is weak to moderate medium prismatic which breaks to moderate fine and medium subangular blocky; friable; slightly plastic; few fine roots; patchy clay films on ped faces; when dry, light gray (10YR 7/2) silt coatings on ped faces and in cracks; few manganese coatings and few fine soft manganese concretions; gradual smooth boundary.
14517	B _{23t}	37-49	Brown to dark brown (7.5YR 4/4) silt loam; macrostructure is weak to moderate prismatic which breaks to weak fine and medium subangular blocky structure; friable; common light gray (10YR 7/2) (dry) silt coatings on ped faces and in cracks; few fine clay films on ped faces; few manganese coatings and few fine manganese concretions; few fine roots; gradual smooth boundary.
14518	B _{23t}	49-64	Same as above horizon. Horizon divided for characterization purposes only.

Remarks: Colors given are for moist soil.

SOIL TYPE Memphis silt loam LOCATION Warren County, Mississippi

SOIL NOS. 956Maa75-1 LAB. NOS. 8961-8969

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)									TEXTURAL CLASS		
		1B1a					3A1					2A2 > 2	
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002			
0-2	Ap	<0.1	0.2	0.1	0.2	0.8	78.7	20.0	45.8	33.8	-	sil	
2-5	B21t	<0.1	<0.1	<0.1	<0.1	0.6a	68.2	31.2	37.5	31.3	-	sic1	
5-14	B22t	<0.1	<0.1	<0.1	<0.1	0.8a	71.2	28.0	41.3	30.7	-	sic1	
14-28	B23t	<0.1	<0.1	<0.1	<0.1	1.1a	76.1	22.8	46.2	31.0	-	sil	
28-39	B24t	<0.1	<0.1	<0.1	<0.1	1.1a	78.5	20.4	47.0	32.6	-	sil	
39-53	B31t	<0.1	<0.1	<0.1	<0.1	0.9a	81.6	17.5	49.4	33.1	-	sil	
53-65	B32t	<0.1	<0.1	<0.1	<0.1	1.0a	83.6	15.4	51.0	33.6	-	sil	
65-80	C1	<0.1	<0.1	<0.1	<0.1	0.8a	86.4	12.8	53.3	33.9	-	sil	
80-92+	C2	<0.1	<0.1	<0.1	<0.1	0.7a	86.6	12.7	50.4	36.9	-	sil	
pH		ORGANIC MATTER					Free Iron % Fe ₂ O ₃	MOISTURE TENSIONS					
8C1a	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a	CoCO ₂ equiv- alent %	1/10 ATMOS. %	1/3 ATMOS. %	4E2 15 ATMOS. %			
5.8			2.95	0.204	14	1.6						10.9	
4.7			0.62	0.066	9	2.3						13.1	
4.9			0.19	0.034		2.1						11.7	
5.2			0.12	0.022		1.7						9.9	
5.3			0.09			1.7						8.9	
5.6			0.08			1.6						9.2	
5.8			0.08			1.6						7.8	
5.8			0.05			1.5						7.1	
6.0			0.07			1.6						6.8	
5A1a CATION EXCHANGE CAPACITY NH ₄ Ac		EXTRACTABLE CATIONS				5B1a BASE SAT. % NH ₄ Ac EXCH.	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	Ca/Mg	8D3		
	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1	me/100g	me/100g	me/100g				
18.0	10.4	2.9	8.8	0.1	0.4	77	61	13.8	22.6	3.6			
17.4	5.5	4.0	12.1	0.1	0.4	57	45	10.0	22.1	1.4			
16.3	6.5	3.7	9.2	0.1	0.3	65	54	10.6	19.8	1.8			
14.7	7.4	3.6	6.0	0.2	0.3	78	66	11.5	17.5	2.0			
14.2	8.0	3.6	6.0	0.3	0.3	86	67	12.2	18.2	2.2			
13.7	8.3	4.0	5.0	0.3	0.3	94	72	12.9	17.9	2.1			
12.9	8.0	3.8	4.2	0.2	0.2	94	74	12.2	16.4	2.1			
12.4	8.0	3.8	2.8	0.2	0.2	98	81	12.2	15.0	2.1			
12.0	7.9	3.9	3.2	0.2	0.2	102	79	12.2	15.4	2.0			
a. Few smooth light brown to black coner. (Fe-Mn?)													

Soil Type: Memphis silt loam
 Soil Nos.: 856Miss75-1
 Location: Warren County, Mississippi, 10 miles northeast of Vicksburg, Mississippi in northwest quarter of southwest quarter, Sec. 17, T17N, R5E, photo AVN-20-184.
 Vegetation and Use: Hardwood forest with some understory of sweetgum, dogwood, locust, etc. (This land appears to have been cultivated probably 100 years ago.)
 Slope and Land Form: Ridge top with slopes 5 and 8 percent, side slopes broken topography.
 Drainage and Permeability: Well drained. Moderately permeable.
 Parent Material: Loess.
 Collected and Described by: Joe Kubota and V. H. McGehee, April 16, 1956.

Horizon and
 Lincoln
 Lab. No.

- A_p
 8961 0 to 2 inches. Dark reddish brown (5YR 2/2 moist) silt loam mixed with dark brown (7.5YR 3/2 moist) silt loam; and very dark brown (10YR 2/2 moist); weak medium and fine granular structure; friable; many roots; clear smooth boundary.
- B₂t
 8962 2 to 5 inches. Dark reddish brown to reddish brown (5YR 3/4 and 4/4 moist) silty clay loam; weak to moderate fine and medium subangular blocky structure; friable; plastic and sticky when wet; many fine roots; clear smooth boundary.
- B₂2t
 8963 5 to 14 inches. Dark reddish brown to reddish brown (5YR 3/4 and 4/4 moist) silty clay loam; weak to moderate medium subangular blocky structure; friable to firm; plastic and sticky when wet; many fine dark colored stains (manganese) occur as coatings on peds; many fine roots; few coarse roots; clear smooth boundary.
- B₂3t
 8964 14 to 28 inches. Dark reddish brown (5YR 3/4 moist) light silty clay loam; moderate medium subangular blocky structure; friable; plastic and sticky when wet; many fine roots and worm casts; clear smooth boundary.
- B₂4t
 8965 28 to 39 inches. Dark reddish brown to dark brown (5YR 3/4 and 7.5YR 4/4 moist) heavy silt loam; moderate medium subangular blocky structure; friable; slightly sticky, slightly plastic; many fine roots; clear smooth boundary.
- B₃1t
 8966 39 to 53 inches. Dark brown (7.5YR 4/4 and 10YR 5/4 dry) silt loam; weak medium subangular blocky peds having dark brown interiors and surfaces coated with bleached silt; slightly plastic, slightly sticky when wet; slightly hard when dry; many fine roots; clear smooth boundary.
- B₃2t
 8967 53 to 65 inches. Dark yellowish brown to yellowish brown (10YR 4/4 and 5/4 dry) silt loam; soil appears massive in place; breaks out into very coarse subangular blocky to prismatic peds; friable; slightly plastic, slightly sticky; few fine roots; clear wavy boundary.
- G₁
 8968 65 to 80 inches. Dark brown (10YR 4/3 moist, 5/4 dry) yellowish brown silt loam; soil massive in place; very friable; slightly plastic, slightly sticky; numerous fine and medium pores; some pores and fine cracks coated by reddish brown (5YR 4/3) clay skin; few fine woody roots; clear wavy boundary.
- G₂
 8969 80 to 92 inches plus. Dark brown (10YR 4/3 moist) yellowish brown (10YR 5/4 dry) silt loam; massive in place; friable; slightly plastic, slightly sticky when wet; few fine and medium pores; bleaching along fine channels; few fine roots; few fine faint strong brown stains.

SOIL TYPE Memphis LOCATION Warren County, Mississippi
silt loam

SOIL NOS. S56Miss75-2 LAB. NOS. 8970-8978

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1a											3A1
		VERY COARSE SAND 2.1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	> 2		
0-3	A1	0.2a	0.3a	0.2a	0.5b	1.6b	88.5	8.7	54.5	35.9	-	si	
3-9	A2	<0.1	<0.1	<0.1	0.1	1.1b	89.8	9.0	55.8	35.2	-	si	
9-13	B21t	<0.1	<0.1	<0.1	<0.1	0.6b	71.2	28.2	42.2	29.6	-	sic1	
13-23	B22t	<0.1	<0.1	<0.1	<0.1	0.6b	70.0	29.4	41.0	29.6	-	sic1	
23-31	B23t	<0.1	<0.1	<0.1	<0.1	0.9b	75.6	23.5	46.2	30.3	-	sil	
31-41	B24t	<0.1	<0.1	<0.1	<0.1	1.2b	78.0	20.8	48.4	30.8	-	sil	
41-51	B3t	<0.1	<0.1	<0.1	<0.1	1.6b	80.9	17.4	51.7	30.8	-	sil	
51-67	C1	<0.1	<0.1	<0.1	<0.1	1.1b	83.2	15.7	52.6	31.7	-	sil	
67-77	C2	<0.1	<0.1	<0.1	0.1	1.3b	84.8	13.8	54.2	32.0	-	sil	
pH		ORGANIC MATTER				Free Iron %Fe ₂ O ₃	MOISTURE TENSIONS						
8C1a	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a	CoCO ₃ equiv- alent %	1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %			
5.7			3.76	0.209	18	0.6				6.7			
4.9			0.46	0.043	11	0.7				3.7			
4.9			0.26	0.040	6	1.7				11.3			
5.0			0.18	0.034		2.0				12.2			
5.1			0.12	0.028		1.9				10.2			
5.2			0.09			1.7				9.3			
5.4			0.09			1.6				8.6			
5.5			0.08			1.7				7.7			
5.6			0.08			1.6				7.2			
5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS 5B1a					BASE SAT. % NH ₄ Ac EXCH.	5C3 Base Sat. % on Sum	5B1a Sum	5A3a Sum	Ca/Mg			
	6N2b Ca	6O2b Mg	6H1a H	6F2a Na	6Q2a K	5C1	Cations me/100g	me/100g	me/100g	8D3			
13.9	8.4	2.2	7.8	<0.1	0.4	79	58	11.0	18.8	3.8			
5.1	0.9	0.4	5.4	0.1	0.3	33	24	1.7	7.1				
15.1	6.7	3.3	8.8	0.1	0.5	70	55	10.6	19.4	2.0			
16.8	8.2	3.6	8.9	0.1	0.5	74	58	12.4	21.3	2.3			
14.5	7.4	3.2	7.0	0.1	0.4	76	61	11.1	18.1	2.3			
13.4	7.2	3.4	6.0	0.1	0.3	82	65	11.0	17.0	2.1			
13.0	7.5	3.4	5.5	0.2	0.3	88	67	11.4	16.9	2.2			
12.0	6.8	3.1	4.6	0.2	0.3	87	69	10.4	15.0	2.2			
11.6	6.6	3.2	4.1	0.3	0.2	89	72	10.3	14.4	2.1			

a. Common irregular black concr. (Mn?)
b. Few smooth and irregular light brown to black concr. (Fe-Mn?)

Soil Type: Memphis silt loam
 Soil Nos.: 856 Miss-75-2
 Location: Warren County, Mississippi, 19 miles northeast of Vicksburg in northwest quarter of southwest quarter, Sec. 17, T17N, R5W, photo AVN-1G-56.
 Vegetation and Use: Hardwood forest with some understory of locust, dogwood, wild cherry, holly, switchcane, ivy and laurel.
 Slope and Land Form: Ridge top with 2 to 5 percent slope; side slopes are broken topography.
 Drainage and Permeability: Well drained. Moderately permeable.
 Parent Material: Loess.
 Collected and Described by: Joe Kubota and V. H. McGhee, April 16, 1956.

Horizon and
 Lincoln
 Lab. No.

- O2 1 to 0 inch. Leaf litter of oak leaves with some gum, elm, dogwood, and locust leaves.
- A1 0 to 3 inches. Dark gray to dark grayish brown (10YR 4/1 and 4/2 moist) silt loam intermixed with material from A2; weak fine and medium granular structure; friable; many fine roots; clear smooth boundary.
- A2 3 to 9 inches. Dark brown to brown (10YR 4/3 and 5/3 moist) silt loam; weak medium and fine granular structure; friable; few worm casts and fine fingers of A1 material from above; numerous fine roots; many medium roots; clear smooth boundary.
- B21t 9 to 13 inches. Dark brown to brown (7.5YR 4/4 and 5/4 moist) silt loam; weak fine subangular to angular blocky structure; firm to friable; plastic and sticky when wet; many fine woody roots and numerous fine fibrous roots; clear smooth boundary.
- B22t 13 to 23 inches. Dark brown (7.5YR 4/4 moist) silt loam; moderate medium and coarse subangular blocky structure; firm to friable; plastic and sticky when wet; few dark colored manganese coatings; numerous fine and medium roots; clear smooth boundary.
- B23t 23 to 31 inches. Dark brown (7.5YR 4/4 moist) heavy silt loam; weak to moderate medium and coarse subangular blocky structure; friable; slightly plastic, slightly sticky when wet; numerous fine roots; clear smooth boundary.
- B24t 31 to 41 inches. Dark brown (7.5YR 4/2 and 4/4 moist) silt loam; weak medium and coarse subangular blocky structure; friable; slightly plastic, slightly sticky when wet; manganese coatings on ped faces; numerous fine roots; clear smooth boundary.
- B3t 41 to 51 inches. Dark brown (7.5YR 4/2 and 4/4 moist) silt loam; soil appears massive in place but has many fine cracks; breaks along these tend to produce some weak, medium to fine subangular peds; friable; slightly plastic, slightly sticky; few manganese coatings on ped faces; many fine roots; clear smooth boundary.
- C1 51 to 67 inches. Dark brown (7.5YR 4/4 moist) silt loam; soil massive in place; friable; slightly plastic, slightly sticky when wet; few to many fine roots; clear smooth boundary.
- C2 67 to 77 inches. Dark brown (10YR 4/3 moist) yellowish brown (10YR 5/4 dry) silt loam; massive in place; friable; few fine roots; this horizon is dry and has not been wet by seasonal rains.

SOIL SURVEY LABORATORY Lincoln, Nebr. July 1959

SOIL TYPE Memphis LOCATION Warren County, Mississippi
silt loam

SOIL NOS. S59M_{ss}-75-1 LAB. NOS. 9921-9928

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		1R1a		3A1						2A2		
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	> 2			
	2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002			
0-7	Ap	0.1a	0.1a	0.1a	0.2a	1.2b	87.9	10.4	60.7	28.5	-	sl
7-10	A2	<0.1	0.1c	0.1c	0.3c	0.8c	79.9	18.8	48.1	32.8	-	sl
10-18	B1	<0.1	<0.1	<0.1	0.1c	0.5c	79.2	20.2	42.6	37.2	-	sl
18-32	B21t	<0.1	<0.1	<0.1	0.1c	0.5c	74.9	24.5	40.6	34.9	-	sl
32-42	B22t	<0.1	<0.1	<0.1	0.1c	0.9c	75.2	23.8	42.1	34.1	-	sl
42-52	B3t	<0.1	<0.1	<0.1	0.1c	0.9c	76.4	22.6	43.7	33.7	-	sl
52-72	C1	<0.1	<0.1	<0.1	<0.1	0.9c	77.9	21.2	43.9	34.9	-	sl
72-84	C2	<0.1	<0.1	<0.1	<0.1	0.7c	81.3	18.0	44.4	37.6	-	sl

pH	ORGANIC MATTER				Free Iron	BULK DENSITY			MOISTURE TENSIONS			
	6A1a		6B1a			4A1a	4A1c	4A1h	4B1	4B3	4B2	
	ORGANIC CARBON	NITRO-GEN	C/N	Fe ₂ O ₃ %		Field State	30-cm	O.D.	Field State	30-cm	15 ATMOS.	
1:5	1:10	%	%	%	g/cc	g/cc	g/cc	%	%	%		
5.9			1.31	0.120	11	1.0	1.41	1.39	1.43	22	27	5.4
5.2			0.34	0.051	7	1.5						7.9
5.1			0.22	0.045		1.4	1.47	1.45	1.50	21	26	8.1
5.1			0.17	0.041		1.9	1.50	1.47	1.57	22	26	10.4
5.3			0.10			1.9	1.56	1.53	1.62	20	24	10.3
5.5			0.09			1.5						9.8
5.6			0.08			1.9						9.5
5.4			0.11			1.9	1.45	1.40	1.47	17	27	8.3

5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS					5B1a BASE SAT. % NH ₄ Ac EXCH.	Base Sat. % on Sum Cations	Sum Ext. Bases	Sum Ext. Cations	Ca/Mg
	6N2b	6O2b	6H1a	6P2a	6Q2a					
	Ca	Mg	H	Na	K					
	milliequivalents per 100g. soil					5C1	5C3	5B1a	5A3a	8D3
9.1	4.7	2.0	5.2	<0.1	0.4	78	58	7.1	12.3	2.4
10.0	4.4	1.9	7.3	<0.1	0.2	65	47	6.5	13.8	2.3
9.3	3.1	2.2	8.5	0.1	0.2	60	40	5.6	14.1	1.4
12.4	4.2	2.9	9.8	0.2	0.3	61	44	7.6	17.4	1.4
12.2	5.7	3.6	9.0	0.2	0.3	80	52	9.8	18.8	1.6
12.7	6.6	4.1	7.3	0.2	0.3	88	60	11.2	18.5	1.6
13.0	6.7	3.8	7.3	0.2	0.3	85	60	11.0	18.3	1.8
11.8	6.2	2.9	6.5	0.2	0.3	81	60	9.6	16.1	2.1

a. Many light and dark brown concr. (Fe?)
 b. Common light and dark brown concr. (Fe?)
 c. Many light and dark brown concr. (Fe?); few black concr. Mn?
 d. Average of 2 clods.

Soil Type: Memphis silt loam

Soil Nos.: S59Miss-75-1

Location: Warren County, Mississippi, on State Highway 27, about 8 miles southeast of Vicksburg. Center of NE 1/4 SE 1/4, Sec. 10, T15N, R4E. Photo AVM-4N-120.

Vegetation and Use: Pecan grove about 25 years old with native grass and weeds.

Slope and Land Form: Gently sloping (4 percent) toward northwest on ridge in steeply sloping loess area.

Drainage and Permeability: Well drained. Permeability is moderate.

Parent Material: Loess.

Collected by: J. S. Allen, January 28, 1959.

Described by: R. C. Carter, January 28, 1959.

Horizon and

Lincoln

Lab. No.

- A_p
9921 0 to 7 inches. Dark brown (10YR 4/3) to yellowish brown (10YR 5/4) silt loam with weak medium to coarse crumb structure; discontinuous layer of dark brown (7.5YR 4/4) silt loam about 1 inch thick at 6-inch depth; very friable; numerous fine grass roots; boundary clear and smooth.
- A₂
9922 7 to 10 inches. Dark yellowish brown (10YR 4/4) to yellowish brown (10YR 5/4) silt loam with weak fine to medium subangular blocky structure; very friable; numerous grass roots and few tree roots; few fine manganese concretions; boundary abrupt and smooth.
- B₁
9923 10 to 18 inches. Dark brown (7.5YR 4/4) silt loam with weak fine to medium subangular blocky structure; friable; few worm and root channels filled with soil from above horizon; numerous grass and fine tree roots; few fine and medium manganese concretions and coatings; boundary clear and smooth.
- B₂t
9924 18 to 32 inches. Dark brown (7.5YR 4/4) silty clay loam with moderate fine and medium subangular blocky structure and many thin clay films on peds; friable to firm; many grass roots and few tree roots; many manganese coatings on ped faces; boundary gradual and irregular.
- B₂t
9925 32 to 42 inches. Dark brown (7.5YR 4/4) heavy silt loam with common fine distinct mottles of pale yellow (5Y 7/3); weak medium subangular blocky structure and thin clay films on peds; friable; many fine grass roots; many manganese coatings; few fine voids; boundary gradual and wavy.
- B₃t
9926 42 to 52 inches. Dark brown (7.5YR 4/4) silt loam with few fine distinct mottles of light gray (5Y 7/2); weak medium subangular blocky structure with few clay skins on peds; friable; few roots; common light gray (5Y 7/2) thin silt coatings on ped faces and in cracks; large manganese coatings and concretions; few fine pores; boundary gradual and wavy.
- C₁
9927 52 to 72 inches. Dark brown (7.5YR 4/4) silt loam; structureless with very few clay skins on vertical faces; friable; few pale yellow (5Y 7/3) thin silt coatings on faces and in cracks; very few tree roots; boundary arbitrary.
- C₂
9928 72 to 84 inches. Dark brown (7.5YR 4/4) silt loam; structureless; friable; few light gray (5Y 7/1) thin silt coatings on faces and in cracks; few fine manganese coatings.

Remarks: Colors are for moist soil.

SOIL SURVEY LABORATORY Lincoln, Nebr. July 1959

SOIL TYPE Memphis LOCATION Warren County, Mississippi
 silt loam

SOIL NOS. S59Miss-75-2 LAB. NOS. 9929-9937

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)									2A2 > ?	TEXTURAL CLASS
		1B1a		PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)					3A1			
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002		
0-4	Ap	0.1a	0.1a	<0.1	<0.1	0.8a	89.3	9.7	58.7	31.4	-	s1
4-9	A2	<0.1	<0.1	<0.1	<0.1	0.4b	79.9	19.7	43.2	37.1	-	s11
9-13	B21t	<0.1	<0.1	<0.1	<0.1	0.5b	73.0	26.5	37.9	35.6	-	s11/s1c1
13-21	B22t	<0.1	<0.1	<0.1	<0.1	0.6b	70.7	28.7	38.5	32.8	-	s1c1
21-30	B23t	<0.1	<0.1	0.1b	0.2b	0.7b	72.8	26.2	40.5	33.1	-	s11
30-39	B24t	<0.1	<0.1	<0.1	<0.1	1.0b	75.5	23.5	42.2	34.3	-	s11
39-49	B3t	<0.1	<0.1	<0.1	<0.1	0.8b	81.0	21.2	43.8	35.0	-	s11
49-61	C1	<0.1	<0.1	<0.1	<0.1	0.6b	81.2	18.2	43.3	38.5	-	s11
61-76	C2	<0.1	<0.1	<0.1	<0.1	0.5b	80.1	19.4	41.5	39.1	-	s11

8C1a	pH	ORGANIC MATTER			Free Iron Fe ₂ O ₃ %	BULK DENSITY			MOISTURE TENSIONS			
		6A1a	6B1a	C/N		4A1a	4A1c	4A1h	4B1	4B3	4B2 15 ATMOS.	
		ORGANIC CARBON %	NITROGEN %			Field State g/cc	30-cm g/cc	O.D. g/cc	Field State %	30-cm %	%	
1:1	1:5	1:10			6C1a							
6.0			1.00	0.092	11	0.9					4.5	
5.8			0.33	0.042	8	1.6	1.44	1.41	1.46	20	26	8.2
5.7			0.24	0.036		2.1						11.1
5.4			0.14	0.029		2.3	1.53	1.48	1.59	20	26	12.1
5.4			0.11	0.025		2.0						10.8
5.2			0.10			1.9	1.50	1.44	1.55	21	28	10.1
5.5			0.08			1.9						9.4
5.3			0.08			1.9						8.5
5.2			0.08			2.0	1.50	1.43	1.54	19	29	9.2

5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS					5B1a BASE SAT. % NH ₄ Ac EXCH.	Base Sat. % on Sum Cations	Sum Ext. Bases	Sum Ext. Cations	Ca/Mg
	6N2b	6O2b	6H1a	6P2a	6Q2a					
	Ca	Mg	H	Na	K					
	milliequivalents per 100g. soil					5C1	5C3	5B1a	5A3a	8D3
6.3	3.4	1.1	4.4	<0.1	0.3	76	52	4.8	9.2	3.1
8.5	4.4	1.8	5.7	0.1	0.2	76	53	6.5	12.2	2.4
12.0	5.9	3.6	7.3	0.2	0.3	83	58	10.0	17.3	1.6
13.8	4.2	3.8	10.6	0.2	0.3	62	44	8.5	19.1	1.1
13.6	3.0	3.8	11.4	0.2	0.3	54	39	7.3	18.7	0.8
13.3	2.8	3.8	10.6	0.2	0.4	54	40	7.2	17.8	0.7
12.9	3.0	3.6	9.3	0.2	0.3	55	43	7.1	16.4	0.8
12.3	3.3	3.4	8.1	0.2	0.3	58	47	7.2	15.3	1.0
12.6	4.0	3.7	7.7	0.2	0.3	65	52	8.2	15.9	1.1

a. Few light and dark brown coner. (Fe?); trace black coner. (Mn?)
 b. Many light and dark brown coner. (Fe?); few black coner. (Mn?)

Soil Type: Memphis silt loam

Soil Nos.: 85Miss-75-2

Location: Warren County, Mississippi, on State Highway 27 about 9 miles southeast of Vicksburg. Center of W 1/2, NE 1/4 SE 1/4, Sec. 14, T15N, R4E. Photo AVN-4N-164.

Vegetation and Use: Bermudagrass and crimson clover pasture for about 6 years.

Slope and Land Form: Gently sloping (3 percent) toward northeast. On ridge in steeply sloping loess area.

Drainage and Permeability: Well drained. Permeability is moderate.

Parent Material: Loess.

Collected by: J. S. Allen, January 28, 1959.

Described by: R. C. Carter, January 28, 1959.

Horizon and

Lincoln

Lab. No.

Ap 9929	0 to 4 inches. Mixed light yellowish brown (10YR 6/4) and light olive gray (5Y 6/2) silt loam with weak medium and coarse crumb structure; very friable; numerous fine grass roots; boundary abrupt and smooth.
A2 9930	4 to 9 inches. Yellowish brown (10YR 5/4) silt loam with weak fine to coarse crumb structure; friable; numerous grass roots; has about 1-inch layer of A2 included in this horizon; boundary abrupt and smooth.
B21t 9931	9 to 13 inches. Dark brown (7.5YR 4/4) to strong brown (7.5YR 5/6) heavy silt loam with weak fine and medium subangular blocky structure; few clay films on peds; friable; many grass roots; few fine manganese coatings on ped faces; boundary clear and smooth.
B22t 9932	13 to 21 inches. Dark brown (7.5YR 4/4) silty clay loam with moderate medium subangular blocky structure; and many thin clay films on peds; friable to firm; many grass roots; few fine manganese coatings on ped faces; boundary arbitrary.
B23t 9933	21 to 30 inches. Dark brown (7.5YR 4/4) silty clay loam with moderate medium subangular blocky structure and many thin clay films on ped faces; friable to firm; many grass roots; many manganese coatings on ped faces; boundary clear and wavy.
B24t 9934	30 to 39 inches. Dark brown (7.5YR 4/4) silt loam with few fine distinct mottles of light olive gray (5Y 6/2); weak medium to coarse subangular blocky structure with few thin clay films on ped faces; friable; many grass roots; few light olive gray (5Y 6/2) silt coatings on ped faces and in cracks; many fine manganese concretions and coatings on ped faces; few fine pores; arbitrary boundary.
B3t 9935	39 to 49 inches. Dark brown (7.5YR 4/4) silt loam with few to common fine distinct mottles of light olive gray (5Y 6/2); weak medium to coarse subangular blocky structure with few thin clay films on ped faces; friable; many grass roots; common light olive gray (5Y 6/2) silt coatings on ped faces and in cracks; many manganese coatings on ped faces; few fine pores; boundary clear and smooth.
C1 9936	49 to 61 inches. Dark brown (7.5YR 4/4) silt loam; structureless; very few clay skins on faces; friable; very few grass roots; few light olive gray (5Y 6/2) silt coatings on faces and in cracks; few fine manganese concretions; boundary arbitrary.
C2 9937	61 to 76 inches. Dark brown (7.5YR 4/4) silt loam; structureless; slight amount of clay movement in cracks; friable; very few grass roots; few light olive gray (5Y 6/2) silt coatings on faces and in cracks; few manganese coatings on faces.

Remarks: Colors are for moist soil.

Soil Type: Myatt silt loam

Soil No.: S63Miss-37-2

Location: 3 miles southeast of Highway 11 on Little Black Creek; 75 feet west of abandoned county road; 1/4 mile southwest of bridge on interstate Highway 59 over Little Black Creek; SW 1/4, NE 1/4, Section 34, Township 2N, Range 14 west, Lamar County, Mississippi, aerial photo: CLQ-6V-174.

Vegetation and Land Use: Water oak, pin oak, sweet gum, understory of hardwood seedlings and shrubs; few sprigs of watergrass.

Slope and Land Form: 0 to 2 percent

Horizon and

Beltsville

Lab. No.

- A1
63286 0 to 6 inches. Dark gray (10YR 4/1) silt loam; weak medium granular structure; friable; many fine roots; few worm casts from the A2 horizon; strongly acid; abrupt wavy boundary.
- A2g
63287 6 to 12 inches. Gray (10YR 5/1) silt loam with few fine distinct mottles of light yellowish brown (2.5Y 6/4); weak fine subangular blocky structure; friable; few strong brown (7.5YR 5/6) root stains; few fine light gray (10YR 7/1) streaks of fine sand; few fine roots; few fine voids; few worm casts from the A1 horizon; the peds are slightly brittle; strongly acid; clear wavy boundary.
- B1g
63288 12 to 18 inches. Gray to light gray (10YR 6/1) loam with few medium distinct mottles of yellowish brown (10YR 5/6); weak medium subangular blocky structure; friable; few fine light gray (10YR 7/1) streaks of fine sand and a small percentage of silt; few fine roots; the peds are slightly brittle; strongly acid; clear wavy boundary.
- B21g
63289 18 to 29 inches. Gray to light gray (10YR 6/1) loam to silt loam with common fine and medium distinct mottles of yellowish brown (10YR 5/8) and light yellowish brown (2.5Y 6/4); moderate medium angular blocky structure; friable; few fine roots; few coarse quartz grains; few small voids; strongly acid; gradual wavy boundary.
- B22tg
63290 29 to 42 inches. Gray to light gray (10YR 6/1) clay loam with common medium distinct yellowish brown (10YR 5/6) strong brown (7.5YR 5/6), and light yellowish brown (2.5Y 6/4) mottles; moderate medium angular and subangular blocky structure; coarse prismatic peds in place; friable to firm; few reddish brown (5YR 4/4) root stains; few fine roots; fine voids; some clay movement; strongly acid; clear wavy boundary.
- B23tg
63291 42 to 60 inches. Gray to light gray (10YR 6/1) silty clay loam with common medium and coarse distinct mottles of pale yellow (2.5Y 7/4), and strong brown (7.5YR 5/8); strong medium angular blocky structure; firm; clay or silt coatings on ped faces; some clay movement or pressure faces; few fine roots; few small voids; strongly acid.

Note: The location is on first terrace subject to overflow.

Soil type: Myatt silt loam

Soil No.: S63Miss-37-4

Location: 1/4 mile SW of bridge over Black Creek on Highway 589, SE 1/4, NW 1/4, Section 12, Township # N, Range 15W, Lamar County, Mississippi, aerial photo: GLQ-7V-18.

Vegetation and Land Use: Water oak, pin oak, white oak and sweet gum. Understory is hardwood seedlings and shrubs. Slope and Land Form: 0 to 2 percent

Horizon and
Beltsville
Lab. No.

- A1
Not sampled 0 to 1 1/2 inches. Very dark gray (10YR 3/1) silt loam; weak thin platy breaking into weak fine granular structure; friable; many worm casts from the A2 horizon; many fine and medium roots; strongly acid; clear smooth boundary.
- A2
63292 1 1/2 to 5 inches. Mottled gray (10YR 5/1), light brownish gray (10YR 6/2), strong brown (7.5YR 5/8), and white (2.5Y 8/2) silt loam; weak fine subangular blocky structure with some pedes showing a tendency toward weak thin platy structure; friable; few fine dark brown (7.5YR 4/4) root stains; few (5 to 15mm) manganese concretions; many fine pieces of charcoal; many fine and medium roots; much mixing by worm action; strongly acid; clear wavy boundary.
- A and B
63293 5 to 12 inches. Gray (10YR 5/1) silt loam with common medium faint and distinct mottles of yellowish brown (10YR 5/8) and light yellowish brown (2.5Y 6/4); weak medium subangular blocky structure; friable; few fine dark brown to brown (7.5YR 4/4) root stains; few (5 to 15mm) manganese concretions; few pieces of charcoal; few small voids containing silt flow; few fine roots; strongly acid; clear wavy boundary.
- B1g
63294 12 to 17 inches. Gray to light gray (10YR 6/1) silt loam with few medium distinct mottles of yellowish brown (10YR 5/8) and light yellowish brown (2.5Y 6/4); weak medium subangular blocky structure; friable; common (5 to 15mm) manganese concretions; few silt coatings on ped faces; few fine roots; strongly acid; clear wavy boundary.
- B21
63295 17 to 23 inches. Gray to light gray (10YR 6/1) heavy silt loam or light silty clay loam with few medium distinct mottles of yellowish brown (10YR 5/8) and olive yellow (2.5Y 6/6); weak fine prismatic breaking into weak fine angular and subangular blocky structure; friable; more and thicker silt coatings on ped faces than in the B1g horizon; silt streaks in horizon in places; few fine pieces of charcoal; few fine roots; strongly acid; clear wavy boundary.
- B22g
63296 23 to 35 inches. Gray to light gray (10YR 6/1) silty clay loam with common medium distinct mottles of yellowish brown (10YR 5/8) and olive yellow (2.5Y 6/6); moderate medium angular and subangular blocky structure with some prismatic structure in place; friable; few silt coatings on ped faces; few fine roots; (texture lighter than the B23tg and B24tg horizons) strongly acid; gradual smooth boundary.
- B23tg
63297 35 to 51 inches. Light gray (2.5Y 7/2) silty clay loam with many medium and coarse, faint and distinct mottles of pale yellow (2.5Y 7/4) and strong brown (7.5YR 5/6); moderate medium subangular blocky structure; firm; a few silt and clay coatings on ped faces; few fine roots (more than in B24tg horizon); the texture of this horizon is near a silty clay; strongly acid; gradual wavy boundary.
- B24tg
63298 51 to 59+ inches. Light gray (2.5Y 7/2) silty clay loam with common medium and coarse, faint and distinct mottles of pale yellow (2.5Y 7/4) and strong brown (7.5YR 5/6); moderate medium angular blocky structure with a few fine prismatic structure in place; a few silt and clay coatings on ped faces; few fine strong brown (7.5YR 5/6) root stains; few fine roots; the texture of this horizon is near a silty clay. Strongly acid.

Note: This site is on a low lying area of stream terrace.

SOIL SURVEY LABORATORY Lincoln, Nebr. March 1959

SOIL TYPE Ora LOCATION Covington County, Mississippi
fine sandy loam

SOIL NOS. 856M1a16-1 LAB. NOS. 8979-8986

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1a					3A1						2A2
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	> 2		
0-3	A1	0.6	3.8	16.6	24.4	2.4	46.6	5.6	27.4	27.8	-	fsl	
3-5	A2	0.1	3.5	16.7	26.3	2.5	45.5	5.4	28.1	26.9	-	fsl	
5-10	A3	0.2	3.6	17.6	25.8	2.2	44.7	5.9	27.8	25.5	-	fsl	
10-13	B1	0.1	2.6a	13.8a	22.2a	2.0b	47.4	11.9	25.5	29.5	-	1	
13-24	B2t	0.1	3.2a	13.9a	21.0a	1.8b	37.0	23.0	20.5	23.5	-	1	
24-32	B31t	0.1	4.1a	21.2a	34.0a	2.9b	27.9	9.8	22.4	17.3	-	fsl	
32-41	B32tx	0.3	4.6a	24.4a	39.2a	3.2b	20.8	7.5	21.4	12.6	-	fsl	
41-56	B33tx	0.1	4.3	26.2	28.4	2.7	19.8	18.5	19.3	11.7	-	sl	
8C1a		pH		ORGANIC MATTER			Free Iron			MOISTURE TENSIONS			
	1:5	1:10	6A1a	6B1a		Fe ₂ O ₃			4B1a	4B1a	4B2		
			ORGANIC CARBON	NITRO-GEN	C/N			CaCO ₃ equiv- alent	1/10 ATMOS.	1/3 ATMOS.	15 ATMOS.		
			%	%		6C1a		%	%	%	%		
4.9			2.92	0.107	27	0.4			35.0	19.9	3.8		
5.2			0.82	0.033	25	0.5			24.6	16.9	2.5		
5.2			0.22	0.018		0.5			19.4	15.5	2.0		
5.1			0.17	0.026		1.0			22.1	17.9	4.1		
5.0			0.18	0.031		2.3			28.8	20.4	8.8		
5.0			0.08			1.0			17.6	12.7	3.6		
5.0			0.04			0.7			15.0	10.3	2.9		
5.0			0.06			1.8			18.7	13.4	6.6		
5A1a		EXTRACTABLE CATIONS					BASE SAT. %	5C3	5B1a	5A3a	Ca/Mg		
CATION EXCHANGE CAPACITY		6N2b	6O2b	6H1a	6P2a	6Q2a	Base Sat. %	Sum	Sum	Sum			
NH ₄ Ac		Co	Mg	H	Na	K	NH ₄ Ac EXCH.	on Sum	Bases	Cations.			
		milliequivalents per 100g. soil					5C1	Cations	me/100g	me/100g			
9.2	1.4	0.4	11.9	0.1	0.2	23	15	2.1	14.0				
3.8	0.6	0.4	3.6	0.1	0.1	29	23	1.1	4.7				
2.0	0.2	0.1	2.2	0.1	0.1	20	15	0.4	2.6				
3.4	0.3	0.8	3.2	0.1	0.2	38	29	1.3	4.5				
8.3	0.3	2.2	6.4	0.1	0.3	35	31	2.9	9.3				
3.0	0.1	0.4	3.2	0.1	0.1	17	14	0.5	3.7				
2.3	0.1	0.3	2.3	0.1	0.1	17	15	0.4	2.7				
4.1	0.8	0.4	4.1	0.1	0.2	34	25	1.4	5.5				

- a. Many irregular dark brown to black concr. (Fe-Mn?)
- b. Few irregular dark brown to black concr. (Fe-Mn?)

Soil Type: Ora fine sandy loam
 Soil Nos.: 856Miss16-1
 Location: Covington County, Mississippi, Sec. 36, T9N, R15W, Ref. airphoto CJO-1G-46.
 Vegetation and Use: Mixed pine and hardwoods with an understory of dogwood, persimmon, sassa, blackgum, huckleberry and maple saplings.
 Slope and Land Form: Gently sloping ridge with northwest exposure (3 percent).
 Drainage and Permeability: Moderately well to well drained. Permeability is moderate in the horizons above the fragipan and slow in that layer.
 Parent Material: Coastal plain material.
 Collected and Described by: Joe Ribota, M. E. Shaffer, and R. H. Havens, April 11, 1956.

Horizon and
 Lincoln
 Lab. Nos.

01-02 Thin litter of leaves, principally oaks and pine needles.

A1
8979 0 to 3 inches. Very dark grayish brown (10YR 3/2 moist) fine sandy loam; medium to coarse and fine crumb structure; very friable; many coarse roots and many fibrous roots; smooth abrupt boundary.

A2
8980 3 to 5 inches. Yellowish brown to light olive brown (10YR 5/4 and 2.5Y 5/4 moist) fine sandy loam; medium and fine platy structure with some weak fine subangular blocky peds; friable; root bleaching along fine pores; clear smooth boundary.

A3
8981 5 to 10 inches. Brown to yellowish brown (10YR 5/3 and 5/4 moist) fine sandy loam; weak medium to fine granular structure; friable; few fine roots; many worm casts and pores filled with A1 material; clear smooth boundary.

B1
8982 10 to 13 inches. Brown (10YR 4/3 moist) to yellowish brown (10YR 5/4 moist) or strong brown (7.5YR 5/6 moist) very fine sandy clay loam; weak medium to fine subangular blocky structure; friable; clear smooth boundary.

B2t
8983 13 to 24 inches. Yellowish red (5YR 4/8 moist) very fine sandy clay loam; weak to moderate medium to fine subangular blocky structure; friable; plastic and sticky when wet; clay skins prominent and continuous in pores but faint to patchy around peds; clear smooth boundary.

B31t
8984 24 to 32 inches. Yellowish red to strong brown (5YR 4/8 and 7.5YR 5/6 wet) sandy clay loam; weak to moderate medium and fine subangular blocky structure; slightly sticky, slightly plastic; clay skins continuous along root channels; clear smooth boundary.

B32tx
8985 32 to 41 inches. Yellowish red to strong brown (5YR 5/6 and 7.5YR 5/6 wet) sandy loam; soil is very firm and massive in place but is friable when removed; breaks to moderate medium and coarse platy and subangular blocky peds; few roots occur mainly in the gray streaks along ped faces; few coarse and numerous roots; abrupt wavy boundary.

B33tx
8986 41 to 56 inches. Strong brown (7.5YR 5/6 wet) and very pale brown (10YR 7/4 wet) sandy loam; coarse prismatic peds; in place soil is very firm and appears massive but when displaced is friable; peds are vesicular; few roots along gray streaks.

SOIL TYPE Ors LOCATION Covington County, Mississippi
 fine sandy loam

SOIL NOS. S56Mss16-2 LAB. NOS. 8987-8996

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1s					3A1						
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY					
		2.1	1.0-5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	2A2 > 2		
0-3	A1	0.4	4.6	11.2	25.2	6.2	46.8	5.6	40.4	26.7	-	fsl	
3-7	A2	0.2	3.4	9.7	23.5	6.6	50.0	6.6	41.3	28.7	-	sil/fsl	
7-10	A3	0.1	3.4	9.6	22.2	5.4	50.2	9.1	40.2	28.2	-	sil/1	
10-14	B1	0.1	2.7a	7.4a	17.5a	4.3b	47.2	20.8	33.0	28.4	-	1	
14-22	B2lt	0.2	3.1a	8.5a	20.8a	5.2b	39.6	22.6	33.0	23.8	-	1	
22-26	see	0.4	4.8a	12.6a	30.9a	7.4b	31.3	12.6	38.6	18.0	-	fsl	
26-32	Descr.	0.6	4.9a	14.2a	36.6a	8.9b	26.3	8.5	41.7	14.0	-	fsl	
32-40		0.4	4.4	11.3	33.5	7.0	19.2	24.2	33.1	10.6	-	scl	
40-54		0.2	4.5	12.1	33.3	6.5	15.6	27.8	30.4	8.8	-	scl	
54-72		0.3	4.5	12.3	30.0	5.9	9.8	27.2	30.2	5.9	-	scl	
8C1a		pH			ORGANIC MATTER			Free Iron			MOISTURE TENSIONS		
		1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITRO-GEN %	C/N	%Fe ₂ O ₃	CaCO ₃ equiv-alent %	1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %		
							6C1a %						
5.2				2.03	0.083	24	0.5					3.5	
5.2				0.78	0.034	23	0.5					2.8	
5.2				0.27	0.027	10	0.8					3.3	
5.0				0.23	0.031		2.0					7.6	
5.0				0.10	0.026		2.3					8.3	
5.0				0.10	0.020		1.5					4.9	
5.0				0.07			0.8					3.2	
5.1				0.07			2.6					8.8	
5.0				0.04			2.8					9.8	
4.9				0.02			2.5					10.1	
5A1a		EXTRACTABLE CATIONS					5B1a	BASE SAT. %	5C3	5B1a	5A3a	Ca/Mg	
CATION EXCHANGE CAPACITY		6N2b	6O2b	6H1a	6P2a	6Q2a	NH ₄ Ac EXCH.	Base Sat. % on Sum	Base Sum	Sum	Sum		
NH ₄ Ac		Ca	Mg	H	Na	K			me/100g	me/100g			
milliequivalents per 100g. soil													
7.7	<0.1	0.6	8.2	<0.1	0.3	12		10	0.9	9.1			
3.8	0.1	0.8	3.6	<0.1	0.2	29		23	1.1	4.7			
3.0	0.5	0.8	4.0	<0.1	0.2	50		27	1.5	5.5			
6.6	0.5	1.6	6.8	<0.1	0.2	35		25	2.3	9.1			
7.2	0.1	1.9	7.2	0.1	0.2	32		24	2.3	9.5			
4.2	0.1	1.2	4.8	0.1	0.2	38		25	1.6	6.4			
2.4	0.1	0.6	2.8	<0.1	0.1	33		22	0.8	3.6			
5.6	<0.1	1.2	6.0	<0.1	0.1	23		18	1.3	7.3			
6.4	0.1	1.0	7.2	<0.1	0.1	19		14	1.2	8.4			
5.8	<0.1	0.9	6.0	<0.1	0.1	17		14	1.0	7.0			

- a. Many irregular dark brown to black concr. (Fe-Mn?)
- b. Few irregular dark brown to black concr. (Fe-Mn?)

Soil Type: Ora fine sandy loam

Soil No.: 956Miss16-2

Location: Covington County, Mississippi, 3 miles east of Collins, Mississippi on Highway 84, and about 200 yards north of road in mixed pine-hardwood woods (T8N, R15W, Sec. 16, Ref. airphoto GJO-1G-158).

Vegetation and Use: Mixed hardwood and pine with an understory of dogwood, persimmon, sumac, blackgum and maple and huckleberry.

Slope and Land Form: Gently sloping (3 percent) with a northwest exposure.

Drainage and Permeability: Moderately well to well drained. Permeability is moderate in the horizons above the fragipan and slow in that layer.

Parent Material: Coastal plain material.

Collected and Described by: Joe Kubota, M. E. Shaffer, and Y. H. Havens, April 11, 1956.

Horizon and

Lincoln

Lab. No.

- A1
8987 0 to 3 inches. Very dark grayish brown (10YR 3/2 moist) fine sandy loam; medium to fine crumb structure; friable; many roots; clear smooth boundary.
- A2
8988 3 to 7 inches. This horizon is a mixture of soil material from horizons above and below; fine sandy loam; weak medium to fine subangular blocky structure; very friable; many fine roots; clear smooth boundary.
- A3
8989 7 to 10 inches. Yellowish brown (10YR 5/4 moist) very fine sandy loam or loam; weak medium to fine subangular blocky structure; very friable; many fine fingers of A1 material and B material; few very fine quartz pebbles; clear wavy boundary.
- B1
8990 10 to 14 inches. Strong brown (7.5YR 5/6 moist) loam; weak fine and medium subangular blocky structure; friable; slightly plastic, slightly sticky when wet; few fine roots; clear smooth boundary.
- B2t
8991 14 to 22 inches. Yellowish red (5YR 4/8 moist) loam; weak to moderate medium to fine subangular blocky structure; friable; slightly plastic, slightly sticky; few fine and medium roots; clear smooth boundary.
- IIB2t
8992 22 to 26 inches. Strong brown (7.5YR 5/6 moist) loam or light sandy clay loam; weak medium and fine subangular blocky structure; friable; slightly plastic, slightly sticky; few fine yellowish brown mottles; fine roots; abrupt wavy boundary.
- IIB2jtx
and A'2x
8993 26 to 32 inches. Mottled strong brown (7.5YR 5/6 moist) pale brown (10YR 6/3 moist) and yellowish red (5YR 4/8 moist) sandy loam; weak to moderate very coarse platy structure which breaks to medium and fine plates and medium subangular blocky peds; friable; few fine roots; numerous fine pores; clear wavy boundary.
- IIB24tx
8994 32 to 40 inches. Mottled strong brown (7.5YR 5/6 moist) and yellowish red (5YR 4/8 moist) sandy clay loam; weak to moderate medium and coarse subangular blocky structure that breaks to coarse and medium plates and some small prismatic peds; friable; slightly sticky, slightly plastic; few fine roots; numerous fine pores; vesicular; clear smooth boundary.
- IIB25tx
8995 40 to 54 inches. Mottled red (2.5YR 4/8 moist) yellowish brown (10YR 5/8 moist) and yellowish red (5YR 4/8 moist) sandy clay loam; weak coarse prismatic peds that break into moderate fine and coarse subangular blocky peds; soil appears massive in place; friable when removed; roots follow ped faces; clear smooth boundary.
- IIB3t
8996 54 to 72 inches. Red (2.5YR 4/8 moist) sandy clay loam; soil mass tends to break out into very coarse subangular blocky peds; firm and massive in place; friable when removed; there are a few very large (1 inch) pores or cracks and a number of very fine pores that are filled with reddish brown (5YR 4/4) clay.
- 72 to 84 inches plus. By auger. Yellowish red, friable sandy clay loam with yellow, brown, and red mottles in lower part.

SOIL Phbea silt loam SOIL Nos. S6Miss-18-2 LOCATION Forrest County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 63299-63305

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm)										3A1		Coarse fragments				
		Total										Sand		Silt		2A2 ≥ 2	2-19	19-76
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.8-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)	Pct.	Pct. of ← < 75mm →			
Pct. of < 2 mm																		
0-3	A1	62.4	12.4	0.7	2.4	4.2	8.0	9.9		36.5	40.1			tr.				
3-8	A2	68.0	9.6	0.8	2.2	3.6	6.7	9.1		58.8	22.0			tr.				
8-16	B2	64.9	13.2	0.7	2.0	3.1	6.4	9.7		40.1	38.1			tr.				
16-21	A'2gk	67.2	11.8	0.5	1.7	3.2	6.3	9.3		40.9	39.1			tr.				
21-33	B'2tgk	56.2	20.5	0.6	2.3	3.1	6.7	10.6		33.9	36.7			tr.				
33-46	C1gk	53.4	20.3	0.7	2.0	3.4	7.1	13.1		31.2	39.3			tr.				
46-60+	C2x	52.4	20.2	0.1	1.9	3.8	8.0	13.6		30.1	40.2			tr.				

Depth (in.)	6A1a	6B2a	C/N	Carbonate as CaCO ₃	6C1a	Bulk density			Water content			pH	
	Organic carbon	Nitrogen			Ext. Iron as Fe	4A1e 1/3 Bar	4A1h Oven- dry		4B1c 1/3 Bar	4B2 15 Bar		6C1c 1:1 IN KCl	6C1a (1:1) H ₂ O
	Pct.	Pct.		Pct.	Pct.	g/cc	g/cc	g/cc	Pct.	Pct.	Pct.		
0-3	2.07	0.100	21		0.6		1.35	1.38		25.7	6.2		
3-8	0.44	0.040	11		0.7		1.60	1.61		18.1	4.1		4.8
8-16	0.15				1.1		1.56	1.58		18.2	5.5		4.7
16-21	0.03				1.0		1.74	1.74		16.7	5.0		4.8
21-33	0.10				1.4		1.60	1.66		20.7	8.9		4.7
33-46	0.02				1.3		1.74	1.78		16.6	8.9		4.5
46-60+	0.05				1.1		1.70	1.77		18.2	8.6		4.6

Depth (in.)	Extractable bases				5B1a	6B2a	CBC		6C1d	Base saturation	
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	Ext. Acid- ity	5A3a Sum Cat- ions		Ext. AL	5C3 Sum Cat- ions Pct.	Pct.
	mg/100 g										
0-3	0.9	0.5	0.1	0.1		8.1	9.7		1.5		16
3-8	0.1	0.3	0.1	tr.		5.0	5.5		2.0		9
8-16	tr.	0.1	0.1	tr.		5.3	5.5		3.0		4
16-21	-	0.2	0.1	tr.		4.6	4.9		2.8		6
21-33	-	0.4	0.1	0.1		8.5	9.1		5.9		7
33-46	-	0.4	0.1	0.1		7.8	8.4		5.4		7
46-60+	0.1	0.5	0.2	0.1		7.5	8.4		5.6		11

Depth (in.)	Clay Mineralogy 7A1b-d						7A3	
	Mt. a	Chl.	Vm. X-ray	Mi.	Int.	Qtz.	Kl. %	Gibb- site%
	← DZ →							
	- b/	-	xx	-	-	-	23	-
	-	-	xx	-	-	-	29	-
	-	-	xx	-	-	-	33	-
	x	-	xxx	-	-	-	37	-

a. Mont. = Montmorillonite, Int. = Interstratified layer silicates, Chl. = Chlorite, Vm. = Vermiculite, Mi. = Mica, Kl. = Kaolinite, Qtz. = Quartz
b. Relative Amounts: blank = not determined, dash = not detected, t = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant

Soil Type: Pheba silt loam

Soil No.: S63Miss-18-2

Location: NW of Gandy's Grocery, Glendale on Eatonville Road 2.7 miles; 0.5 mile west in oldfield. T 5N, Range 13W, Section 20, Forrest County, Mississippi; aerial photo: C2K-1H-31.

Vegetation and Land Use: Cutover land; few slash pine seedlings.

Slope and Land Form: 0 to 2 percent

Horizon and
Beltsville
Lab. No.

- A1 63299 0 to 3 inches. Dark gray (10YR 4/1) silt loam; weak medium granular structure; friable; many fine roots; few small pieces of charcoal; some earthworm casts; strongly acid; clear wavy boundary.
- A2 63300 3 to 8 inches. Pale brown (10YR 6/3) loam or silt loam; weak medium platy and fine subangular blocky structure; friable; many fine worm casts from adjoining horizons (10YR 5/3 crushed); few fine roots; less clay than B2; very strongly acid; clear wavy boundary.
- B2 63301 8 to 16 inches. Light yellowish brown (2.5Y 6/4) silt loam with common fine faint mottles of yellowish brown (10YR 5/8) and few fine faint light brownish gray (10YR 6/2); weak medium subangular blocky structure; friable; many small voids; few worm channels; common fine and medium iron and manganese concretions; few fine roots; slightly more clay than A2; very strongly acid; clear wavy boundary.
- A'2gx 63302 16 to 21 inches. Pale brown (10YR 6/3) silt loam with few fine faint mottles of gray to light gray (10YR 6/1); weak thin platy structure; friable; brittle; porous; few fine and medium iron and manganese concretions; many voids; the horizon is discontinuous; very strongly acid; abrupt irregular boundary.
- B'2tgx 63303 21 to 33 inches. Yellowish brown (10YR 5/8) loam to silt with common medium faint mottles of light yellowish brown (2.5Y 6/4); some moderate coarse angular structure; massive in places; firm; few clay films; horizon contains gray horizontal bands 1/2 to 1 inch thick; clay content increases in bands; few small iron and manganese concretions; root stains are brown (7.5YR 4/4); very strongly acid; clear wavy boundary.
- C1gx 63304 33 to 46 inches. Olive yellow (2.5Y 6/6) heavy loam with many coarse distinct mottles of gray to light gray (10YR 6/1), strong brown (7.5YR 5/8) and few medium distinct red (2.5YR 4/8); massive; firm; high bulk density; occasional pressure face; vertical gray tonguing of sandy clay loam material 1 to 1 1/2 inches wide; pockets of gray material probably eluviated from above horizons; edges of pockets contain higher content of clay than center; very strongly acid; gradual wavy boundary.
- C2x 63305 46 to 60 inches. This horizon consists of coarse polygonal structure with pockets of gray material separating them; interior of polygons are coarse mottled yellowish brown (10YR 5/8), and strong brown (7.5YR 5/8) with mottles of gray (10YR 6/1); silt loam; firm; the clay pockets are gray to light gray (10YR 6/1) silty clay loam on the outer edge; the centers are silt loam; few fine manganese concretions are present; few fine roots; massive; very strongly acid.

Note: This site is some 20 feet above flood stage on an old Pleistocene terrace upland.

Soil Type: Pheba silt loam

Soil No.: S63Miss-18-3

Location: 0.8 miles east of Junction of Highway 11 and 42, Petal, Miss.; 8.4 miles NE on Old Richton Road to Po Boy Feed Store; NW 0.2 miles on blacktop road, SW 250 feet in pasture. Section 21, T 5N, R 12 W. Forrest County, Mississippi, aerial photo: CZE-7H-16.

Vegetation and Land Use: Carpetgrass, bluestem, and longleaf pine seedlings.

Slope and Land Form: 0 to 2 percent

Horizon and

Beltsville

Lab. No.

- A1
63306 0 to 4 inches. Dark gray (10YR 4/1) silt loam; weak medium granular structure; friable; many worm casts from the A2 horizon; few fine pieces of charcoal; common fine roots; very strongly acid; clear wavy boundary.
- A2
63307 4 to 9 inches. Light brownish gray (2.5Y 6/2) silt loam with common fine distinct mottles of yellowish brown (10YR 5/6), and few fine faint mottles of gray to light gray (10YR 6/1); weak medium subangular to weak fine granular structure; friable; few gray (10YR 5/1) worm casts from the A1 horizon; few fine roots; few fine brown concretions; very strongly acid; clear wavy boundary.
- B2
63308 9 to 18 inches. Light yellowish brown (2.5Y 6/4) silt loam with common fine faint mottles of yellowish brown (10YR 5/8), pale brown (10YR 6/3) and few fine faint light brownish gray (10YR 6/2); weak medium subangular blocky structure; friable; few fine voids; few fine brown concretions; few fine roots; very strongly acid; clear wavy boundary.
- A'2gx
63309 18 to 24 inches. Light gray (2.5Y 7/2) silt loam with many fine and medium distinct mottles of yellowish brown (10YR 5/6), strong brown (7.5YR 5/8), pale brown (10YR 6/3), and light gray (10YR 6/1); massive; firm; horizon well defined but discontinuous; brittle; common fine voids; very strongly acid; abrupt irregular boundary.
- B'2tqx
63310 24 to 39 inches. Yellowish brown (10YR 5/8) loam with common medium and coarse distinct mottles of brown to dark brown (7.5YR 4/4) and few fine prominent mottles of red (2.5YR 5/8); moderate coarse angular blocky structure, very firm, brittle; 40 percent of horizon contains horizontal gray (N 6/) streaks, 1/2 to 2 inches in width, these streaks are heavier in texture than horizon as a whole; few coarse (20mm) soft brown concretions, common manganese stains on yellowish brown ped faces, and in center of peds; few voids; few well defined ped faces; very strongly acid; gradual wavy boundary.
- B'3tx
63311 39 to 49 inches. Yellowish brown (10YR 5/6) loam with common medium and coarse distinct and prominent mottles of strong brown (7.5YR 5/8) and red (2.5YR 4/8); massive with a tendency to break into coarse angular blocky structure; very firm; 20 percent of horizon contains vertical gray (N 6/) streaks, 1/2 inch to 1 1/2 inches in width. These streaks are clay loam in texture; few medium (5 to 15 mm) manganese concretions; few fine voids; very strongly acid; gradual wavy boundary.
- Cx
63312 49 to 65 inches. Yellowish brown (10YR 5/8) heavy loam with common medium distinct mottles of strong brown (7.5YR 5/8), and yellowish red (5YR 5/8); massive; firm, not as firm as B3tx; 15 percent of horizon contains vertical gray (N 6/) streaks, 1/2 to 1 inch in width, these streaks are clay loam in texture; evidence of clay movement in gray (N 6/) streaks; very strongly acid.

Notes: This is located on a high Pleistocene terrace (Upland) some 35 to 40 feet above the Leaf River. The area never overflows.

SOIL TYPE Prentiss LOCATION Clarke County, Mississippi
 fine sandy loam

SOIL NOS. S61Miss-12-1 LAB. NOS. 15128-15135

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		181a		3A1						2A2		
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			> 2	
		2.1	1.0-5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.20-0.02	0.02-0.002		
0-5	Ap	0.2a	2.1a	5.4	39.6	14.1	35.9	2.7	57.5	16.5	-	fs1
5-9	A2	0.1	1.3	3.9	31.0	11.2	45.6	6.9	49.0	27.0	-	fs1
9-20	B2t	0.1	1.2	3.7	28.8	10.6	36.6	19.0	43.7	21.1	-	l
20-26	B22t	<0.1	1.6	5.1	38.7	13.4	29.6	11.6	49.8	16.7	-	fs1
26-36	B23tx	<0.1	1.7	5.4	41.6	14.5	25.9	10.9	51.2	14.3	-	fs1
36-46	B24tx	<0.1	1.7	6.3	42.6	13.4	22.3	13.7	47.1	14.2	-	fs1
46-54	See	0.1	2.6	8.7	44.1	10.3	14.4	19.8	40.3	8.9	-	fs1/sc1
54-70	Desc.	<0.1	0.9	3.1	32.8	13.6	22.8	26.8	44.6	14.5	-	sc1

pH		Organic Matter			Bulk Density					MOISTURE TENSIONS		
8c1a	8c1e	6a1a	6a1a	C/N	Field Moist	30 cm.	A.D.	4b1b	4c1	4b2		
H ₂ O	KCl	O.C.	N		4b4	4a1a	4b3	4a1c	4a1b	1/3	1/3-to	15
%	%	%	%	%	% M.	g/cc	% M.	g/cc	g/cc	ATMOS.	1.5-Atm.	ATMOS.
										Pieces	in./in.	Sieved
6.0	5.0	0.82	0.054	15	18.3	1.56	17.9	1.56	1.56	10.0	.13	1.5
6.1	4.9	0.17	0.016									2.5
4.6	3.6	0.16	0.019		14.1	1.64	18.9	1.60	1.66	15.3	.13	7.0
4.6	3.4	0.05	0.011									4.5
4.7	3.5	0.03			10.2	1.85	13.3	1.82	1.85	10.8	.12	3.9
4.6	3.4	0.02			10.7	1.86	13.6	1.80	1.86	11.5	.11	5.4
4.7	3.3	0.01			14.5	1.76	17.2	1.70	1.79	12.2	.08	7.2
4.6	3.1	0.02										10.6

5A1a	EXTRACTABLE CATIONS					5K1a		Base Sat. NH ₄ OAc Exch. 5C1	5A3a Sum Ext. Cations me/100g	5C3 Base Sat. % Sum Cat	Sum Ext. Bases and Al	6C1a Free Iron (Fe ₂ O ₃) %
	Ext. Bases					6H1a	6G2a					
	Ca	Mg	Na	K		H	Al					
6M2b	6O2b	6P2a	6Q2a									
4.1	2.9	0.3	<0.1	0.2	2.5	-	83	5.9	58	3.4	0.5	
2.8	2.0	0.3	<0.1	0.2	1.4	-	89	3.9	64	2.5	0.8	
5.9	1.9	0.3	<0.1	0.2	6.0	1.7	41	8.4	28	4.1	1.7	
4.2	0.8	0.3	<0.1	0.1	4.6	1.7	28	5.8	21	2.9	1.1	
3.7	0.1	0.5	<0.1	<0.1	4.2	1.7	16	4.8	12	2.3	0.7	
5.3	0.1	0.7	<0.1	0.1	6.2	2.7	17	7.1	13	3.6	0.8	
8.2	0.1	1.3	0.1	0.1	8.8	4.7	20	10.4	15	6.3	0.8	
12.7	0.9	2.4	0.1	0.2	12.0	7.2	28	15.6	23	10.8	1.5	

a. Few Fe/Mn-bearing aggregates.

Soil Type: Prentiss fine sandy loam
 Soil Nos.: 861Miss-12-1
 Location: Clarke County, Mississippi, about 1 mile south of Enterprise. 300 feet south of northwest corner of Sec. 25, T4N, R14E.
 Vegetation and Use: Carpetgrass and broomsedge pasture.
 Slope and Land Form: Nearly level (1 percent slope).
 Drainage and Permeability: Moderately well drained with medium runoff and internal drainage. Permeability is moderate in the upper part of solum and slow in the lower part.
 Parent Material: Coastal Plain terrace.
 Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 15, 1961.
 Described by: H. L. Neal and R. C. Carter, May 15, 1961.

Horizon and
 Lincoln
 Lab. No.

Ap 0 to 5 inches. Dark grayish brown (10YR 4/2) fine sandy loam; weak fine and medium granular and subangular blocky structure; very friable; common fine roots; worm and root channels filled with material from A2; clear smooth boundary.
 15128
 A2 5 to 9 inches. Light yellowish brown (2.5Y 6/4) fine sandy loam; weak fine and medium granular and medium subangular blocky structure; friable; few fine roots; some mixing of Ap in worm and root channels; few fine soft brown and black concretions; clear smooth boundary.
 15129
 B21t 9 to 20 inches. Yellowish brown (10YR 5/6) heavy loam; moderate fine and medium subangular blocky structure; friable; few fine roots; few fine soft brown concretions; clear smooth boundary.
 15130
 B22t 20 to 26 inches. Yellowish brown (10YR 5/6) fine sandy loam with common fine distinct mottles of light yellowish brown (10YR 6/4) and light gray (10YR 7/2); weak medium platy structure breaking into fine and medium subangular blocky structure; friable; few fine roots; few fine soft brown concretions; clear smooth boundary.
 15131
 B23tx 26 to 36 inches. Mottled light yellowish brown (10YR 6/4), yellowish brown (10YR 5/6) and light brownish gray (10YR 6/2) fine sandy loam; mottles are many fine distinct; moderate medium platy structure breaking into moderate medium subangular blocky structure; friable; few fine roots; many fine voids; few vertical cracks of pale yellow (2.5Y 7/4) sandy loam; gradual smooth boundary.
 15132
 B24tx 36 to 46 inches. Mottled yellowish brown (10YR 5/6) light brownish gray (10YR 6/2) and yellowish red (5YR 4/8) sandy loam; mottles are many fine and medium, distinct and prominent; moderate medium platy structure breaking into moderate medium and coarse subangular and angular blocky structure; friable; few fine roots; few common fine voids; vertical cracks 1 to 2 inches wide of pale yellow (2.5Y 7/4) loamy sand; patchy clay films; gradual smooth boundary.
 15133
 IIB25tx 46 to 54 inches. Mottled yellowish red (5YR 4/8) light brownish gray (10YR 6/2) and yellowish brown (10YR 5/6) sandy clay loam; mottles are many fine and medium, distinct and prominent; moderate coarse subangular and angular blocky structure; friable to firm; few fine roots; few fine voids; clay films on ped faces and in cracks; clear smooth boundary.
 15134
 IIB26tx 54 to 70 inches. Gray (10YR 6/1) heavy sandy clay loam with common to many fine and medium, distinct and prominent yellowish red (5YR 4/8) yellowish brown (10YR 5/6) and red (10R 4/6) mottles; moderate medium and coarse angular blocky structure; friable to firm slightly plastic; clay films on ped faces and in cracks.
 15135

Remarks: The B21t, B23tx and IIB26tx horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): The mineralogy of the very fine sand is uniform throughout. Quartz and feldspar dominate. Thin, patchy clay films observed in the B23tx horizon under a stereoscopic microscope.

SOIL SURVEY LABORATORY Lincoln, Nebr. July 1959

SOIL TYPE Providence LOCATION Lincoln County, Mississippi
silt loam

SOIL NOS. S59Miss-43-1 LAB. NOS. 9884-9891

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)									TEXTURAL CLASS	
		1B1a					3A1					2A2 > 2
		VERY COARSE SAND 2.1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	6.2-0.02	0.02-0.002		
0-2	A1	0.2	2.0	8.2	14.6	2.0	67.5	5.5	39.3	35.6	-	s11
2-8	A2	0.2	2.0	8.5	13.8	1.6	67.0	6.9	38.0	35.4	-	s11
8-10	B1	0.1	1.2	5.0	8.2	1.0	67.3	17.2	32.8	38.4	-	s11
10-19	B2t	<0.1	0.9	4.0	6.6	0.8	59.6	28.1	26.6	36.2	-	sic1
19-28	11B22t	0.2	1.7	7.4	12.9	1.6	56.2	20.0	28.1	34.6	-	s11
28-37	See	0.3	3.2	14.4	26.0	3.1	36.6	16.4	28.5	21.0	-	1
37-45	Desc.	0.1	3.6	17.3	32.6	3.9	25.3	17.2	27.2	14.3	-	fs1
45-62	11B25t	0.2	3.2	17.0	35.1	4.1	20.2	20.2	25.7	11.8	-	scl/fs1

8C1a	pH		ORGANIC MATTER			Free Iron	BULK DENSITY			MOISTURE TENSIONS		4B2 15 Atmos. %
	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITRO-GEN %	C/N	Fe ₂ O ₃ %	Field State g/cc	30-cm g/cc	O. D. g/cc	Field State %	30-cm %	
						6C1a						
4.8			3.10	0.113	27	0.6						5.4
4.8			0.67	0.025	23	0.8						2.9
5.0			0.26	0.029	9	1.8						7.1
5.1			0.22	0.031		3.1						12.1
5.3			0.08	0.017		2.3						8.9
5.5			0.05			1.6						6.9
5.8			0.03			1.6						7.1
5.7			0.03			2.1						8.5

5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS					5B1a	BASE SAT. % NH ₄ Ac EXCH.	Base Sat. % on Sum Cations	Sum Ext. Bases	Sum Ext. Cations	Ce/Mg
	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1	5C3	5B1a	5A3a		
	milliequivalents per 100g. soil										
11.6	2.3	0.8	14.2	<0.1	0.2	28	19	3.3	17.5		
3.7	0.4	0.4	6.0	<0.1	0.1	24	13	0.9	6.9		
6.2	0.4	0.8	6.9	<0.1	0.1	21	16	1.3	8.2		
10.8	0.3	3.8	11.0	0.1	0.1	40	28	4.3	15.3		
8.2	0.1	2.9	6.9	0.1	0.2	40	32	3.3	10.2		
6.0	<0.1	2.4	4.0	0.2	0.1	45	40	2.7	6.7		
5.7	<0.1	3.1	4.4	0.2	0.1	60	44	3.4	7.8		
6.4	<0.1	3.2	4.8	0.3	<0.1	55	42	3.5	8.3		

Soil Type: Providence silt loam

Soil Nos.: S59Miss-43-1

Location: Lincoln County, Mississippi, southeast of Brookhaven. 1/45 feet west of southeast corner of SW 1/4, NE 1/4, Sec. 36, T7N, R7E. Photo CUL-2K-40.

Vegetation and Use: Mixed pine and hardwoods with some native bluestem.

Slope and Land Form: Gently sloping (3 percent) on ridge in gently to moderately sloping topography.

Drainage and Permeability: Moderately well drained. Permeability is moderate in the horizons above the fragipan and slow in that layer.

Parent Material: Thin loess overlying friable Coastal Plain material.

Collected by: J. S. Allen, January 26, 1959.

Described by: R. C. Carter, January 26, 1959.

Horizon and
Lincoln
Lab. No.

- O1 1/2 to 0 inch. Hardwood leaves, pine needles and native grass litter.
- A1 0 to 2 inches. Black (10YR 2/1) to very dark gray (10YR 3/1) silt loam with weak fine to coarse granular structure; very friable; numerous fine grass roots; boundary abrupt and smooth.
- A2 2 to 8 inches. Light olive brown (2.5Y 5/4) silt loam with weak fine to medium subangular blocky structure; very friable, slightly sticky; numerous fine grass roots; boundary abrupt and smooth.
- B1 8 to 10 inches. Strong brown (7.5YR 5/6) silt loam with weak fine to medium subangular blocky structure; friable, slightly sticky; many fine roots; boundary clear and smooth.
- B2t 10 to 19 inches. Yellowish red (5YR 5/6) heavy silt loam with moderate fine and medium subangular blocky structure; friable, slightly sticky; few fine roots; boundary abrupt and smooth.
- B2t 19 to 28 inches. Strong brown (7.5YR 5/6) silt loam with many medium distinct mottles of pale brown (10YR 6/3); weak thick platy structure breaking down into moderate coarse subangular blocky; few thin clay skins on peds; firm, slightly sticky; few fine roots; some fine pores; common manganese coatings on ped faces; boundary gradual and wavy. This horizon wet and moisture seeped out along face of pit.
- B2t 28 to 37 inches. Mottled strong brown (7.5YR 5/6) pale brown (10YR 6/3) and light gray (10YR 7/2) loam with weak to moderate medium angular blocky structure; firm; few roots; many pores; vertical cracks of light gray (10YR 7/1) high in clay; boundary gradual and wavy.
- B2t 37 to 45 inches. Strong brown (7.5YR 5/6) clay loam with common fine distinct mottles of yellowish red (5YR 5/6) and light gray (10YR 7/1); weak to moderate medium angular blocky structure; firm; very few roots; few pores; vertical cracks of light gray (10YR 7/1) which is high in clay content; boundary gradual and wavy.
- B2t 45 to 62 inches. Variegated red (10R 4/6 to 4/8) and reddish yellow (7.5YR 6/6) clay loam; structureless, breaking into coarse angular blocks; firm; very few roots; light gray (10YR 7/1) coatings on faces; vertical crack of light gray (10YR 7/1) clay loam.

Remarks: Colors are of moist soil.

SOIL SURVEY LABORATORY Lincoln, Nebr. July 1959

SOIL TYPE Providence LOCATION Lincoln County, Mississippi
silt loam

SOIL NOS. S59Miss-43-2 LAB. NOS. 9892-9900

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)								TEXTURAL CLASS		
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY				
		2.1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002		
0-3	A1	0.4	2.7	7.1	6.5	1.1	73.0	9.2	34.7	41.6	s11	
3-7	A2	0.1	2.0	6.1	5.6	0.9	74.2	11.1	34.1	42.7	s11	
7-9	B1	0.2	1.5	4.7	4.2	0.6	74.3	14.5	31.0	45.2	s11	
9-14	B21t	0.1	1.2	3.8	3.3	0.5	70.2	20.9	28.8	42.9	s11	
14-23	B22t	<0.1	1.0	3.3	2.8	0.5	62.8	29.6	24.0	40.1	s1cl	
23-30	B23t	0.1	1.3	4.3	3.7	0.6	65.3	24.7	25.7	41.3	s11	
30-38	See	<0.1	3.9	13.7	9.7	1.1	56.1	15.5	25.8	33.9	s11	
38-53	Desc.	0.1	7.3	25.6	16.3	1.6	34.5	14.6	19.1	21.0	1	
53-60	1/ B26t	0.1	7.8	28.8	18.7	1.8	26.8	16.0	16.5	16.7	s1	
40-55	1/	<0.1	6.3	21.4	13.5	1.3	43.0	14.5	22.3	25.3	1	
pH		ORGANIC MATTER				Free Iron	BULK DENSITY			MOISTURE TENSIONS		
8C1a	1:5	1:10	6A1a	6B1a	C/N	Fe ₂ O ₃ %	4A1a	4A1c	4A1h	4B4	4B3	4B2
			ORGANIC CARBON	NITROGEN		6C1a	Field State	30-cm	O. D.	Field State	30-cm	15 ATMOS.
1:1			%	%			g/cc	g/cc	g/cc	%	%	%
5.3			3.92	0.135	29	0.8	0.93	0.92	0.98	40	36	6.7
5.0			0.84	0.044	19	0.9	1.47	1.47	1.48	20	23	4.2
5.1			0.40	0.032	12	1.3						5.4
5.1			0.23	0.029		2.0						8.1
5.2			0.14	0.031		3.3	1.48	1.47	1.57	22	24	12.3
5.3			0.10	0.027		2.8						10.6
5.5			0.06			2.0						6.6
5.4			0.02			1.3	1.90	1.84	1.90	9	15a	5.5
5.4			0.03			1.3						5.7
5.4			0.07			1.6						6.0
5A1a		EXTRACTABLE CATIONS				5B1a	Base Sat. %	Sum Ext.	Sum Ext.	Ca/Mg		
CATION EXCHANGE CAPACITY		6N2b	6O2b	6H1a	6P2a	6Q2a	on Sum	Bases	Cations			
NH ₄ Ac		Ca	Mg	H	Na	K	5C1	5C3	5A3a	8D3		
milliequivalents per 100g. soil												
14.2	4.4	1.5	16.3	<0.1	0.4		44	28	6.3	22.6	2.9	
6.0	0.4	0.4	7.3	<0.1	0.1		15	11	0.9	8.2		
6.3	0.5	1.3	6.0	<0.1	0.1		30	24	1.9	7.9		
7.7	0.9	2.4	6.5	0.1	0.2		47	36	3.6	10.1		
11.4	0.9	3.4	9.3	0.1	0.2		40	33	4.6	13.9		
10.4	0.9	3.4	7.7	0.1	0.2		44	37	4.6	12.3		
6.7	0.7	3.2	4.8	0.1	0.1		61	46	4.1	8.9		
5.1	0.5	1.6	3.2	0.1	0.1		45	42	2.3	5.5		
5.0	0.4	2.2	3.2	0.1	0.1		56	47	2.8	6.0		
5.9	0.4	2.6	3.2	0.1	0.1		54	50	3.2	6.4		

1/ Polygon crack filling.
a. Average of 2 clods.

Soil Type: Providence silt loam
 Soil Nos.: 859Miss-43-2
 Location: Lincoln County, Mississippi, approximately 10 miles northeast of Brookhaven. 1/45 feet west and 72 feet north of southeast corner of SW 1/4 SE 1/4, Sec. 10, T7N, R9E. Photo CGL-8K-86.
 Vegetation and Use: Mixed pine and hardwoods and native grass. This area has probably never been cleared.
 Slope and Land Form: Gently sloping (3 percent) on broad ridge in area of gently to moderately sloping topography.
 Drainage and Permeability: Moderately well drained. Permeability is moderate in the horizons above the fragipan and slow in that layer.
 Parent Material: Thin loess overlying friable Coastal Plain material.
 Collected by: J. S. Allen, January 26, 1959.
 Described by: R. C. Carter, January 26, 1959.

Horizon and
 Lincoln
 Lab. No.

- O1 1/2 to 0 inches. Hardwood leaves, pine needles and native grass litter.
- A1
9892 0 to 3 inches. Black (10YR 2/1) silt loam with weak fine to coarse granular structure; very friable; numerous fine grass roots; boundary clear and smooth.
- A2
9893 3 to 7 inches. Grayish brown (10YR 5/2) silt loam with weak fine subangular blocky structure; very friable; numerous fine grass roots; boundary clear and smooth.
- B1
9894 7 to 9 inches. Strong brown (7.5YR 5/6) silt loam with weak fine subangular blocky structure; friable, slightly sticky; few root channels filled with light gray (10YR 7/2) silt loam; numerous fine roots; boundary clear and wavy.
- B21t
9895 9 to 14 inches. Strong brown (7.5YR 5/6) heavy silt loam with weak fine to medium subangular blocky structure; friable, slightly sticky; numerous fine roots; boundary clear and smooth.
- B22t
9896 14 to 23 inches. Yellowish red (5YR 4/6) heavy silt loam with moderate fine and medium subangular blocky structure; friable, slightly sticky; many fine roots; common manganese coatings on ped faces in lower part of horizon; boundary clear and irregular.
- B23t
9897 23 to 30 inches. Dark brown (7.5YR 4/4) to strong brown (7.5YR 5/6) silt loam with common medium distinct mottles of light yellowish brown (10YR 6/4); moderate medium angular blocky and subangular blocky structure with few thin clay skins on peds; friable, slightly sticky; few roots; common manganese concretions; many fine pores; boundary clear and wavy. This horizon wet and free moisture seeped out along face of pit.
- IIB24tx
& A'2x
9898 30 to 38 inches. Mottled yellow (10YR 7/6) light brownish gray (2.5Y 6/2) and yellowish red (5YR 4/6) silt loam; moderate fine and medium angular blocky structure with few clay skins on peds; friable, slightly sticky; few grass roots; many fine pores; boundary clear and wavy.
- IIB25tx
9899 38 to 53 inches. Yellowish red (5YR 4/6 to 3/6) loam with few fine distinct mottles of light brownish gray (2.5Y 6/2); breaks out into coarse angular peds with few thin clay skins; firm to very firm; few grass roots; few pores; many manganese coatings on peds; light brownish gray (2.5Y 6/2) silt coatings on ped faces and in cracks; boundary gradual and wavy.
- IIB26tx
9900 53 to 60 inches. Red (2.5YR 4/6) sandy clay loam with few fine distinct mottles of light gray (10YR 7/2); structureless to weak coarse angular blocky structure; firm to very firm; large gray polygonal crack with high concentration of iron along the edges.

Remarks: Colors are of moist soil.

Stereoscopic microscope observations:

B22t: A few thin clay films on the surfaces of the larger voids. Clay films not observed on ped surfaces.

Soil Type: Rains very fine sandy loam

Soil No.: S63Miss-18-1

Location: 5.2 miles south of Carnes School on paved road; 0.5 mile east of road in reforested area; NE 1/4, Section 27, Township 18, Forrest County, Mississippi, aerial photo: CZH-7H-72.

Vegetation and Land Use: Slash pine, wax myrtle, gallberry, and pitcher plants.

Slope and Land Form: 0 to 2 percent

Horizon and

Beltsville

Lab. No.

- A1
63313 0 to 3 inches. Very dark gray (10YR 3/1) very fine sandy loam; weak medium granular structure; friable; many fine roots and brown (7.5YR 4/4) root stains; earthworm casts from A2; very strongly acid; clear wavy boundary.
- A21g
63314 3 to 7 inches. Dark gray (10YR 4/1) with bleached sand grains of light brownish gray (10YR 6/2); very fine sandy loam; weak medium granular structure; friable; brown to dark brown (7.5YR 4/4) root stains; many fine roots; worm casts from adjoining horizons; strongly acid; clear wavy boundary.
- A22g
63315 7 to 13 inches. Mottled dark gray (10YR 4/1), light brownish gray (10YR 6/2) and common fine distinct mottles of light yellowish brown (2.5Y 6/4) very fine sandy loam; weak fine subangular blocky structure; friable; fine root stains are dark brown to brown (7.5YR 4/4); some worm casts from adjoining horizons; organic intrusion from A1; strongly acid; clear wavy boundary.
- B1g
63316 13 to 21 inches. Grayish brown (2.5Y 5/2) very fine sandy loam with many fine distinct mottles of yellowish brown (10YR 5/6); weak medium subangular blocky structure; friable; fine root stains are brown to dark brown (7.5YR 4/4); some small wormholes; few small pieces of charcoal; organic intrusions; strongly acid; clear wavy boundary.
- B2g
63317 21 to 28 inches. Light brownish gray (10YR 6/2) loam or silt loam with many fine medium distinct mottles of yellowish brown (10YR 5/8) and light yellowish brown (2.5Y 6/4); weak medium subangular blocky structure; friable; few wormholes; few fine roots; intrusions of organic materials and manganese down ped faces and channels; balls of sandy clay loam present in channels; strongly acid; clear wavy boundary.
- B3g
63318 28 to 46 inches. Mottled yellowish brown (10YR 5/8), brownish yellow (10YR 6/6), and gray to light gray (10YR 6/1) light sandy clay loam or loam; massive; slightly plastic; coarse polygons separated by gray (10YR 6/1) and light gray (10YR 7/2) fine sandy loam streaks about 2 inches thick; tonguing more pronounced than in B2g; gray about 55 percent of mass; brown about 45 percent; few fine roots; few fine voids or wormholes; possibility of lithological discontinuity between B3g and Cg; strongly acid; gradual wavy boundary.
- Cg
63319 46 to 60 inches. Gray to light gray (10YR 6/1) sandy loam with common coarse distinct mottles of olive yellow (2.5Y 6/6), brownish yellow (10YR 6/8) and grayish brown (10YR 5/2); massive; slightly plastic; few streaks of fine sand; mass composed of approximately 65 percent gray and 35 percent brown material; some clay balls present probably from leaching of gray streaks; strongly acid.

Note: This site is located on a terrace about five feet above the alluvial plain of Double Branch. The site is subject to flooding.

Soil Type: Rains loam
 Soil No.: 863Miss-37-1
 Location: 4 miles W. of Highway 11, Lumberton, on paved road; 2.8 miles south and west on gravel rd.; north 200 feet,
 Township 1 N, Range 15 West, Section 19, Lamar County, Mississippi, serial photo CIA-7V-200.
 Vegetation and Land Use: Slash pine, black gum, pitcher plants.
 Slope and Land Form: 0 to 2 percent.

Horizon and
 Beltsville
 Lab. No.

- A1 63320 0 to 5 inches. Very dark gray (10YR 3/1) loam; weak medium and coarse granular structure; friable; light gray (2.5Y 7/2) mottles or earthworm casts; few fine brown to dark brown (7.5YR 4/4) root stains; clear wavy boundary.
- A2g 63321 5 to 9 inches. Light gray to gray (10YR 6/1) very fine sandy loam with common fine distinct mottles of yellowish brown (10YR 5/8); weak medium and coarse granular structure; friable; few fine roots; occasional earthworm casts from A1; few fine strong brown (7.5YR 5/6) root stains; clear wavy boundary.
- B1g 63322 9 to 16 inches. Light gray to gray (10YR 6/1) very fine sandy loam mottled with yellowish brown (10YR 5/8); few ped faces are grayish brown (2.5Y 5/2); very weak medium subangular blocky structure; friable; few fine strong brown (7.5YR 5/8) root stains; few fine roots; clear wavy boundary.
- B21g 63324 16 to 29 inches. Light gray to gray (10YR 6/1) loam with many fine and medium mottles of yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6); weak medium subangular blocky structure; friable; gray (10YR 6/1) vertical streaks 3 to 4 inches wide are present; few small voids; few fine roots; occasional small brown concretions; gradual smooth boundary.
- B22g 63325 29 to 42 inches. Mottled with light gray to gray (10YR 6/1) yellowish brown (10YR 5/8), strong brown (7.5YR 5/8), and few fine prominent mottles of red (2.5YR 5/8), sandy clay loam; weak medium, angular to moderate subangular blocky structure; colors above are for centers of polygons; vertical gray (10YR 6/1) streaks 3 to 4 inches wide separate the polygons; evidence of silt and fine sand movement within gray streaks; few fine voids; few small concretions; gradual smooth boundary.
- B3g 63326 42 to 50 inches. Mottled light gray to gray (10YR 6/1), yellowish brown (10YR 5/8), strong brown (7.5YR 5/6) and many fine prominent red (2.5YR 5/8) mottles; clay loam; weak medium angular blocky structure; firm; common voids or earthworm holes; above colors are for interior of polygons; vertical light gray to gray (10YR 6/1) streaks, 3 to 4 inches wide separate the polygons; evidence of silt and fine sand movement in the streaks; water seepage evident in lower part of horizon; clear smooth boundary.
- C1g 63327 50 to 66 inches. Mottled light gray to gray (10YR 6/1), yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6), clay loam; massive with some thick platy structure; firm; common voids; gray (10YR 6/1) streaks slightly larger and sandier than in B3g; some silt and fine sand movement in streaks.
- C2g 66 to 75 inches. Mottled gray to light gray (10YR 6/1), yellowish brown (10YR 5/8) and dark yellowish brown (10YR 4/4) heavy clay loam; massive; firm; few small brown and black concretions.
- C3g 75 to 84 inches. Coarse mottled gray to light gray (10YR 6/1) yellowish red (5YR 5/6) and dark yellowish brown (10YR 4/4), clay loam; massive; firm; common small concretions.
- C4g 84 to 95 inches. Light gray (10YR 6/1) sandy clay loam with common medium distinct mottles of yellowish brown (10YR 5/8); massive; firm to slightly plastic; few brown concretions.

Notes: This site is on a narrow terrace. The 66 to 75, 75 to 84, and the 84 to 95 inch zones were described from soil auger borings.

SOIL Ruston loam SOIL Nos. 855Miss-30-3 LOCATION Jackson County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 5612 - 5616

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SAI											3B2 Cm	3B1 Coarse fragments		
		Total												2A2 ≥ 2 Pct.	2-10 Pct.	19-76 Pct. of ≤ 76mm
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)				
0-3	A1	20.8	7.2	0.6	9.3	18.6	31.4	12.1		11.3	36.8		tr.			
3-9	A2	21.1	10.0	0.4	9.4	18.6	29.4	11.1		11.9	34.5		-			
9-17	B1	23.0	13.9	0.5	7.1	15.8	26.5	11.2		13.0	35.2		-			
17-43	B2t	22.3	17.7	0.3	6.5	14.6	27.0	11.6		13.3	34.1		-			
43-84+	B3t	18.1	10.6	0.4	7.6	16.9	32.4	14.0		9.5	39.0		-			
Pct. of < 2 mm																
Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. iron as Fe Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH		
						4A1a kg bar	4A1h Oven dry g/cc	4A1c g/cc		4B1c kg bar	4B2 15 bar	8C1c (1:1) KCl		8C1a (1:1) H ₂ O		
															Pct.	Pct.
0-3	1.30	0.054	24												5.0	
3-9	0.56	0.030	19												5.0	
9-17	0.28	0.022													5.0	
17-43	0.08	0.015													4.7	
43-84+	0.04	0.005													4.7	
Depth (in.)	Extractable bases 5B1a					6H1a Ext. acidity	CEC		6G1d Ext. Al	Relation to clay			8D3 Ca/Mg	Base saturation		
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		5A3a Sum cations	Ext. Al		CEC Sum	Ext. iron	15-bar water		5C3 Sum cations Pct.	5C1 NH ₄ ONc Pct.	
																meq/100 g
0-3	0.7	0.3	tr.	0.1		5.5	6.6						17			
3-9	0.4	0.7	tr.	tr.		4.1	5.2						21			
9-17	0.4	0.1	tr.	tr.		3.7	4.2						12			
17-43	0.1	0.2	tr.	tr.		4.3	4.6						6			
43-84+	0.3	0.1	tr.	tr.		2.0	2.4						17			
Depth (in.)	Clay Fraction Analysis 7A1b-d															
	Mt.	Chl.	Vm.	Ml.	Int.	Qtz.	Kl.	Gibbsite								
									7A2 X-ray				7A3			

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, ml. = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Ruston loam
 Soil Nos.: S55Miss-30-3
 Location: Jackson County, Mississippi, SE 4, SE 4, Sec. 7, T 5S, R 5W, 6 miles SE Hurley, 1/8 mile
 W. Alabama State Line. Photo 7E-160
 Vegetation and Land Use: Second growth Longleaf pine
 Drainage: Well drained

Horizon and
 Beltsville
 Lab. No.

- A1 0 to 3 inches. Dark grayish brown (10YR 4/2) very friable loam with weak medium crumb structure; clear smooth boundary; numerous roots; strongly acid.
 5612
- A2 3 to 9 inches. Dark brown (10YR 4/3) with many fine distinct mottles of very dark gray (10YR 3/1) and reddish brown (5YR 4/4). (Mottles probably due to worm activity); very friable loam with weak medium crumb structure; gradual smooth boundary; many roots, numerous worm casts; very strongly acid.
 5613
- B1 9 to 17 inches. Yellowish red (5YR 4/8) with few fine distinct mottles of very dark grayish brown (10YR 3/2); very friable loam with weak medium subangular blocky structure; gradual smooth boundary; many roots; few worm casts; very strongly acid.
 5614
- B2t 17 to 43 inches. Red (2.5YR 4/8) very friable loam to silty clay loam with moderate medium subangular blocky structure; diffuse smooth boundary; some roots in upper part, a few extending to the bottom of horizon; very strongly acid.
 5615
- B3t 43 to 84+ inches. Yellowish red (5YR 5/8) very friable loam with weak medium subangular blocky structure; very strongly acid.
 5616

Notes: Colors refer to moist soil.

SOIL Ruston loam SOIL Nos. S55M1a-30-4 LOCATION Jackson County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 5617 - 5621

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1											3B2 Ca	3B1 Coarse fragments		
		Total												2A2	2-19	19-75
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (= 0.002)	Vary coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)		(2-0.1)	Pct. of > 2	Pct. of 2-19
0-5	A1		34.6	7.2	0.1	0.7	1.8	28.7	26.9		17.8	66.0				
5-10	A2		34.1	13.3	0.0	0.4	1.4	25.7	25.1		17.9	61.6				
10-17	B1		31.8	19.9	0.1	1.3	1.0	24.4	21.5		16.7	55.4				
17-52	B2t		29.0	20.6	0.1	0.8	1.2	26.4	19.9		13.8	57.1				
52-72+	B3t		27.3	16.2	0.1	0.9	1.2	31.3	23.2		11.8	62.5				
Depth (in.)	6A1a Organic carbon	Nitrogen	C/N	Carbonate as CaCO ₃	Ext. Iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH		
						4A1a 1/2 bar	4A1b Oven dry	4A1c g/cc		4B1c 1/2 bar	4B2 15 bar	4B3 Pct.		8C1c (1:1) MCl	8C1a (1:1) H ₂ O	
						Pct.	Pct.	Pct.		Pct.	Pct.	Pct.		MCl	H ₂ O	
0-5	1.14	0.055	21													
5-10	0.37	0.029														5.0
10-17	0.15	0.021														4.8
17-52	0.06	0.013														4.8
52-72+	0.02	0.006														4.7
																4.6
Depth (in.)	Extractable bases 5B1a					6H1a	CEC		6B1d	Ratios to clay			8D3	Base saturation		
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	Ext. acidity	5A3e Sum cations	Ext. Al	CEC Sum	Ext. Iron	15-bar water	Ca/Mg	5C3 Sum cations Pct.	5C1 NH ₄ OAc Pct.		
	mg/100 g															
0-5	0.6	0.6	tr.	0.1		5.1	6.4						20			
5-10	0.5	0.5	tr.	0.1		4.3	5.4						20			
10-17	0.6	0.4	tr.	0.1		4.9	6.0						18			
17-52	0.1	0.4	tr.	0.1		4.9	5.5						11			
52-72+	0.1	0.3	tr.	tr.		3.7	4.1						10			
Depth (in.)	Clay Fraction Analysis 7A1b-d															
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite								
	7A2 X-75 7A3															

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Ruston loam
 Soil No.: S55Miss-30-4
 Location: Jackson County, Mississippi, NW 4, SE 4, Sec. 42, T 4S, R 6W, 2 1/2 miles w. of Harelston.
 Photo CZK-SH-134
 Vegetation: Longleaf pine with an undergrowth of dogwood

Horizon and
 Beltsville
 Lab. No. *

- A1
 5617 0 to 5 inches. Dark grayish brown (10YR 4/2) with few distinct mottles of strong brown (7.5YR 5/6) friable loam of weak medium crumb structure; gradual smooth boundary; numerous grass roots; very strongly acid.
- A2
 5618 5 to 10 inches. Strong brown (7.5YR 5/6) with many medium distinct mottles of dark grayish brown (10YR 4/2) and dark brown (7.5YR 4/2). (The mottles are presumably caused by worm action.) Very friable loam of moderate medium crumb structure; gradual wavy boundary; numerous roots; very strongly acid.
- B1
 5619 10 to 17 inches. Yellowish red (5YR 5/6) friable loam of weak medium subangular blocky structure; gradual smooth boundary; some pine roots; very strongly acid.
- B2t
 5620 17 to 52 inches. Red (2.5YR 5/8-4/8), friable loam of weak to moderate medium subangular blocky structure; gradual wavy boundary, few pine roots; very strongly acid.
- B3t
 5621 52 to 72+ inches. Yellowish red (5YR 4/8) with few medium distinct mottles of olive yellow (2.5Y 6/8), friable loam of weak medium subangular blocky structure; very strongly acid.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1962

SOIL TYPE Savannah LOCATION Clarke County, Mississippi
 fine sandy loam

SOIL NOS. S61Miss-12-2 LAB. NOS. 15136-15143

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)									2A2 > 2	TEXTURAL CLASS	
		1B1a		3A1									
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	6.2-0.02	0.02-0.002			
0-6	Ap	0.6a	1.6a	3.7	32.9	18.3	39.5	3.4	65.1	15.0	Tr.	fs1	
6-11	A2	0.1	0.7	1.9	24.3	16.8	50.6	5.6	55.4	29.4	-	sil	
11-22	AB	0.2	0.5	1.4	20.9	14.8	42.9	19.3	47.8	25.0	-	1	
22-28	B21t	<0.1	0.4	1.4	23.7	17.8	39.1	17.6	52.8	21.6	-	1	
28-35	B22t	<0.1	0.4	1.5	25.1	18.2	32.3	22.5	52.0	17.1	-	1	
35-44	B23tx	<0.1	0.3	1.5	25.5	19.9	28.2	24.6	52.5	14.9	-	1/scl	
44-56	B24tx	<0.1	0.3	1.6	26.4	19.5	25.1	27.0	51.5	13.0	-	scl	
56-68	B25tx	<0.1	0.3	1.6	27.2	19.8	23.5	27.6	51.9	11.7	-	scl	
pH		Organic Matter			Bulk Density				MOISTURE TENSIONS				
8C1a	8C1c	6A1a	6B1a		Field Moist		30 cm.		A.D.	4B1b	4C1	4B2	
H ₂ O	KCl	O.C.	N	C/N	4B1	4A1a	4B3	4A1c	4A1b	1/3	1/3-to	15	
1:1	1:1	%	%		% M.	g/cc	% M.	g/cc	g/cc	ATMOS. Pieces	1.5-Atm. in./in.	ATMOS. Sieved	
5.1	3.8	0.55	0.038	14	17.1	1.57	19.2	1.57	1.57	9.0	.11	1.7	
5.0	3.7	0.12	0.010									2.0	
4.8	3.4	0.10	0.023		14.8	1.62	20.2	1.57	1.64	16.5	.14	7.6	
4.6	3.4	0.05	0.013									6.8	
4.5	3.2	0.04										9.0	
4.5	3.2	0.03			14.0	1.80	18.2	1.71	1.82	16.1	.11	9.7	
4.5	3.2	0.03			16.3	1.75	20.3	1.67	1.78	17.6	.12	10.4	
4.4	3.1	0.03										10.4	
5A1a		EXTRACTABLE CATIONS				5B1a		Base	5A3a	5C3	Sum	8D3	6C1a
CATION EXCHANGE CAPACITY NH ₄ OAc		Ext. Bases				6A1a	6C2a	Sat. %	Sum	Base	Ext.	Ca/Mg	Free Fe (Fe ₂ O ₃)
		Ca	Mg	Na	K	H	Al	NH ₄ OAc	Ext.	Sat. %	Sum		%
		milliequivalents per 100g. soil						5C1	Options		Sum		
									← me/100g →				
2.8	0.5	0.6	<0.1	0.1	3.4	0.2	43	4.6	26	1.4		0.5	
2.0	0.4	0.3	<0.1	0.1	2.3	0.4	40	3.1	26	1.2		0.6	
6.5	1.2	0.4	<0.1	0.3	6.7	2.4	29	8.6	22	4.3		1.8	
6.2	1.2	0.8	<0.1	0.2	6.7	2.9	35	8.9	25	5.1		1.5	
9.5	1.1	1.2	<0.1	0.2	9.8	5.0	26	12.3	20	7.5	0.9	1.5	
10.6	0.1	1.9	0.1	0.2	11.7	6.3	22	14.0	16	8.6		1.3	
11.4	<0.1	2.4	0.1	0.2	12.6	7.5	24	15.3	18	10.2		2.4	
12.2	<0.1	2.8	0.1	0.2	11.5	7.7	25	14.6	21	10.8		1.9	

a. Many Fe/Mn-bearing aggregates.

Soil Type: Savannah fine sandy loam

Soil Nos.: S61Miss-12-2

Location: Clarke County, Mississippi, 1/2 mile south of Stonewall. 400 feet west and 300 feet south of northeast corner of SW 1/4 SE 1/4, Sec. 5, T3N, R15E.

Vegetation and Use: Bahiagrass pasture.

Slope and Land Form: Nearly level (1 percent slope).

Drainage and Permeability: Moderately well drained with medium runoff and internal drainage. Permeability is moderate in the upper part of the solum and slow in the lower part.

Parent Material: Coastal Plain terrace.

Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 15, 1961.

Described by: H. L. Neal and R. C. Carter, May 15, 1961.

Horizon and

Moisture

Lab. No.

- Ap
15136 0 to 6 inches. Dark grayish brown (10YR 4/2) fine sandy loam; weak fine and medium granular structure; very friable; few fine roots; root and wormholes filled with material from A2; few fine soft black concretions; clear smooth boundary.
- A2
15137 6 to 11 inches. Very pale brown (10YR 7/3) fine sandy loam; weak fine and medium granular and medium subangular blocky structure; friable; few fine roots; some mixing of Ap material in root and wormholes; few fine soft brown and black concretions; clear smooth boundary.
- AB
15138 11 to 22 inches. Yellowish brown (10YR 5/6) heavy loam; moderate medium and subangular blocky structure; friable; few fine roots; some material from A horizon in root and wormholes in upper part of horizon; few fine black and brown concretions; clear smooth boundary.
- B21t
15139 22 to 28 inches. Yellowish brown (10YR 5/6) loam; common fine faint pale brown (10YR 6/3) mottles; moderate fine and medium subangular blocky structure; friable; few fine roots; few fine soft brown concretions; common fine voids; clear smooth boundary.
- B22t
15140 28 to 35 inches. Mottled yellowish brown (10YR 5/6) and light brownish gray (10YR 6/2) light clay loam; mottles are many fine and medium distinct; moderate medium and coarse subangular and angular blocky structure; friable; few fine roots; common fine soft brown concretions; common fine voids; patchy clay films on ped faces and in cracks; few fine vertical cracks filled with light gray (10YR 6/1) clay loam; gradual smooth boundary.
- B23tx
15141 35 to 44 inches. Mottled yellowish brown (10YR 5/6) light brownish gray (10YR 6/2) and yellowish red (5YR 4/8) clay loam; mottles are many fine and medium, distinct and prominent; moderate fine and medium subangular and angular blocky structure; friable to firm; slightly plastic; few fine roots; few fine voids; few vertical cracks less than 1 inch wide filled with light gray (10YR 6/1) heavy clay loam; gradual smooth boundary.
- B24tx
15142 44 to 56 inches. Mottled yellowish brown (10YR 5/6) gray (10YR 5/1) and yellowish red (5YR 4/8) clay loam; mottles are many fine and distinct prominent; moderate medium and coarse subangular and angular blocky structure; firm; slightly plastic; clay films in cracks and on ped faces; few vertical streaks of light gray (10YR 6/1) clay loam; gradual smooth boundary.
- B25tx
15143 56 to 68 inches. Mottled yellowish red (5YR 4/8) light gray to gray (10YR 6/1) and yellowish brown (10YR 5/6) clay loam; mottles are many fine and medium, distinct and prominent; moderate medium and coarse subangular blocky and angular blocky structure; firm; slightly plastic; few vertical cracks of light gray to gray (10YR 6/1) clay loam; clay films on ped faces and in cracks.

Remarks: The AB, B22t, and B25tx horizons were sampled for the Bureau of Public Roads. Colors given are for moist conditions.

Mineralogy (Method 7B): The mineralogy of the very fine sand is uniform throughout. Quartz and feldspar dominate.

SOIL TYPE Savannah LOCATION Forrest County, Mississippi
 very fine sandy loam

SOIL NOS. S56Mssl8-1 LAB. NOS. 8997-9006

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in. mm.) (per cent)										TEXTURAL CLASS
		1B1a		3A1						2A2		
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			> 2	
		2.1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002		
0-3	A1	0.6	1.5	2.8	18.0	12.4	57.3	7.4	47.8	33.8	-	s11
3-6	A21	0.1	1.2	2.6	17.9	12.2	58.1	7.9	48.0	34.5	-	s11
6-10	A22	0.2	1.1a	2.5a	16.6a	12.5a	56.2	10.9	46.9	33.0	-	s11
10-13	B1	0.1	1.0a	2.3a	17.4a	12.8a	52.6	13.8	46.9	30.3	-	s11
13-26	B21t	0.1	1.0a	2.4a	16.5a	11.7a	48.9	19.4	44.5	27.3	-	1
26-36	B22tx	0.1	1.0a	2.7a	17.6a	12.7a	46.1	19.8	46.3	24.9	-	1
36-42	B23tx	0.1	0.9a	2.5a	17.0a	13.5a	39.9	26.1	43.9	21.7	-	1
42-52	B24tx	0.1	0.9a	2.6a	19.3a	15.0a	37.5	24.6	46.5	20.2	-	1
52-61	B3tx	0.1	0.8a	2.8a	21.4a	15.8a	34.7	24.4	48.5	17.8	-	1
61-73+	C	0.1	1.3a	3.1a	22.5a	16.7a	33.0	23.3	53.6	12.5	-	1
pH		ORGANIC MATTER					Free Iron	MOISTURE TENSIONS				
8C1a	1:5	1:10	6A1a	6B1a	C/N	%Fe ₂ O ₃	CaCO ₃ equivalent	1/10 ATMOS.	1/3 ATMOS.	15 ATMOS.	4B2	
			%	%		6C1a	%	%	%	%		
			3.09	0.106	29	0.6					4.8	
			1.18	0.049	24	0.7					3.0	
			0.48	0.028	17	1.0					3.8	
			0.27	0.022		1.3					5.0	
			0.14	0.018		1.9					7.5	
			0.09			2.1					7.6	
			0.04			3.0					10.1	
			0.03			2.9					9.7	
			0.03			2.0					9.8	
			0.03			3.4					9.7	
5A1a	EXTRACTABLE CATIONS					5B1a	5C3	5B1a	5A3a	Ca/Mg		
CATION EXCHANGE CAPACITY	6N2b	6O2b	6H1a	6E2a	6Q2a	BASE SAT. %	Base Sat. % on Sum	Sum Bases	Sum Cations			
NH ₄ , Ac	Ca	Mg	H	Na	K	NH ₄ , Ac EYCH.						
	milliequivalents per 100g. soil					5C1	Cations/me/100g me/100g			8D3		
11.5	2.6	1.2	12.8	<0.1	0.3	36	24	4.1	16.9	2.2		
5.8	1.3	0.8	6.3	<0.1	0.2	40	27	2.3	8.6			
4.0	0.9	0.8	4.8	<0.1	0.1	45	27	1.8	6.6			
4.1	0.6	0.7	4.4	<0.1	0.2	36	25	1.5	5.9			
5.5	<0.1	0.7	6.4	0.1	0.2	18	14	1.0	7.4			
6.5	0.1	0.4	7.2	<0.1	0.1	9	8	0.6	7.8			
6.5	<0.1	0.4	8.4	<0.1	0.1	8	6	0.5	8.9			
7.2	<0.1	0.4	7.6	<0.1	0.1	7	6	0.5	8.1			
6.2	<0.1	0.1	7.2	<0.1	0.2	5	4	0.3	7.5			
5.8	<0.1	0.2	7.2	<0.1	0.2	7	5	0.4	7.6			

a. Few smooth light brown to black concr. Fe-Mn?

Soil Type: Savannah very fine sandy loam
 Soil Nos.: 856Miss18-1
 Location: Forrest County, Mississippi on Griffin timber holdings east of Petal, Mississippi on south side of Mississippi Highway 42, 5 miles east of Junction 11 and 42. (T5N, R12W, Sec. 34, Photo CZH-1E-136).
 Vegetation and Use: Open woodland dominated by longleaf pine with understory of widely separated blackgum, dogwood, huckleberry and gallberry.
 Slope and Land Form: Nearly level (1 percent) on flat ridge.
 Drainage and Permeability: Moderately well drained. Permeability is moderate in the horizons above the fragipan and slow in that layer.
 Parent Material: Coastal plain sandy material.
 Collected and Described by: Joe Kubota, M. E. Shaffer, Y. E. Havens, April 11, 1956.

Horizon and
 Lincoln
 Lab. No.

A1 0 to 3 inches. Very dark gray (10YR 3/1 and 3/2 moist) very fine sandy loam; very friable; weak medium and fine crumb structure; many fibrous and a few fine woody roots; smooth, clear boundary.
 8997

A21 3 to 6 inches. Horizon of A1, A2, and some B material. Dark grayish brown to very dark grayish brown (10YR 4/2 and 3/2 moist) very fine sandy loam; medium to fine weak crumb structure; friable; many worm casts and pores filled with material from above and below. Many fine fibrous and fine to coarse woody roots; clear, wavy boundary.
 8998

A22 6 to 10 inches. Brown to yellowish brown (10YR 5/3 and 5/4 moist) loam or very fine sandy loam; weak medium subangular blocky structure breaking to weak medium and fine granular; friable; many fine roots; clear, wavy boundary.
 8999

B1 10 to 13 inches. Yellowish brown to light olive brown (10YR 5/6 and 2.5Y 5/6 moist) loam or silt loam; weak medium subangular blocky structure; friable; many worm casts; clay skins in root channels and fine pores; clear, wavy boundary.
 9000

B21t 13 to 26 inches. Yellowish brown (10YR 5/6 moist) loam; weak medium subangular structure; friable; clay skin faint and patchy on ped faces and continuous in large and fine pores and root channels; many fine woody and few medium woody roots; clear, smooth boundary.
 9001

B22tx 26 to 36 inches. Yellowish brown to light olive brown (10YR 5/6 and 2.5Y 5/6 moist) loam; weak medium to fine subangular blocky structure; friable; numerous firm to very firm concretions 1/8 inch to 1/2 inch with continuous clay skin and with yellowish brown (10YR 5/6 moist) to dark reddish brown centers; concretions are more numerous in lower than in upper part of horizon; many medium and fine woody roots; abrupt wavy boundary.
 9002

B23tx 36 to 42 inches. Yellowish brown (10YR 5/6 moist) loam or very fine sandy loam; mottled brown and pale brown; soil is massive in place and breaks into medium to coarse subangular blocky structure; friable to firm; clay skin patchy; root bleaching on horizontal faces of ped; clear smooth boundary.
 9003

B24tx 42 to 52 inches. Yellowish brown (10YR 5/8 moist) loam; soil tends to break out into very coarse and coarse subangular blocky to prismatic ped structure which breaks into moderate medium subangular blocky structure; friable to firm; numerous fine pores and fine cracks; few dark brown concretions; smooth gradual boundary.
 9004

B3tx 52 to 61 inches. Yellowish brown (10YR 5/8 moist) loam; with common fine distinct yellowish red (5YR 4/8 moist) mottles; in place soil is slightly firm, appears massive, and has some light yellowish brown (2.5Y 6/4) vertical streaks; friable; slightly plastic, slightly sticky when wet; few fine roots and few fine pebbles; bleaching along root channels; smooth gradual boundary.
 9005

C 61 to 73 inches plus. Yellowish brown (10YR 5/6 and 5/8 moist) loam; soil appears massive in place; slightly plastic, slightly sticky when wet; friable; dark yellowish brown (10YR 4/4) clay skins in the soil along pores and cracks; few yellowish red (5YR 5/8) stains and firm to very firm concretions.
 9006

SOIL SURVEY LABORATORY Lincoln, Nebr. March 1959

SOIL TYPE Savannah LOCATION Forrest County, Mississippi
 very fine sandy loam

SOIL NOS. S56Miss18-2 LAB. NOS. 9007-9015

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		1B1a		3A1					2A2		> 2	
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	0.2-0.002	0.02-0.002		
2.1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002				
0-3	A1	0.4a	1.0a	1.6a	13.9a	14.5a	60.0	8.6	53.0	32.0	-	s11
3-5	A21	0.1a	0.9a	1.4a	12.6a	14.2a	61.0	9.8	53.1	31.9	-	s11
5-8	A22	0.1a	0.8a	1.5a	12.8a	13.8a	59.3	11.7	50.6	32.5	-	s11
8-12	B1	0.2b	0.8b	1.2b	12.2a	12.6a	58.7	14.3	47.1	33.4	-	s11
12-24	B21t	0.1b	0.6b	1.0b	10.5a	11.5a	52.1	24.2	41.3	30.3	-	s11
24-32	B22tx	0.1b	0.8b	1.1b	11.3a	13.5a	47.6	25.6	42.5	27.1	-	1
32-42	B23tx	<0.1	0.5b	0.9b	12.0a	14.0a	48.1	24.5	44.4	26.9	-	1
42-44	B24tx	0.1b	0.5b	1.0b	14.7a	15.9a	43.0	24.8	46.8	23.2	-	1
44-48+	B25tx	0.1b	0.9b	1.3b	14.2a	15.7a	43.0	24.8	46.1	23.2	-	1
8C1a		pH		ORGANIC MATTER			Free Iron	MOISTURE TENSIONS			4B2	
1:1		1:5	1:10	ORGANIC CARBON	NITROGEN	C/N	% Fe ₂ O ₃	CaCO ₃ equiv- alent	1/10 ATMOS.	1/3 ATMOS.	15 ATMOS.	
5.3				%	%		6C1a	%	%	%	%	
5.2				2.10	0.086	24	0.8				4.5	
5.1				1.12	0.051	22	1.0				4.2	
4.9				0.48	0.031	15	1.3				4.6	
4.8				0.27			1.7				5.4	
5.0				0.15			2.4				9.5	
4.9				0.08			2.8				10.4	
4.9				0.04			2.8				10.1	
4.9				0.04			2.7				9.0	
4.9				0.06			3.7				10.1	
5A1a		EXTRACTABLE CATIONS				5B1a	BASE SAT. %	5C3	5B1a	5A3a	Ca/Mg	
CATION EXCHANGE CAPACITY		6N2b	6O2b	6H1a	6F2a	6Q2a	NEU. AC EXCH.	Base Sat. % on Sum	Sum Bases	Sum Cations		
MLL Ac		milliequivalents per 100g. soil					5C1	Cations me/100me/100g				
9.5		2.0	0.5	8.8	<0.1	0.4	30	25	2.9	11.7		
5.8		0.9	0.3	6.4	<0.1	0.2	24	18	1.4	7.8		
4.1		0.5	0.5	4.4	<0.1	0.2	29	21	1.2	5.6		
4.2		0.3	0.2	5.2	<0.1	0.1	14	10	0.6	5.8		
7.1		0.1	0.4	8.4	0.1	0.2	11	9	0.8	9.2		
7.2		0.6	0.2	8.4	<0.1	0.2	14	11	1.0	9.4		
6.8		<0.1	0.3	8.8	<0.1	0.2	7	5	0.5	9.3		
6.2		<0.1	0.4	7.6	<0.1	0.1	8	6	0.5	8.1		
6.5		<0.1	0.4	7.6	<0.1	0.1	8	6	0.5	8.1		

a. Few smooth light brown to black concr. (Fe-Mn?)
 b. Common smooth light brown to black concr. (Fe-Mn?)

Soil Type: Savannah very fine sandy loam

Soil No.: 856Miss18-2

Location: Forrest County, Mississippi on Griffintimber holdings on north side of Mississippi Highway 42, 4.6 miles east of Highway Junction US 11 - Mississippi 42 (T5N, R12W, Sec. 34, Photo C2H-18-136).

Vegetation and Use: Open woodland dominated by longleaf pine with understory of widely separated blackgum, dogwood, huckleberry and gallberry.

Slope and Land Form: Nearly level (1 percent) on flat ridge.

Drainage and Permeability: Moderately well drained. Permeability is moderate in the horizons above the fragipan and slow in that layer.

Parent Material: Coastal plain sandy material.

Collected and Described by: Joe Kubota, M. E. Shaffer, and L. H. Havens, April 13, 1956.

Horizon and

Lincoln

Lab. No.

- 01-02 3 to 0 inch. Litter of pine needles, leaves and stems of grasses.
- A1
9007 0 to 3 inches. Very dark brown (10YR 2/2 and 3/2 moist) very fine sandy loam; weak medium and fine granular structure; friable; many fine fibrous and a few medium and fine woody roots; bits of charcoal present; wormholes and a few worm casts; a very few fine extremely firm concretions; clear smooth boundary.
- A21
9008 3 to 5 inches. Mixture of material from above and below; friable fine sandy loam; weak medium and fine granular structure; few fine firm concretions; many fine and few medium roots; clear smooth boundary.
- A22
9009 5 to 8 inches. Light yellowish brown to light olive brown (10YR 6/4 and 2.5Y 5/6 moist) loam; weak medium to fine subangular blocky structure which breaks to fine granular; friable; many fine and medium roots; few fine firm concretions; wormholes and a few worm casts; clear smooth boundary.
- B1
9010 8 to 12 inches. Yellowish brown (10YR 5/4 and 5/6 moist) loam; weak medium and fine subangular blocky structure; friable; slightly plastic, slightly sticky when wet; few firm concretions; clay skin patchy in pores; few worm casts; few to many fine roots; clear smooth boundary.
- B21t
9011 12 to 24 inches. Yellowish brown (10YR 5/6 and 5/8 moist) heavy loam; weak medium to fine subangular blocky structure; slightly plastic, slightly sticky; firm to friable; many fine roots; few soft concretions; horizon essentially free of mottles; clear smooth boundary.
- B22tx
9012 24 to 32 inches. Yellowish brown (10YR 5/6 moist) loam; weak medium and fine subangular blocky structure; friable; slightly plastic, slightly sticky when wet; few firm and soft concretions; clay skin patchy along pebble soil mass interface and on ped faces, but it is continuous in fine pores; common, fine, faint to distinct mottles of strong brown and dark red; few fine roots; clear smooth boundary.
- B23tx
9013 32 to 42 inches. Brown (10YR 5/3 moist to wet) loam; weak medium to fine subangular blocky structure; friable; plastic and sticky when wet; numerous firm concretion-like mass with strong brown surface coats; bleaching along root channels; few fine roots; abrupt wavy boundary.
- B24tx
9014 42 to 44 inches. Yellowish brown (10YR 5/6 and 2.5Y 5/6 wet) fine sandy loam; interior of peds strong brown (7.5YR 5/6); coarse platy and subangular blocky structure; firm in place but friable when removed; slightly plastic, slightly sticky; few fine roots along gray streaks; clear smooth boundary.
- B25tx
9015 44 to 48 inches plus. Strong brown (7.5YR 5/6 and 5/8 wet) with dark red mottles that are common, fine, faint to distinct fine sandy loam; massive in place but when removed breaks into very coarse prismatic to columnar peds; firm in place; friable when removed; slightly plastic, slightly sticky; clay skins present along horizontal faces of peds and in fine pores.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1962

SOIL TYPE Savannah silt loam LOCATION Monroe County, Mississippi

SOIL NOS. S61Mss-48-3

LAB. NOS. 15172-15178

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)									2A2 > 2	TEXTURAL CLASS	
		1B1a		3A1					3A1				
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	0.25-0.075	0.075-0.002			
2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002					
0-7	Ap	0.9a	3.5b	4.9	18.2	5.7	56.8	10.0	39.5	31.5	-	s11	
7-19	B2k	0.6a	2.6b	3.6	13.9	4.7	48.8	25.8	30.4	29.6	-	1	
19-23	B2a	0.3a	2.4b	4.2	16.5	5.6	42.2	28.8	30.8	24.8	-	c1	
23-35	B23tx	0.2b	2.3	4.4	17.4	5.7	40.1	29.9	31.2	22.8	-	c1	
35-42	B24tx	0.2b	2.3	4.3	18.1	5.4	39.6	30.1	31.7	21.9	-	c1	
42-53	B31	0.4b	2.9	5.6	22.1	7.2	33.6	28.2	31.7	19.5	-	c1	
53-65	B32	0.6b	3.5	5.8	25.4	8.3	30.0	26.4	35.1	14.9	-	1/c1	
pH		Organic Matter			Bulk Density					MOISTURE TENSIONS			
801a H ₂ O	801c KCl	6A1a O.C.	6B1a N	C/N	Field Moist		30 cm.		A.D.	4B1b 1/3 ATMOS. Pieces	4C1 1/3-to 15-Atm. cm./hr	4B2 15 ATMOS. Sieved	
1:1	1:1	%	%		% M.	g/cc	% M.	g/cc	g/cc	%	cm./hr	%	
4.5	3.6	0.65	0.056	12	13.3	1.61	19.2	1.58	1.61	15.3	.19	3.4	
5.0	3.6	0.14	0.025		17.6	1.60	21.7	1.56	1.65	23.5	.21	10.1	
4.7	3.3	0.06	0.019									10.6	
4.5	3.2	0.05	0.012		15.7	1.72	19.3	1.70	1.76	19.1	.14	10.7	
4.3	3.1	0.04										11.6	
4.2	3.2	0.02			15.0	1.78	17.5	1.74	1.80	16.9	.11	10.5	
4.6	3.2	0.01										9.7	
5A1a		EXTRACTABLE CATIONS				5B1a		Base Sat. %	5A3a	5C3	Sum Ext.	8D3	6C1a
CATION EXCHANGE CAPACITY NH ₄ OAc		Ext. Bases				6B1a	6C2a	NEH ₄ OAc Exch.	Sum Ext. cations	Base Sat. %	Sum Ext. and Al	Ca/Mg	Free Iron (Fe ₂ O ₃)
NH ₄ OAc		Ca	Mg	Na	K	H	Al	5C1	Ext. cations	Sum Ext.	and Al		%
←		6B2b	6B2b	6B2a	6B2a	milliequivalents per 100g. soil							
4.2	1.3	0.8	<0.1	0.4	6.0	0.5		60	8.5	29	3.0		1.6
7.9	3.0	1.8	0.1	0.1	7.2	0.9		63	12.2	41	5.9	1.7	2.7
8.5	1.3	1.7	<0.1	0.1	8.6	2.7		36	11.7	26	5.8	0.8	2.5
9.0	0.9	1.3	<0.1	0.1	9.3	3.5		26	11.6	20	5.8		2.3
9.6	0.2	1.1	<0.1	0.1	10.3	4.0		14	11.7	12	5.4		2.7
7.5	0.1	1.2	<0.1	0.1	8.8	3.5		19	10.2	14	4.9		2.5
6.9	<0.1	0.6	<0.1	0.1	8.4	3.5		10	9.1	8	4.2		2.4

a. Many Fe/Mn-bearing aggregates.
b. Few Fe/Mn-bearing aggregates.

Soil Type: Savannah silt loam

Soil Nos.: S51Miss-48-3

Location: Monroe County, Mississippi, 3½ miles east of Amory on U. S. Highway 278 and 200 feet north of highway.
SE 1/4 SE 1/4, Sec. 5, T138, R8E.

Vegetation and Use: Cotton.

Slope and Land Form: Gently sloping (3 percent slope).

Drainage and Permeability: Moderate well to well drained with medium to rapid runoff and medium internal drainage.
Permeability is moderate in the upper part of the solum and slow in the lower part.

Parent Material: Sandy Coastal Plain.

Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 17, 1961.

Described by: L. C. Murphree and R. C. Carter, May 17, 1961.

Horizon and

Lincoln

Lab. No.

- Ap
15172 0 to 7 inches. Brown to dark brown (10YR 4/3) silt loam with high sand content; weak fine granular and weak medium subangular blocky structure; very friable; few fine roots; few fine brown and black concretions; undecayed crop residue in lower part of plow layer; clear smooth boundary.
- B2t
15173 7 to 19 inches. Strong brown (7.5YR 5/6) heavy loam or clay loam; moderate fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few fine and medium black and brown concretions; clear smooth boundary.
- B22t
15174 19 to 23 inches. Strong brown (7.5YR 5/6) heavy loam or clay loam; common medium prominent mottles of dark red (2.5YR 3/6); moderate fine subangular blocky structure; friable; few fine and medium black and brown concretions; gradual smooth boundary.
- B23tx
15175 23 to 35 inches. Mottled dark red (10P 3/6), yellowish brown (10YR 5/4) and light gray to gray (10YR 6/1) sandy clay loam; mottles are many medium and coarse, distinct and prominent; moderate coarse and very coarse platy structure; breaks into moderate medium subangular blocky structure; firm; compact and brittle; this horizon is in thin horizontal beds of gray, dark red and yellowish brown layers; few fine voids; gradual smooth boundary.
- B24tx
15176 35 to 42 inches. Mottled dark red (10R 3/6) light gray to gray (10YR 6/1) and yellowish brown (10YR 5/4) sandy clay loam; mottles are many medium and coarse, distinct and prominent; moderate coarse and very coarse platy structure; breaks into moderate medium subangular blocky structure; firm; compact and brittle; horizontal bedding not as strong as horizon above; few fine voids; clear smooth boundary.
- B3l
15177 42 to 53 inches. Dark red (2.5YR 3/6) to (10R 3/6) sandy clay loam with common medium and coarse prominent yellowish brown (10YR 5/4) mottles; many mottles are in old root and wormholes; weak coarse angular and subangular blocky structure; friable; few vertical cracks of yellowish brown (10YR 5/4) sandy clay loam; diffuse smooth boundary.
- B32
15178 53 to 65 inches. Dark red (10R 3/6) light sandy clay loam; mottled with common medium and coarse, distinct and prominent yellowish brown (10YR 5/4) and pale brown (10YR 6/3) mottles; weak coarse angular and subangular blocky structure; friable.

Remarks: The B2t, B23tx, and B3l horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): The mineralogy is uniform throughout. Quartz and feldspar dominate the very fine sand, with small amounts of kyanite, zircon, and tourmaline present. Thin, patchy clay films observed in the B2t, B23tx, and B3l horizons under a stereoscopic microscope.

SOIL TYPE Savannah silt loam LOCATION Monroe County, Mississippi

SOIL NOS. S61Miss-18-4. LAB. NOS. 15179-15185

DEPTH INCHES	HORIZON	1B1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)								3A1		TEXTURAL CLASS	
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY		2A2 > 2			
		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002			
0-7	Ap	0.2 a	0.8	6.2	29.0	4.1	52.6	7.1	40.7	26.7	-	s11	
7-19	B21t	<0.1	0.5	5.2	23.2	3.2	44.7	23.2	29.2	27.3	-	1	
19-23	B22t	<0.1	0.5	5.9	28.9	4.1	43.9	16.7	32.3	26.6	-	1	
23-27	B23tx	<0.1	0.5	6.2	30.0	4.1	39.2	20.0	30.5	23.9	-	1	
27-37	B24tx	<0.1	0.5	6.3	29.8	3.9	34.3	25.2	28.1	20.8	-	1	
37-49	B31	<0.1	0.5	7.4	32.6	4.0	27.6	27.9	25.2	18.0	-	cl/scl	
49-62	B32	<0.1	0.5	7.5	34.7	4.0	25.9	27.4	25.3	16.8	-	scl	
pH		Organic Matter			Bulk Density				MOISTURE TENSIONS				
8C1a H ₂ O	8C1c KCl	6A1a O.C.	6B1a N	C/N	Field Moist		30 cm.		A.D.	4B1b 1/3 ATMS. Pieces	4C1 1/3-to 15-Atm. Sieved	4B2 15 ATMS. Sieved	
1:1	1:1	%	%		4B1 % M.	4A1a g/cc	4B3 % M.	4A1c g/cc	4A1b g/cc	%	%	%	
5.5	4.3	0.87	0.057	15	13.1	1.51	17.4	1.48	1.50	14.1	.17	2.5	
4.7	3.4	0.21	0.032		15.2	1.60	20.3	1.57	1.64	21.3	.19	9.1	
4.7	3.4	0.06	0.018									5.9	
4.9	3.6	0.06	0.011									7.2	
4.9	3.4	0.04			13.4	1.80	17.1	1.76	1.82	17.1	.14	9.4	
4.9	3.4	0.02			15.4	1.75	18.4	1.72	1.78	16.9	.12	10.0	
4.7	3.4	0.02										10.4	
5A1a		EXTRACTABLE CATIONS				5B1a		Base Sat.	5A3a	5C3	Sum Ext.	8D3	6C1a
CATION EXCHANGE CAPACITY NH ₄ OAc		Ext. Bases				6B1a H	6C2a Al	Sum NH ₄ OAc Exch.	Sum Cations	Base Sat. %	Sum Bases	Ca/Mg	Free Iron (Fe ₂ O ₃)
		Ca 6N2b	Mg 6O2b	NH ₄ 6P2a	K 6Q2a			5C1	Ext. Cations	Sum. %	and Al		
		milliequivalents per 100g. soil											
3.7	2.0	0.5	<0.1	0.1	4.2	0.1	70	6.8	38	2.7		0.8	
8.6	1.0	1.9	0.1	0.2	7.9	2.2	37	11.1	29	5.4	0.5	2.2	
5.7	0.1	1.2	0.1	0.1	5.8	2.1	26	7.3	20	3.6		1.4	
5.5	0.1	1.0	<0.1	0.1	6.7	2.5	22	7.9	15	3.7		1.6	
8.4	0.1	1.2	<0.1	0.1	9.1	3.6	17	10.5	13	5.0		2.3	
7.5	<0.1	1.3	<0.1	0.1	9.8	4.3	19	11.2	12	5.7		2.5	
8.2	0.1	1.3	<0.1	0.1	9.8	4.5	18	11.3	13	6.0		2.5	

a. Many Fe/Mn-bearing aggregates.

Soil Type: Savannah silt loam

Soil No.: 851Miss-48-4

Location: Monroe County, Mississippi, $4\frac{1}{2}$ miles east of Hatley on blacktop road, 0.9 mile north and 0.4 mile west on gravel road, about 300 feet north of road. SW $1/4$ SW $1/4$, Sec. 18, T28S, R9E.

Vegetation and Use: Vetch - cover crop.

Slope and Land Form: Gently sloping (3 percent slope).

Drainage and Permeability: Moderately well to well drained with medium to rapid runoff and medium internal drainage. Permeability is moderate in the upper part of the solum and slow in the lower part.

Parent Material: Sandy Coastal Plain.

Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 17, 1961.

Described by: L. C. Murphree and R. C. Carter, May 17, 1961.

Horizon and
Lincoln
Lab. No.

- Ap
15179 0 to 7 inches. Dark grayish brown (10YR 4/2) silt loam with high sand content; weak fine and medium granular structure; very friable; few fine roots; material from B horizon in root and wormholes; few fine soft black and brown concretions; few fine pieces of charcoal; abrupt smooth boundary.
- E2t
15180 7 to 19 inches. Brown to dark brown (7.5YR 4/4) heavy loam; moderate fine and medium subangular blocky structure; friable; slightly plastic; few fine roots; few fine soft brown and black concretions; clear smooth boundary.
- E22t
15181 19 to 23 inches. Strong brown (7.5YR 5/6) heavy loam; common medium prominent dark red (2.5YR 3/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; clear wavy boundary.
- E23tx
15182 23 to 27 inches. Mottled dark red (10R 3/6), strong brown (7.5YR 5/6) and yellowish brown (10YR 5/4) heavy sandy loam; many medium and coarse, faint and prominent mottles; moderate coarse and very coarse platy structure; breaks into moderate medium subangular blocky structure; firm; few fine voids; few vertical cracks 1 to 2 inches wide filled with yellowish brown (10YR 5/4) sandy loam; gradual smooth boundary.
- E24tx
15183 27 to 37 inches. Mottled dark red (10R 3/6), yellowish brown (10YR 5/4), and pale brown (10YR 6/3) sandy clay loam; mottles are many medium and coarse, faint and prominent; moderate coarse and very coarse platy structure; breaks into moderate medium subangular blocky structure; firm; compact and brittle; this horizon is in thin, horizontal beds of gray, dark red and yellowish brown layers; few fine voids; patchy clay films on ped faces and in cracks; few vertical cracks filled with yellowish brown (10YR 5/4) sandy loam and few with light brownish gray (2.5Y 6/2) sandy clay loam; gradual smooth boundary.
- E31
15184 37 to 49 inches. Dark red (10R 3/6) sandy clay loam with common medium prominent mottles of yellowish brown (10YR 5/4) and few medium prominent mottles of light gray to gray (10YR 6/1); mottles are segregated in pockets, old root and worm channels; moderate coarse angular and subangular blocky structure; friable; patchy clay films on ped faces and in cracks; few vertical cracks filled with yellowish brown (10YR 5/4) sandy loam and few with light brownish gray (2.5Y 6/2) sandy clay loam; diffuse smooth boundary.
- E32
15185 49 to 62 inches. Dark red (10R 3/6) light sandy clay loam with common medium prominent mottles of yellowish brown (10YR 5/4); weak coarse angular and subangular blocky structure; friable; patchy clay films on ped faces and in cracks.

Remarks: The E2t, E24tx, and E31 horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): The mineralogy is uniform throughout. Quartz and feldspar dominate the very fine sand, with small amounts of kyanite, zircon, and tourmaline present.

SOIL Sharkey clay SOIL Nos. D45-M-017 LOCATION Tunica County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 46264 - 46269

Depth (in.)	Horizon	7B1b Size class and particle diameter (mm) 3A1											3B2 Cm	3B1 Coarse fragments				
		Total		Sand								Silt		Clay		2A2 ≥ 2	2-19	19-76
		Sand (2-0.06) (0.05-0.002)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02)	Int. II (0.02-0.002)	(2-0.1)		Pct. of Pct.	Pct. of Pct. of < 76mm			
0-4	A _p	34.4	60.3	0.3	0.6	0.4	1.5	2.5										
4-8	A ₁₂	31.8	64.6	0.2	0.5	0.4	1.0	1.5										
8-13	A ₁₃	33.0	62.6	0.2	0.6	0.5	1.2	1.9										
13-17	AC	35.0	58.8	0.4	1.0	1.3	1.7	1.8										
17-24	C ₁	31.8	65.3	-	0.1	0.2	0.7	1.9										
24-42	C ₂	35.6	61.8	-	0.2	0.2	0.6	1.6										
Depth (in.)	6A3a Organic Matter	Nitrogen Pct.	C/N Pct.	Carbonate as CaCO ₃ Pct.	Ext. iron as Fe Pct.	4D1 Bulk density			4D2 Water content			4C1 WRD in/in	pH					
						4A1a ½ bar g/cc	4A1b Oven dry g/cc	4D1 COLE g/cc	4B1c ½ bar Pct.	4B2 15 bar Pct.	4C1 WRD in/in		8C1c (1:1) KCl	8C1e (1:1) H ₂ O				
0-4		2.5															5.9	
4-8		2.2																5.9
8-13		2.3																5.9
13-17		1.6																5.9
17-24		1.2																5.6
24-42		1.2																5.5
Depth (in.)	6B1a Extractable bases 5B1a					6B1c Ext. acidity	6B1d CEC		6B1e Ext. Al	6B1f Ratios to clay			6B3 Ca/Mg	6B4 Base saturation				
	6B2a Ca	6B2b Mg	6B2c Na	6B2d K	Sum		6B1d Sum cations	6B1e Ext. Al		6B1f DEC Sum	6B1f Ext. iron	6B1f 15-bar water		6B3 Ca/Mg	6B4 Sum cations Pct.	6B4 NH ₄ OAc Pct.		
					mg/100 g													
0-4	25.9	9.2		1.1		7.0	43.8									83		
4-8	26.0	9.8		0.7		7.1	45.6									84		
8-13	27.3	10.2		0.6		6.4	44.5									86		
13-17	25.6	10.2		0.6		7.7	44.1									83		
17-24	24.7	11.8		0.6		7.3	44.4									84		
24-42	23.3	11.9		0.7		7.3	43.2									84		
Depth (in.)	7A1b-d Clay Fraction Analysis																	
	Mt.	Chl.	Vm.	Ml.	Int.	Qtz.	Kl.											
	7A2 X-ray				7A3													

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, ml. = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, sx = moderate, xxx = abundant, xxxx = dominant

Soil Type: Sharkey clay

Soil No.: D45Mi-017

Location: Tunica County, Mississippi, slightly west of and across road from tenent house. SE 1/4
SE 1/4, Sec. 33, T 4S, R 11W

Collected by: R. W. Simonson, H. B. Vanderford, and C. B. Melton

Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and

Beltsville

Lab. No.

Ap 46264	0 to 4 inches. Very dark grayish brown (10YR 3/2) clay; moderate, fine granular structure; friable; very plastic, very sticky; medium acid; clear smooth boundary.
A12 46265	4 to 8 inches. Very dark grayish brown (10YR 3/2) clay; common, fine distinct dark yellowish brown (10YR 4/4) mottles; moderate fine granular structure; very plastic, very sticky; friable to firm; few fine black concretions; medium acid; clear smooth boundary.
A13 46266	8 to 13 inches. Dark gray (10YR 4/1) clay; many fine and medium distinct strong brown (7.5YR 5/6) and faint gray (10YR 5/1) mottles; massive; firm; very plastic, very sticky; few fine black concretions; medium acid; gradual wavy boundary.
AC 46267	13 to 17 inches. Mottled dark gray (10YR 4/1) strong brown (7.5YR 5/6) and gray (10YR 5/1) clay; massive; firm; very plastic, very sticky; some mixing of material from A horizon in cracks; few fine black concretions; medium acid; gradual smooth boundary.
C1 46268	17 to 24 inches. Dark gray (10YR 4/1) clay; many fine and medium distinct strong brown (7.5YR 5/6) and brown (10YR 4/3) mottles, massive; very plastic, very sticky; firm; some mixing of material from A horizon in cracks; few fine black concretions; few slickensides up to 2 inches across; medium acid; gradual smooth boundary.
C2 46269	24 to 42 inches. Very dark gray (10YR 3/1) clay; many fine distinct dark brown (10YR 4/3) mottles; massive; very plastic; very sticky, firm; common slickensides up to 2 inches across; medium acid.

SOIL Sharkey clay SOIL Nos. D45-MI-018 LOCATION Tunica County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 46270 - 46273

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) SA1											3B2 Cm	3B1 Coarse fragments			
		Total		Sand					Silt					2A2 ≥ 2 Pct.	2-10 Pct.	10-70 Pct. of "< 75mm	
		Sand (2-0.05) (0.05-0.002)	Silt (= 0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)					(2-0.1)
0-4	Ap	32.1	65.2	0.2	0.5	0.4	0.9	0.7									
4-13	A12	32.5	65.0	0.2	0.7	0.4	0.8	0.4									
13-23	C1	37.4	59.9	0.1	0.5	0.5	1.0	0.6									
23-36	C2g	39.4	58.9	-	0.3	0.3	0.7	0.4									
Pct. of < 2 mm																	
Depth (in.)	6A3a Organic Matter	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. iron as Fe Pct.	Bulk density			4B1 COLE	Water content			4C1 WRD in/in	pH			
						4A1e 1/2 bar g/cc	4A1h Oven dry g/cc	4B1c 1/2 bar Pct.		4B2 15 bar Pct.	8C1c (1:1) KCl	8C1a (1:1) H ₂ O					
0-4	2.4															5.9	
4-13	1.8															6.2	
13-23	1.1															5.6	
23-36	0.5															5.0	
Depth (in.)	Extractable bases 5B1a					6B1a Ext. acidity	6B1b Sum cations	6B1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation				
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum				6C1c Sum	Ext. iron	15-bar water		8C3 Sum cations Pct.	8C1 NH ₄ OH Pct.			
	mg/100 g																
0-4	26.9	9.4		1.0		6.8	44.1									85	
4-13	27.1	8.9		0.7		5.4	42.1									87	
13-23	26.9	9.6		0.6		7.8	44.9									83	
23-36	19.6	11.3		0.7		8.2	39.8									79	
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Chl.	Vm.	Ml.	Int.	Qtz.	Kl.	Gibbsite									
	7A2 X-ray				7A3												

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, ml = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, slash = not detected,
tr. = trace, s = small, m = moderate, ab. = abundant, dom. = dominant.

Soil Type: Sharkey clay

Soil No.: D45M1-018

Location: Tunica County, Mississippi, about 20 rods south of gravelled road, NW 1/4, NW 1/4, Sec. 2,
T 58, R 11W

Collected by: R. W. Simonson, H. B. Vanderford, and C. B. Melton

Described by: R. C. Carter, W. A. Cole, and Frank Scott

Horizon and

Beltsville

Lab. No.

Ap 46270	0 to 4 inches. Very dark grayish brown (10YR 3/2) clay; moderate fine granular structure; friable to firm; very plastic, sticky; abrupt smooth boundary.
A12 46271	4 to 13 inches. Dark gray (10YR 4/1) clay; many medium fine distinct strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) mottles; massive to weak, coarse subangular blocky structure; very plastic, very firm, very sticky, diffuse irregular boundary.
C1 46272	13 to 23 inches. Dark gray (10YR 4/1) to gray (10YR 5/1) clay; many fine distinct strong brown (7.5YR 5/6) and dark yellowish brown (10YR 4/4) mottles; massive; very plastic, very sticky, very firm; few cracks filled with material from the A horizon; diffuse irregular boundary.
C2g 46273	23 to 36 inches. Gray (10YR 5/1) clay; many fine distinct strong brown (7.5YR 5/6) and dark yellowish brown (10YR 4/4) mottles; massive; very plastic, very sticky, very firm; common slickensides; few cracks filled with material from A horizon.

SOIL TYPE. Stough loam

LOCATION Clarke County, Mississippi

SOIL NOS. S61Mas-12-3

LAE NOS. 15144-15150

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)							3A1	2A2 > 2	TEXTURAL CLASS		
		VERY COARSE SAND 2.1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002					
0-4	A1	0.4a	1.7	4.2	33.6	12.4	41.1	6.6	48.7	25.6	Tr.	fsl/1	
4-9	A2	0.1a	1.4	3.7	32.0	12.0	39.9	10.9	47.4	24.7	-	1	
9-17	B21t	0.2a	1.5	3.9	31.1	11.2	37.7	14.4	44.9	23.5	-	1	
17-24	B22tx	0.9a	2.5a	4.8	32.6	11.1	35.0	13.1	44.3	21.5	-	1/fsl	
24-34	IIB31x	0.2a	2.5a	6.0	42.6	13.2	27.2	8.3	49.4	16.9	-	fsl	
34-50	IIB32x	0.2	2.2	6.4	46.1	14.0	15.6	15.5	48.0	9.1	-	fsl	
50-65	IIC	0.1	1.8	6.2	49.7	14.6	12.0	15.6	49.1	7.4	-	fsl	
pH		Organic Matter			Bulk Density			MOISTURE TENSIONS					
8C1a	8C1c	6A1a	6B1a	C/N	Field Moist		30 cm.	A.D.	4B1b	4C1	4B2		
H ₂ C	KCl	O.C.	N		4B4	4A1a	4B3	4A1c	4A1b	1/3 to 15-ATMOS.	15-ATMOS.		
1:1	1:1	%	%		% M.	g/cc	% M.	g/cc	g/cc	Pieces	15-ATMOS.		
5.5	4.8	2.15	0.104	21	24.0	1.45	25.6	1.42	1.46	22.6	.25	5.0	
4.9	3.8	0.44	0.026	17								4.4	
4.8	3.5	0.20	0.019		17.6	1.62	18.9	1.59	1.64	15.1	.15	5.6	
4.7	3.5	0.05	0.013		14.7	1.72	17.5	1.68	1.72	13.1	.13	5.2	
4.6	3.6	0.02	0.012		11.6	1.84	13.9	1.80	1.84	11.2	.15	3.0	
4.5	3.2	0.02			14.2	1.79	14.4	1.74	1.80	10.8	.10	5.3	
4.4	3.2	0.04										6.5	
5A1a		EXTRACTABLE CATIONS				5B1a		Base Sat. %	5A3a	5C3	Sum Ext. Bases	8D3	6C1a
CATION EXCHANGE CAPACITY NH ₄ OAc		Ext. Bases				6H1a	6C2a	NH ₄ OAc	Sum Ext. Cations	Sum Ext. Bases and Al		Ca/Mg	Free Iron (Fe ₂ O ₃)
←		Ca	Mg	Na	K	H	Al	5C1	←	→		→	
←		6M2b	6O2b	6P2a	6Q2a								
←		milliequivalents per 100g. soil											
9.7	5.1	1.2	<0.1	0.1	8.8	-	66	15.2	42	6.4	4.2	0.6	
4.6	1.3	0.8	<0.1	0.1	4.8	0.7	48	7.0	31	2.9		0.8	
5.0	0.8	0.4	<0.1	0.1	5.1	1.9	26	6.4	20	3.2		1.1	
4.6	<0.1	0.4	<0.1	0.1	5.3	2.4	11	5.8	9	2.9		1.8	
3.1	0.1	0.2	0.1	0.1	3.7	1.8	16	4.2	12	2.3		0.7	
5.7	0.1	0.6	0.1	0.1	6.5	3.7	16	7.4	12	4.6		0.9	
6.6	<0.1	0.8	0.1	0.1	7.4	4.5	15	8.4	12	5.5		1.8	

a. Many Fe/Mn-bearing aggregates.

Soil Type: Stough loam
 Soil Nos.: 861Miss-12-3
 Location: Clarke County, Mississippi, 1/2 mile west of Enterprise. 300 feet west and 500 feet south of northwest corner of SW 1/4 SW 1/4, Sec. 23, T4N, R4E.
 Vegetation and Use: Dallisgrass pasture.
 Slope and Land Form: Nearly level (1/2 percent slope).
 Drainage and Permeability: Somewhat poorly drained with slow runoff and slow internal drainage. Permeability is moderate in the upper part of the solum and slow in the lower part.
 Parent Material: Coastal Plain terrace.
 Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 16, 1961.
 Described by: R. C. Glenn and R. C. Carter, May 16, 1961.

Horizon and
 Lincoln
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A1 0 to 4 inches. Very dark gray (10YR 3/1) loam; weak fine and medium granular and weak medium subangular blocky structure; friable, common fine roots, few fine and medium black and brown concretions; few root and filled with material from A2 in lower part of horizon; clear smooth boundary.
 15144
 A2 4 to 9 inches. Mottled yellowish brown (10YR 5/4) and dark grayish brown (10YR 4/2) loam; mottles are many fine distinct, and appear to be due to mixing by worm activity; weak fine and medium granular and subangular blocky structure; friable; common fine roots; few fine and medium brown and black concretions; clear smooth boundary.
 15145
 B2t 9 to 17 inches. Brownish yellow (10YR 6/6) loam; weak fine and medium subangular blocky structure; friable; few fine roots; common fine and medium brown and black concretions; clear smooth boundary.
 15146
 B2tx 17 to 24 inches. Mottled yellow (2.5Y 7/6) yellowish brown (10YR 5/6) and light gray (10YR 7/1) loam; mottles are many fine and medium distinct; moderate fine and medium subangular blocky structure; friable; few fine roots; common fine and medium and few coarse black and brown concretions; few fine voids; clear smooth boundary.
 15147
 IIB31x 24 to 34 inches. Mottled light yellowish brown (2.5Y 6/4) light gray (2.5Y 7/2) and yellow (10YR 7/6) fine sandy loam; mottles are many fine faint and distinct; weak medium and coarse subangular and angular blocky structure; friable; vertical cracks less than 1 inch wide of pale yellow (5Y 7/3) loamy sand; common fine and medium brown and black concretions; common fine voids; gradual smooth boundary.
 15148
 IIB32x 34 to 50 inches. Mottled light gray (2.5Y 7/2) yellowish brown (10YR 5/6) and yellow (10YR 7/6) sandy loam; mottles are many fine faint and distinct; weak coarse and medium subangular and angular blocky structure; friable; few fine brown and black concretions; common fine voids; few vertical cracks less than 1 inch wide of pale yellow (5Y 7/3) loamy sand; gradual smooth boundary.
 15149
 IIC 50 to 65 inches. Mottled strong brown (7.5YR 5/8) light gray to gray (10YR 6/1) and brownish yellow (10YR 6/6) heavy sandy loam; mottles are many fine and medium distinct; structureless; friable; few vertical cracks filled with light gray to gray (N 6/) sandy clay loam and few cracks of pale yellow (5Y 7/3) loamy sand.
 15150

Remarks: The B2t, IIB31x, and IIC horizons were sampled for the Bureau of Public Roads. Horizons IIB31x, IIB32x and IIC were wet when described. Other colors given are for moist condition.

Mineralogy (Method 7B): The mineralogy of the very fine sand is uniform throughout. Quartz and feldspar dominate. Thin, patchy clay films observed in the IIB31x and IIB32x horizons under a stereoscopic microscope.

SOIL TYPE Stough LOCATION Clarke County, Mississippi
 fine loamy variant

SOIL NOS. S61Miss-12-4

LAB. NOS. 15151-15157

DEPTH INCHES	HORIZON	1A1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)								3A1		TEXTURAL CLASS	
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	0.25-0.075	0.075-0.002	2A2 > 2		
0-4	A1	0.1a	0.7b	2.8	56.0	14.2	22.2	4.0	57.2	12.4	-	fsl/lfs	
4-11	A2	0.1a	0.3b	2.4	51.5	13.2	25.9	6.6	54.2	15.3	-	fsl	
11-18	B21t	0.1a	0.3b	1.8	42.4	11.6	26.2	17.6	46.0	17.0	-	fsl	
18-31	B22tx	0.5a	0.6a	2.0	40.9	9.4	25.5	21.1	43.3	16.2	-	scl	
31-41	B23gtx	0.6a	0.5a	2.5	42.4	10.5	23.3	19.8	43.1	15.4	-	fsl/scl	
41-58	B24gtx	0.1a	0.5a	2.2	40.2	10.4	20.6	26.0	41.1	13.9	-	scl	
58-65	B3x	<0.1	0.3	2.1	41.9	10.2	17.0	28.5	41.0	11.2	-	scl	
pH		Organic Matter			Bulk Density				MOISTURE TENSIONS				
8Ca H ₂ O	8Ca KCl	6A1a O.C.	6A1a N	C/N	Field Moist		30 cm.	A.D.	4A1b 1/3 Atmos.	4C1 1/3-to 15-Atm.	4B2 15 ATMOS. Sieved		
1:1	1:1	%	%		4A4 % M.	4A1a g/cc	4B3 % M.	4A1c g/cc	4A1b g/cc	Pieces lb./in.			
6.6	6.1	1.26	0.054	23	14.0	1.53	17.0	1.49	1.50	9.0	.09	2.9	
4.8	3.8	0.09	0.007									2.0	
4.6	3.4	0.10	0.016									6.5	
4.7	3.3	0.05	0.015		14.4	1.76	18.0	1.71	1.80	14.8	.12	7.8	
4.7	3.3	0.04										7.0	
4.8	3.1	0.04			15.3	1.74	18.2	1.68	1.76	13.6	.08	9.1	
4.6	3.2	0.03										10.0	
5A1a CATION EXCHANGE CAPACITY (NH ₄ OAc)		EXTRACTABLE CATIONS				5B1a		Base Sat.	5A3a Sum Ext.	5C3 Base Sat.	Sum Ext. Bases	Ca/Mg	6C1a Free Iron. (Fe ₂ O ₃)
		Ce 6A2b	Mg 6A2b	Na 6A2a	K 6A2a	H	Al	NH ₄ OAc Exch. sc1	Sum Cations na/100g	Sum Ext. and Al			
5.9	7.1	0.5	<0.1	<0.1	<0.1	3.5	-	129	11.1	68	7.6	0.4	
1.9	0.1	0.2	<0.1	<0.1	<0.1	2.3	0.7	16	2.6	12	1.0	0.3	
6.6	0.3	0.4	<0.1	0.1	0.1	6.7	3.6	12	7.5	11	4.4	0.9	
7.9	<0.1	0.9	<0.1	0.1	0.1	8.4	5.0	13	9.4	11	6.0	1.0	
7.2	<0.1	0.6	<0.1	0.1	0.1	7.7	4.4	10	8.4	8	5.1	1.0	
10.0	<0.1	0.7	<0.1	0.1	0.1	11.0	6.8	8	11.8	7	7.6	1.2	
11.1	<0.1	1.1	<0.1	0.1	0.1	12.4	7.8	11	13.6	9	9.0	2.5	

- a. Many Fe/Mn-bearing aggregates.
- b. Few Fe/Mn-bearing aggregates.

Soil Type: Stough fine loamy variant

Soil No.: S51Miss-12-4

Location: Clarke County, Mississippi, one mile west and $\frac{1}{2}$ mile northwest of Shubuta. 300 feet east and 300 feet south of northwest corner of SW $1/4$ SW $1/4$, Sec. 5, T10N, R7W.

Vegetation and Use: Carpetgrass pasture.

Slope and Land Form: Nearly level (1 percent slope).

Drainage and Permeability: Somewhat poorly drained with slow runoff and slow internal drainage. Permeability is moderate in the upper part of the solum and slow in the lower part.

Parent Material: Coastal Plain terrace.

Collected by: J. S. Allen and Dean C. McMurtry, Jr., May 16, 1961.

Described by: R. C. Glenn and R. C. Carter, May 16, 1961.

Horizon and

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Lab. No.

- A1
15151 0 to 4 inches. Very dark gray (10YR 3/1) fine sandy loam; weak fine and medium granular structure; very friable; common fine roots; few fine soft black and brown concretions; some mixing of A2 in lower 1 inch of horizon in root and wormholes; abrupt smooth boundary.
- A2
15152 4 to 11 inches. Pale olive (5Y 6/3) fine sandy loam; weak fine and medium granular structure; very friable; few fine roots; some mixing of A1 in root and wormholes; few fine brown and black concretions clear smooth boundary.
- B21t
15153 11 to 18 inches. Light yellowish brown (2.5Y 6/4) heavy sandy loam with many fine distinct and faint yellowish brown (10YR 5/6) and pale olive (5Y 6/3) mottles; weak fine and medium subangular blocky structure; friable; few fine roots; few fine and medium brown and black concretions; clear smooth boundary.
- B22tx
15154 18 to 31 inches. Mottled light gray (2.5Y 7/2) yellowish brown (10YR 5/6) and light yellowish brown (2.5Y 6/4) light sandy clay loam; mottles are many fine distinct; weak medium and coarse subangular and angular blocky structure; friable; common fine and medium brown and black concretions; few fine voids; few vertical cracks $\frac{1}{2}$ to 1 inch wide filled with light gray (2.5Y 7/2) sandy loam; gradual smooth boundary.
- B23gtx
15155 31 to 41 inches. Mottled light gray to gray (10YR 6/1) yellowish brown (10YR 5/6) and light yellowish brown (2.5Y 6/4) sandy clay loam; mottles are many fine and medium, faint and distinct; weak medium and coarse subangular and angular blocky structure; friable; common fine to coarse brown and black concretions; few fine voids; common vertical seams 1 inch wide filled with light gray (2.5Y 7/2) sandy loam; gradual smooth boundary.
- B24gtx
15156 41 to 58 inches. Mottled yellowish brown (10YR 5/6) light gray to gray (10YR 6/1) and strong brown (7.5YR 5/6) sandy clay loam; mottles are many fine and medium, faint and distinct; weak coarse angular blocky structure; friable; common fine to coarse brown, red, and black concretions; few fine voids; patchy clay films in cracks; common vertical seams filled with light gray (2.5Y 7/2) sandy loam; diffuse wavy boundary.
- B3x
15157 58 to 65 inches. Mottled yellowish brown (10YR 5/6) light gray to gray (10YR 6/1) and red (10R 4/8) sandy clay loam; mottles are many fine and medium, distinct and prominent; massive; friable to firm; few fine red concretions; patchy clay films in cracks; common vertical seams filled with light gray (2.5Y 7/2) sandy loam.

Remarks: The B21t, B23gtx, and B3x horizons were sampled for the Bureau of Public Roads. Colors given are for moist soil.

Mineralogy (Method 7B): The mineralogy of the very fine sand is uniform throughout. Quartz and feldspar dominate.

SOIL SURVEY LABORATORY Lincoln, Nebr. March 1959

SOIL TYPE Sumter LOCATION Clay County, Mississippi
silty clay

SOIL NOS. 858 Mas-13-1 LAB. NOS. 9752-9757

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		1B1a		3A1				2A2		> 2		
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	0.2-0.02		0.02-0.002	
2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002				
0-5 1/2	Ap	2.2a	1.5a	1.3b	6.4b	5.4b	41.8	41.4	17.0	34.3	Tr.	sic
5 1/2-9 1/2	C1	0.2a	0.5a	0.5b	4.7b	5.6b	44.2	44.3	15.2	37.9	Tr.	sic
9 1/2-18 1/2	C2	0.2a	0.3a	0.4a	4.1b	5.8b	35.6	53.6	15.1	29.3	-	c
18 1/2-22	C3	0.1a	0.1a	0.4a	3.9b	4.8b	34.3	56.4	13.7	28.3	-	c
22-34	C4	0.1a	0.2a	0.4a	4.1b	4.9b	33.1	57.2	13.4	27.5	-	c
34-54	C5	0.2a	0.4a	0.4a	4.1b	6.5b	33.7	54.7	16.8	26.5	-	c
pH		ORGANIC MATTER				6C1a	ELECTRICAL CONDUCTIVITY EC-10 ³ MILLIMHOS PER CM @ 25°C.	6E1a	MOISTURE TENSIONS			
8C1a	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe2O3%		CaCO3 equivalent %	GYPSUM mg./100g. SOIL	1/10 ATMOS.	1/3 ATMOS.	4B2 IS ATMOS.
1:1										%	%	%
7.6			2.08	0.133	16	1.5		55				14.3
7.8			0.62	0.058	11	1.4		61				15.1
7.8			0.42	0.035	12	2.2		53				18.5
7.7			0.29	0.028	10	2.0		56				20.2
7.7			0.21	0.021		1.2		59				20.6
7.6			0.12			1.1		57				20.3
5A1a CATION EXCHANGE CAPACITY		EXTRACTABLE CATIONS				5B1a	BASE SAT. % NH4, Ac EXCH.	MOISTURE AT SATURATION				
NH4, Ac		6C2b	6H1a	6P2a	6Q2a							
		Ca	Mg	H	Na	K						
		milliequivalents per 100g. soil										
21.5		1.1	<0.1	<0.1	0.4							
23.0		0.3	<0.1	<0.1	0.3							
23.1		0.4	<0.1	<0.1	0.3							
20.8		0.1	<0.1	0.1	0.4							
19.4		0.1	<0.1	0.1	0.4							
20.0		0.2	<0.1	0.1	0.5							
Many CaCO3 coner. or fragments; trace smooth light brown to black coner. (Fe-Mn?)												
Common CaCO3 coner. or fragments; trace smooth light brown to black coner. (Fe-Mn?)												

Soil Type: Sumter silty clay
 Soil No.: 858 Miss-13-1
 Location: Northeast quarter of the northwest quarter, Sec. 14, T20N, R7E; Clay County.
 Elevation: Approximately 400 feet.
 Use: Hay meadow.
 Relief: Gently sloping, 3 percent.
 Drainage: Moderately well drained.
 Parent Material: Selma chalk.
 Ground Water: None.
 Moisture: Soil was moist when sampled.
 Root Distribution: Roots to 18½ inches and very few below.
 Collected by: R. R. Covell, M. C. Garber, L. C. Murphree and R. C. Carter, November 17, 1958.
 Described by: R. C. Carter.

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- Ap 0 to 5½ inches. Olive (5Y 5/3) silty clay; old worm and root channels filled with pale yellow (5Y 7/3) silty clay; moderate fine to coarse granular structure; moist friable; sticky and plastic when wet; many fine grass roots; few fine lime nodules; moderately alkaline; abrupt, wavy boundary.
- C1 5½ to 9½ inches. Pale yellow (2.5Y 7/4) with many fine, faint mottles of white (2.5Y 8/0), silty clay; white color due to soft lime nodules; weak medium subangular blocky breaking down into moderate fine to coarse granular structure; moist, friable; sticky and plastic when wet; few fine grass roots; few fine lime nodules and dark brown concretions; moderately alkaline; clear wavy boundary.
- C2 9½ to 18½ inches. Pale yellow (2.5Y 7/4) with many fine distinct mottles of light gray (5Y 7/1) reddish yellow (7.5YR 6/8) and white (2.5Y 8/0) silty clay; weak medium subangular blocky breaking down into moderate fine to coarse granular structure; moist friable; sticky and plastic when wet; few thin discontinuous clay skins on ped faces; few fine grass roots; common fine soft lime nodules; moderately alkaline; clear irregular boundary.
- C3 18½ to 22 inches. Light gray (5Y 7/2) with few fine distinct mottles of pale yellow (2.5Y 7/4) and brownish yellow (10YR 6/8) silty clay; irregular rectangular peds; pieces of soft marl with silty clay between peds; moist firm; sticky and plastic when wet; very few fine roots; common fine soft lime nodules; few fine dark brown concretions; moderately alkaline; clear irregular boundary.
- C4 22 to 34 inches. Mottled pale yellow (5Y 7/3) and brownish yellow (10YR 6/8) soft marl which is hard when dry; structureless; breaks into soft pieces of marl which are rectangular shaped and about two inches across; moist, extremely firm; few fine grass roots between peds; strongly alkaline.
- C5 34 to 54 inches. Description same as for horizon C4. Horizon divided due to thickness. Sample taken with bucket auger.

Colors given are for moist condition.

OIL TYPE Sufter LOCATION Monroe County, Mississippi
silty clay

SOIL NOS. 958Msa-48-6 LAB. NOS. 9758-9764

DEPTH INCHES	HORIZON	1B1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)									2A2 > 2	TEXTURAL CLASS	
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	3A1				
		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002			
0-5	Ap	0.3a	0.4a	1.2a	9.4a	16.4a	36.2	36.1	39.7	19.1	Tr.	cl	
5-9	AC	0.1a	0.4a	0.7a	6.4a	13.6a	36.0	42.8	32.2	21.7	-	c	
9-14	C1	0.1b	0.3b	0.6b	4.9b	12.6b	35.7	45.8	28.9	22.8	-	c	
14-22	C2	0.2b	0.5b	0.8b	5.8b	14.2b	35.4	43.1	31.1	22.6	-	c	
22-27	C3	0.1b	0.3b	0.6b	5.5b	14.1b	35.4	44.0	32.1	21.5	-	c	
27-36	C4	0.2b	0.4b	0.7b	6.5b	15.6b	35.2	41.4	35.7	20.0	-	c	
36-42	C5	0.1b	0.3b	0.8b	8.1c	17.8c	34.9	38.0	36.3	22.4	-	cl	
8C1a		pH		ORGANIC MATTER			6C1a	ELECTRI- CAL CONDUCTI- VITY EC-10 ³ MILLIMGS PER CM 25°C.	6E1a	MOISTURE TENSIONS			4B2
1:1		1:5	1:10	6A1a ORGANIC CARBON	6B1a NITRO- GEN	C/N	Free Iron Fe ₂ O ₃ %	CaCO ₃ equiv- alent	GYP-SUM mg./100g. SOIL	1/10 ATMOS.	1/3 ATMOS.	15 ATMOS.	%
7.7				1.86	0.167	11	1.6	42				13.9	
7.8				1.24	0.116	11	1.4	42				16.2	
7.8				0.80	0.069	12	1.5	40				17.4	
7.8				0.54	0.049	11	1.3	43				16.2	
7.7				0.35	0.032	11	0.9	45				16.8	
7.6				0.25			0.9	46				15.8	
7.6				0.18			0.7	52				14.9	
5A1a		EXTRACTABLE CATIONS 5B1a				BASE SAT. % NH ₄ Ac EXCH.							MOISTURE AT SATU- RATION
NH ₄ Ac		602b Ca	6H1a Mg	6P2a H	6Q2a Na	6Q2a K	milliequivalents per 100g. soil					%	
20.8		0.6	<0.1	<0.1	0.4								
22.7		0.3	<0.1	<0.1	0.4								
23.9		0.3	<0.1	0.1	0.4								
21.1		0.2	<0.1	0.1	0.3								
19.1		0.2	<0.1	0.1	0.4								
17.0		0.7	<0.1	0.1	0.4								
14.7		1.0	<0.1	0.1	0.5								

- a. Few smooth black concr. (Fe-Mn?); trace CaCO₃ concr. or fragments.
- b. Many CaCO₃ concr. or fragments; trace smooth light brown to black concr. (Fe-Mn?)
- c. Common CaCO₃ concr. or fragments; trace smooth light brown to black concr. (Fe-Mn?)

Soil Type: Sander silty clay
 Soil No.: S58Miss-48-6
 Location: Monroe County, 4½ miles east of Prairie; southwest quarter of southeast quarter, Sec. 7, T15N, R7E.
 Elevation: Approximately 400 feet.
 Use: Hay meadow.
 Relief: Gently sloping 3 percent.
 Drainage: Moderately well drained.
 Parent Material: Selma chalk.
 Ground Water: None.
 Moisture: Soil was moist when sampled.
 Root Distribution: Roots to 14 inches and very few below.
 Collected by: R. R. Covell, M. C. Garber, L. C. Murphree, and R. C. Carter, November 17, 1958.
 Described by: R. C. Carter.

Horizon and
 Lincoln
 Lab. No.

- Ap 0 to 5 inches. Olive (5Y 5/3) silty clay; old root and worm channels filled with pale yellow (5Y 7/4) silty clay; moderate fine to coarse granular structure; moist friable; sticky and plastic when wet; many fine grass roots; few fine dark brown concretions; moderately alkaline; clear smooth boundary.
- AC 5 to 9 inches. Pale yellow (5Y 7/4) silty clay; old worm and root channels filled with olive (5Y 5/3) silty clay from Ap horizon; weak to moderate medium subangular blocky breaking down into moderate fine granular structure; moist friable; sticky and plastic when wet; many fine grass roots; few fine lime nodules; moderately alkaline; clear smooth boundary.
- C1 9 to 14 inches. Pale yellow (5Y 7/4) with common fine distinct mottles of brownish yellow (10YR 6/8) and light olive gray (5Y 6/2) silty clay; weak to moderate medium subangular blocky breaking down into moderate fine granular structure; few thin discontinuous clay skins in ped faces; moist friable; plastic and sticky when wet; few fine grass roots; few fine soft lime nodules and dark brown concretions; moderately alkaline; clear wavy boundary.
- C2 14 to 22 inches. Mottled light olive gray (5Y 6/2) and pale yellow (5Y 7/4) with many fine faint mottles of light gray (5Y 7/2) silty clay to clay; weak medium subangular blocky structure; moist friable; sticky and plastic when wet; very few fine grass roots; common fine soft lime nodules; moderately alkaline; abrupt smooth boundary.
- C3 22 to 27 inches. Mottled gray (5Y 6/1) and pale yellow (5Y 7/4) with few fine distinct mottles of yellow (2.5Y 7/8) mixed silty clay to clay and soft marl; weak medium subangular blocky structure; moist firm; sticky and plastic when wet; common fine soft lime nodules; moderately alkaline; clear smooth boundary.
- C4 27 to 36 inches. Gray (5Y 6/1) soft marl; which is hard when dry; ped interiors are pale olive (5Y 6/3); structureless breaks into soft pieces of marl which are rectangular shaped and about 2 inches across; these peds break out in plates; moist extremely firm; no roots; few fine dark concretions; strongly alkaline.
- C5 36 to 42 inches. Description same as for horizon C4. Horizon divided due to thickness. Sample taken with bucket auger.

Colors given are for moist condition.

SOIL SURVEY LABORATORY

Lincoln, Nebr.

March 1959

OIL TYPE Summer clay

LOCATION Newton County, Mississippi

SOIL NOS. S58Miss-51-2

LAB. NOS. 9765-9769

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS	
		1B1a											
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	2A2	3A1	> 2		
2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002					
0-5	Ap	2.0a	3.2a	2.8a	4.3a	5.8a	42.0	39.9	27.4	22.4	Tr.	sicl-sic	
5-12	AC	0.2a	0.8a	0.8a	1.9a	3.2a	29.8	63.3	14.4	19.6	-	c	
12-20	C1	0.5b	0.8b	0.9c	6.0c	8.5c	50.4	32.9	25.8	36.8	-	sicl	
20-35	C2	1.2b	1.2b	1.3c	8.0c	9.0c	52.3	27.0	30.6	35.2	-	sicl-sil	
35-50	C3	0.9b	0.8b	0.8c	5.7c	8.6c	40.0	43.2	21.5	30.4	-	sic-c	
pH		ORGANIC MATTER				6C1a	ELECTRICAL CONDUCTIVITY EC-10 ³ MILLIMHOS PER CM @ 25°C.	6E1a	MOISTURE TENSIONS				
8C1a	1:5	1:10	6A1a	6B1a	C/N	Free Iron Fe ₂ O ₃ %		CaCO ₃ equivalent %	GYPSSUM mg./100g. SOIL	1/10 ATMOS.	1/3 ATMOS.	15 ATMOS.	
1:1			% ORGANIC CARBON	% NITROGEN						%	%	%	
7.7			2.40	0.192	12	2.8		10				18.2	
7.5			0.96	0.077	12	3.2		3				28.9	
7.8			0.41	0.039	10	1.2		59				14.7	
7.7			0.14	0.013		0.8		69				11.7	
7.6			0.12			1.0		54				18.1	
5A1a	EXTRACTABLE CATIONS				5B1a	BASE SAT. % NH ₄ Ac EXCH.	MOISTURE AT SATURATION %						
CATION EXCHANGE CAPACITY	Ca	6C2b	6H1a	6P2a	6Q2a								
← NH ₄ Ac →		Mg	H	Na	K								
		milliequivalents per 100g. soil											
34.5		1.0	1.2	<0.1	0.5								
46.1		0.4	2.1	0.1	0.6								
20.4		0.2	<0.1	0.1	0.4								
13.4		0.2	<0.1	<0.1	0.4								
20.7		0.4	<0.1	<0.1	0.6								

- a. Few CaCO₃ coner. or fragments; few smooth black coner. (Fe-Mn?)
- b. Many CaCO₃ coner. or fragments; trace smooth black coner. (Fe-Mn?)
- c. Common CaCO₃ coner. or fragments; trace smooth black coner. (Fe-Mn?)

Soil Type: Bunter clay
 Soil Nos.: 558Miss-51-2
 Location: 6 miles south of Lawrence; northwest quarter of northwest quarter, Sec. 26, T5N, R10E - Photo No. AVC-ZG-212 - Newton County.
 Elevation: Approximately 350 feet.
 Use: Permanent native pasture.
 Relief: Moderately sloping, 6 percent.
 Drainage: Moderately well drained.
 Parent Material: Marly clay.
 Ground Water: None.
 Moisture: Soil was moist when sampled.
 Root Distribution: Many roots to 12 inches.
 Collected by: H. L. Neal, C. H. Whittington and R. C. Carter, November 26, 1958.
 Described by: R. C. Carter.

Horizon and
 Lincoln
 Lab. No.

- Ap
 9765 0 to 5 inches. Very dark grayish brown (10YR 3/2) clay; moderate, medium subangular blocky and granular structure; moist friable; sticky and plastic when wet. Many fine grass roots; common, fine lime nodules and gravel concretions; moderately alkaline; clear, smooth boundary.
- AC
 9766 5 to 12 inches. Light olive brown (2.5Y 5/4) clay; old worm and root channels filled with very dark grayish brown (10YR 3/2) clay from Ap horizon; moderate, medium subangular blocky structure; moist, friable to firm; plastic and sticky when wet; clay skins on ped faces; many fine grass roots; common fine dark brown concretions; moderately alkaline; clear, wavy boundary.
- C1
 9767 12 to 20 inches. Mottled light gray (2.5Y 7/2) light olive brown (2.5Y 5/4) and yellow (10YR 7/8) silty clay to silty clay loam; weak medium subangular blocky structure; moist friable; plastic and sticky when wet; few fine grass roots; many medium and coarse soft lime nodules; few fine dark brown concretions; moderately alkaline; clear irregular boundary.
- C2
 9768 20 to 35 inches. Mottled light gray (2.5Y 7/2) dark grayish brown (2.5Y 4/2) and yellow (10YR 7/8) soft marly clay; which is slightly hard when dry; dark grayish brown color is in old root channels; peds break out into rectangular pieces which break down into weak medium subangular blocky structure; moist, friable; sticky and plastic when wet; very few roots; few seashell fossils ranging from 2 to 6 inches in size; many fine and medium lime nodules; strongly alkaline.
- C3
 9769 35 to 50 inches. Description same as for horizon C2. Horizon divided due to thickness.

Colors given are for moist condition.

SOIL SURVEY LABORATORY Lincoln, Nebr. March 1959

SOIL TYPE Sumter clay LOCATION Newton County, Mississippi

SOIL NOS. S58Miss-51-3 LAB. NOS. 9770-9774

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	2A2 > 2	3A1 0.2-0.02	0.02-0.002	
0-6	Ap	2.1a	2.2a	1.4a	3.9a	3.7a	46.5	40.2	17.9	34.5	Tr.	sic-siel
6-14	AC	2.0a	2.2a	1.3a	3.6a	3.9a	53.6	33.4	16.7	42.8	Tr.	siel
14-26	Cl	1.3a	0.8a	0.7a	3.1a	4.0a	56.5	33.6	15.6	46.8	-	siel
26-38	C2	0.8a	0.6a	0.3a	1.0a	1.5a	39.2	56.6	7.3	34.0	-	c
38-50	C3	1.4a	0.7a	0.4a	1.3a	1.9a	34.5	59.8	8.5	28.7	-	c
pH		ORGANIC MATTER				6C1a Free Iron Fe ₂ O ₃ %	ELECTRICAL CONDUCTIVITY EC-10 ³ MILLIMHOS PER CM @25°C.	6E1a CaCO ₃ equiv- alent %	MOISTURE TENSIONS			4E2 15 ATMOS. %
8C1a	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITRO- GEN %	C/N				1:10 ATMOS. %	1/3 ATMOS. %		
7.5			3.41	0.262	13	2.1		30				21.5
7.8			1.45	0.118	12	1.4		49				17.6
7.8			0.41	0.038	11	1.3		60				15.9
7.6			0.26			1.4		42				25.0
7.5			0.22			1.3		39				27.1
5A1a CATION EXCHANGE CAPACITY NH ₄ Ac		EXTRACTABLE CATIONS				5B1a BASE SAT. % NH ₄ Ac EXCH.						MOISTURE AT SATURATION %
	Co	6O2b Mg	6H1a H	6P2a Na	6Q2a K							
← milliequivalents per 100g. soil →												
40.2		1.3	0.4	<0.1	0.6							
29.2		0.4	<0.1	0.1	0.3							
19.4		0.2	<0.1	<0.1	0.4							
31.8		0.4	<0.1	0.1	0.7							
34.4		0.6	<0.1	0.1	0.8							

a. Many CaCO₃ coner. or fragments.

Soil Type: Suter clay
 Soil Nos.: 85084ss-51-3
 Location: 5 1/2 miles south of Newton; southwest quarter of northwest quarter, Sec. 28, T5N, R11E; Photo No. AVC-2G-13.
 Newton County.
 Elevation: Approximately 350 feet.
 Use: Permanent native pasture.
 Relief: Gently sloping, 3 percent.
 Drainage: Moderately well drained.
 Parent Material: Marly clay.
 Ground Water: None.
 Moisture: Soil was moist when sampled.
 Root Distribution: Many roots to 14 inches.
 Collected by: E. L. Neal, C. E. Whittington and R. C. Carter, November 26, 1958.
 Described by: R. C. Carter.

Horizon and
 Lincoln
 Lab. No.

- Ap 0 to 6 inches. Very dark gray (10YR 3/1) clay; moderate fine subangular blocky and granular structure; moist, friable; sticky and plastic when wet; many fine grass roots; common fine lime nodules and dark brown concretions; moderately alkaline; clear, smooth boundary.
 9770
- AC 6 to 14 inches. Mottled dark grayish brown (2.5Y 4/2) and light yellowish brown (2.5Y 6/4) clay; moderate, fine subangular blocky and granular structure; moist friable; sticky and plastic when wet; few fine grass roots; many fine and medium lime nodules; moderately alkaline; clear, smooth boundary.
 9771
- C1 14 to 26 inches. Mottled yellow (2.5Y 7/6) light gray (2.5Y 7/2) and white (2.5Y 8/0) silty clay to silty clay loam; white color due to soft lime nodules; moist friable; sticky and plastic when wet; few roots; approximately 50 percent of this horizon is fine to medium soft lime nodules; few fine to medium dark brown concretions; moderately alkaline; clear wavy boundary.
 9772
- C2 26 to 38 inches. Mottled yellow (2.5Y 7/6 and 10YR 7/8) light gray (2.5Y 7/2) and grayish brown (2.5Y 5/2) soft marly clay, which is slightly hard when dry; peds break out into rectangular pieces which break down into weak, coarse angular and subangular blocky structure; moist friable; sticky and plastic when wet; no roots; many fine and medium lime nodules; moderately alkaline.
 9773
- C3 38 to 50 inches. Description same as for horizon C2. Horizon divided due to thickness.
 9774

Colors given are for moist condition.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Vaiden LOCATION Lowndes County, Mississippi
silty clay loam

SOIL NOS. S58:Miss-14-1 LAB. NOS. 8242-8247

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)								2A2 > 2	TEXTURAL CLASS	
		1B1a		3A1				2A1				
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02			0.02-0.002
0-5	Ap	0.6a	0.6a	0.4a	1.0b	2.1b	41.9	53.4	20.5	24.0	Tr.	sic
5-14	B21t	0.2a	0.2a	0.2b	0.3b	1.2b	33.3	64.6	13.7	20.9	Tr.	c
14-23	B22t	0.1a	0.2a	0.1b	0.1b	1.1b	34.5	63.9	13.9	21.7	-	c
23-33	B23t	0.1a	0.2a	0.1b	0.2b	1.0b	33.9	64.5	13.2	21.8	-	c
33-42	C1	0.1a	0.1a	0.1b	0.3b	1.0b	33.2	65.2	13.5	20.9	-	c
42-65	C2	0.2c	0.2c	0.2c	0.4c	1.1c	31.2	66.7	12.3	20.2	2	c

8C1a	pH	ORGANIC MATTER				Free Iron Fe ₂ O ₃ %	6E1a CaCO ₃ equiv- of am %	BULK DENSITY		WATER RETENT.	
		6A1a ORGANIC CARBON % d	6B1a NITRO-GEN %	C/N	4A1a Field State g/cc			4A1b O. D. g/cc	4B4 Field State %	4B2 15 Bar %	
1:1	1.5	1:10									
5.0			1.63	0.119	14	2.7		1.54	1.64	4	19.9
4.7			0.32	0.025	13	2.4					24.4
4.6			0.22	0.009		2.4		1.4	1.76	24	24.2
4.7			0.14	0.007		2.2		1.5	1.74	18	24.2
5.0			0.14			2.3		1.4	2.0	44	24.2
7.5			0.15			2.8	1	1.57	1.89	19	24.5

5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS					5B1a BASE SAT. % NH ₄ Ac EXCH.	5C3 Base Sat. % on Sum	5E1a Sum	5A3a Sum	Ca/Mg
	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K					
	milliequivalents per 100g. soil					5C1	Cations <me/100g ->		8D3	
33.0	24.8	3.7	14.3	0.2	0.5	88	67	29.2	43.5	6.7
38.2	17.5	2.4	27.4	0.4	0.4	54	43	20.7	48.1	7.3
36.8	19.0	2.1	26.0	0.5	0.4	60	46	22.0	48.0	9.0
40.2	25.6	2.6	19.2	0.7	0.4	73	60	29.3	48.5	9.8
40.2	34.5	2.9	11.6	0.8	0.4	95	77	38.6	50.2	11.9
44.0		3.7		1.0	0.4					

a. Many smooth dark brown to black concr. (Fe-Mn)
 b. Common smooth dark brown to black concr. (Fe-Mn)
 c. Common smooth dark brown to black concr. (Fe-Mn) } Also, common, CaCO₃
 concr.
 d. 7.0 kg/m² to 60 inches. (Method 6A).

Soil Type: Vaiden silty clay loam

Soil Nos.: S58Miss-44-1

Location: 280 feet south and 330 feet west of northeast corner of the NW 1/4 of the NE 1/4 of Sec. 15, T17N, R17E.
280 feet south of county road to Trinity and 2 miles east of U. S. Highway 45. Photograph ND-8F-90.

Area; Lowndes County, Mississippi.

Use: Pasture.

Relief: Gently sloping.

Drainage: Somewhat poorly drained.

Parent Material: Marly clay.

Ground Water: Deep.

Moisture: Soil was moist when sampled.

Root Distribution: Good.

Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 21, 1958.

Described by: Y. H. Havens.

Horizon and

Lincoln

Lab. No.

- Ap
8242 0 to 5 inches. Dark brown (10YR 4/3) to dark grayish brown (10YR 4/2) silty clay loam with few fine faint light brownish gray (10YR 6/2) mottles; weak fine subangular blocky structure; friable when moist, plastic and sticky when wet; very hard when dry; numerous worm and root holes; abrupt smooth boundary.
- B21t
8243 5 to 14 inches. Mottled yellowish red (5YR 4/8 to 5/8) yellowish brown (10YR 5/8) and light gray (2.5Y 7/2) silty clay; moderate fine and medium subangular and angular blocky structure; firm when moist, very plastic, very sticky when wet; many fine roots, many worm and root holes; clear smooth boundary.
- B22t
8244 14 to 23 inches. Mottled gray (10YR 6/1) yellowish brown (10YR 5/8) and yellowish red (5YR 5/8) silty clay; moderate to strong fine and medium angular blocky and subangular blocky structure; friable when moist, very plastic and very sticky when wet; numerous fine roots; clear smooth boundary.
- B23t
8245 23 to 33 inches. Mottled gray (10YR 6/1) strong brown (7.5YR 5/8) and red (2.5YR 5/8) clay; moderate to strong fine to coarse angular blocky and subangular blocky structure; few scattered slickensides; friable when moist, very plastic and very sticky when wet; few fine roots; clear smooth boundary.
- C1
8246 33 to 42 inches. Mottled gray (10YR 6/1) and strong brown (7.5YR 5/8) clay; many large slickensides, medium and coarse blocks formed by slickensides breaking into very fine and fine angular blocky peds; friable when moist, very plastic and very sticky when wet; few fine roots; abrupt wavy boundary.
- C2
8247 42 to 65 inches. Yellowish brown (10YR 5/8) clay (neutral to alkaline clay) with many medium distinct gray (10YR 6/1) mottles; numerous large slickensides; slickensides break into moderate fine and very fine angular blocky peds; numerous lime nodules ($\frac{1}{2}$ to $1\frac{1}{2}$ inch in size); many fine manganese concretions; few fine roots; friable when moist, very plastic, very sticky when wet; abrupt wavy boundary.
- C3 65 to 76 inches plus. Mottled yellowish brown (10YR 5/8) and gray (10YR 5/1) clay; large medium and coarse blocks formed by slickensides breaking into fine and very fine angular blocky peds; manganese coatings on peds; friable when moist, very plastic, very sticky when wet; few fine roots.

Remarks: The Ap, B23t, and C2 horizons were sampled for the Bureau of Public Roads. Grayish holes observed in area; few fine grass roots throughout profile. Consistency of soil when dry is very hard.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

OIL TYPE Vaiden LOCATION Lowndes County, Mississippi
 silty clay loam

SOIL NOS. S58Miss-44-2 LAB. NOS. 8248-8251

DEPTH INCHES	HORIZONE	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										2A2 > 2	TEXTURAL CLASS
		1B1a		3A1						3A1			
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY					
		2.1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-3.02	0.02-0.002			
0-3	Ap	0.6a	0.7a	0.6a	1.2b	2.4b	36.2	58.3	20.9	18.2	-	c	
3-14	B21t	<0.1	0.2a	0.2a	0.3b	1.5b	29.3	68.5	13.1	17.8	-	c	
14-21	B22t	0.1	0.2a	0.1a	0.3b	1.3b	30.6	67.4	12.5	19.5	2	c	
21-38	C	1.6c	0.9c	0.4c	0.7c	1.2c	31.6	63.6	12.9	20.3	5	c	
pH		ORGANIC MATTER				Free Iron	6E1a		BULK DENSITY WATER RETENT.				
8C1a		6A1a		6B1a	C/N	Fe ₂ O ₃ ^s	CaCO ₃ equiv- alent	4A1a	4A1h	4B1	4B2		
1:1		ORGANIC CARBON	NITRO-GEN					Field	O. D.	Field	15		
1:10		% d	%		6C1a	%	g/cc	g/cc	%	%			
4.8		1.69	0.124	14	2.8		1.46	1.77	25	18.3			
4.5		0.31	0.024	13	2.8		1.23	1.69	39	25.1			
6.9		0.22	0.010		2.9		1.26	1.71	36	24.3			
7.6		0.20	0.010		2.7		1.40	1.64	14	23.7			
5A1a		EXTRACTABLE CATIONS				5E1a	5C3	5B1a	5A3a	Ca/Mg			
CATION EXCHANGE CAPACITY NH ₄ Ac		6N2b	6O2b	6H1a	6P2a	6Q2a	BASE SAT. % NH ₄ Ac EXCH.	Base % on Sum	Sum	Sum			
		Co	Mg	H	No	K							
		milliequivalents per 100g. soil					5C1	Cations	me/100g.	8D3			
36.2	27.0	3.1	14.4	0.1	0.5	85	68	30.7	45.1	8.7			
44.2	31.1	1.9	19.3	0.2	0.4	76	64	33.6	52.9	16.4			
44.3		1.4	4.8	0.4	0.4								
42.9		1.3		0.5	0.4								

- a. Many smooth black concr. (Mn)
- b. Common smooth black concr. (Mn)
- c. Common smooth black concr. (Mn) Also, common, CaCO₃ concr.
- d. 4.6 kg/m² to 38 inches. (Method 6A)

Soil Type: Vaiden silty clay loam

Soil Nos.: S58Miss-44-2

Location: 538 feet east and 552 feet north of the southwest corner of the SW 1/4 of the SW 1/4 of Sec. 5, T18N, R17E. One mile south of Motley Creek and 7 miles west of Columbus. Photograph ND-7F-70.

Area: Lowndes County, Mississippi.

Use: Pasture.

Relief: Nearly level.

Drainage: Somewhat poorly drained.

Parent Material: Marly clays.

Ground Water: Deep.

Moisture: Soil was moist when sampled.

Root Distribution: Good in upper 21 inches.

Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 21, 1958.

Described by: Y. H. Havens.

Horizon and

Lincoln

Lab. No.

- Ap
8248 0 to 3 inches. Dark brown (10YR 4/3) to dark yellowish brown (10YR 4/4) heavy silty clay loam; weak fine and very fine subangular blocky and moderate fine granular structure; friable when moist, plastic and sticky when wet; many worm and root holes, many fine roots; abrupt smooth boundary.
- B2t
8249 3 to 14 inches. Mottled strong brown (7.5YR 5/8) and gray (10YR 6/1) silty clay; moderate very fine to fine angular blocky and subangular blocky structure; friable when moist, very sticky and very plastic when wet; many worm and root holes filled with dark yellowish brown (10YR 4/4) silty clay; clear irregular boundary.
- B2t
8250 14 to 21 inches. Light olive brown (2.5Y 5/4) silty clay with many fine distinct and prominent gray (10YR 6/1) and strong brown (7.5YR 5/8) mottles; moderate very fine to medium angular blocky and subangular blocky structure; friable when moist, very sticky and very plastic when wet; few lime concretions; many root and worm channels; weak slickensides break into very fine and fine angular blocky peds; clear irregular boundary.
- C
8251 21 to 38 inches. Light olive brown (2.5Y 5/6) clay; large slickensides break into fine and very fine weak to moderate angular blocky structure; friable when moist, very plastic and sticky when wet; many lime nodules; few fine roots; olive gray (5Y 4/2) faces on slickensides and in pockets; olive gray clay appears as irregular boundary at lower part of C horizon.

Remarks: The marly clay boundary is abrupt and irregular; depth to carbonate ranges from 11 to 50 inches in the sampling pit.

Consistency of soil very hard when dry.

The B2t and C horizons were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Veiden LOCATION Monroe County, Mississippi
silt loam (deep phase)

SOIL NOS. 8581-49-3

LAB. NOS. 8252-8259

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		1B1a					3A1					
		VERY COARSE SAND 2-1	COARSE SAND 1.0-5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.075	0.075-0.002	2A2 > 2	
0-4	Ap	1.3a	1.7a	1.1a	2.5b	1.4b	68.4	23.6	32.0	39.0	-	sil
4-6	A3E1	0.8a	1.4a	0.6a	1.8b	1.0b	58.4	35.8	27.0	33.4	-	sic1
6-12	B2lt	0.1a	0.4a	0.4a	1.0b	0.8b	45.1	52.2	18.7	27.8	-	sic
12-19	B2tg	0.1a	0.4a	0.3a	0.4b	1.2b	44.0	53.6	17.9	27.3	Tr.	sic
19-35	B2tg	0.2a	0.6a	0.3a	0.3b	1.0b	44.3	53.3	17.3	28.0	-	sic
35-49	C1	0.2a	0.4a	0.3a	0.4b	0.8b	38.9	59.0	15.3	24.5	-	c
49-58	C2	0.1a	0.2a	0.2a	0.4b	0.9b	38.2	60.0	14.1	25.1	-	c
58-67+	C3	0.5c	0.6c	0.3c	0.5c	0.6c	39.6	57.9	14.9	25.4	Tr.	c
pH		ORGANIC MATTER					Free Iron	6E1a BULK DENSITY		WATER RETENT.		
8C1a	1.5	1.10	6A1a ORGANIC CARBON %	6E1a NITRO-GEN %	C/N	Fe ₂ O ₃ ^{1/2}	4A1a Field State	4A1h O.D.	4B4 Field State	4B2 15 Bar		
1:1			%	%		6C1a	%	g/cc	g/cc	%	%	
5.3			2.28	0.153	15	1.9		1.30	1.37	4	10.2	
5.0			0.65	0.053	12	2.2		1.32	1.48	14	13.4	
4.6			0.43	0.033	13	2.7		1.30	1.62	23	20.2	
4.6			0.23	0.019		2.7		1.35	1.7	22	20.3	
4.7			0.14	0.013		2.4		1.40	1.78	30	20.7	
4.8			0.14			2.8		1.42	1.75	23	22.1	
5.2			0.18			2.9		1.46	1.72	17	21.2	
7.6			0.12			3.2					20.8	
5A1a CATION EXCHANGE CAPACITY NH ₄ Ac	EXTRACTABLE CATIONS					5B1a BASE SAT. % NH ₄ Ac EXCH.	5C3 Base On Sum	5E1a Sum	5A3a Sum	Ca/Mg		
6N2b	6O2b	6H1a	6P2a	6Q2a								
Ca	Mg	H	Na	K								
milliequivalents per 100g. soil						5C1 Cations	← me/100g →		8D3			
18.2	10.2	1.9	11.6	<0.1	0.2	68	51	12.3	23.9	5.4		
20.4	12.3	1.3	12.1	<0.1	0.2	68	53	13.8	25.9	9.5		
29.5	11.0	1.5	25.6	0.1	0.3	44	34	12.9	38.5	7.3		
30.2	6.8	0.7	29.5	0.2	0.3	26	21	8.0	37.5			
31.6	10.5	1.0	26.5	0.5	0.3	39	32	12.3	38.8	10.5		
35.5	20.7	1.7	19.0	0.9	0.4	67	56	23.7	42.7	12.2		
35.7	31.2	2.2	8.6	1.2	0.4	98	80	35.0	43.6	14.2		
36.4		2.4		1.4	0.4							
a.	Many smooth light brown to black concr. (Fe-Mn)											
b.	Common smooth light brown to black concr. (Fe-Mn)											
c.	Common smooth light brown to black concr. (Fe-Mn) Also, common, CaCO ₃											
d.	7.0 kg/m ² to 60 inches. (Method 6A).											

Soil Type: Vaiden silt loam (deep phase)

Soil Nos.: S58Miss-48-3

Location: 300 feet north and 560 feet west of the southeast corner of SE 1/4 of the SW 1/4 of Sec. 33, T158, R6E. 0.2 mile west of Highway 45W at Maldon and 300 feet north of local road. Photograph NG-3F-175.

Area: Monroe County, Mississippi.

Use: Open pasture with scattered trees.

Relief: Nearly level.

Drainage: Somewhat poorly drained.

Parent Material: Marly clays.

Ground Water: Deep.

Moisture: Soil was moist when sampled.

Root Distribution: Good.

Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 22, 1958.

Described by: Y. H. Havens.

Horizon and

Lincoln

Lab. No.

- Ap 0 to 4 inches. Dark grayish brown (10YR 4/2) silt loam with many fine faint and distinct light brownish gray (2.5Y 6/2) and strong brown (7.5YR 5/8) mottles; moderate fine granular, weak very fine and fine subangular blocky structure; friable when moist, slightly plastic when wet; many root and worm channels filled with very pale brown (10YR 7/4) and gray (10YR 6/1) silt loam; many fine roots, some partially decayed organic matter; few small manganese concretions; abrupt smooth boundary.
- B1 4 to 6 inches. Mottled brownish yellow (10YR 6/8) pale brown (10YR 6/3) and some yellowish red (5YR 5/8) 8253 silt loam; weak fine and medium subangular blocky and moderate fine granular structure; friable when moist, slightly plastic, slightly sticky when wet; numerous roots, abrupt smooth boundary. This horizon is a mixture of A and B.
- B21t 6 to 12 inches. Mottled red (2.5YR 4/8) pale brown (10YR 6/3) and gray (10YR 6/1) silty clay; mottles 8254 are many, fine and medium, and prominent; moderate to strong very fine to medium angular blocky and subangular blocky structure; friable when moist, very plastic and sticky when wet; few coarse roots; numerous fine roots; clear smooth boundary.
- B22tg 12 to 19 inches. Mottled gray (10YR 6/1) red (2.5YR 4/8) and strong brown (7.5YR 5/8) silty clay or 8255 clay; moderate very fine to medium subangular and angular blocky structure; friable when moist, very plastic and very sticky when wet; few coarse roots, root channels filled with light gray (10YR 7/2) silty clay; numerous fine roots; gradual wavy boundary.
- B23tg 19 to 35 inches. Gray (5Y 6/1) clay with many fine and medium prominent strong brown (7.5YR 5/8) and 8256 few yellowish red (5YR 4/8) mottles; moderate very fine to medium subangular and angular blocky structure; friable when moist, very sticky, very plastic when wet; few small weak slickensides; numerous fine roots; clear wavy boundary.
- C1 35 to 49 inches. Mottled yellowish brown (10YR 5/8) and gray (10YR 6/1) clay; many slickensides which 8257 break into moderate very fine to medium angular and subangular blocky structures; friable to firm when moist, very sticky and very plastic when wet; many small manganese concretions; root channels filled with gray clay; few fine voids; gradual wavy boundary.
- C2 49 to 58 inches. Brownish yellow (10YR 6/6) to yellowish brown (10YR 5/8) clay with common fine and 8258 medium prominent gray (2.5Y 6/0) mottles, coatings on faces are gray (5Y 6/1) large slickensides break into moderate very fine to medium angular and subangular blocky pedis; many fine manganese concretions and coatings in lower part of horizon; few manganese concretions and coatings throughout horizon; few fine roots; gradual wavy boundary.
- C3 58 to 67 inches plus. Brownish yellow (10YR 6/6) clay with many fine faint and prominent yellowish brown 8259 (10YR 5/8) light brownish gray (2.5Y 6/2) mottles; large slickensides break to moderate very fine to medium angular and subangular blocky pedis; friable when moist, very plastic, very sticky when wet; many lime nodules present; few manganese concretions; few fine roots.

Remarks: The Ap, B23tg, and C2 horizons were sampled for the Bureau of Public Roads. Consistency of soil very hard when dry.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Vaiden LOCATION Monroe County, Mississippi
silt loam (deep phase)

SOIL NOS. S58Miss-4E-4 LAB. NOS. 8260-8268

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)									2A2 > ?	TEXTURAL CLASS	
		1B1s		3A1			3A1						
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002			
0-1	A1	1.6a	1.1a	1.2a	2.2a	3.0a	72.7	18.2	40.2	36.2	-	s11	
1-3	A2	0.6a	1.2a	1.1a	1.5a	4.3a	71.3	20.0	39.3	36.4	-	s11	
3-8	B21t	0.2a	0.6a	0.7a	0.9a	2.6a	54.0	41.0	26.2	30.4	-	s1c	
8-13	B22t	0.1a	0.5a	0.5a	0.8a	2.6a	50.7	44.8	25.4	27.9	-	s1c	
13-27	B23t	0.3a	0.5a	0.6a	0.8a	2.3a	48.7	46.8	23.6	27.4	-	s1c	
27-43	B31t	0.6a	0.6a	0.5a	0.7a	2.0a	45.0	50.6	20.3	26.7	Tr.	s1c	
43-54	B32t	0.4a	0.5a	0.5a	0.8a	2.0a	45.4	50.4	20.7	26.8	Tr.	s1c	
54-62	C1	0.5a	0.4a	0.6a	0.9a	1.8a	46.8	49.0	21.5	27.3	Tr.	s1c	
62-72	C2	0.4b	0.6b	0.6b	0.8b	2.0b	46.8	48.8	21.2	27.7	3	s1c	
8C1a		pH		ORGANIC MATTER			Free Iron Fe ₂ O ₃ ^h	6E1a CaCO ₃ equiv. acid		BULK DENSITY		WATER RETENT.	
		1:5	1:10	6A1a ORGANIC CARBON % C	6B1a NITROGEN %	C/N			4A1a Field State	4A1h O. D.	4B4 Field State	4B2 15 Bar	
		1:1					6C1a %		g/cc	g/cc	%	%	
5.7				2.72	0.194	14	1.1		1.48	1.50	1	9.1	
4.7				1.03	0.078	13	1.2		1.37	1.48	10	8.0	
4.6				0.43	0.033	13	1.9		1.41	1.62	15	17.0	
4.5				0.22	0.023		2.2		1.36	1.56	12	17.6	
4.6				0.18	0.017		2.3		1.50	1.73	16	19.2	
4.6				0.07			2.4		1.37	1.58	12	18.5	
4.8				0.10			2.3		1.59	1.74	10	18.1	
5.1				0.09			2.6		1.57	1.73	12	18.1	
7.5				0.07			2.5						
5A1a		EXTRACTABLE CATIONS				5B1a	BASE SAT. % NH ₄ Ac EXCH.	5C3	5B1a	5A3a	Ca/Mg		
CATION EXCHANGE CAPACITY M ₄ Ac		6N2b Ca	6O2b Mg	6H1a H	6P2a No	6Q2a K		Base Sum on Sum	Sum Cations				
		milliequivalents per 100g. soil					5C1	Cations me/100g.		8D3			
15.2		11.4	1.3	7.8	0.1	0.3	86	63	13.1	20.9	8.8		
11.8		3.6	0.8	11.0	<0.1	0.1	38	29	4.5	15.5			
22.8		4.3	1.3	22.0	0.1	0.2	26	21	5.9	27.9	3.3		
24.3		4.0	0.8	23.9	0.1	0.2	21	18	5.1	29.0			
25.8		5.5	1.1	23.5	0.2	0.2	27	23	7.0	30.5	5.0		
28.7		11.6	0.8	20.8	0.4	0.3	46	39	13.1	33.9			
28.2		17.6	1.3	14.2	0.6	0.3	70	58	19.8	34.0	13.5		
28.8		23.5	1.5	8.0	0.7	0.3	90	76	26.0	34.0	15.7		
28.9			2.1	1.9	0.9	0.3							
a.		Common smooth light brown to black coner. (Fe-Mn)											
b.		Common smooth light brown to black coner. (Fe-Mn) Also, common, CaCO ₃											
c.		4.8 kg/m ² to 60 inches. (Method 6A).											

Soil Type: Vaiden silt loam (deep phase)

Soil Nos.: 858Mis-48-4

Location: 495 feet south and 100 feet west of northeast corner of the NE 1/4 of the SW 1/4 of Sec. 4, T14S, R6E. 2.5 miles east of the Chickasaw County line at Egypt and 800 feet north of local road. Photograph NG-3F-175.

Area: Monroe County, Mississippi.

Use: Open pasture.

Relief: Nearly level.

Drainage: Somewhat poorly drained.

Parent Material: Marly clays.

Ground Water: Deep.

Moisture: Soil was moist when sampled.

Root Distribution: Good.

Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 22, 1958.

Described by: Y. H. Havens.

Horizon and

Lincoln

Lab. No.

- A1
8260 0 to 1 inch. Dark gray (5Y 4/1) silt loam with few fine faint gray (5Y 5/1) mottles; weak fine subangular blocky and moderate fine granular structure; friable when moist, slightly plastic when wet; many fine roots, many brown and dark gray root stains, few root and worm channels; abrupt smooth boundary.
- A2
8261 1 to 3 inches. Pale brown (10YR 6/3) silt loam with common medium faint grayish brown (2.5Y 5/2) mottles; weak fine subangular blocky and moderate fine granular structure; friable when moist, slightly plastic when wet; many fine roots and few coarse roots; abrupt wavy boundary.
- B21t
8262 3 to 8 inches. Mottled yellowish brown (10YR 5/8) to brownish yellow (10YR 6/8) to gray (10YR 6/1) and gray (5Y 6/1) silty clay loam; moderate fine and medium subangular blocky structure; friable when moist, plastic and sticky when wet; many old root and worm channels filled with gray (5Y 6/1) silt loam; many fine roots; clear wavy boundary.
- B22t
8263 8 to 13 inches. Mottled brownish yellow (10YR 6/8) yellowish brown (10YR 5/8) and light olive gray (5Y 6/2) and red (2.5YR 4/8) silty clay; moderate very fine to medium angular blocky and subangular blocky structure; friable to firm when moist, very plastic and very sticky when wet; numerous fine roots, few coarse roots; clear smooth boundary.
- B23t
8264 13 to 27 inches. Mottled gray (5Y 6/1) yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) and yellowish red (5YR 4/8) and red (2.5YR 4/8) clay; mottles are many, fine and prominent; moderate very fine to medium angular blocky and subangular blocky structure; friable when moist, very sticky, very plastic when wet; many fine roots, few coarse roots; clear wavy boundary.
- B31t
8265 27 to 43 inches. Mottled light olive brown (2.5Y 5/6) and gray (5Y 6/1) clay; moderate very fine to medium angular and subangular blocky structure; friable to firm when moist, very plastic and very sticky when wet; few thin slickensides; few fine roots and root channels; root channels filled with gray (5Y 6/1) clay; gradual wavy boundary.
- B32t
8266 43 to 54 inches. Mottled yellowish brown (10YR 5/8) to brownish yellow (10YR 6/8) to gray (5Y 6/1) clay; large slickensides break into moderate very fine to medium angular and subangular blocky peds; friable when moist, very sticky, very plastic when wet; few manganese concretions; faces on slickensides are light olive brown (2.5Y 5/6) with some gray; few fine roots; gradual wavy boundary.
- C1
8267 54 to 62 inches. Mottled yellowish brown (10YR 5/8) to brownish yellow (10YR 6/8) clay with many coarse prominent light brownish gray (2.5Y 6/2) mottles; large slickensides break to moderate very fine to medium angular and subangular blocky peds; friable to firm when moist, very sticky, very plastic when wet; many fine manganese concretions and coatings in lower parts of horizons; few lime nodules; root channels filled with gray (10YR 6/1) clay; few fine roots; gradual wavy boundary.
- C2
8268 62 to 72 inches. Coarsely mottled brownish yellow (10YR 6/8) to yellowish brown (10YR 5/8) and light brownish gray (2.5Y 6/2) and olive gray (5Y 5/2) clay; large slickensides break to moderate very fine to medium angular and subangular blocky structure; friable when moist, very plastic, very sticky when wet; many lime nodules, many fine manganese concretions; few fine roots, root channels filled with gray (10YR 6/1) clay.

Remarks: The B21t, B23t, and C2 horizons were sampled for the Bureau of Public Roads. Consistency of soil very hard when dry. Scattered crayfish holes in area.

SOIL Vaiden silty clay SOIL Nos. 855M1a-51-1 LOCATION Newton County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551111 - 551115

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) 3A1											3B2 Cm	3B7 Coarse fragments 3B7		
		Total			Sand				Silt					2A2 ≥ 2 Pct.	2-19 Pct.	19-75 Pct.
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)				
Pct. of < 2 mm																
0-3	Ap	48.3	28.6	1.9	6.2	6.0	6.7	2.3		26.1	27.3		tr.			
3-6	B1	42.7	46.0	1.0	2.9	3.0	3.2	1.2		28.0	17.2		tr.			
6-19	B21t	34.5	59.0	0.2	1.6	1.8	2.0	0.9		22.9	13.4		tr.			
19-47	B22t	27.1	67.7	0.1	1.2	1.1	1.5	1.3		20.3	8.8		tr.			
47-60	B3t	30.4	52.2	2.5	3.9	2.3	3.9	4.8		23.0	14.6		-			
Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. Iron as Fe Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH		
						4A1e g/cc	4A1h g/cc	4A1i g/cc		4B1c g bar	4B2 15 bar	8C1c KCl (1:1)		8C1a H ₂ O (1:1)		
0-3	1.41														4.9	
3-6	0.82														4.4	
6-19	0.42														4.3	
19-47	0.20														4.3	
47-60	0.22														7.5	
Depth (in.)	Extractable bases 5B1a				6H1a Ext. acidity	CEC		6G1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation			
	6N2d Ca	6O2h Mg	6P2a Na	6Q2a K		Sum	5A3a Sum cations		CEC Sum	Ext. Iron	15-bar water		Sum cations Pct.	5C1 NH ₄ OAc Pct.		
0-3	10.5	2.0	0.1	0.2		10.5	23.3						55			
3-6	13.7	2.1	0.2	0.4		16.2	32.6						50			
6-19	18.0	2.1	0.3	0.4		20.0	40.8						50			
19-47	34.0	3.1	0.6	0.6		13.1	51.4						74			
47-60	a	a	a	a		a	a						a			
Depth (in.)	Clay Fraction Analysis 7A1b-d															
	Mt	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite								
7A2 X-ray																
7A3																

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.
a Extractable cations not determined.
Calcareous layer.

Soil Type: Vaiden silty clay
 Soil No.: S55Miss-51-1
 Location: Newton County, Mississippi, 1/4 mile west of cemetery and 175 feet north of gravel road
 between Sec. 22 and 27. R 10E, T 5N.
 Collected by: L. C. Murphree, H. L. Neal

Horizon and
 Beltsville
 Lab. No.

- Ap
 551111 0 to 3 inches. Dark grayish brown (10YR 4/2) friable silty clay containing a few grass roots; weak medium blocky structure; plastic when wet, hard when dry; abrupt smooth boundary, strongly acid. 2 to 4 inches thick.
- B1
 551112 3 to 6 inches. Grayish brown (10YR 5/2) very firm clay containing a few grass roots with many, medium, distinct dark yellowish brown (10YR 4/4) and light gray (10YR 7/1) mottles; moderate medium blocky structure; plastic when wet, very hard when dry; clear wavy boundary; strongly acid. 2 to 4 inches thick.
- B21t
 551113 6 to 19 inches. Pale yellow (2.5Y 8/4) very firm clay containing a few small tree roots and gravel with few, medium, faint yellowish red (5YR 5/6) and gray (10YR 6/1) mottles; moderate medium blocky structure; plastic when wet; very hard when dry; gradual wavy boundary; strongly acid. 12 to 15 inches thick.
- B22t
 551114 19 to 47 inches. Light gray (10YR 7/2) very firm clay with many, fine, faint brownish yellow (10YR 6/6) mottles; moderate medium blocky structure; plastic when wet, very hard when dry; slightly acid. 20 to 30 inches thick.
- B3t
 551115 47 to 60 inches. Light gray (10YR 7/2) very firm clay mottled with brownish yellow (10YR 6/6) mixed with partially weathered chalk.

Notes: Colors refer to moist soil.

SOIL Vaiden silty clay SOIL Nos. 855Mies-51-2 LOCATION Newton County, Mississippi

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 55116 - 55119

Depth (in.)	Horizon	Size class and particle diameter (mm) SA1											3B2 Cm	Coarse fragments 5B1		
		Total		Sand					Silt					2A2 ≥ 2 Pct.	2-10 Pct.	10-76 Pct. of ≤ 76mm
		Sand (2-0.05) (0.05-0.002)	Silt (= 0.002)	Clay (= 0.002)	Vary coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Vary fine (0.1-0.05)	Int. III (0.05-0.02) (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)				
0-4	Ap	45.6	48.4	0.6	1.6	1.2	1.6	1.0	30.5	17.1			-			
4-18	B21t	22.9	76.1	0.1	0.2	0.2	0.3	0.2	16.8	6.6			-			
18-46	B22t	25.8	73.2	0.1	0.2	0.1	0.3	0.3	19.3	7.0			-			
46-60	B3t	30.7	63.1	2.2	2.0	0.7	0.8	0.5	22.2	9.4			-			
Pct. of < 2 mm																
Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N	Carbonate as CaCO ₃ Pct.	Ext. iron as Fe Pct.	Bulk density			401 COLE	Water content			401 WRD in/in	pH		
						4A1a 1/2 bar g/cc	4A1b Oven dry g/cc	401		4B1c 1/2 bar Pct.	4B2 15 bar Pct.	8C1c (1:1) KCl		8C1a (1:1) H ₂ O		
0-4	2.44														5.7	
4-18	0.53														4.4	
18-46	0.28														4.8	
46-60	0.30														7.6	
Depth (in.)	Extractable bases 5B1a					6B1a Ext. acidity	CEC 5A3a Sum cations	6D1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation			
	5N2d Ca	5O2b Mg	5P2a Na	5Q2a K	Sum				CEC Sum	Ext. iron	15-bar water		5C3 Sum cations Pot.	5C1 NH ₄ OH Pot.		
					mg/100 g											
0-4	23.8	4.1	0.2	0.6		10.0	38.7								74	
4-18	29.4	5.2	0.4	0.6		17.9	53.5								66	
18-46	35.5	6.1	0.7	0.7		8.5	51.5								63	
46-60	a	a	a	a		a	a								a	
Depth (in.)	Clay Fraction Analysis 7A1b-d															
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite								
	7A2 X-ray				7A3											

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, s = small, m = moderate, ab. = abundant, dom. = dominant.
a Extractable cations not determined.
Calcareous layer.

Soil Type: Vaiden silty clay

Soil No.: S55Miss-51-2

Location: Newton County, Mississippi, 1 1/4 miles south of Lawrence, Mississippi, approximately 50 feet west of Mississippi Highway 505.

Collected by: L. C. Murphree, H. L. Neal

Horizon and
Beltsville
Lab. No.

Ap 551116	0 to 4 inches. Dark grayish brown (10YR 4/2) friable silty clay containing a few grass roots; weak medium blocky structure; plastic when wet, hard when dry; abrupt smooth boundary; strongly acid. 2 to 4 inches thick.
B21t 551117	4 to 18 inches. Brownish yellow (10YR 6/6) very firm clay containing a few small tree roots with few, fine, faint yellowish red (5YR 4/6) and light gray (10YR 7/1) mottles; moderate medium blocky structure; plastic when wet, very hard when dry; clear wavy boundary; strongly acid. 12 to 18 inches thick.
B22t 551118	18 to 46 inches. Light gray (10YR 7/2) very firm clay with many, fine, faint brownish yellow (10YR 6/6) mottles; moderate medium blocky structure; slightly acid; 20 to 30 inches thick.
B3t 551119	46 to 60 inches. Yellowish brown (10YR 5/4) very firm clay mottled with light gray (10YR 7/1) containing many iron concretions and lime nodules. This layer rests upon partially weathered chalk.

Notes: Colors refer to moist soil.

SOIL Vicksburg silt loam SOIL Nos. S5061a-42-2 LOCATION Leflore County, Mississippi
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 56583 - 96585

Depth (in.)	Horizon	1B1a Size class and particle diameter (mm) SA1											3B2 Cm	Coarse fragments SB1			
		Total				Sand								3B2 Cm	2A2 ≥ 2	2-19	19-75
		Sand (2-0.06)	Silt (0.06-0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)					
0-6	Ap	88.8	10.8	-	-	-	0.1	0.3		61.0	26.1			tr.			
6-18	C1	84.8	15.0	-	-	-	-	0.2		60.1	24.9			tr.			
18-40+	C2	84.0	14.8	-	-	-	-	0.2		58.4	26.8			tr.			
Pct. of < 2 mm																	
Depth (in.)	6A1s Organic carbon	Nitrogen	Q/N	Carbonate as CaCO ₃	Ext. iron as Fe	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH			
						4A1s kg bar	4A1h Oven dry	4D1 g/cc		4B1c kg bar	4B2 15 bar	4C1 in/in		8C1c (1:1)	8C1s (1:1)		
						Pct.	Pct.	Pct.		Pct.	Pct.	Pct.		KCl	H ₂ O		
0-6	0.79	0.105	8													5.0	
6-18	0.41	0.059	7													5.4	
18-40+	0.23	0.042														5.1	
Depth (in.)	Extractable bases SB1a					6H1a Ext. acidity	CEC		6D1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation			
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		6A1s Sum	6D1d Sum		CEC Sum	Ext. Iron	15-bar water		Ca/Mg	8C3 Sum cations Pct.	8C1s NH ₄ OAc Pct.	
	mg/100 g																
0-6	4.8	2.1	0.2	0.4		4.8	12.3						61				
6-18	4.6	2.6	0.3	0.2		4.8	12.5						62				
18-40+	4.0	2.9	0.1	0.2		5.0	12.2						59				
Depth (in.)	Clay Fraction Analysis 7A1b-d							7A2 X-ray		7A3							
	Mt.	Chl.	Vm.	Ml.	Int.	Qtz.	Kl.	Gibbsite									

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, ml = mica,
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite
Relative amounts: blank = not determined, dash = not detected,
tr. = trace, s = small, m = moderate, xx = abundant, xxx = dominant.

Soil Type: Vicksburg silt loam

Soil No.: S56Miss-42-2

Location: Leflore County, Mississippi, 1/4 mile NW of Browning School and 1/4 mile N. of Columbus and Greenville railroad, on the W. Bank of an old bayou, Sec. 7, T 19N, R 2E, photo AVI-1F-17

Collected by and date: Walter E. Keenan, 5/23/56

Horizon and
Beltsville
Lab. No.

- Ap 56583 0 to 6 inches. Yellowish brown (10YR 5/4), pale yellow (2.5Y 7/4), dry; very friable silt loam, with weak fine granular structure; very strongly acid; boundary abrupt, smooth.
- C1 56584 6 to 18 inches. Light yellowish brown (10YR 6/4), light yellowish brown (2.5Y 6/4), dry; very friable silt loam; with some layers of very pale brown and white in the lower part; massive structure; strongly acid; boundary clear, smooth.
- C2 56585 18 to 40 inches. Yellowish brown (10YR 5/4), light yellowish brown (2.5Y 6/4), dry; friable silt loam, splotched or streaked with gray and yellow; with many dark brown stains and splotches in the lower part; a few small dark colored concretions; massive structure; very strongly acid.

Notes: Colors refer to moist soil unless otherwise stated.

Soil Type: Wilcox silt loam

Soil Nos.: 558Miss-72-2

Location: 264 feet west and 99 feet north of southeast corner of the SW 1/4 of the SE 1/4 of Sec. 12, T13N, R16E. In pasture east of local road two miles north of crossroads on black top three miles west of center of Shuqualak. Photograph NI-1H-24. Area: Noxubee County, Mississippi.

Use: Pasture.

Relief: Gently sloping.

Drainage: Somewhat poorly drained.

Parent Material: Acid clays (Porters Creek clay).

Ground Water: Deep.

Moisture: Soil was moist when sampled.

Root Distribution: Good.

Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 20, 1958.

Described by: Y. H. Havens.

Horizon and

Lincoln

Lab. No.

- Ap
8222 0 to 4 inches. Dark grayish brown (10YR 4/2) silt loam with few fine and faint mottles and material from layer below; moderate fine granular and weak fine subangular blocky structure; friable when moist, slightly plastic when wet; many fine roots, root channels and wormholes; abrupt smooth boundary.
- B21t
8223 4 to 11 inches. Dark yellowish brown (10YR 4/4) silty clay loam or silty clay with common fine distinct gray (10YR 6/1) and light brownish gray (2.5Y 6/2) mottles; moderate fine and medium subangular blocky structure; friable when moist, plastic and slightly sticky when wet; many fine roots, root channels and wormholes; clear smooth boundary.
- B22t
8224 11 to 16 inches. Mottled yellowish red (5YR 4/8) gray (10YR 6/1) and yellowish brown (10YR 5/6) light silty clay; strong fine and medium subangular and angular blocky structure; friable to firm when moist; plastic and sticky when wet; common fine roots; gradual smooth boundary.
- B23tg
8225 16 to 36 inches. Gray (10YR 6/1) clay with common fine prominent red (10R 4/8) and brownish yellow (10YR 6/8) mottles; moderate medium prismatic structure that breaks into moderate to strong fine and medium angular and subangular blocky structure; firm when moist, plastic and sticky when wet; small weak slickensides; few fine roots; gradual wavy boundary.
- B3g
8226 36 to 56 inches. Gray (10YR 6/1) clay with many medium prominent red (10R 4/8) and yellowish brown (10YR 5/8) mottles; strong fine to coarse angular blocky structure; firm when moist, plastic and sticky when wet; large slickensides (8 by 10 inches) just above shale layer; few fine roots; pockets of yellowish brown (10YR 5/6) clay which are discontinuous; abrupt irregular boundary.
- R
8227 56 to 72 inches plus. Olive (5Y 5/3) shale.

Remarks: The B21t, B23tg, and R horizons were sampled for the Bureau of Public Roads.

OIL TYPE Wilcox LOCATION Noxubee County, Mississippi
silt loam

SOIL NOS. 358Mss-52-3 LAB. NOS. 8228-8234

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										TEXTURAL CLASS
		1E1a					3A1					
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	0.2-0.02		0.02-0.002	
2.1	1.0-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02		0.02-0.002	2A2		
												> 2
0-5	Ap	2.1a	2.4a	1.5b	2.1b	0.9b	52.0	39.0	17.4	36.4	Tr.	sic1
5-8	B2lt	1.0a	2.0a	1.2b	1.2b	1.4b	49.6	43.6	15.2	36.2	-	sic
8-15	B22t	1.1a	1.7a	1.0b	0.8b	1.5b	46.2	47.7	14.5	33.3	-	sic
15-33	B23tg	1.3a	2.1a	1.2b	0.9b	1.4b	45.9	47.2	14.6	32.8	-	sic
33-50	B3g	0.9a	0.9a	0.6b	0.8b	0.6b	36.9	59.3	10.2	27.7	-	c
50-57	Cg	0.3a	0.7a	0.6b	1.3b	1.1b	28.8	67.2	6.7	23.9	-	c
57-73	R	0.1	0.3a	0.3b	0.7b	0.8b	22.6	75.3	2.3	21.5	-	c

8C1a		ORGANIC MATTER			Free Iron	CaCO ₃ equivalent	BULK DENSITY WATER RETENT.			
1:5	1:10	6A1a	6B1a	C/N	Fe ₂ O ₃ %		4A1a	4A1h	4B4	4B2
		ORGANIC CARBON	NITROGEN			Field State	O. D.	Field State	15 Bar	
		% C	%		6C1a	%	g/cc	g/cc	%	
4.7		1.46	0.106	14	3.6		1.50	1.54	1	
4.6		0.46	0.062	7	3.6		1.46	1.59	10	
4.7		0.33	0.052	6	3.4		1.42	1.66	9	
4.7		0.22	0.039		3.8		1.41	1.74	24	
4.5		0.14			3.6		1.38	1.76	27	
4.0		0.14			5.5					
4.2		0.18			2.8					

5A1a	EXTRACTABLE CATIONS					BASE SAT. NB4Ac EXCH.	5C3	5B1a	5A3a	Ca/Mg
	6N2b	6O2b	6H1a	6P2a	6Q2a					
	Cu	Mg	H	Na	K					
milliequivalents per 100g. soil										
						5C1	Cations		8D3	
19.7	4.6	5.3	15.8	0.1	0.5	53	40	10.5	26.3	0.9
21.2	3.1	5.0	19.2	0.1	0.4	40	31	8.6	27.8	0.6
23.0	2.3	5.5	20.7	0.2	0.5	37	29	8.5	29.2	0.4
23.5	2.1	6.3	19.3	0.4	0.4	39	32	9.2	28.5	0.3
30.9	4.1	10.8	21.0	0.7	0.6	52	44	16.2	37.2	0.4
33.8	6.0	14.5	20.1	0.9	0.8	66	52	22.2	42.3	0.4
38.4	8.0	17.7	19.3	1.2	1.1	73	59	28.0	47.3	0.4

a. Many smooth light brown to black concr. (Fe-Mn)
 b. Common smooth light brown to black concr. (Fe-Mn)
 c. 6.7 kg/m² to 60 inches (Method 6A).

Soil Type: Wilcox silt loam

Soil Nos.: 858Miss-92-3

Location: 425 feet east and 35 feet south of northwest corner of the NW 1/4 of the NE 1/4 of Sec. 15, T13N, R16E.
In idle field south of gravel road 5 miles west of Shugualak. Photograph NI-5H-56. Area: Noxubee County, Mississippi.

Use: Idle (Broomsage).

Relief: Gently sloping.

Drainage: Somewhat poorly drained.

Parent Material: Acid clay (Porters Creek clay).

Ground Water: Deep.

Moisture: Soil was moist when sampled.

Root Distribution: Good.

Collected by: J. S. Allen, K. W. Flach, and Y. H. Havens, May 20, 1958.

Described by: Y. H. Havens.

Horizon and

Lincoln

Lab. No.

Ap
8228 0 to 5 inches. Dark brown (10YR 4/3) silt loam or silty clay loam with few fine faint pale brown (10YR 6/3) mottles; moderate fine granular and weak fine subangular blocky structures; friable when moist, slightly plastic when wet; many fine roots, root and worm channels; abrupt smooth boundary.

B21t
8229 5 to 8 inches. Mottled dark brown (7.5YR 4/4) pale brown (10YR 6/3) gray (10YR 6/1) and yellowish red (5YR 4/8) silty clay loam or silty clay; moderate fine and medium subangular blocky structure; friable when moist, plastic, slightly sticky when wet; many fine roots, root and worm channels; clear smooth boundary.

B22t
8230 8 to 15 inches. Mottled yellowish red (5YR 4/8) light brownish gray (10YR 6/2) and grayish brown (2.5Y 5/2) silty clay; strong fine and medium subangular and angular blocky structure; firm when moist, plastic and sticky when wet; few small iron concretions; many fine roots; clear wavy boundary.

B23tg
8231 15 to 33 inches. Light brownish gray (2.5Y 6/2) silty clay or clay with many medium prominent red (10R 4/8) and light olive brown (2.5Y 5/6) mottles; strong fine and medium angular and subangular blocky structure; firm when moist, plastic and sticky when wet; root and worm channels filled with gray (10YR 6/1) clay; occasional small gravel; gradual wavy boundary.

B3g
8232 33 to 50 inches. Mottled gray (5Y 5/1) yellowish brown (10YR 5/8) and yellowish red (5YR 4/8) clay; strong coarse angular blocky and strong fine and medium angular and subangular blocky structure; friable when moist, very plastic and sticky when wet; many slickensides (3 inches large); abrupt wavy boundary.

Cg
8233 50 to 57 inches. Mottled gray (5Y 5/1) to yellowish brown (10YR 5/6) and red (10R 4/8) clay; mottles are many coarse and prominent; massive structure and strong coarse angular blocky; large slickensides; friable when moist, very plastic and sticky when wet; numerous fine roots; abrupt wavy boundary.

R
8234 57 to 53 inches. Gray (10YR 5/1) shale; few large roots in shale.

Remarks: The Ap, B23g, and R horizons were sampled for the Bureau of Public Roads.
Numerous roots through entire profile.

MISSISSIPPI

