Soil Survey Investigations Report No. 6

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

...ARKANSAS LOUISIANA MISSOURI

SOIL CONSERVATION SERVICE · U.S. DEPARTMENT OF AGRICULTURE
In cooperation with
ARKANSAS, LOUISIANA, AND MISSOURI AGRICULTURAL EXPERIMENT STATIONS

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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. Saran-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
      4. Nonpolar-liquid-saturated clods
   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. Acidity by $BaCl_2$-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. Peroxide 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. Dithionite-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. Gysum
      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. $BaCl_2$-triethanolamine I
         a. Back-titration with HCl
      2. $BaCl_2$-triethanolamine II
         a. Back-titration with HCl
      3. 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 Fe, Al, and Mn removed
         d. Oxalate-cerate
      3. NH_4Cl-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, $Mg_2P_2O_7$
      3. NH_4Cl-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 fractionatior
      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

ARKANSAS

County	Soil Series	Soil Survey No.	Page
Ashley	Portland	S60Ark-2-1	29
Cross	Grenada	S57Ark-19-1	11
Desha	Perry	S60Ark-21-1	31
	Perry	S60Ark-21-2	33
Franklin	Rarden (now Enders)	S60Ark-24-1	35
	Rarden (now Enders)	S60Ark-24-2	37
Mississippi	Dubbs	S60Ark-47-1	3
	Dubbs	S60Ark-47-3	5
Perry	Sharkey	S57Ark-53-1	43
	Sharkey	S58Ark-53-1	45
Phillips	Memphis	S57Ark-54-1	23
	Memphis	S57Ark-54-2	25
Pope	Hartsells	S59Ark-58-3	13
	Hartsells	S59Ark-58-4	15
	Linker	S59Ark-58-1	17
	Linker	S59Ark-58-2	19
St. Francis	Loring	S57Ark-62-1	21
	Memphis	S58Ark-62-1	27
Saline	Savannah	S60Ark-63-1	39
	Savannah	S60Ark-63-2	41
Sebastian	Taloka	S57Ark-66-1	47
	Taloka	S57 Ark-66-2	49
Woodruff	Dexter	S58Ark-74-1	7
	Dexter	S58Ark-74-2	9

MISSOURI

County	Soil Series	Soil Survey No.	Page
Caldwell	Grundy	S57Mo-13-1	115
	Grundy	S57Mo-13-2	117
	Grundy	S57Mo-13-3	119
	Grundy	S57Mo-13-4	121
	Sharpsburg	S57Mo-13-5	131
	Sharpsburg	S57Mo-13-6	133
Cape Girardeau	Loring	Z-1-2-8-364 to 381	127
	Loring	Z-1-2-8-382 to 399	129
Dent	Clarksville	S59Mo-33-2	111
	Clarksville	S59Mo-33-1	113
	Hobson	S59Mo-33-3	123
	Hobson	S59Mo-33-4	125
Pike	Winfield	Z-1-2-8-307 to 326	137
St. Charles	Weldon	Z-1-2-8-346 to 363	135

LOUISIANA

Parish	Soil Series	Soil Survey No.	Page
Acadia	Crowley	S57La-1-2	77
	Crowley	S57La-1-3	79
	Wrightsville	S57La-1-1	99
	Wrightsville	S57La-1-4	101
Beauregard	Beauregard	S57La-6-1	53
	Beauregard	S57La-6-2	55
	Bowie	S57La-6-5	57
	Bowie	S57La-6-6	59
	Caddo	S57La-6-5	65
	Caddo	S57La-6-4	67
Bossier	Buxin	S57La-8-7	61
	Buxin	S57La-8-8	63
	Cahaba	S55La-8-1	69
	Cahaba	S55La-8-2	71
	Ruston	S57La-8-2	87
	Ruston	S57La-8-2	89
	Tilden	S56La-8-2	91
	Tilden	S57La-8-3	93
	Wrightsville	S56La-8-1	103
	Wrightsville	S56La-8-3	105
	Wrightsville	S57La-8-4	107
	Wrightsville	S57La-8-6	109
East Baton Rouge	Verdun	S61La-17-9	95
	Verdun	S61La-17-10	97
Jefferson Davis	Crowley	S57La-27-1	81
	Crowley	S57La-27-2	83
St. Mary	Baldwin		51
	Iberia		85
Tangipahoa	Cahaba	S56La-53-1	73
	Cahaba	S56La-53-2	75

ARKANSAS

Soil Series	County	Soil Survey No.	Page
Dubbs	Mississippi	S60Ark-47-1	3
	Mississippi	S60Ark-47-3	5
Dexter	Woodruff	S58Ark-74-1	7
	Woodruff	S58Ark-74-2	9
Grenada	Cross	S57Ark-19-1	11
Hartsells	Pope	S59Ark-58-3	13
	Pope	S59Ark-58-4	15
Linker	Pope	S59Ark-58-1	17
	Pope	S59Ark-58-2	19
Loring	St. Francis	S57Ark-62-1	21
Memphis	Phillips	S57Ark-54-1	23
	Phillips	S57Ark-54-2	25
	St. Francis	S58Ark-62-1	27
Portland	Ashley	S60Ark-2-1	29
Perry	Desha	S60Ark-21-1	31
	Desha	S60Ark-21-2	33
Rarden (now Enders)	Franklin	S60Ark-24-1	35
	Franklin	S60Ark-24-2	37
Savannah	Saline	S60Ark-63-1	39
	Saline	S60Ark-63-2	41
Sharkey	Perry	S57Ark-53-1	43
	Perry	S58Ark-53-1	45
Taloka	Sebastian	S57Ark-66-1	47
	Sebastian	S57Ark-66-2	49

MISSOURI

Soil Series	County	Soil Survey No.	Page
Clarksville	Dent	S59Mo-33-2	111
	Dent	S59Mo-33-1	113
Grundy	Caldwell	S57Mo-13-1	115
	Caldwell	S57Mo-13-2	117
	Caldwell	S57Mo-13-3	119
	Caldwell	S57Mo-13-4	121
Hobson	Dent	S59Mo-33-3	123
	Dent	S59Mo-33-4	125
Loring	Cape Girardeau	Z-1-2-8-364 to 381	127
	Cape Girardeau	Z-1-2-8-382 to 399	129
Sharpsburg	Caldwell	S57Mo-13-5	131
	Caldwell	S57Mo-13-6	133
Weldon	St. Charles	Z-1-2-8-346 to 363	135
Winfield	Pike	Z-1-2-8-307 to 326	137

LOUISIANA

Soil Series	Parish	Soil Survey No.	Page
Baldwin	St. Mary		51
Beauregard	Beauregard	S57La-6-1	53
	Beauregard	S57La-6-2	55
Bowie	Beauregard	S57La-6-5	57
	Beauregard	S57La-6-6	59
Buxin	Bossier	S57La-8-7	61
	Bossier	S57La-8-8	63
Caddo	Beauregard	S57La-6-3	65
	Beauregard	S57La-6-4	67
Cahaba	Bossier	S55La-8-1	69
	Bossier	S55La-8-2	71
	Tangipahoa	S56La-53-1	73
	Tangipahoa	S56La-53-2	75
Crowley	Acadia	S57La-1-2	77
	Acadia	S57La-1-3	79
	Jefferson Davis	S57La-27-1	81
	Jefferson Davis	S57La-27-2	83
Iberia	St. Mary		85
Ruston	Bossier	S57La-8-1	87
	Bossier	S57La-8-2	89
Tilden	Bossier	S56La-8-2	91
	Bossier	S57La-8-3	93
Verdun	East Baton Rouge	S61La-17-9	95
	East Baton Rouge	S61La-17-10	97
Wrightsville	Acadia	S57La-1-1	99
	Acadia	S57La-1-4	101
	Bossier	S56La-8-1	103
	Bossier	S56La-8-3	105
	Bossier	S57La-8-4	107
	Bossier	S57La-8-6	109

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Dubbs fine sandy loam **LOCATION** Mississippi County, Arkansas

SOIL NOS. S60Ark-47-1 **LAB. NOS.** 13312-13318

DEPTH INCHES	HORIZON	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	2A2 > 2	TEXTURAL CLASS
0-6	A_{p1}	<0.1	0.1	0.2	8.9	49.3	34.2	7.3	85.6	6.0	-	vfsl
6-10	A_{p2}	<0.1	<0.1	0.3	8.9	52.9	32.2	5.7	88.7	4.5	-	vfsl
10-17	B_{21}	<0.1	<0.1	0.2	2.9	33.1	43.0	20.8	66.3	12.3	-	l
17-28	B_{22}	<0.1	<0.1	0.2	2.7	27.0	52.3	17.8	67.0	14.6	-	sil
28-36	C_{11}	<0.1	<0.1	0.2	13.2	56.6	20.1	9.9	83.3	5.9	-	vfsl
36-46	C_{12}	<0.1	<0.1	0.2	33.2	51.0	10.1	5.5	89.0	3.0	-	lvfs
46-64	C_2	<0.1	<0.1	0.2	36.4	50.9	7.9	4.6	91.0	3.0	-	vfs/lvfs

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	Ext. Al me/100g	$CaCO_3$ equivalent %	8D3 Ca/Mg	MOISTURE TENSIONS 4B1b 1/3 ATMOS. Pieces %	1/3 ATMOS. Sieved %	4B2 15 ATMOS. Sieved %
5.7			0.45	0.051	9	0.5			4.9			3.7
5.0			0.29	0.037	8	0.4			6.4	7.2		3.0
5.6			0.50	0.062	8	1.2			5.9	21.0		10.1
5.4			0.34	0.043	8	1.1			3.8	20.0		9.3
5.4			0.17			1.0			4.2	10.1		5.7
5.8			0.10			0.8			3.4			4.0
6.0			0.06			0.7			4.8			3.5

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	Bulk Density 4A1h O.D. g/cc	4A1c 30-Cm. g/cc	4B3 Water Content 30-Cm. %
←	milliequivalents per 100g. soil				→							
6.4	4.4	0.9	2.8	<0.1	0.3	88	67	5.6	8.4			
5.0	3.2	0.5	3.2	0.1	0.2	80	56	4.0	7.2	1.58	1.55	17.0
15.8	11.2	1.9	6.0	0.1	0.3	85	69	13.5	19.5	1.58	1.48	22.9
14.9	9.2	2.4	6.6	0.1	0.3	80	64	12.0	18.6	1.54	1.44	24.6
9.8	6.3	1.5	4.0	0.1	0.2	83	67	8.1	12.1	1.46	1.43	23.2
7.1	4.7	1.4	2.5	0.1	0.1	89	72	6.3	8.8			
6.2	4.3	0.9	2.2	0.1	0.1	87	71	5.4	7.6			

Concretions, organic matter fragments, or other special formations were not evident in the sand fractions.

Soil type: Dubbs fine sandy loam
Soil No.: S60Ark-47-1
Location: Mississippi County, Arkansas, 6 miles west and 1½ miles southwest of Joiner on Arkansas Highway 118 to Whitton Cemetery, and 1,000 feet southeast. Photo EK-2N-9, 1-29-54.
Vegetation and use: Native vegetation was bottom land hardwoods. Present use, row crops of cotton and soybeans. Has been cultivated many years; now planted to cotton.
Slope and land form: Nearly level recent alluvium on low natural levee terrace.
Drainage and permeability: Moderately well drained. Surface runoff slow; internal drainage medium; permeability moderately slow.
Parent material: General alluvium from a wide variety of source material (Mississippi River).
Samples collected by: Dr. Frank Carlisle, Dr. H. C. Dean, Robert L. Juve, May 5, 1960.
Profile described by: Marvin Lawson, May 5, 1960.

Lincoln Lab. No.	Horizon	
13312	Ap1	0-6 inches. Dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; very friable; few roots; pH 6.0; clear smooth boundary.
13313	Ap2	6-10 inches. Dark grayish brown (10YR 4/2) fine sandy loam; massive, breaks to fine angular blocky aggregates; friable; few roots; pH 6.0; abrupt wavy boundary.
13314	B21	10-17 inches. Dark brown (10YR 3/3) sandy clay loam; moderate medium subangular blocky structure; firm, somewhat sticky; clay films on most peds, many peds with continuous clay films; dark stains on some peds; few roots; plentiful channel-like medium pores; pH 6.0; gradual smooth boundary.
13315	B22	17-28 inches. Dark brown (10YR 3/3) clay loam, crushed color dark brown (10YR 4/3); moderate coarse subangular blocky structure; friable; common discontinuous clay films; common medium pores; few roots; dark stain on some peds; pH 5.5; clear wavy boundary.
13316	C11	28-36 inches. Dark brown (10YR 3/3) very fine sandy loam with light brownish gray (10YR 6/2) concentric with sinuous channels; massive; very friable; few roots; noticeable amounts of mica; pH 6.0; arbitrary boundary.
13317	C12	36-46 inches. Same as C11 with clear wavy boundary.
13318	C2	46-64 inches. Dark grayish brown (10YR 4/2) very fine sandy loam; massive; very friable; noticeable amounts of mica; pH 6.0.

Remarks: Dubbs soils are associated with Dundee, Bosket, and Forestdale on recent alluvium on older natural levees of the Mississippi River and its tributaries. Colors given are for moist soil. Color of dry soil will be one or two values higher. Soil wet when sampled. pH by Hellige-Truog field test kit. Average annual rainfall is 48 inches; average annual temperature is 61° F.; and average frost-free period is 216 days. Horizons B21 and C11 were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Dubbs Fine sandy loam **LOCATION** Mississippi County, Arkansas

SOIL NOS. S60Ark-47-3 **LAB. NOS.** 13327-13333

DEPTH INCHES	HORIZON	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	2A2 > 2	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-6	A_p	<0.1	0.1a	0.2a	1.4	30.8	55.3	12.2	76.1	11.1	-	sil
6-19	B_2	<0.1	<0.1	0.1a	0.6b	9.3	54.5	35.5	41.2	23.0	-	sicl
19-26	B_3	<0.1	<0.1	0.2a	1.1b	22.9	52.7	23.1	61.3	15.1	-	sil
26-35	C_1	<0.1	<0.1	0.2c	4.1	51.2	33.6	10.9	81.0	7.5	-	vfsl
35-47	C_2	<0.1	<0.1	0.2c	1.7	39.1	45.9	13.1	78.1	8.1	-	l
47-52	IIB	<0.1	<0.1	0.1c	0.6	7.4	66.3	25.6	48.9	25.2	-	sil
52-62	IIC	<0.1	0.1c	0.3c	3.4	49.8	38.8	7.6	84.4	7.0	-	vfsl

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	6G2a Ext. Al me/100g	$CaCO_3$ equivalent %	8D3 Ca/Mg	MOISTURE TENSIONS 1/3 ATMOS. Pieces %	1/3 ATMOS. Sieved %	4B2 15 ATMOS. Sieved %
5.9			0.60	0.064	9	0.7	◁		4.6			5.9
5.3			0.31	0.045	7	1.4	1		3.4			16.2
5.1			0.24	0.039		1.3	1		3.5			11.8
5.3			0.19			1.0	◁		4.0			6.8
5.3			0.15			1.1	◁		3.8			7.4
5.3			0.15			1.3	◁		3.4			12.3
5.7			0.08			0.9	◁		3.8			4.6

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	Bulk Density 4A1h O.D. g/cc	4A1c 30-Cm g/cc	4B3 Water Content 30-Cm. %
	← milliequivalents per 100g. soil →											
9.2	6.9	1.5	4.0	0.1	0.3	96	69	8.8	12.8			
23.5	14.8	4.3	9.0	0.2	0.5	84	69	19.8	28.8	1.70	1.48	24.3
17.2	11.3	3.2	7.4	0.2	0.4	88	67	15.1	22.5	1.60	1.48	26.3
11.0	6.9	1.7	4.8	0.1	0.2	81	65	8.9	13.7	1.46	1.40	26.1
11.6	8.0	2.1	4.8	0.2	0.2	90	69	10.5	15.3	1.48	1.42	26.9
18.2	13.3	3.9	5.1	0.2	0.5	98	78	17.9	23.0			
9.2	6.5	1.7	3.0	0.1	0.2	92	74	8.5	11.5			

a. Many Fe-Mn? Concr.
b. Common Fe-Mn? Concr.
c. Many mica fragments.

Soil type: Dubbs fine sandy loam
Soil No.: S60Ark-47-3
Location: Mississippi County, Arkansas, 3/4 mile northwest of Birdsong on unnumbered county highway and 1400 feet northeast. Photo ED-2N-7, 1-29-54.
Vegetation and use: Native vegetation was bottom land hardwoods. Present use, row crops of cotton and soybeans. Has been cultivated many years; now planted to cotton.
Slope and land form: Nearly level recent alluvium on low natural levee terrace.
Drainage and permeability: Moderately well drained. Surface runoff slow; internal drainage medium; permeability moderately slow.
Parent material: General alluvium from a wide variety of source material (Mississippi River).
Samples collected by: Dr. Frank Carlisle, Dr. H. C. Dean, Robert L. Juve, May 5, 1960.
Profile described by: Marvin Lawson, May 5, 1960.

Lincoln Lab.No.	Horizon	
13327	Ap	0-6 inches. Dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; very friable; few roots; pH 6.0; abrupt smooth boundary.
13328	B2	6-19 inches. Dark brown (10YR 3/3) silty clay loam, crushed color yellowish brown (10YR 5/6); moderate medium prismatic structure that breaks readily to strong medium subangular blocky peds; firm, plastic; continuous clay films; few roots; few pores with clay films; pH 5.5; clear wavy boundary.
13329	B3	19-26 inches. Dark brown (10YR 4/3) silty clay loam; weak fine prismatic structure that breaks readily to moderate medium subangular blocky peds; firm, plastic; continuous clay films on many peds; few roots; few pores; pH 5.5; gradual wavy boundary.
13330	C1	26-35 inches. Dark brown (10YR 4/3) very fine sandy loam with few fine distinct mottles of grayish brown (10YR 5/2); massive; very friable; few roots; few pores; pH 5.5; diffuse boundary.
13331	C2	35-47 inches. Dark brown (10YR 4/3) very fine sandy loam; massive; very friable; common tubular pores; pH 5.5; clear smooth boundary.
13332	IIB	47-52 inches. Dark brown (10YR 4/3) silt loam, crushed color yellowish brown (10YR 5/4); strong fine prismatic structure that readily breaks to moderate medium subangular blocky peds; very firm; thick clay films continuous on vertical sides of prisms; many tubular pores with clay films; pH 5.5; clear smooth boundary.
13333	IIC	52-62 inches. Dark brown (10YR 4/2) very fine sandy loam with few fine distinct light gray (10YR 7/2) mottles; massive; friable; pH 6.0.

Remarks: Dubbs soils are associated with Dundee, Bosket, and Forestdale on recent alluvium on older natural levees of the Mississippi River and its tributaries. Colors given are for moist soil. Color of dry soil will be one or two values higher. Soil wet when sampled. pH by Hellige-Truog field test kit. Average annual rainfall is 48 inches; average annual termperature is 61° F.; and average frost-free period is 216 days. Horizons B2 and C1 were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Dexter silt loam **LOCATION** Woodruff County, Arkansas

SOIL NOS. S58Ark-74-1-(1-6) **LAB. NOS.** 8354-8359

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	3A1 0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-7	Ap	0.2a	0.4a	1.0a	11.4a	10.5a	63.0	13.5	47.8	33.3	-	sil
7-17	A1	-	0.2a	0.8a	4.9a	14.8a	62.3	17.0	47.0	32.1	-	sil
17-35	B2	-	0.1b	0.3b	2.5a	8.5a	48.3	40.3	33.8	24.7	-	sic
35-47	B3	-	0.2b	0.4b	15.5a	12.5a	45.5	25.9	57.0	12.9	-	l
47-65	D1	0.1b	0.2b	0.7b	36.6a	19.6a	23.0	19.8	63.4	7.9	-	fsl
65-72+	D2	-	0.9a	20.2a	47.4a	12.5a	12.0	7.0	42.0	4.1	-	lfs

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS		4B2 15 ATMOS. %
6.1			0.74	0.088	8							5.5
6.2			0.21	0.046								6.5
5.7			0.20	0.041								17.2
5.6			0.12									11.8
5.8			0.07									8.8
5.8			0.04									4.0

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na % on NH_4Ac Exch.	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
7.2	4.2	0.7	5.5	-	0.4	74	49	5.3	10.8	6.0	-	
6.7	4.4	0.6	3.6	-	0.3	79	60	5.3	8.9	7.3	-	
21.8	13.5	5.6	6.6	0.1	0.5	90	75	19.7	26.3	2.4	-	
15.5	8.6	4.1	9.3	-	0.4	84	58	13.1	22.4	2.1	-	
11.3	6.0	3.1	6.9	-	0.3	83	53	9.4	16.3	1.9	-	
5.3	3.0	1.4	2.3	-	0.1	85	66	4.5	6.8	2.1	-	

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

Soil type: Dexter silt loam
Soil No.: S58Ark-74-1-(1-6)
Area: Woodruff County, Arkansas.
Location: On Gregory plantation, from junction Arkansas-U. S. Highway 64 and Arkansas Highway 33 at Augusta, south 9.6 miles; east on farm road 0.3 mile; southeast on farm road 0.15 mile. SW Sec. 5, T6N, R2W. Cache-White Rivers interfluve. This area has been in cultivation for many years until this year in Johnson grass.
Samples collected by: H. C. Dean, T. C. Bigger, Marvin Lawson, and George Maxwell.
Described by: Marvin Lawson.
Date: June 6, 1958.

Lincoln Lab.No.	Horizon	
8354	Ap	0-7 inches. Dark brown (10YR 3/3-4/3) silt loam; weak fine subangular blocky structure; friable; few tubular pores; rhizomes and fine roots common; pH 6.0; clear smooth boundary.
8355	A1	7-17 inches. Dark brown (10YR 4/3-5/3) silt loam; weak fine subangular blocky and granular structure; friable; common medium and coarse to tubular pores; common fine roots; pH 6.0; gradual smooth boundary.
8356	B2	17-35 inches. Dark yellowish brown (10YR 4/4) heavy silty clay loam; moderate medium subangular blocky structure; firm; most peds well glazed with clay films; few medium and coarse tubular pores; few fine roots; several peds coated with soft black and very dark grayish brown substance; pH 6.0; gradual smooth boundary.
8357	B3	35-47 inches. Yellowish brown (10YR 5/4) silty clay loam; weak medium angular blocky structure; friable; clay films common, patchy; few medium to coarse tubular pores; peds commonly coated with soft black and very dark brown substance; pH 6.0; clear smooth boundary.
8358	D1	47-65 inches. Dark brown (10YR 4/3) fine sandy loam or loam; weak angular blocky structure; friable; shows some stratification in texture and color; few tubular pores; few peds coated with soft black substance; pH 6.5; gradual smooth boundary.
8359	D2	65-72+ inches. Dark brown (10YR 4/3) sandy loam; massive; very friable; pH 6.0. Sampled by bucket auger. Maximum depth 72 inches.

Remarks: Soil colors given are for moist soil. pH by Hellige-Truog field kit indicator.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Dexter silt loam **LOCATION** Woodruff County, Arkansas

SOIL NOS. S58Ark-74-2-(1-7) **LAB. NOS.** 8360-8366

DEPTH INCHES	HORIZON	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	0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										
0-5	Ap	0.2a	0.4a	0.5b	10.1b	13.0b	69.3	6.5	60.9	27.8	-	sil
5-10	A1	-	0.1a	0.2b	9.0b	8.5b	64.4	17.8	46.6	33.0	-	sil
10-17	B1	-	0.1a	0.2b	7.1b	8.1b	58.8	25.7	43.0	29.3	-	sil
17-36	B21	-	-	0.1b	1.0b	15.7b	52.0	31.2	44.7	23.1	-	sicl
36-51	B22	-	0.1a	0.2b	3.5b	18.5b	51.8	25.9	55.1	16.2	-	sil
51-57	D	-	-	0.4b	15.2b	30.0b	36.0	18.4	61.2	9.5	-	l
57-70+	D2	-	-	0.7b	69.3b	19.2b	5.6	5.2	62.1	2.3	-	fs

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN %	ORGANIC MATTER C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS	MOISTURE TENSIONS	MOISTURE TENSIONS 4B2 15 ATMOS. %
6.1			0.48	0.064	8							3.4
6.3			0.20	0.045								6.7
6.4			0.17	0.043								10.1
6.2			0.10	0.042								14.3
5.0			0.08									12.4
5.1			0.05									8.6
5.2			0.03									2.9

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na % on NH_4Ac Exch.	MOISTURE AT SATURATION %
	← milliequivalents per 100g. soil →											
4.8	3.1	0.4	2.7	-	0.4	81	59	3.9	6.6	7.8	-	
7.0	4.9	0.5	2.7	-	0.2	80	67	5.6	8.3	9.8	-	
10.3	7.4	1.6	3.7	-	0.3	90	72	9.3	13.0	4.6	-	
16.8	9.6	5.1	5.6	0.1	0.4	90	73	15.2	20.8	1.9	-	
16.4	4.1	5.6	12.5	0.1	0.4	62	45	10.2	22.7	0.7	1	
11.2	2.4	3.3	5.5	0.1	0.3	54	53	6.1	11.6	0.7	1	
3.8	0.9	0.8	3.2	-	0.1	47	36	1.8	5.0	1.1	-	

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

Soil type: Dexter silt loam
Soil No.: S58Ark-74-2-(1-7)
Area: Woodruff County, Arkansas.
Location: 23 miles north of McCrory, 50 feet west of Arkansas Highway 17, Cache River bayou, DeView interfluve. Sec. 28 T8N, R2W. Has been in cultivation many years - present use, soybeans.
Samples collected by: H. C. Dean, T. C. Bigger, Marvin Lawson, and George Maxwell.
Described by: Marvin Lawson.
Date: June 6, 1958.

Lincoln Lab. No.	Horizon	
8360	Ap	0-5 inches. Dark brown (10YR 4/3) silt loam; weak fine and medium subangular blocky structure; very friable; few fine roots; pH 6.0; clear smooth boundary.
8361	A1	5-10 inches. Dark brown (10YR 4/3) silt loam; weak fine and medium subangular blocky structure; friable; few tubular pores; pH 6.0; gradual smooth boundary.
8362	B1	10-17 inches. Dark brown (7.5YR 4/4) light silty clay loam; moderate medium angular blocky structure; friable; few patchy clay films; few tubular pores; few peds coated with soft black substance; pH 6.0; clear smooth boundary.
8363	B21	17-36 inches. Dark yellowish brown (10YR 4/4) silty clay loam; moderate medium angular blocky structure; firm; few tubular pores; common clay films; many peds coated with soft black or dark brown substance; few fine roots; pH 6.0; diffuse boundary.
8364	B22	36-51 inches. Brown (10YR 5/3) silty clay loam; moderate medium angular blocky structure; friable; common clay films; common tubular pores; few peds coated with black and very dark brown soft substance; few fine roots; pH 5.0; gradual smooth boundary.
8365	D	51-57 inches. Dark yellowish brown (10YR 4/4) heavy sandy loam; weak angular blocky structure; friable; few fine roots; common fine and medium tubular pores; pH 5.5.
8366	D2	57-70+ inches. Yellowish brown (10YR 5/6) sandy loam; loose; pH 5.5. Sampled by bucket auger. Maximum depth sampled 70 inches.

Remarks: Colors stated are for moist soil. pH by Hellige-Truog field kit indicator.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 13, 1958

SOIL TYPE Grenada silt loam **LOCATION** Cross County, Arkansas

SOIL NOS. S57Ark-19-1-(1-7) **LAB. NOS.** 5699-5705

DEPTH INCHES	HORIZON	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	2A2 > 2	TEXTURAL CLASS
0-4	Ap	-	0.2a	0.1a	0.5a	0.4a	80.2	18.6	40.5	40.4	-	sil
4-14	B21	-	0.2a	0.1a	0.3a	0.2a	69.4	29.8	28.7	41.1	-	sicl
14-19	B22	-	0.2a	0.2a	0.4a	0.4a	72.5	26.3	31.3	41.8	-	sil
19-25	B3	-	0.2a	0.3a	0.5a	0.5a	76.7	21.8	31.9	45.6	-	sil
25-34	B3m1	-	-	-	0.1a	0.3a	72.5	27.1	31.2	41.7	-	sicl
34-41	B3m2	-	-	-	0.1a	0.2a	75.8	23.9	31.8	44.3	-	sil
41-51+	C	-	0.4a	0.4a	0.6a	0.7a	78.7	19.2	33.9	45.9	-	sil

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN %	ORGANIC MATTER C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS	MOISTURE TENSIONS	MOISTURE TENSIONS 4B2 15 ATMOS. %
5.1			0.92	.088	10							7.6
5.4			0.14	.037								12.3
5.2			0.12	.027								12.0
5.5			0.09	.025								10.7
5.4			0.05									13.7
5.0			0.04									12.2
5.4			0.04									12.2

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na % on NH_4Ac Exch.	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
9.0	1.3	1.9	8.6	-	0.3	39	29	3.5	12.1	0.7	-	
13.2	0.6	2.9	12.8	0.2	0.2	30	23	3.9	16.7	0.2	2	
13.5	0.2	2.9	13.5	0.2	0.2	26	20	3.5	17.0	0.1	1	
12.4	0.4	2.7	11.6	0.4	0.2	30	24	3.7	15.3	0.1	3	
16.8	1.9	5.4	13.7	1.0	0.2	50	38	8.5	22.2	0.4	6	
17.0	2.3	6.5	10.4	1.4	0.2	61	50	10.4	20.8	0.4	8	
16.5	3.2	6.9	7.5	2.0	0.2	74	62	12.3	19.8	0.5	12	

a. Few smooth brown concr. (Mn-Fe?)

Soil type: Grenada silt loam
Soil No.: S57Ark-19-1-(1-7)
Area: Cross County, Arkansas.
Location: One mile north of Ellis Chapel and 1/4 mile east on west terrace of Brushy Creek, 50 feet north of Wynne Road.
Sampling party: H. C. Dean, James Allen, C. J. Finger, Marvin Lawson, J. L. Gray, Joe Pettiet, and Nelse Robertson.
Described by: Marvin Lawson.
Date: May 28, 1957.

Lincoln Lab. No.	Horizon	
5699	Ap	0-4 inches. Yellowish brown (10YR 5/4) silt loam; weak fine and medium subangular blocky; friable; common fine and medium pores, many fine roots; pH 5.0; clear boundary.
5700	B21	4-14 inches. Yellowish brown (10YR 5/6) silty clay loam; moderate fine and medium subangular blocky; friable; fine roots common; few fine and medium hard concretions; pH 5.0; gradual boundary.
5701	B22	14-19 inches. Dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky; friable; medium and fine pores common; few fine roots; few fine concretions; pH 4.5; gradual boundary.
5702	B3	19-25 inches. Yellowish brown (10YR 5/4) silt loam with common fine and medium mottles slightly more yellow and a few pale brown; weak fine subangular blocky; friable; fine and medium pores common; few roots; common medium and coarse hard concretions; pH 4.5; clear boundary.
5703	B3m1	25-34 inches. Light brownish gray (2.5Y 6/2) silty clay loam with common coarse mottles of dark brown (10YR 3/3); brown portions seem to be silt loam; moderate coarse subangular blocky; somewhat firm, brittle; few medium pores; occasional fine root; few medium hard concretions; pH 5.0; diffuse boundary.
5704	B3m2	34-41 inches. Yellowish brown (10YR 5/4) silty clay loam mottled with pale brown (10YR 6/3) and with some ped coatings of light gray (10YR 7/2); moderate medium subangular blocky; firm; few medium pores and occasional fine root; few medium hard concretions; pH 5.0; gradual boundary.
5705	C	41-51+ inches. Dark yellowish brown (10YR 4/4) silt loam with medium and coarse mottles of pale brown (10YR 6/3) around pores; moderate coarse angular blocky; firm, brittle; few small hard concretions; few medium pores; pH 5.5.

Remarks: Colors are for moist soil. Colors of dry soil are about 2 values higher. pH by Hellige-Truog Soil Reaction Tester.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Hartsells fine sandy loam **LOCATION** Pope County, Arkansas

SOIL NOS. S59Ark-58-3 **LAB. NOS.** 11223-11226

DEPTH INCHES	HORIZON	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	0.2-0.02	0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										
0-4	Ap	0.6a	1.2	7.5	39.7	10.7	32.9	7.4	47.9	16.2	5	fsl
4-14	B21	0.6a	0.7	4.1	27.8	8.2	35.8	22.8	37.0	22.2	6	l
14-22	B22	0.2a	0.7	4.4	30.7	8.9	34.6	20.5	39.9	20.3	4	l
22-41	C	1.4a	2.2a	5.8b	36.9b	8.1b	22.3	22.3	36.0	12.4	19	scl

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	Ext. Al me/100g	$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/16 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. Sieved %
4.7			0.76	0.057	13	0.8						3.1
4.6			0.17	0.027		1.8						8.1
4.6			0.13	0.019		1.7						7.5
4.6			0.08	0.015		3.4						9.0

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		
←	milliequivalents per 100g. soil				→							
3.8	0.9	<0.1	4.6	<0.1	0.2	29	19	1.1	5.7			
8.1	0.6	0.3	9.4	<0.1	0.2	14	10	1.1	10.5	2.0		
7.5	0.3	0.6	9.6	<0.1	0.1	13	9	1.0	10.6	0.5		
8.1	0.1	<0.1	10.1	<0.1	0.1	2	2	0.2	10.3			

a. Many (Fe-Mn?) Concr.
b. Few (Fe-Mn?) Concr.

Soil type: Hartsells fine sandy loam
Soil No.: 859Ark-58-3
Location: Pope County, Arkansas, Buck Mountain, 3.7 miles north of Moreland by road, 50 feet north of access road on south side of NE NE 827, T9N, R19W. Photo IM 3-54, 1941 flight.
Vegetation and use: Annual lespedeza. Native vegetation was oak-hickory forest. Has been cleared more than 50 years.
Slope and land form: Gently sloping (3 percent south) on gently rolling synclinal plateau at elevation of about 1,000 feet above sea level.
Drainage and permeability: Well drained; surface runoff moderate, internal drainage good, permeability moderate.
Parent material: Residuum from acid sandstone.
Samples collected by: Marvin Lawson, H. C. Dean, Carl McGrew, John Cox, Francis Stephens, of SCS; May 21, 1959.
Profile described by: Marvin Lawson, May 21, 1959.

Lincoln Lab.No.	Horizon	
11223	Ap	0-4 inches. Brown (10YR 5/3) fine sandy loam; weak fine subangular blocky aggregates; very friable; many roots; few pockets of worm casts; medium sandstone fragments and hard dark brown concretions common on surface, only occasional in soil mass; common tubular and vesicular pores; pH 6.0; clear wavy boundary.
11224	B21	4-14 inches. Strong brown (7.5YR 5/6) sandy clay loam, crushed soil color one-half unit higher; moderate medium angular blocky structure; friable; clay films common, usually patchy; common tubular and vesicular pores with clay films; common roots; occasi nal medium sandstone fragments and hard dark brown concretions; pH 5.0; arbitrary boundary.
11225	B22	14-22 inches. Strong brown (7.5YR 5/8) sandy clay loam; crushed soil color one-half value higher; moderate medium angular blocky structure; friable; common clay films, utually patchy; common tubular and vesicular pores, clay filmed; few roots; occasional medium sandstone fragments and hard dark brown concretions; pH 4.5; clear wavy boundary.
11226	C	22-41 inches. Loose mass of sandstone fragments in various degrees of disintegration, fragments up to 2 inches in dimension; interstitial material loose sandy loam variegated dark red (10R 3/6) to gray (10YR 6/1); no roots; has occasional tonguing of B2 along fracture planes to a depth of several inches; pH 4.0; abrupt irregular boundary.
	Dr	41+ inches. Level bedded acid sandstone.

Remarks: Colors are for moist soil. Soil moist when sampled. pH by Hellige-Truog field kit. Core and bag samples from horizons Ap, B21, and B22 were taken for Arkansas Agricultural Experiment Station.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Hartsells fine sandy loam **LOCATION** Pope County, Arkansas

SOIL NOS. S59Ark-58-4 **LAB. NOS.** 11227-11231

DEPTH INCHES	HORIZON	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	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-6	Ap	0.5a	1.2c	12.0b	35.2	9.3	35.2	6.6	45.1	16.5	Tr.	fsl
6-13	B21	0.3a	0.9c	5.4b	16.3	4.6	46.2	26.3	29.9	29.3	Tr.	l
13-21	B22	0.3a	0.8c	6.4b	19.4	5.2	40.3	27.6	31.9	23.6	Tr.	cl
21-36	C1	0.2a	0.5b	6.4b	19.0	5.0	31.6	37.3	27.9	18.3	5	cl
36-50	C2	0.3a	0.8b	6.9b	20.5	5.3	22.9	43.3	24.5	14.3	14	c

pH 8C1a 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	6G2a Ext. Al me/100g	$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. Sieved %
5.4			0.40	0.036	11	0.8	<1					2.8
4.8			0.23	0.034		1.9	3					10.0
4.7			0.14	0.022		2.0	5					10.6
4.6			0.06	0.020		3.5	8					14.2
4.5			0.08			5.7	9					16.5

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		
←	milliequivalents per 100g. soil				→							
2.9	1.0	0.6	2.9	<0.1	0.2	62	38	1.8	4.7	1.7		
9.2	1.5	1.4	9.2	<0.1	0.3	35	26	3.2	12.4	1.1		
10.0	0.6	1.6	11.2	<0.1	0.2	24	18	2.4	13.6	0.4		
12.1	0.1	1.2	14.1	<0.1	0.2	12	10	1.5	15.6	0.1		
13.3	0.1	1.1	16.2	<0.1	0.2	10	8	1.4	17.6	0.1		

a. Many (Fe-Mn?) concr.
b. Few (Fe-Mn?) concr.
c. Common (Fe-Mn?) concr.

Soil type: Hartsells fine sandy loam
Soil No.: 859Ark-58-4
Location: Pope County, Arkansas, Carrion Crow Mountain, 1/2 mile north, 1/4 mile east, 50 feet south of access road, about 4 miles northeast of Pottsville; northeast corner of NE SE S3, T7N, R19W, photo IM 4-27, 1941 flight; elevation about 1,000 feet above sea level.
Vegetation and use: Annual lespedeza, native grasses, and forbs. Native vegetation was oak-hickory forest. Has been cleared more than 50 years.
Slope and land form: Gently sloping (2 percent north) on gently rolling synclinal plateau.
Drainage and permeability: Well drained. Surface runoff moderate, internal drainage good, permeability moderate.
Parent material: Residuum from acid sandstone.
Samples collected by: Marvin Lawson, H. C. Dean, Carl McGrew, John Cox, Francis Stephens, SCS; T. W. Green, National Forest Service, May 21, 1959.
Profile described by: Marvin Lawson, May 21, 1959.

Lincoln Lab.No.	Horizon	
11227	Ap	0-6 inches. Dark brown (10YR 4/3) fine sandy loam; weak medium subangular aggregates; very friable; common fine tubular pores; few pockets of worm casts; occasional medium sandstone fragments and hard dark brown concretions; many roots; pH 6.0; clear wavy boundary.
11228	B21	6-13 inches. Brown (7.5YR 5/4) silty clay loam, crushed color one-half value higher; moderate medium angular blocky structure; firm in mass, peds friable; common tubular pores with clay films; occasional plugs of brown sandy loam; few channels with dark decomposing organic shreds; common patchy clay films; common roots; occasional medium sandstone fragments and hard dark brown concretions; pH 5.5; arbitrary boundary.
11229	B22	13-21 inches, Yellowish brown (10YR 5/4) silty clay loam; crushed color one-half value higher; few medium reddish brown mottles; moderate medium angular blocky structure; coarse fragments; firm, peds friable; common to many patchy clay films; few tubular pores with clay films; occasional medium sandstone fragments and hard dark brown concretions; pH 5.0; clear wavy boundary.
11230	C1	21-36 inches. Variegated gray (10YR 6/1), 20 percent red (2.5YR 4/6), and 10 percent grayish brown (10YR 5/2) clay loam; coarse angular blocky aggregates; coarse fragments firm, aggregates friable; few tubular and vesicular pores; occasional sandstone fragments and hard dark brown concretions; pH 4.0; clear wavy boundary.
11231	C2	36-50 inches. Somewhat flaggy weathered sandstone fragments with interstitial sandy loam; about 50/50 gray (10YR 6/1) and dark red (10R 3/6) in coarse reticulations; few patchy clay films on surface of hard fragments; pH 4.0; irregular boundary.
	Dr	50+ inches. Level bedded acid sandstone.

Remarks: Colors are for moist soil. Soil moist when sampled. pH by Hellige-Truog field kit. Core and bag samples from horizon Ap taken for Arkansas Agricultural Experiment Station.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Linker fine sandy loam **LOCATION** Pope County, Arkansas

SOIL NOS. S59Ark-58-1 **LAB. NOS.** 11214-11217

DEPTH INCHES	HORIZON	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	2A2 > 2 (19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-4	A_p	0.2a	1.2	5.7	42.2	12.2	33.7	4.8	53.5	14.1	Tr.	fsl
4-9	B_1	0.1a	0.8	4.3	31.4	9.2	39.3	14.9	43.0	22.3	-	l
9-24	B_2	0.5a	0.7	3.5	26.3	7.5	35.8	25.7	36.3	21.4	Tr.	l
24-35	C	4.6a	3.0a	5.1a	33.8b	8.6b	26.5	18.4	38.2	14.4	22	fsl

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	5C1a Free Iron % Fe_2O_3	6G2a Ext. Al me/100g	6E1c $CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. Sieved %
6.5			0.38	0.032	12	0.4	<1	<1				1.7
5.6			0.21	0.025		1.0	<1					5.4
5.0			0.15	0.024		1.9	3					9.5
4.8			0.05			5.4	3					6.6

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
	milliequivalents per 100g. soil									
2.3	1.5	0.5	1.2	<0.1	0.2	96	65	2.2	3.4	3.0
4.6	2.5	0.6	3.4	<0.1	0.3	74	50	3.4	6.8	4.2
8.9	2.0	0.8	8.7	<0.1	0.2	34	26	3.0	11.7	2.5
6.1	0.1	0.6	7.6	<0.1	0.1	13	10	0.8	8.4	0.2

a. Many (Fe-Mn?) Concr.
b. Few (Fe-Mn?) Concr.

Soil type: Linker fine sandy loam
Soil No.: S59Ark-58-1
Location: Pope County, Arkansas, 2.4 miles north of Moreland by road on Buck Mountain. Southwest corner of SW NW S35, T9N, R19W, 300 feet east and 50 feet north of road turn, on crest of ridge. Photo IM 3-52. 1941 flight.
Vegetation and use: Native grasses and forbs grazed. Has been cleared more than 50 years. Native vegetation was oak-hickory forest.
Slope and land form: Gently sloping (3 percent west) on gently rolling synclinal plateau of elevation of about 1,000 feet above sea level.
Drainage and permeability: Well drained; surface runoff moderate, internal drainage good, permeability moderate.
Parent material: Residuum from acid sandstone.
Sampled collected by: H. C. Dean, Marvin Lawson, Carl McGrew, Francis Stephens, and John Cox, of SCS; T. W. Green, National Forest Service, May 21, 1959.
Profile described by: Marvin Lawson, May 21, 1959.

Lincoln Lab.No.	Horizon	
11214	Ap	0-4 inches. Brown (10YR 5/3) fine sandy loam; weak medium subangular blocky aggregates; very friable; medium sandstone fragments common on surface but only occasional in soil mass; occasional medium hard dark brown concretions which may have been inherited from the parent sandstone; common coarse tubular pores; common pockets filled with worm casts; roots common; pH 6.5; clear wavy boundary.
11215	B1	4-9 inches. Yellowish red (5YR 4/6) light sandy clay loam; crushed color yellowish red (5YR 5/6); weak to moderate fine and medium subangular blocky structure; friable; patchy clay films; clay bridges (dominant?); fine roots common, occasional coarse root; few large tubular holes with very dark decomposed organic material; pockets of worm casts common; many medium pores, some with clay films; occasional fine and medium sandstone fragments; occasional hard dark brown medium concretion which may have been inherited from the parent sandstone; some brown streaks appear to be infiltrated from A2 along cracks and channels; pH 6.0; clear wavy boundary.
11216	B2	9-24 inches. Yellowish red (5YR 4/8) sandy clay loam; crushed color yellowish red (5YR 5/8); moderate medium angular blocky; friable; clay films common, discontinuous; common tubular pores, commonly with clay films; few large channels containing very dark decomposed organic shreds; occasional medium hard dark brown concretions and sandstone fragments; few roots; pH 5.0; clear wavy boundary.
11217	C	24-35 inches. Gravelly loam with coarse reticulations of pale brown (10YR 6/3) and yellowish red (5YR 4/6); friable to hard angular blocks of sandstone fragments in various stages of weathering coated with sandy loam; common hard concretions which are also found in the unweathered sandstone; few discontinuous clay films along some cleavage planes; no roots observed; pH 5.0; wavy to irregular gradual boundary.
	Dr	35+ inches. Level bedded acid sandstone, partially weathered near surface.

Remarks: Soil colors on moist soil. Soil moist when sampled. pH by Hellige-Truog field kit. Application of brooder house refuse containing oyster shell, 1958. Core and bag samples were taken of horizons Ap, B1, B2 and C for Arkansas Agricultural Experiment Station.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Linker fine sandy loam **LOCATION** Pope County, Arkansas

SOIL NOS. S59Ark-58-2 **LAB. NOS.** 11218-11222

DEPTH INCHES	HORIZON	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	0.2-0.02	0.02-0.002	3A1 2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-4	Ap	0.3a	2.9	10.4	27.1	16.4	36.4	6.5	50.9	16.2	7	fsl
4-8	B_1	0.8a	2.5	7.8	19.4	10.2	43.6	15.7	38.5	25.7	5	l
8-22	B_2	1.2a	2.8	8.4	20.3	11.0	34.5	21.8	37.8	18.7	3	l
22-27	C_1	2.9a	3.8b	9.0b	23.3b	13.3b	34.6	13.1	43.4	17.7	6	fsl/l
27-34	C_2	4.0a	3.9a	8.8b	23.8b	12.1b	28.2	19.2	39.5	14.8	40	fsl

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	Ext. Al me/100g	$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. Sieved %
5.6			0.45	0.037	12	0.8						2.5
5.6			0.17	0.022		1.3						5.4
5.0			0.16	0.023		2.3						8.0
4.9			0.09	0.011		2.8						5.3
4.9			0.07			4.0						7.2

5A1a CATION EXCHANGE CAPACITY NH_4OA_c	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4OA_c EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
←	milliequivalents per 100g. soil				→					
2.9	1.3	0.2	2.2	<0.1	0.2	59	44	1.7	3.9	6.5
5.2	2.7	0.8	3.2	<0.1	0.2	71	54	3.7	6.9	3.4
8.5	2.5	1.8	6.4	<0.1	0.2	53	41	4.5	10.9	1.4
5.3	1.1	0.8	5.4	<0.1	0.1	38	27	2.0	7.4	1.4
6.5	1.0	0.9	6.6	<0.1	0.1	31	23	2.0	8.6	1.1

a. Many (Fe-Mn?) Concr.
b. Few (Fe-Mn?) Concr.

Soil type: Linker fine sandy loam
Soil No.: S59Ark-58-2
Location: Pope County, Arkansas, Carrion Crow Mountain, 3½ air-line miles east of Pottsville; southwest corner of SW NE S14, T7N, R19W. Photo IM 3-42 1941 flight.
Vegetation and use: Presently in annual lespedeza. Native vegetation was oak-hickory forest. Has been cleared more than 50 years.
Slope and land form: Gently sloping (4 percent north) on gently rolling synclinal plateau at elevation about 1,000 feet above sea level.
Drainage and permeability: Well drained; surface runoff moderate, internal drainage good, permeability moderate.
Parent material: Residuum from acid sandstone.
Samples collected by: H. C. Dean, Marvin Lawson, Carl McGrew, Francis Stephens, John Cox, of SCS; T. W. Green, National Forest Service, May 21, 1959.
Profile described by: Marvin Lawson, May 21, 1959.

Lincoln Lab. No.	Horizon	
11218	Ap	0-4 inches. Dark brown (7.5YR 4/4) fine sandy loam; weak fine subangular aggregates; very friable; many roots; few medium tubular pores; few pockets of worm casts; fine and medium sandstone fragments and dark brown hard concretions are common on the surface but only occasional in the soil mass; pH 6.0; clear smooth boundary.
11219	B1	4-8 inches. Reddish brown (5YR 4/4) loam or light sandy clay loam; crushed color dark brown (7.5YR 4/4); weak medium subangular blocky structure; friable; few patchy clay films; common roots; occasional medium sandstone fragments and hard dark brown concretions; pH 6.0; gradual smooth boundary.
11220	B2	8-22 inches. Yellowish red (5YR 4/8) sandy clay loam, crushed color yellowish red (5YR 5/8); moderate medium angular blocky structure; soil mass firm, peds friable; common patchy clay films; some entire; common roots; common medium tubular pores with clay films; occasional medium sandstone fragments and hard dark brown concretions; pH 5.0; gradual wavy boundary.
11221	C1	22-27 inches. Dark brown (7.5YR 4/4) gravelly sandy loam with mottles and streaks of grayish brown and yellowish brown; massive; firm soil mass; aggregates friable; many coarse sandstone fragments in various stages of weathering; common hard dark brown concretions; occasional clay film on cleavage and fracture planes; common tubular pores; occasional fine root; some tonguing several inches into D; pH 4.5; clear wavy boundary.
11222	C2	27-34 inches. 75-90 percent sandstone fragments in various stages of weathering with loose sandy loam as interstitial fill; splotches and streaks of red (2.5YR 4/6), reddish brown (5YR 4/4), and grayish-brown (10YR 5/2); no roots observed; common hard dark brown concretions; pH 4.5.
	Dr	Level bedded acid sandstone.

Remarks: Colors are for moist soil. Soil moist when sampled. pH by Hellige-Truog field kit. Core and bag samples of horizons Ap, B1 and B2 were taken for Arkansas Agricultural Experiment Station.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 13, 1958

SOIL TYPE Loring silt loam **LOCATION** St. Francis County, Arkansas

SOIL NOS. S57Ark-62-1-(1-8) **LAB. NOS.** 5685-5692

DEPTH INCHES	HORIZON	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	2A2 > 2	TEXTURAL CLASS
0-5	Ap	0.3	0.5a	0.4a	1.1a	0.8a	79.7	17.2	43.4	37.6	-	sil
5-11	B21	0.1	0.2a	0.2a	0.5a	0.5a	68.9	29.6	28.5	41.2	-	sicl
11-16	B22	0.1	0.6a	0.5a	0.8a	0.6a	71.8	25.6	28.6	44.2	-	sil
16-21	B23	0.2	0.9a	0.6a	1.0a	0.8a	74.1	22.4	29.2	46.2	-	sil
21-27	B3m1	-	0.1a	0.2a	0.4a	0.3a	70.1	28.9	29.7	40.9	-	sicl
27-38	B3m2	-	0.1a	0.2a	0.5a	0.3a	74.6	24.3	29.8	45.4	-	sil
38-41	C11	-	0.1a	0.3a	0.8a	0.6a	75.8	22.4	30.0	46.8	-	sil
41-44+	C12	-	0.2a	0.4a	1.3a	0.6a	75.7	21.8	31.4	45.7	-	sil

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN %	ORGANIC MATTER C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	6E1a $CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS		4B2 15 ATMOS. %
5.5			1.49	.124	12.0							8.2
4.9			0.24	.040								12.8
5.3			0.19	.036								12.3
5.3			0.19	.029								11.3
5.3			0.14	.022								13.8
5.5			0.09									12.5
6.3			0.11					-				12.2
7.2			0.11					-				12.1

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na %on NH_4Ac Exch.	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
10.7	3.8	2.0	7.4	0.1	0.5	60	46	6.4	13.8	1.9	1	
13.6	2.7	2.3	11.6	0.2	0.2	40	32	5.4	17.0	1.2	1	
13.0	1.6	2.4	12.0	0.3	0.1	34	27	4.4	16.4	0.7	2	
12.2	1.0	2.0	12.0	0.4	0.1	29	22	3.5	15.5	0.5	3	
16.0	1.5	4.3	12.4	1.0	0.2	44	36	7.0	19.4	0.3	6	
15.2	2.9	6.0	7.9	1.6	0.2	70	58	10.7	18.6	0.5	10	
14.7	4.0	7.2	3.6	2.0	0.2	91	79	13.4	17.0	0.6	14	
14.6	4.3	7.2	2.8	2.3	0.2	96	83	14.0	16.8	0.6	16	

a. Few smooth brown concr. (Mn-Fe?)

Soil type: Loring silt loam
Soil No.: 357Ark-62-1-(1-8)
Area: St. Francis County, Arkansas.
Location: 1/2 mile south and 300 feet east of Wheatley, Arkansas, by road, and 200 feet north of road back of house.
Sampling party: H. C. Dean, James Allen, C. J. Finger, Marvin Lawson, J. L. Gray, and Joe Pettiet.
Described by: Marvin Lawson.
Date: May 27, 1957.
Lincoln

Lab. No.	Horizon	
5685	Ap	0-5 inches. Dark grayish brown (10YR 4/2) silt loam; weak medium subangular blocky; very friable; pH 6.0; clear smooth boundary.
5686	B21	5-11 inches. Brown (7.5YR 5/4) silty clay loam, moderate fine and medium subangular blocky; friable, numerous fine roots and few pores; pH 5.0; gradual smooth boundary.
5687	B22	11-16 inches. Yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky; friable; few fine and medium hard brown concretions; numerous fine roots, few fine and medium pores; pH 5.5; gradual smooth boundary.
5688	B23	16-21 inches. Yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky, friable, few fine to coarse hard concretions; numerous fine roots; pH 4.5; abrupt smooth boundary.
5689	B3m1	21-27 inches. Coarsely mottled pale brown (10YR 6/3) and yellowish brown (10YR 5/4) about equal in amount of each, silty clay loam; moderate coarse subangular blocky with tendency to prismatic; few black streaks on ped faces; friable but somewhat brittle; peds brown inside; numerous fine roots; pH 5.0; clear smooth boundary.
5690	B3m2	27-38 inches. Yellowish brown (10YR 5/4) silty clay loam, some faces pale brown (10YR 6/3); moderate medium subangular blocky; friable; fine roots common; many medium pores; pH 5.0; clear smooth boundary.
5691	C11	38-41 inches. Yellowish brown (10YR 5/4) silt loam with many medium mottles of light brownish gray (10YR 6/2); weak coarse angular blocky; firm and brittle, nearly dry; few fine roots; many medium pores; pH 6.0; clear smooth boundary.
5692	C12	41-44+ inches. Yellowish brown (10YR 5/4) silt loam with 10 percent medium mottles of light brownish gray (10YR 6/2); black smears on some ped faces; weak medium angular blocky; firm, somewhat brittle, nearly dry; few fine roots, many medium pores; pH 6.0.

Remarks: Colors stated are for moist soil. Colors of dry soil will be about 2 values higher. pH by Hellige-Truog Soil Reaction Tester.

SOIL SURVEY LABORATORY Lincoln, Nebr. Rev. June 1959

SOIL TYPE Memphis silt loam **LOCATION** Phillips County, Arkansas

SOIL NOS. S57Ark-54-1-(1-6) **LAB. NOS.** 6393-6398

DEPTH INCHES	HORIZON	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	0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										
0-6	Ap	0.1	0.1	0.1a	0.2a	0.5a	79.7	19.3	49.0	31.3	-	sil
6-16	B21	-	-	-	-	0.4a	70.1	29.5	39.9	30.6	-	sicl
16-28	B22	-	-	-	-	0.6a	76.8	22.6	42.6	34.8	-	sil
28-43	B23	-	-	-	-	0.5a	79.4	20.1	44.2	35.7	-	sil
43-74	B3	-	-	-	-	0.6a	80.8	18.6	43.5	37.9	-	sil
74-96+	C	-				0.5a	81.1	18.4	57.2	34.4	-	sil

DEPTH INCHES	pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN %	C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS	MOISTURE TENSIONS	MOISTURE TENSIONS 4B2 15 ATMOS. %
0-6	4.8			0.80	.070	11							7.5
6-16	4.8			0.16	.026								12.0
16-28	4.8			0.08	.018								9.8
28-43	4.8			0.05									9.4
43-74	5.0			0.03									9.2
74-96+	5.5			0.03									9.8

DEPTH INCHES	5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na % on NH_4Ac Exch.	MOISTURE AT SATURATION %
	← milliequivalents per 100g. soil →												
0-6	11.1	3.5	2.0	7.8	0.1	0.3	53	43	5.9	13.7	1.8	1	
6-16	15.4	2.5	3.3	13.0	0.2	0.3	41	33	6.3	19.3	0.8	1	
16-28	13.3	1.9	3.2	11.8	0.2	0.2	41	32	5.5	17.3	0.6	2	
28-43	13.0	2.5	3.2	9.4	0.2	0.2	47	39	6.1	15.5	0.8	2	
43-74	13.1	3.6	3.6	8.2	0.2	0.2	58	48	7.6	15.8	1.0	2	
74-96+	14.5	7.1	4.0	6.3	0.3	0.3	81	65	11.7	18.0	1.8	2	

a. Common irregular dark brown concr. (Fe-Mn?).

Soil type: Memphis silt loam
Soil No.: S57Ark-54-1-(1-6)
Location: Phillips County, Arkansas, one mile south of Walnut Corner on Highway 1, 1/2 mile west on Old Little Rock Road, 500 feet northwest, near crest of slope.
Vegetation and use: Oaks, maple, and tulip poplar; cleared land in row crop cultivation for many years, presently in cotton.
Topography: 4 percent south slope on nearly level to gently rolling relief.
Samples collected by: H. C. Dean, C. J. Finger, Marvin Lawson, and Nelse Robertson.
Described by: Marvin Lawson.
Date: August 16, 1957.

Lincoln Lab. No.	Horizon	
6393	Ap	0-6 inches. Dark grayish brown (10YR 4/2) silt loam; weak fine granular; very friable; many fine roots; pH 5.5; abrupt smooth boundary.
6394	B21	6-16 inches. Dark brown (7.5YR 4/4) silty clay loam; moderate fine subangular blocky at moderate field moisture; friable at good field moisture, hard at low moisture; grayish brown silt coat on some peds; common fine roots; pH 4.5; gradual smooth boundary.
6395	B22	16-28 inches. Brown (7.5YR 5/4) on aggregate faces, yellowish brown (10YR 5/4) on broken faces; silty clay loam; moderate coarse subangular blocky at low moisture, moderate fine subangular blocky at good moisture content; very friable, slightly hard; fine roots common; fine and medium pores common in peds; few fine concretions; white silt on about 10 percent of peds; pH 4.5; diffuse smooth boundary.
6396	B23	28-43 inches. Dark brown (10YR 4/3) silty clay loam; pale brown silt coats on about 10 percent of peds; weak coarse subangular blocky at low moisture; very friable; few fine pores; few fine roots; few fine dark concretions; pH 4.5; diffuse boundary.
6397	B3	43-74 inches. Dark brown (7.5YR 4/4) light silty clay loam; weak coarse subangular blocky at low moisture, weak medium blocky at moderate moisture, slightly hard, very friable; white silt on few peds; common fine and medium pores; pH 5.0; boundary not exposed but apparently rather abrupt.
6398	C	74-96+ inches. Reddish brown (5YR 4/3) at 74 inches to dark reddish gray (5YR 4/2) at 96 inches, silt loam; weak fine subangular blocky; pale brown streaks on some peds; very friable; pH 6.0. Sampled by bucket auger.

Remarks: Clay films abundant but discontinuous in B21, common and patchy in B22 and B23. Colors given are for moist soil unless otherwise stated. Colors of dry soil are one or two values higher. pH readings by Hellige-Truog Soil Reaction Tester.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 15, 1958

SOIL TYPE Memphis silt loam **LOCATION** Phillips County, Arkansas

SOIL NOS. S57Ark-54-2-(1-6) **LAB. NOS.** 6399-6404

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	2A2 > 2	TEXTURAL CLASS
0-6	Ap	-	0.1	0.1a	0.2a	0.5a	89.1	10.0	52.0	37.7	-	si
6-18	B21	-	-	-	-	0.4a	69.6	30.0	33.4	36.6	-	sicl
18-31	B22	-	-	-	-	0.4a	73.8	25.8	35.0	39.2	-	sil
31-43	B23	-	-	-	-	0.4a	77.4	22.2	39.0	38.8	-	sil
43-70	B3	-	-	-	-	0.4a	79.2	20.4	41.8	37.8	-	sil
70-98+	C1	-	-	-	-	0.3a	84.4	15.3	46.7	38.0	-	sil

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS		4B2 15 ATMOS. %
5.3			0.63	.062	10							4.4
5.0			0.20	.036								12.3
4.8			0.09	.026								11.4
4.8			0.09									10.6
4.9			0.04									9.7
5.2			0.02									8.3

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH.	5C3 Base Sat. % on Sum 5C1 Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na % on NH_4Ac Exch.	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
6.2	2.8	1.0	3.5	-	0.4	68	54	4.2	7.7	2.8	-	
14.7	4.3	4.2	9.5	0.1	0.3	60	48	8.9	18.4	1.0	1	
14.0	2.6	4.3	10.6	0.2	0.3	53	41	7.4	18.0	0.6	1	
13.6	2.4	3.2	11.0	0.2	0.3	45	36	6.1	17.1	0.8	1	
13.2	2.6	3.3	10.2	0.2	0.2	48	38	6.3	16.5	0.8	2	
11.9	5.5	3.1	5.9	0.2	0.2	76	60	9.0	14.9	1.8	2	

a. Common irregular dark brown concr. (Fe-Mn?)

Soil type: Memphis silt loam
Soil No.: S57Ark-54-2-(1-6)
Location: Phillips County, Arkansas, 50 feet north of Highway 20,0.1 mile east of Big Creek, 1.5 miles east of Poplar Grove.
Vegetation and use: Oak, maple, and tulip poplar; cleared land cultivated to row crops for many years, presently in cotton.
Topography: 8 percent north slope on nearly level to gently rolling relief.
Samples collected by: H. C. Dean, C. J. Finger, Marvin Lawson, and Nelse Robertson.
Described by: Marvin Lawson.
Date: August 16, 1957.

Lincoln Lab. No.	Horizon	
6399	Ap	0-6 inches. Dark grayish brown (10YR 4/2) silt loam; weak fine granular; very friable; many roots; pH 6.0; abrupt smooth boundary.
6400	B21	6-18 inches. Dark brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky; friable; fine roots common; many fine pores; pH 4.5; arbitrary boundary.
6401	B22	18-31 inches. Dark brown (10YR 4/3) silty clay loam; moderate fine and medium angular blocky; firm at lower field moisture limit, friable at upper limit; common fine roots; common fine pores; few hard fine concretions; pH 4.5; gradual smooth boundary.
6402	B23	31-43 inches. Dark brown (10YR 4/3) silty clay loam; coarse subangular blocky at low moisture, weak fine subangular blocky at moderate moisture; friable; pale brown silt coatings on some peds; few fine pores; few fine roots; few fine black concretions; pH 4.5; gradual smooth boundary.
6403	B3	43-70 inches. Dark brown (10YR 4/3) silty clay loam; weak fine subangular blocky; friable; pale brown silt coats on a few peds; few fine pores; few soft dark brown concretions; pH 5.0; arbitrary boundary.
6404	C1	70-98 inches plus. Bucket auger sample. Dark brown (7.5YR 4/3) silt loam; weak fine angular blocky; few fine pores; few peds with pale brown silt coats; pH 5.5.

Remarks: Clay films abundant but discontinuous in B21, common and patchy in B22 and B23. Colors given are for moist soil unless otherwise stated.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Memphis silt loam **LOCATION** St. Francis County, Arkansas

SOIL NOS. S58Ark-62-1-(1-6) **LAB. NOS.** 8342-8347

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	2A2 > 2	TEXTURAL CLASS
0-4	Ap	-	-	-	0.1a	0.3a	75.4	24.2	44.2	31.6	-	sil
4-19	B21	-	-	-	-	0.3a	70.2	29.5	34.3	36.2	-	sicl
19-30	B22	-	-	-	-	0.2a	75.0	24.8	37.0	38.2	-	sil
30-41	B31	-	-	-	-	0.3a	76.3	23.4	38.1	38.5	-	sil
41-51	B32	-	-	-	-	0.2a	77.9	21.9	40.0	38.1	-	sil
51-70	C	-	-	-	-	0.2a	78.6	21.2	40.0	38.8	-	sil

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN %	ORGANIC MATTER C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS	MOISTURE TENSIONS	MOISTURE TENSIONS 4B2 15 ATMOS. %
5.3			0.41	0.052	8							10.1
5.0			0.12	0.034								12.4
5.1			0.09	0.026								10.9
5.2			0.06									10.8
5.3			0.03									10.5
5.4			0.04									10.6

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6Q2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na % on NH_4Ac Exch.	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
12.7	4.1	2.9	7.8	-	0.5	59	49	7.5	15.3	1.4	-	
16.3	4.1	2.9	12.0	0.2	0.4	47	39	7.6	19.6	1.4	1	
14.0	3.8	3.2	11.1	0.2	0.3	54	40	7.5	18.6	1.2	1	
14.2	4.4	3.4	9.2	0.2	0.3	58	47	8.3	17.5	1.3	1	
13.8	5.3	3.9	8.3	0.2	0.3	70	54	9.7	18.0	1.4	1	
15.0	6.7	3.8	7.4	0.2	0.3	73	60	11.0	18.4	1.8	1	

a. Many smooth light brown to black concr. (Fe-Mn?).

Soil type: Memphis silt loam
Soil No.: S58Ark-62-1-(1-6)
Area: St. Francis County, Arkansas.
Location: Five miles north, 1/4 mile east from Forrest City, 200 feet north of road on Turner farm. SW SE NW Sec. 34, T6N, R3E. Field has been in cultivation many years - now idle.
Samples collected by: Marvin Lawson, H. C. Dean, J. L. Gray, and Nelse Robertson.
Described by: Marvin Lawson.
Date: May 7, 1958.

Lincoln Lab.No.	Horizon	
8342	Ap	0-4 inches. Dark brown (10YR 4/3) silt loam; weak fine subangular blocky and granular structure; very friable; fine roots common; pH 5.5; clear smooth boundary.
8343	B21	4-19 inches. Brown (7.5YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; clay skins abundant; few medium black soft concretions or coats on ped faces; few tubular pores; fine roots common; pH 5.5; gradual wavy boundary.
8344	B22	19-30 inches. Brown (7.5YR 5/4) light silty clay loam; moderate medium subangular blocky structure; friable; clay skins less common than in B21; few soft black concretions or ped coats; few fine roots; few fine tubular pores; pH 5.0; gradual wavy boundary.
8345	B31	30-41 inches. Dark yellowish brown (10YR 4/4) light silty clay loam; weak fine angular blocky and subangular blocky structure; very friable; few thin clay skins; occasional fine pocket and some fine seams of very fine white crystals; occasional fine black masses, soft concretions, or ped coats; few fine tubular pores; few fine roots; pH 5.0; arbitrary boundary.
8346	B32	41-51 inches. Same as B31 except pH 5.5 and no roots observed.
8347	C	51-70 inches. Silt loam, very friable. At 70 inches material was reddish brown (5YR 4/3.5). Dye was absorbed so that no pH reading was made. Bucket type auger was used to reach below 51 inches.

Remarks: Colors stated are for moist soil. pH was determined by Hellige-Truog field kit indicator.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Portland silty clay **LOCATION** Ashley County, Arkansas

SOIL NOS. 860Ark-2-1 **LAB. NOS.** 13342-13348

DEPTH INCHES	HORIZON	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	0.2-0.02	3A1 0.02-0.002	2A2 > 2	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-3	A_{p1}	0.3a	1.3a	1.1a	1.5a	0.9a	46.2	48.7	5.1	42.7	-	sic
3-8	A_{p2}	<0.1a	0.2a	0.2a	0.4a	0.3a	21.3	77.6	1.2	20.6	-	c
8-18	C_1	<0.1	0.1a	0.1a	0.4a	0.3a	20.3	78.8	1.1	19.7	-	c
18-30	C_2	<0.1	0.1a	0.1a	0.3a	0.4a	29.7	69.4	2.5	27.8	-	c
30-45	C_3	0.6b	0.2b	0.1b	0.1c	0.2c	35.5	63.3	1.8	34.0	-	c
45-65	C_4 d	0.7b	0.2b	0.2b	0.3c	0.2c	41.6	56.8	5.0	37.0	-	sic
45-65	C_4 e	0.1b	0.1b	<0.1	0.1f	0.3f	80.1	19.3	46.4	34.1	-	sil

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	Ext. Al me/100g	6E1c $CaCO_3$ equivalent %	8D3 Ca/Mg	4B1b MOISTURE TENSIONS 1/3 ATMOS. Pieces %	1/3 ATMOS. Sieved %	4B2 15 ATMOS. Sieved %
5.4			1.93	0.156	12	2.8			1.5			19.6
4.3			0.54	0.044	12	1.5			1.1	38.9		30.2
4.6			0.42	0.035	12	1.4			1.1	42.4		28.8
5.7			0.67	0.049	14	1.6			1.3	42.4		26.7
7.6			0.34			1.5		2.7		40.5		25.9
7.8			0.24			1.3		7.4				24.6
8.1			0.16			0.7		1.6				9.2

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	Bulk Density 4A1h O.D. g/cc	4A1c 30-Cm. g/cc	4B3 Water Content 30-Cm. %
←	milliequivalents per 100g. soil				→							
28.5	13.8	9.1	13.6	0.1	1.1	84	64	24.1	37.7	1.41	1.23	31.5
44.6	17.3	15.7	21.0	0.5	1.2	78	62	34.7	55.7	1.82		
46.1	20.6	18.6	13.9	1.0	1.1	90	75	41.3	55.2	1.88		
43.1	22.8	17.8	8.0	1.3	1.0	100	84	42.9	50.9	1.88		
39.4		17.9	<0.1	1.7	1.1					1.74	1.26	37.3
35.6		14.4	<0.1	2.2	1.1							
14.9		5.7	0.8	1.1	0.4							

a. Many Fe-Mn? concr.
b. Many carbonates. Limestone fragments?
c. Trace carbonates. Limestone fragments? Many Fe-Mn? concr.
d. Clay layers.
e. Silty layers.
f. Carbonates. Limestone fragments?

Soil type: Portland silty clay
Soil No.: S60Ark-2-1
Location: Ashley County, Arkansas, 1½ miles west of Montrose on Arkansas-U.S. Highway 82, 300 feet south of highway. Photo CFC-1F-93, 2/8/52.
Vegetation and use: Native vegetation is bottom land hardwoods. This site bedded for planting. Has been in cultivation probably 12 to 15 years. Crop and fertilization history not known but cotton probably has been most frequent crop alternated with soybeans. Fertilization with complete fertilizer is common usage and spraying with insecticides is also common.
Slope and land form: 2 percent north slope. Nearly level backwater floodplains. Elevation 125 feet.
Drainage and permeability: Somewhat poorly drained. Runoff slow; internal drainage slow; permeability slow.
Parent material: Alluvial clays, usually calcareous, from wide variety of source material.
Samples collected by: Dr. H. C. Dean, Robert L. Juve, May 9, 1960.
Profile described by: Marvin Lawson, May 9, 1960.

Lincoln Lab.No.	Horizon	
13342	Ap1	0-3 inches. Dark grayish brown (10YR 4/2) silty clay with few faint medium and fine mottles of grayish brown (10YR 5/2) and yellowish brown (10YR 5/4); weak fine angular blocky structure; sticky, plastic; common roots with few as much as 2 inches in diameter; pH 4.5; abrupt wavy boundary.
13343	Ap2	3-8 inches. Dark brown (7.5YR 4/4) clay with common coarse distinct irregular mottles of grayish brown (10YR 5/2); weak fine angular blocky structure; firm, sticky, plastic; common roots with few coarse ones; few tubular pores; pH 4.5; clear wavy boundary.
13344	C1	8-18 inches. Dark brown (7.5YR 4/2) clay with common coarse faint mottles of brown (7.5YR 5/4); strong fine angular blocky structure; very sticky, very plastic; few slickensides; apparent clay films may be due to adjustment to pressure or orientation; few tubular pores; common fine roots; few coarse; pH 5.5; gradual wavy boundary.
13345	C2	18-30 inches. Brown (7.5YR 4/4) clay with common coarse distinct mottles of dark brown (7.5YR 4/2) with gradually merging borders; moderate angular blocky structure; few common apparent clay films may be due to adjustment to pressure or orientation; very sticky; very plastic; few slickensides; few tubular pores; fine roots common; pH 7.0; clear wavy boundary.
13346	C3	30-45 inches. Dark reddish brown (5YR 3/3) clay; strong fine angular blocky structure; very sticky, very plastic; numerous slickensides 4 to 6 inches wide and of undetermined length; smooth faces on aggregates may be due to pressure or reorientation; few fine roots; pH 8.0; clear wavy boundary.
13347 13348	C4	45-65 inches. Alternating thin layers of silt, silt loam, clay loam, and clay in various shades of red with reddish brown predominant; calcareous; pH 8.0. In detail of thickness: 45-46 inches silt loam 46-49½ inches clay 49½-51 inches silt loam with thin clay lenses 51-57 inches clay 57-59 inches silt loam with thin clay lenses 59-60 inches clay 60-65 inches silt loam with few thin clay bands Some silt loam layers were discontinuous after several inches; boundary to clay abrupt; very soft, friable; dark brown to reddish brown in various horizons; common clay filled vertical channels. Clay usually dark reddish brown (10R 3/3); few black streaks on some surfaces; few lime carbonate concretions; few tubular pores. LSL No. 13347, sample of the clay layers or strata; No. 13348, sample of the silty layers or strata.

Remarks: Colors given are for moist soil. Color of dry soil will be one or two values higher. Soil was wet when sampled. pH by Hellige-Truog field test kit. The Portland soils are associated with the Gallion, Perry, Hebert, and Buxin soils. Horizons C2 and C3 appear to be in disconformity. Climate: Average annual rainfall is 51 inches; average annual temperature is 65° F; and average frost-free period is 226 days. Horizons C1 and C4 were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Perry clay **LOCATION** Desha County, Arkansas

SOIL NOS. S60Ark-21-1 **LAB. NOS.** 13356-13361

DEPTH INCHES	HORIZON	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	2A2 > 2	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-2	A11	0.3a	0.2a	0.2a	0.6	10.5	42.0	46.2	28.9	24.0	-	sic
2-6	A12	<0.1	0.1a	0.1a	0.5	11.0	43.0	45.3	28.0	26.4	-	sic
6-18	C1	0.1b	0.2b	0.1a	0.3	7.4	30.8	61.1	18.6	19.8	-	c
18-28	C2	0.1b	0.2b	0.1a	0.4	8.7	31.7	58.8	22.0	18.7	-	c
28-41	C3	<0.1	0.2b	0.1a	0.6	13.0	35.4	50.7	30.2	18.6	-	c
41-58	C4	0.1c	0.2c	0.1c	0.4d	6.9d	33.5	58.8	15.1	25.6	-	c

pH 8C1a 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	6G2a Ext. Al me/100g	6E1c $CaCO_3$ equivalent %	8D3 Ca/Mg	MOISTURE TENSIONS 1/10 ATMOS. %	4B1b 1/3 ATMOS. Pieces %	4B2 15 ATMOS. Sieved %
4.4			3.32	0.223	15	1.1	6		2.3			17.4
4.5			1.05	0.089	12	1.5	9		2.3			18.7
4.3			0.58	0.043	13	1.3	6		1.7		36.1	25.4
4.7			0.54	0.034	16	1.2	1		1.8		33.6	23.1
6.1			0.37			1.2	<1	<0.1			28.5	20.5
7.3			0.22			1.4	<1	1.5			37.4	23.4

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	Bulk Density 4A1h O.D. g/cc	4A1c 30-Cm g/cc	4B3 Water Content 30-Cm. %
← milliequivalents per 100g. soil →												
24.9	9.6	4.1	22.2	0.1	0.6	58	39	14.4	36.6			
22.7	8.4	3.6	21.1	0.2	0.5	56	38	12.7	33.8			
35.2	15.8	9.3	18.3	0.6	0.8	75	59	26.5	44.8	1.78e	1.29	33.8
35.2	20.0	11.4	10.9	1.1	0.8	95	75	33.3	44.2	1.79	1.38e	29.2
32.5		11.5	4.4	1.7	0.6					1.84	1.43	29.4
36.0		13.6	0.3	2.8	0.9					1.76e	1.31	34.4

a. Common Fe-Mn? concr.
b. Many Fe-Mn? concr.
c. Trace carbonates. Limestone fragments? Many Fe-Mn? concr.
d. Trace carbonates. Limestone fragments?
e. Duplicate samples exceed confidence limit of ± 0.05 and range to ± 0.08.

Soil type: Perry clay
Soil No.: S60Ark-21-1
Location: Desha County, Arkansas, 200 feet east of Arkansas-U.S. Highway 65 across from roadside park at Tillar. Photo CFG-4W-65, 10/27/58.
Vegetation and Use: Hardwood forest that has been cutover, occasionally burned, and range grazed. Apparently has never been cultivated. Vegetation consists of willow oak, scalybark hickory, post oak, ash, locust thorn, hawthorn, and cedar elm. Sedges are common in forest openings. When drained this soil type is used for production of crops common to the area, such as cotton, soybeans, rice, and small grains.
Slope and land form: Level backwater flood plains. Gilgai surface.
Drainage and permeability: Poorly drained. Runoff very slow or ponded; internal drainage very slow; permeability very slow.
Parent material: Alluvial clays, usually calcareous, from a wide variety of source materials.
Samples collected by: Dr. H. C. Dean, Robert L. Juve, May 10, 1960.
Profile described by: Marvin Lawson, May 10, 1960.

Lab. No.	Horizon	
	A00	1-0 inches. Leaf and twig litter.
	A0	None
13356	A11	0-2 inches. Gray (10YR 5/1) clay with few fine mottles of strong brown (7.5YR 5/6); weak fine and medium granular structure; firm, sticky, plastic; several peds coated with black (10YR 2/1) humus; many roots; pH 5.0; clear wavy boundary.
13357	A12	2-6 inches. Gray (10YR 5/1) clay with common medium and coarse prominent mottles of strong brown (7.5YR 5/6); weak fine subangular blocky structure; very sticky, very plastic; few infusions of very dark gray continuous into A11 above; few pores; many roots; pH 4.5; clear wavy boundary.
13358	C1	6-18 inches. Gray (10YR 5/1) clay with about 20 percent medium and coarse prominent mottles of strong brown (7.5YR 5/6); weak fine angular blocky structure; few medium slickensides; few smooth faces except along slickensides; very sticky, very plastic; few black streaks continuous into A1 above; common roots; few structural pores only; pH 4.0; gradual wavy boundary.
13359	C2	18-28 inches. Gray (10YR 5/1) clay with few medium prominent mottles of dark brown (7.5YR 4/4); weak fine and medium angular blocky structure; very sticky; very plastic; common medium slickensides; few structural pores; common roots; pH 5.5; gradual boundary.
13360	C3	28-41 inches. Dark gray (10YR 4/1) clay with few medium prominent mottles of reddish brown (5YR 4/4); moderate medium subangular blocky structure; very sticky; very plastic; common medium slickensides; smooth faces on most peds which may be a result of pressure or orientation; occasional fine hard concretion; few dead fine roots; few sinuous black humus streaks; common roots; pH 6.5; clear wavy boundary.
13361	C4	41-58 inches. Reddish brown (5YR 4/3) clay; some large fragments platy. Finer components of large fragments moderate medium subangular blocky; very sticky, very plastic; few medium slickensides; few roots; few fine soft black globules; few sinuous black humus streaks on aggregate faces; pH 8.0.

Remarks: Perry soils are associated with Buxin, Portland, Gallion, and Hebert soils and occasionally with Sharkey. Colors given are for moist soil. Colors of dry soil will be one or two values higher. Soil was wet when sampled. pH by Hellige-Truog field test kit. Average annual rainfall is about 50 inches; average annual temperature is 64° F.; and the frost-free season averages 228 days. Horizons C1 and C4 were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Perry clay **LOCATION** Desha County, Arkansas

SOIL NOS. S60Ark-21-2 **LAB. NOS.** 13362-13366

DEPTH INCHES	HORIZON	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	2A2 > 2	TEXTURAL CLASS
0-5	A	<0.1	0.1a	<0.1	0.1b	1.8	37.2	60.8	12.2	26.9	-	c
5-17	C1	<0.1	<0.1	<0.1	0.1b	2.9	37.7	59.3	21.1	19.6	-	c
17-30	C2	0.1b	<0.1	<0.1	0.1b	3.5	46.7	49.6	29.9	20.4	-	sic
30-41	C3	0.2c	0.4c	0.2c	0.5c	1.4c	28.4	68.9	10.8	19.3	-	c
41-55	C4	2.2c	1.6c	1.0c	1.2c	1.0c	18.3	74.7	4.1	15.8	-	c

pH 8C1a 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	Ext. Al me/100g	6E1c $CaCO_3$ equivalent %	8D3 Ca/Mg	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. Sieved %
5.9			1.98	0.168	12	1.9			2.5			24.4
5.3			0.99	0.095	10	1.7			1.9			22.3
6.0			0.31	0.035	9	1.5		<0.1	1.6			20.6
7.4			0.25			1.4		4.4				26.3
7.7			0.25			1.7		14.6				27.2

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	Bulk Density 4A1h O.D. g/cc	4A1c 30-Cm. g/cc	4B3 Water Content 30-Cm. %
←	milliequivalents per 100g. soil				→							
34.7	23.0	9.2	9.2	0.1	1.1	96	78	33.4	42.6			
32.6	19.0	10.0	9.7	0.3	0.9	93	76	30.2	39.9	1.80		
29.6	17.7	11.3	5.1	0.4	0.7	102	86	30.1	35.2	1.80	1.42	29.7
38.3		16.8	<0.1	1.5	1.0					1.83		
37.8		20.9	<0.1	1.8	1.1							

a. Common organic matter fragments.
b. Many Fe-Mn? concr.
c. Many carbonates. Limestone fragments.

Soil type: Perry clay
Soil No.: S60Ark-21-2
Location: Desha County, Arkansas, 2½ miles north of Kelso on Ark. Highway 1, east on unnumbered county road about 500 feet, and 200 feet north. Photo CFG-1W-67, 10-23-58.
Vegetation and use: Hardwood forest. Hackberry, honey locust, post oak, pecan, green ash, cherrybark oak, willow oak, cedar elm, with understory of grape, Virginia creeper, silverbell, poison ivy, and deciduous holly. Has never been cultivated but has been cutover, occasionally burned, and range grazed.
Slope and land form: Level backwater flood plains. Gilgai surface.
Drainage and permeability: Poorly drained. Runoff very slow or ponded; internal drainage very slow; permeability very slow.
Parent material: Alluvial clays, usually calcareous, from a wide variety of source materials.
Samples collected by: Dr. H. C. Dean, Robert L. Juve, May 10, 1960.
Profile described by: Marvin Lawson, May 10, 1960.

Lincoln Lab. No.	Horizon	
	A00	3-3/4 inches. Leaf and twig litter.
	A0	3/4-0 inches. Clayey humus of variable thickness less than 3/4-inch to near 0 inch; black (10YR 2/1); granular; pH 6.5.
13362	A	0-5 inches. Very dark gray (10YR 3/1) clay with few fine prominent mottles of reddish brown (5YR 4/3); strong coarse subangular blocky structure; very firm, very sticky, very plastic; few medium tubular pores; many roots; pH 6.0; clear wavy boundary.
13363	C1	5-17 inches. Dark gray (10YR 4/1) clay with few fine mottles of yellowish brown (10YR 5/6) and reddish brown (5YR 4/4); strong medium subangular blocky structure; very sticky, very plastic; few medium slickensides; ped faces smooth by pressure or orientation; few fine black globules; common roots; pH 6.0; clear wavy boundary.
13364	C2	17-30 inches. Gray (10YR 6/1) clay with 20 percent of prominent fine and medium mottles of dark brown (7.5YR 4/4); weak coarse platy structure which breaks readily to weak fine angular blocky; very sticky, very plastic; occasional fine black soft globules; few fine dead roots; few live roots; pH 6.5; clear wavy boundary.
13365	C3	30-41 inches. Reddish brown (5YR 4/3) clay; moderate medium and coarse subangular blocky structure; very sticky, very plastic; common medium slickensides; smooth ped surfaces may be due to pressure or orientation; few fine lime carbonate concretions; occasional fine dark hard concretion; few fine dead roots; few live roots; pH 7.5; gradual wavy boundary.
13366	C4	41-55 inches. Reddish brown (5YR 4/3) clay; weak platy mass which breaks readily to medium subangular blocky aggregates; very sticky, very plastic; common medium slickensides; few medium pockets of sand-size lime carbonate concretions; few fine sinuous black humus streaks; smooth aggregate faces may be due to pressure or orientation; few roots; pH 8.0.

Remarks: Perry soils are associated with Buxin, Portland, Gallion, and Hebert soils and occasionally with Sharkey. Colors given are for moist soil. Colors of dry soil will be one or two values higher. Soil was wet when sampled. pH by Hellige-Truog field test kit. Average annual rainfall is about 50 inches; average annual temperature is 64° F; and the frost-free season averages 228 days. Horizons C1 and C4 were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Barden (now Enders) gravelly fine sandy loam **LOCATION** Franklin County, Arkansas

SOIL NOS. S60Ark-24-1 **LAB. NOS.** 13290-13297

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-1	A_1	1.4a	1.3a	2.2	36.4	18.5	30.2	10.0	60.2	14.7	20	fsl
1-4	A_2	1.4b	0.8b	1.5a	35.1	18.3	29.1	13.8	58.2	15.1	6	fsl
4-7	B_1	1.7b	0.7b	1.2a	28.4	14.5	26.6	26.9	47.0	15.0	4	scl
7-15	B_{21}	1.0b	0.8b	1.6a	22.2	9.3	20.1	45.0	33.0	12.6	14	c
15-20	B_{22}	1.1b	0.5b	0.8a	11.0	7.4	28.5	50.7	22.2	21.8	6	c
20-28	B_{23}	0.4b	0.3b	0.8a	5.5	7.4	29.2	56.4	20.9	19.5	7	c
28-37	C_1	1.2b	1.4b	0.6b	1.4b	1.2b	30.1	64.1	6.6	25.5	Tr	c
37-60+	C_2	1.5b	1.5b	0.8b	1.5b	1.0b	37.2	56.5	5.6	33.4	17	c

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	6G2a Ext. Al me/100g	$CaCO_3$ equivalent %	8D3 Ca/Mg	MOISTURE TENSIONS 4B1b 1/3 ATMOS. Pieces %	1/3 ATMOS. Sieved %	4B2 15 ATMOS. Sieved %
4.9			3.39	0.221	15	1.8	1		2.2			8.6
4.7			0.94	0.056	17	2.2	2		5.7			5.7
4.5			0.77	0.059	13	3.5	6		3.0			11.0
4.6			0.40	0.052	8	5.5	11		0.5	19.6		17.2
4.5			0.37	0.063	6	7.2	15					20.2
4.5			0.28	0.065	4	6.3	19			25.1		22.0
4.2			0.24			4.5	27			28.3		23.5
4.4			0.24			5.1	17		0.3	25.6		19.6

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	Bulk Density 4A1h O.D. g/cc	4A1c 30-Cm. g/cc	4B3 Water Content 30-Cm. %
←	milliequivalents per 100g. soil				→							
13.0	3.1	1.4	11.8	<0.1	0.3	37	29	4.8	16.6			
5.9	1.7	0.3	7.8	<0.1	0.1	36	21	2.1	9.9			
10.2	0.6	0.2	13.1	<0.1	0.2	10	7	1.0	14.1			
15.6	0.6	1.3	18.3	<0.1	0.2	13	10	2.1	20.4	1.46	1.38	24.0
19.3	<0.1	1.5	22.2	0.1	0.3	10	8	1.9	24.1			
24.0	<0.1	2.3	25.2	0.1	0.3	11	10	2.7	27.9	1.68		
31.7	<0.1	4.6	33.0	0.2	0.5	17	14	5.3	38.3	1.73	1.42	28.8
26.8	1.9	5.7	24.4	0.4	0.4	31	26	8.4	32.8	1.80	1.58	23.5

a. Common ferruginous sandstone and ironstone fragments.
b. Many ferruginous sandstone and ironstone fragments.

Soil type: Rarden gravelly fine sandy loam (Subsequently correlated as Enders)
Soil No.: S60Ark-24-1
Location: Franklin County, Arkansas, from Ozark, about 12 miles north on Arkansas Highway 23 to Barnes Road; east 3 miles on Barnes Road and 300 feet south of road. Photo AVU-2C-120, 3/23/42.
Vegetation and use: Pine-hardwood forest; shortleaf pine. Hardwood of white hickory, post oak, red oak, white oak in order of dominance. Oaks seriously defective. Has not been cleared nor overcut. Has been frequently burned and subject to range grazing for many years.
Slope and land form: 15 percent west slope near middle of long slope in mountainous terrain; Boston Mountains, composed of level bedded thin alternating strata and lenses of sandstone and shale.
Drainage and permeability: Moderately well drained. Surface runoff rapid; internal drainage slow; permeability very slow.
Parent material: Residuum from noncalcareous shale with creep material on the surface from sandstone ledges above.
Samples collected by: Dr. Frank Carlisle, Dr. H. C. Dean, Robert L. Juve, May 3, 1960.
Profile described by: Marvin Lawson, May 3, 1960.

Lincoln Lab.No.	Horizon	
	A00	2 inches of leaf and twig litter.
	A0	Not observable.
13290	A1	0-1 inches. Very dark grayish brown (10YR 3/2) gravelly very fine sandy loam with streaks of black and strong brown about 10 percent; weak fine granular structure; many roots; very friable; pH 5.0; abrupt wavy boundary.
13291	A2	1-4 inches. Yellowish brown (10YR 5/4) gravelly very fine sandy loam; weak fine subangular blocky structure; very friable; many roots; pH 4.5; gradual wavy boundary.
13292	B1	4-7 inches. Brown (7.5YR 5/4) clay loam; weak fine subangular blocky structure; friable; few coarse sandstone fragments; many sandstone gravels; pH 4.5; gradual wavy boundary.
13293	B21	7-15 inches. Yellowish red (5YR 4/8) clay; strong fine angular blocky structure; firm; clay films on all peds; common roots; common sandstone gravels and few stones; few tubular pores; pH 4.5; gradual wavy boundary.
13294	B22	15-20 inches. Reddish brown (5YR 5/4) clay with common coarse prominent mottles of reddish yellow (7.5YR 6/6) and few fine mottles of light gray (10YR 7/2) and reddish brown (2.5YR 4/4); strong fine angular blocky structure; firm; sticky, plastic; clay films on all peds; few coarse gravels; few roots; pH 4.5; diffuse boundary.
13295	B23	20-28 inches. Pale brown (10YR 6/3) clay variegated with many medium and coarse prominent mottles of light gray (10YR 7/1), brown (10YR 5/3) and dark red (10R 3/6) strong fine angular blocky structure; firm, sticky, plastic; clay films on most peds; few roots; few tubular pores; pH 4.5; gradual wavy boundary.
13296	C1	28-37 inches. Light gray (10YR 7/1) clay with few medium prominent mottles of strong brown (7.5YR 5/8); moderate medium and coarse angular blocky structure; firm, sticky, plastic; few slickensides; common discontinuous clay films; few shale fragments; few fine hard concretions; few fine roots along fracture cracks; pH 4.0; gradual wavy boundary.
13297	C2	37-60+ inches. Light gray (10YR 7/1) shaly clay with common medium mottles of strong brown (7.5YR 5/6); weak platy structure; common fragments of weathered shale; few fine hard concretions; pH 4.0.

Remarks: The Rarden soils are associated with Enders, Pottsville, Linker, and Hartsells soils. These analyses will be useful for comparison with analyses of Rarden soils from other states and with soils which have clayey subsoils from different types of parent materials. Colors given are for moist soils. Colors of dry soils will be one or two values higher. Soil was moist when sampled. pH reading by Hellige-Truog field test kit. Average annual rainfall for this area is about 50 inches with fair seasonal distribution. Frost-free period is about 200 days. Average annual temperature is 56° F. Elevation is about 1,600 feet.

Temperature F°	Average	Average Maximum	Average Minimum
July	75	88	63
January	36	47	24

Horizons A2, B22, C1 and C2 were sampled for Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Barden (now Enders) gravelly fine sandy loam **LOCATION** Franklin County, Arkansas

SOIL NOS. 860Ark-24-2 **LAB. NOS.** 13298-13305

DEPTH INCHES	HORIZON	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	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-2	A a	6.8b	8.7c	11.9c	28.9	14.9	18.3	10.5	39.2	11.3	10	fsl
2-5	A_1	3.6b	3.6c	4.2c	13.9	13.6	41.9	19.2	37.4	26.9	10	l
5-8	B_1	1.3b	2.9c	3.8	13.0	12.8	39.7	26.5	34.8	26.0	Tr.	l/cl
8-22	B_{21}	1.6b	1.2c	1.3	4.2	4.8	30.6	56.3	15.4	22.6	Tr.	c
22-28	B_{22}	2.4b	1.2b	0.6c	1.1c	1.5c	30.4	62.8	6.9	25.6	Tr.	c
28-39	B_{23}	2.1b	0.9b	0.3b	0.4c	1.1c	36.0	59.2	9.2	28.1	Tr.	c
39-46	C_1	3.7b	2.6b	1.0b	1.8b	1.9b	35.1	53.9	10.4	27.5	Tr.	c
46-62	C_2	1.3b	2.0b	0.9b	2.0b	1.8b	37.5	54.5	10.2	30.1	Tr.	c

8C1a pH 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	Ext. Al me/100g	$CaCO_3$ equivalent %	8D3 Ca/Mg	MOISTURE TENSIONS 4B1b 1/3 ATMOS. Pieces %	1/3 ATMOS. Sieved %	4B2 15 ATMOS. Sieved %
4.8			1.33	0.083	16	5.2			1.5			5.7
4.7			1.62	0.092	18	5.2			0.1	18.2		9.0
4.6			0.77	0.065	12	4.8			0.2			11.0
4.6			0.47	0.062	8	7.6			0.1	30.9		22.9
4.5			0.34	0.069	5	8.0						26.0
4.5			0.18			5.8				28.1		24.6
4.5			0.18			7.0				27.5		21.3
4.4			0.14			4.9				26.3		20.5

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5B1a BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	Bulk Density 4A1h O.D. g/cc	4A1c 30-Cm. g/cc	4B3 Water Content 30-Cm. %
←	milliequivalents per 100g. soil				→							
6.6	1.2	0.8	8.0	<0.1	0.2	33	22	2.2	10.2			
9.3	0.1	0.8	11.8	<0.1	0.2	12	8	1.1	12.9	1.53	1.46	21.9
9.6	0.1	0.6	12.3	<0.1	0.1	8	6	0.8	13.1			
23.0	0.1	1.3	25.9	<0.1	0.2	7	6	1.6	27.5	1.54	1.38	30.0
29.0	<0.1	0.8	32.7	0.1	0.3	4	4	1.2	33.9			
29.5	<0.1	0.8	34.3	0.1	0.3	4	3	1.2	35.5	1.64	1.40	29.1
25.6	<0.1	0.6	30.1	0.1	0.3	4	3	1.0	31.1	1.70	1.46	27.3
23.7	<0.1	0.7	28.5	0.1	0.3	5	4	1.1	29.6	1.80		

a. An overwash condition was discovered after samples were taken. It is wash from drains cut away from the road above the site.

b. Many ferruginous sandstone and ironstone fragments.

c. Common ferruginous sandstone and ironstone fragments.

Soil type: Rarden gravelly fine sandy loam (Subsequently correlated as Enders)
Soil No.: S60Ark-24-2
Location: Franklin County, Arkansas, from Ozark about 12 miles north on Arkansas Highway 23 to Barnes Road. East on Barnes Road 11.3 miles and 100 feet north of road. Photo AVU-3C-12, 4/4/42.
Vegetation and use: Predominantly stunted post oak with some blackjack oak and hickory. Few white oak and sweetgum. Possibly was cleared 50 or more years ago. Frequently burned and range grazed.
Slope and land form: 8 percent west slope below crest of hill in mountainous terrain, Boston Mountains, composed of level bedded noncalcareous sandstone and shale of thin alternating strata and lenses.
Drainage and permeability: Moderately well drained. Surface runoff rapid; internal drainage slow; permeability very slow.
Parent material: Residuum from noncalcareous shale with creep material on the surface from sandstone ledges above.
Samples collected by: Dr. Frank Carlisle, Dr. H. C. Dean, Robert L. Juve, May 3, 1960.
Profile described by: Marvin Lawson, May 3, 1960.

Lincoln Lab. No.	Horizon	
	A00	1½-½ inch. Leaf and twig litter.
	A0	½-0 inch. Black (10YR 2/2) organic matter in a mass of roots and containing considerable fine sand.
13298	A[1/]	0-2 inches. Reddish brown (5YR 4/4) gravelly sandy loam; weak medium granular structure; very friable; numerous roots; pH 6.0; clear wavy boundary.
13299	A1	2-5 inches. Dark brown (7.5YR 4/4) gravelly very fine sandy loam; weak medium granular structure; very friable; many roots; few fine black spots; pH 5.5; clear wavy boundary.
13300	B1	5-8 inches. Reddish brown (5YR 4/4) silty clay loam; weak medium subangular blocky structure; friable; common roots; pH 5.0; gradual wavy boundary.
13301	B21	8-22 inches. Yellowish red (5YR 4/8) silty clay; strong fine angular blocky structure; firm, sticky, plastic; soil mass friable, moist; continuous thick clay films on most peds; few fine tubular pores; common roots; pH 4.5; gradual wavy boundary.
13302	B22	22-28 inches. Red (2.5YR 4/8) clay with common medium and coarse mottles of light yellowish brown (10YR 6/4); strong coarse subangular blocky structure that readily breaks into strong fine angular blocky peds; clay films thick and continuous on most peds; firm, sticky, plastic; common roots; pH 4.5; gradual wavy boundary.
13303	B23	28-39 inches. Light gray (5Y 7/1) clay with 30 percent of fine and medium prominent reddish brown (5YR 4/4) mottles; strong fine angular blocky structure; firm, sticky, plastic; continuous thick clay films on most peds; few shale fragments; few slickensides; few medium hard concretions; few tubular pores; few fine roots; pH 4.5; gradual wavy boundary.
13304	C1	39-46 inches. Light gray (5Y 7/1) silty clay with 30 to 40 percent medium and coarse prominent mottles of dark reddish brown (2.5YR 3/4); platy fragments that break into fine angular blocky; common shale fragments; sticky and plastic; few tortuous humus streaks; few medium hard concretions; occasional fine root; pH 4.5; diffuse boundary.
13305	C2	46-62 inches. Light gray (5Y 7/1) decomposed shale with common coarse prominent mottles of dusky red (10R 3/4) largely on cleavage faces; platy; shale fragments easily crushed; shale interiors yellow (10YR 7/8); pH 4.0.

Remarks: The Rarden soils are associated with Enders, Pottsville, Linker, and Hartsells soils. These analyses will be useful for comparison with analyses of Rarden soils from other states and with soils which have clayey subsoils from different types of parent materials. Colors given are for moist soils. Colors of dry soils will be one or two values higher. Soil was moist when sampled. pH reading by Hellige-Truog field test kit. Elevation about 1,600 feet. Average annual rainfall for this area is about 50 inches with fair seasonal distribution. Frost-free period is about 200 days; average annual temperature is 56° F.

Temperature F°	Average	Average Maximum	Average Minimum
July	75	88	63
January	36	47	24

Horizons A1, B21, C1 and C2 were sampled for Bureau of Public Roads.

1/ An outwash condition was discovered after samples were taken. It is wash from drains cut away from the road above the site.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Savannah very fine sandy loam **LOCATION** Saline County, Arkansas

SOIL NOS. S60Ark-63-1 **LAB. NOS.** 13367-13375

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	3A1 2A2 > 2 (<19mm)	TEXTURAL CLASS
0-2	A_1	0.2	1.0	3.1	23.8	14.6	52.4	4.9	53.3	27.5	-	sil
2-6	A_2	0.3	0.7	3.3	25.7	14.6	49.9	5.5	53.0	26.4	Tr.	fsl/sil
6-9	B_1	0.4	0.5	2.9	23.1	14.0	49.1	10.0	50.1	26.3	Tr.	l
9-19	B_{21}	0.6	0.4	2.4	18.9	11.8	47.3	18.6	42.3	27.8	Tr.	l
19-26	B_{22}	0.3	0.4	2.4	18.0	11.2	48.7	19.0	42.8	27.6	Tr.	l
26-36	B_{x1}	0.1a	0.4	2.3	16.4	10.7	49.5	20.6	40.0	29.2	Tr.	l/sil
36-48	B_{x2}	0.3a	0.4	2.4	18.5	11.5	48.0	18.9	41.3	28.3	Tr.	l
48-54	D_1	0.1a	0.3	2.0	18.6	11.8	38.5	28.7	39.2	21.7	Tr.	cl
54-62	D_2	0.1	0.5	3.6	48.1	11.3	16.5	19.9	44.6	8.6	Tr.	fsl/scl

8C1a pH 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	6G2a Ext. Al me/100g	$CaCO_3$ equivalent %	8D3 Ca/Mg	MOISTURE TENSIONS 4B1b 1/3 ATMOS. Pieceas %	1/3 ATMOS. Sieved %	4B2 15 ATMOS. Sieved %
4.4			2.98	0.108	28	0.4	1		3.3			4.4
4.7			0.34	0.026	13	0.5	2		1.0			2.6
4.6			0.34	0.032	11	0.7	3		0.7			4.5
4.5			0.18	0.027		1.2	5		0.2	17.6		8.2
4.5			0.14	0.018		1.2	6			18.5		8.2
4.4			0.11			1.2	6			19.3		8.3
4.7			0.08			1.4	6			19.4		7.9
4.5			0.10			1.7	10		0.4	23.5		12.8
4.4			0.04			0.7	6		0.5			9.2

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	Bulk Density 4A1h O.D. g/cc	4A1c 30-Cm. g/cc	4B3 Water Content 30-Cm. %
←	milliequivalents per 100g. soil				→							
8.7	2.0	0.6	10.3	<0.1	0.1	31	21	2.7	13.0			
3.2	0.2	0.2	4.2	<0.1	<0.1	12	9	0.4	4.6			
5.1	0.4	0.6	5.7	<0.1	0.1	22	16	1.1	6.8			
8.3	0.2	0.9	9.3	<0.1	0.1	14	11	1.2	10.5	1.66	1.59	20.1
8.4	<0.1	1.0	9.8	<0.1	0.1	13	10	1.1	10.9	1.68	1.59	20.5
8.9	<0.1	1.0	10.5	0.1	0.1	13	10	1.2	11.7	1.65b	1.58b	21.0
9.1	<0.1	0.9	10.0	0.1	0.1	12	10	1.1	11.1	1.66	1.58	20.6
16.1	1.1	2.7	14.9	0.4	0.2	27	23	4.4	19.3	1.77	1.59	21.3
12.2	1.3	2.4	10.3	0.4	0.2	35	29	4.3	14.6			

a. Common Fe-Mn? Concr.
b. Duplicate samples exceed confidence limit of ± 0.05 and range to ± 0.08.

Soil type: Savannah very fine sandy loam
Soil No.: S60Ark-63-1
Location: Saline County, Arkansas, on or near Saline-Grant County line, 200 feet west of Arkansas-U.S. Highway 167. Photo CQQ-2R-147, 12/27/56.
Vegetation and use: Pine-hardwood forest. Shortleaf and loblolly pine; southern red oak, white oak, hickory species, sweetgum, and blackgum; understory of dogwood, bush huckleberry, tall ferns, and New Jersey tea. Has been cutover but never cultivated; has had range grazing and, until recently, frequent burning.
Slope and land form: 5 percent south slope on gently rolling Coastal Plain uplands. Elevation 275 feet.
Drainage and permeability: Moderately well drained; surface runoff medium, internal drainage medium, permeability moderately slow.
Parent material: Sandy formations of the Coastal Plain.
Samples collected by: Dr. H. C. Dean, Robert L. Juve, May 11, 1960.
Profile described by: Marvin Lawson, May 11, 1960.

Lincoln Lab.No.	Horizon	
	A00	$2\frac{1}{2}$-$\frac{1}{2}$ inch. Leaf and twig litter.
	A0	$\frac{1}{2}$-0 inch. Very dark gray (5YR 3/1) humus matted with fine roots.
13367	A1	0-2 inches. Grayish brown (10YR 5/2) very fine sandy loam; weak fine subangular blocky structure; very friable; common medium and coarse tubular pores; common medium very dark gray splotches of humic material from A0; few worm casts; many roots; pH 5.5; clear wavy boundary.
13368	A2	2-6 inches. Light brownish gray (10YR 6/2) very fine sandy loam; weak fine subangular blocky structure; very friable; few medium tubular pores; few black spots and streaks; many roots; pH 5.0; clear wavy boundary.
13369	B1	6-9 inches. Light yellowish brown (10YR 6/4) very fine sandy loam; weak fine subangular blocky structure; very friable; slightly sticky; few fine tubular pores; common roots; pH 5.0; clear wavy boundary.
13370	B21	9-19 inches. Yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; friable, nonsticky; few medium tubular pores with clay films; no clay films observed on peds; few dark streaks; few roots; pH 4.5; diffuse boundary.
13371	B22	19-26 inches. Yellowish brown (10YR 5/6) clay loam with few fine mottles of gray (10YR 5/1); moderate medium subangular blocky structure; friable; few patchy clay films; few medium tubular pores with clay film; few roots; pH 4.5; gradual smooth boundary.
13372	Bx1	26-36 inches. Gray (10YR 5/1) sandy clay loam with 40 percent medium distinct mottles of yellowish-brown (10YR 5/6); coarse subangular blocky structure with vertical axes longer than horizontal about $1\frac{1}{2}$ x 3/4 inches respectively; peds break to angular blocky fragments; firm, brittle; few dead fine roots; few sinuous channels filled with gray loam; common medium pores with clay films; few fine roots; pH 4.5; gradual smooth boundary.
13373	Bx2	36-48 inches. Gray (10YR 5/1) sandy clay loam with 40 percent coarse distinct mottles of yellowish brown (10YR 5/4 and 10YR 5/6); coarse subangular blocky structure with vertical axes longer than horizontal, about 3 x 2 inches respectively; coarse peds break to fine angular blocky fragments; friable, brittle; few fine sinuous humus streaks; few medium channel fills of gray loam; common medium tubular pores with clay films; few very fine roots; pH 4.5; clear smooth boundary.
13374	D1	48-54 inches. Gray (5Y 6/1) sandy clay with 20 percent coarse prominent mottles of yellowish-brown (10YR 5/6); crushed color yellowish brown; moderate coarse subangular blocky structure with vertical axes longer than horizontal, about 2 x 1 inches respectively; very firm, sticky, plastic; few patchy clay films; few fine dark hard concretions; few dead fine roots; tonguing of Bx2 between blocks; few smooth quartz gravels of 1/2 inch size; pH 4.5; clear smooth boundary.
13375	D2	54-62 inches. Light brownish gray (10YR 6/2) fine sandy loam with many coarse distinct mottles of brownish yellow (10YR 6/6) and yellowish brown (10YR 5/4) and gray (5Y 5/1); coarse angular blocky aggregates; very firm, brittle; few clayey seams; few dead fine roots; no pores observed; tongues of D1 between some aggregates; pH 4.0.

Remarks: The Savannah soils are associated with the Pheba soils which are somewhat poorly drained and Ora soils which are well drained. They also occur in association with the Ruston, Norfolk, and Bowie soils which do not have fragipans. The data for these samples will be used for comparison with the associated soils named and with Franklinton, Lewiston, Providence, and Bude soils in Arkansas and other states. Colors given are for moist soil. Color of dry soil will be one or two values higher. Soil was wet when sampled. pH by Hellige-Truog field test kit. Climate: Average annual rainfall is 50 inches; average annual temperature is 63° F.; and average frost-free period is 225 days.

Horizons B22, Bx2 and D2 were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Savannah very fine sandy loam **LOCATION** Saline County, Arkansas

SOIL NOS. S60Ark-63-2 **LAB. NOS.** 13376-13382

DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-	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 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										
0-6	A_1	1.9	1.4	1.8	19.0	30.8	41.0	4.1	67.2	18.9	5	vfsl
6-11	A_2	1.2	1.2	1.8	18.4	29.8	41.5	6.1	63.7	21.5	5	vfsl
11-19	A_3	1.8	1.2	1.7	17.5	28.8	41.4	7.6	61.6	21.6	5	l
19-27	B_2	1.5	1.1	1.4	14.7	25.0	39.6	16.7	53.8	21.9	6	l
27-36	B_{x1}	2.0	1.1	1.4	16.7	25.9	38.2	14.7	58.3	19.2	5	l
36-47	B_{x2}	1.0	1.0	1.4	16.8	26.5	37.5	15.8	58.9	18.6	7	l
47-63	B_{x3}	1.3	1.0	1.6	18.6	26.2	29.4	21.9	55.2	15.1	7	l

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN %	C/N	6C1a Free Iron % Fe_2O_3	6G2a Ext. Al me/100g	$CaCO_3$ equivalent %	8D3 Ca/Mg	MOISTURE TENSIONS 1/3 ATMOS. Pieces %	MOISTURE TENSIONS 1/3 ATMOS. Sieved %	MOISTURE TENSIONS 4B2 15 ATMOS. Sieved %
5.2			0.79	0.042	19	0.4	1		4.0			2.0
5.1			0.30	0.029	10	0.5	1		1.0			2.5
5.0			0.15	0.022		0.6	1		2.0			2.9
4.7			0.14	0.025		1.2	4		1.7			6.9
4.5			0.07			1.2	3					6.0
4.7			0.07			1.1	3		0.2			5.9
4.5			0.04			1.9	6					8.8

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5B1a BASE SAT. % NH_4OAc EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	Bulk Density 4A1h O.D. g/cc	Bulk Density 4A1c 30-Cm. g/cc	4B3 Water Content 30-Cm. %
←	milliequivalents per 100g. soil				→							
3.2	0.4	0.1	4.2	<0.1	0.1	19	12	0.6	4.8			
2.3	0.2	0.2	3.2	<0.1	0.1	22	14	0.5	3.7	1.41	1.40	19.4
2.5	0.2	0.1	2.7	<0.1	0.1	16	13	0.4	3.1	1.47	1.48	18.0
6.3	0.5	0.3	7.2	<0.1	0.1	14	11	0.9	8.1	1.53	1.49	19.5
5.2	<0.1	0.3	6.2	<0.1	0.1	8	6	0.4	6.6	1.76	1.72	16.4
5.0	0.1	0.4	6.0	<0.1	0.1	12	9	0.6	6.6	1.79	1.76	15.4
8.1	<0.1	0.4	9.8	<0.1	0.1	6	5	0.5	10.3	1.82	1.78	14.7

Concretions, organic matter fragments, or other special formations were not evident in the sand fractions.

Soil type: Savannah very fine sandy loam
Soil No.. S60Ark-63-2
Location: Saline County, Arkansas, south from Benton, Arkansas, on Arkansas Highway 35 about 6 miles at top of hill one mile north of Saline-Grant County line and 300 feet east of highway. Photo CQQ-3R-57, 12/27/56.
Vegetation and use: May have been cultivated more than 50 years ago indicated by age and species of trees. Has been frequently burned and range grazed. Tree species present shortleaf and loblolly pine, sweetgum and water oak with understory of holly, dogwood, sumac, huckleberry, and muscadine.
Slope and land form: 3 percent east slope on Coastal Plain upland.
Drainage and permeability: Moderately well drained; surface runoff medium, internal drainage medium, permeability moderately slow.
Parent material: Sandy formations of the Coastal Plain.
Samples collected by: Dr. H. C. Dean, Robert L. Juve, May 11, 1960.
Profile described by: Marvin Lawson, May 11, 1960.

Lincoln Lab. No.	Horizon	
	A00	1½-½ inch. Leaf and twig litter.
	A0	½-0 inch. Patchy very dark gray humus matted with roots.
13376	A1	0-6 inches. Dark grayish brown (10YR 4/2) very fine sandy loam; weak medium granular structure; very friable; many worm casts; few medium spots of very dark gray; very porous but of few tubular pores; less than 1/2 percent fine quartz gravels; many roots; pH 5.5; clear wavy boundary.
13377	A2	6-11 inches. Light yellowish brown (10YR 6/4) very fine sandy loam; weak medium subangular blocky structure; very friable; few cavities filled with worm casts; common medium and coarse tubular pores; few black dead fine roots; less than 1/2 percent fine quartz gravels; pH 5.0; clear wavy boundary.
13378	A3	11-19 inches. Brown (10YR 5/3) loam; weak fine subangular structure; very friable; common medium and coarse tubular pores; few fine quartz gravel; common roots; pH 5.0; gradual wavy boundary.
13379	B2	19-27 inches. Yellowish brown (10YR 5/6) clay loam; moderate fine and medium subangular blocky structure; friable; few patchy clay films; few medium and coarse sinuous channels with clay films; few black dead rootlets; common fine roots; less than 1 percent quartz gravels; pH 4.5; clear wavy boundary.
13380	Bx1	27-36 inches. Dark yellowish brown (10YR 4/6) fine sandy loam with many medium mottles of pale brown (10YR 6/3) and gray (10YR 5/1); gray material seems to be clay loam; massive, breaks to coarse angular blocky fragments; firm, distinctly brittle; common coarse pores; few pores with clay films; few fine roots; less than 1 percent quartz gravels; pH 5.0; gradual wavy boundary.
13381	Bx2	36-47 inches. Yellowish brown (10YR 5/6) sandy loam with about 10 percent medium faint mottles of strong brown (7.5YR 5/6) and 10 percent medium prominent mottles of gray (10YR 6/1), wide margins between mottles; weak coarse subangular blocky structure with vertical axes longer than horizontal, horizontal cleavage more distinct than vertical; very firm, brittle; material between peds has color and texture of B2 above; few fine humified roots; less than 1 percent quartz gravels; pH 5.0; clear undulating boundary.
13382	Bx3	47-63 inches. Yellowish brown (10YR 5/8) sandy loam with 10 percent coarse prominent mottles of red (2.5YR 5/6) and streaks of pale brown (10YR 6/3) and gray (10YR 6/1); coarse subangular blocky structure with vertical axes longer than horizontal, about 4 x 2 inches respectively; very firm, brittle; grayish material is clay loam; few fine channels, some with clay films; few patchy clay films in red material; less than 1 percent quartz gravels; pH of gray material, 4.5; pH of yellowish brown material, 5.0.

Remarks: The data for these samples will be used for comparison with the associated soils named and with Franklinton, Lewiston, Providence, and Bude soils in Arkansas and other states. The Savannah soils are associated with the Pheba soils which are somewhat poorly drained and Ora soils which are well drained. They also occur in association with the Ruston, Norfolk, and Bowie soils which do not have fragipans. Colors given are for moist soil. Color of dry soil will be one or two values higher. Soil was wet when sampled. Climate: Average annual rainfall is 50 inches; average annual temperature is 63° F.; and average frost-free period is 225 days. pH by Hellige-Truog field test kit.
Horizons B2, Bx1, and Bx2 were sampled for the Bureau of Public Roads.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 15, 1958

SOIL TYPE Sharkey clay **LOCATION** Perry County, Arkansas

SOIL NOS. S57Ark-53-1-(1-7) **LAB. NOS.** 6560-6566

DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE AND -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	2A2 > 2	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-5	A11	-	-	-	0.1a	0.4a	35.5	64.0	2.1	33.9	-	c
5-9	AC	-	-	-	0.1a	0.3a	25.0	74.6	1.1	24.3	-	c
9-16	C11g	-	-	-	0.1a	0.2a	20.2	79.5	0.8	19.7	-	c
16-22	C12g	0.1	0.1a	0.1a	0.2a	0.3b	18.2	81.0	1.4	17.2	-	c
22-39	C13g	-	0.2a	0.2a	0.4a	0.3	18.1	80.8	1.5	17.1	-	c
39-56	C14g	0.1	0.2a	0.2a	0.4a	0.4	19.2	79.5	1.1	18.7	-	c
56-82+	Cca	1.2d	0.4c	0.2c	0.4c	0.3d	22.1	75.4	0.5	22.1	-	c

8C1a pH 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	6E1a $CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS		4B2 15 ATMOS. %
6.1			2.41	.179	13.5							25.5
5.9			1.94	.152	12.8							28.5
5.2			1.28	.095	13.5							31.8
5.8			0.93	.066	14							32.0
7.1			0.45	.031	14			-				31.4
7.3			0.42					-				30.3
7.6			0.38					3				28.1

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6Q2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na % on NH_4Ac Exch.	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
40.3	25.5	10.9	8.4	0.2	1.4	94	82	38.0	46.4	2.3	-	
45.2	26.2	11.5	10.1	0.4	1.1	87	80	39.2	49.3	2.3	1	
47.3	24.0	13.1	11.4	0.7	1.0	82	77	38.8	50.2	1.8	1	
50.3	27.1	16.2	9.0	1.0	1.1	90	83	45.4	54.4	1.7	2	
52.6	29.3	23.7	6.6	1.8	1.0	100	89	55.8	62.4	1.2	3	
53.2	28.0	24.0	3.3	2.1	1.0	100	94	55.1	58.4	1.2	4	
46.3		22.8	1.2	2.5	1.1						5	

a. Few smooth light brown and black concr. (Fe-Mn?).
b. Many smooth light brown and black concr. (Fe-Mn?).
c. Common $CaCO_3$ concr. Also few smooth light brown and black concr. (Fe-Mn?).
d. Common $CaCO_3$ concr.

Soil type: Sharkey clay
Soil No.: S57Ark-53-1-(1-7)
Area: Perry County, Arkansas.
Location: Three miles east of Perry, 500 feet north at road which parallels Rock Island Railroad, on field road, S1/2, SE1/4, Sec. 19, T5N, R16W.
Vegetation: Cypress, willow oak, cedar elm, tupelo gum, ash, and hawthorn.
Relief: Level.
Samples collected by: H. C. Dean, Marvin Lawson, A. H. Simerson, J. B. Cox, and Thomas Burkett.
Described by: Marvin Lawson.
Date: September 6, 1957.
Lincoln

Lab. No.	Horizon	
6560	A11	0-5 inches. Very dark gray (10YR 3/1-3/2) moist clay; strong fine subangular blocky; sticky, plastic; pH 6.0; clear wavy boundary.
6561	AC	5-9 inches. Dark gray (10YR 4/1) moist clay with few fine and medium yellowish brown (10YR 5/6 and 5/8) moist mottles; strong medium angular blocky; very sticky, very plastic; few fine pores; many roots; pH 6.0; clear wavy boundary.
6562	C11g	9-16 inches. Dark gray (N 4/0) moist clay with many coarse dark yellowish brown (10YR 4/4) moist mottles to 30 percent of area; strong fine angular blocky; very sticky, very plastic; many roots; pH 6.0; clear wavy boundary.
6563	C12g	16-22 inches. Dark gray (N 4/0) moist clay with 10 percent medium mottles of dark brown (7.5YR 4/4) moist; moderate fine angular blocky; extremely sticky, extremely plastic; few fine soft concretions; many roots; pH 6.0; diffuse boundary.
6564	C13g	22-39 inches. Gray (N 5/0) moist clay with 10 percent medium yellowish brown (10YR 5/4) moist mottles; moderate fine angular blocky; extremely sticky, extremely plastic; one large root, vertical; pH 7.0; arbitrary boundary.
6565	C14g	39-56 inches. Gray (N 5/0) moist clay with 10 percent yellowish brown (10YR 5/4) moist medium mottles; moderate fine angular blocky; extremely sticky, extremely plastic; pH 8.0; gradual boundary.
6566	Cca	56-82+ inches. Reddish brown (5YR 4/4-3/4) moist clay with some gray (10YR 5/1) moist coatings; moderate fine angular blocky; sticky, plastic; $CaCO_3$ concretions up to two inches diameter make a high percent of mass volume; pH 8.0.

Remarks: Area is wooded but has been cleared previously. May have been cropped sometime. Colors given are for moist soil. pH by Hellige-Truog Field Kit. Backwater area from Arkansas River. There were several crawfish tunnels in the digging area.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Sharkey clay **LOCATION** Perry County, Arkansas

SOIL NOS. S58Ark-53-1-(1-6) **LAB. NOS.** 8336-8341

DEPTH INCHES	HORIZON	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	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-5	Ap	0.1a	0.3a	0.2a	0.3a	0.7a	33.3	65.1	2.5	31.6	-	c
5-15	C11g	0.1a	0.7a	0.6a	0.8a	0.6a	28.1	69.1	2.6	26.5	-	c
15-29	C12g	0.1a	0.4a	0.2a	0.5a	0.4a	23.6	74.8	1.5	22.8	-	c
29-40	C21g	-	0.2a	0.2a	0.4a	0.2a	23.5	75.5	1.1	22.8	-	c
40-53	C22g	-	0.2a	0.2a	0.4a	0.2a	24.4	74.6	1.1	23.7	-	c
53-72	C3	0.3a	0.5a	0.3a	0.4a	0.4a	24.7	73.4	0.9	24.4	Tr.	c

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	6E1a $CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS		4B2 15 ATMOS. %
5.5			1.69	0.145	11.6							22.9
5.2			1.16	0.084	13.8							25.8
5.3			0.94	0.052	18							27.5
6.9			0.57					-				27.9
7.4			0.49					1				27.7
7.9			0.24					5				27.2

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na % on NH_4Ac Exch.	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
38.7	21.1	12.1	17.1	0.4	0.6	88	67	34.2	51.3	1.7	1	
41.7	19.3	16.0	15.8	0.9	0.7	88	70	36.9	52.7	1.2	2	
45.8	23.2	19.9	13.0	1.4	0.8	99	78	45.3	58.3	1.2	3	
47.7	28.2	21.7	3.9	2.4	0.8	100	93	53.1	57.0	1.3	5	
46.7		20.6	2.9	2.4	0.8						5	
46.0		20.5	-	2.4	0.9						5	

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

Soil type: Sharkey clay
Soil No.: S58Ark-53-1-(1-6)
Area: Perry County, Arkansas.
Location: 1.7 miles west of Bigelow; 0.8 mile west of Fourche River bridge; 100 feet north of county road; near middle of Sec. 13, T4N, R16W.
Samples collected by: H. C. Dean, T. C. Biggers, Marvin Lawson, A. H. Simerson, and Thomas Burkett.
Described by: Marvin Lawson.
Date: June 10, 1958.

Lincoln Lab.No.	Horizon	
8336	Ap	0-5 inches. Dark gray (10YR 4/1) clay; few fine mottles of yellowish brown; coarse angular blocky structure plowed dry, but clods readily crumble to fine subangular blocky structure when wetted; very hard; very plastic and very sticky; few tubular pores; few roots; pH 6.0; clear smooth boundary.
8337	C11g	5-15 inches. Very dark gray (10YR 3/1) clay; strong fine and medium angular blocky structure; appears massive but readily separated into well-coated peds if handled without pressure; few fine dark hard concretions; few roots; pH 6.0; arbitrary boundary.
8338	C12g	15-29 inches. Very dark gray (10YR 3/1) clay; strong fine and medium angular blocky structure; peds well defined and readily separated if handled carefully and cleavage lines apparent under hand lens; prominent slickensides; few fine roots; few dark brown fine hard concretions; pH 6.5; clear wavy boundary ± 6 inches.
8339	C21g	29-40 inches. Very dark gray (10YR 3/1) clay; very dark gray gradually grades to medium and coarse dark brown (7.5YR 3/2) mottles; strong fine angular blocky structure, readily observable by hand lens, easily separated with careful handling but with moderate pressure or disturbance peds become adherent masses; very sticky, very plastic; prominent slickensides; few fine roots; few fine hard concretions; pH 8.0; arbitrary boundary.
8340	C22g	40-53 inches. Same as C21g above but contains few medium $CaCO_3$ concretions and has clear wavy boundary ± 8 inches.
8341	C3	53-72 inches. Reddish brown (2.5YR 4/4) clay; moderate medium angular blocky structure; very sticky, very plastic; effervesces with dilute HCl; pH 8.0. Obtained by bucket auger to depth of 72 inches.

Remarks: Colors stated are for moist soil. pH by Hellige-Truog field kit indicator.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 14, 1958

SOIL TYPE Taloka silt loam **LOCATION** Sebastian County, Arkansas

SOIL NOS. S57Ark-66-1-(1-8) **LAB. NOS.** 6339-6346

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-4	A11	1.8a	1.6a	0.5a	1.1a	4.9a	71.8	18.3	37.0	40.5	Tr.	sil
4-11	A12	4.8a	2.3a	0.5a	0.9a	4.1a	68.5	18.9	35.3	38.0	6.1	sil
11-16	A21	4.6a	2.5a	0.4a	1.0a	4.2a	68.0	19.3	34.0	38.8	8.1	sil
16-21	A22	7.1a	3.2a	0.4a	0.7a	3.8a	64.9	19.9	30.9	38.3	11.3	sil
21-31	B21t	1.2a	0.9a	0.2a	0.6a	2.4a	38.7	56.0	17.2	24.3	2.3	c
31-41	B22t	4.7a	2.2a	0.6a	1.1a	3.0a	38.9	49.5	18.2	24.4	4.7	c
41-52	B3	3.3a	2.2a	0.7b	1.4b	2.4b	46.7	43.3	17.2	32.7	7.6	sic
52-60+	C	5.7a	3.3a	1.0b	1.5b	4.1b	60.0	24.4	26.3	38.7	1.0	sil

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	6E1a $CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS	4B2 15 ATMOS. %
4.8			1.75	.144	12.2						7.9
5.2			0.66	.067	10						7.3
5.6			0.35	.044	8						7.4
5.9			0.20	.028							7.6
5.3			0.31	.063	5						21.4
5.2			0.25								19.8
6.4			0.21					-			18.4
7.5			0.14					-			10.0

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na %on NH_4Ac Exch.	MOISTURE AT SATURATION %
← milliequivalents per 100g. soil →												
10.7	0.8	0.3	12.0	0.1	0.1	12	10	1.3	13.3	2.7	1	
8.0	-	-	8.9	0.2	-	2	2	0.2	9.1	-	2	
7.0	-	0.2	7.4	0.2	-	6	5	0.4	7.8	-	3	
6.6	-	0.6	6.2	0.5	-	17	15	1.1	7.3	-	8	
20.2	2.1	5.6	14.7	3.3	0.2	55	43	11.2	25.9	0.4	16	
21.8	3.0	7.4	12.7	4.2	0.2	68	54	14.8	27.5	0.4	19	
21.2	4.3	9.3	6.7	5.2	0.2	90	74	19.0	25.7	0.5	24	
17.0	4.2	9.2	3.1	4.2	0.2	100	85	17.8	20.9	0.4	25	

a. Common smooth light brown and black concr. (Fe-Mn?).
b. Common smooth light brown and black concr. (Fe-Mn?) and few mica plates.

Soil type: Taloka silt loam
Soil No.: S57Ark-66-1-(1-8)
Location: Sebastian County, Arkansas, 2 miles northwest of Old Jenny Lind between Arkansas-U. S. Highway 71 and access graveled road to west; 500 feet from intersection midway between roads. SE NE SE Sec. 25, T5N, R32W.
Vegetation and use: Natural vegetation was tall grasses; cultural vegetation and use consists ofburning and grazing with an occasional grain sorghum crop.
Topography: Level to gently undulating valley floor.
Drainage: Somewhat poorly drained.
Samples collected by: H. C. Dean, C. J. Finger, Marvin Lawson, and F. H. Stephens.
Described by: Marvin Lawson.
Date: August 12, 1957.

Lincoln Lab. No.	Horizon	
6339	A11	0-4 inches. Very dark grayish brown (10YR 3/2) silt loam; weak fine subangular blocky and granular; firm, dry; very friable, moist; few fine hard concretions; few fine pores; numerous fine roots; pH 5.5; clear smooth boundary.
6340	A12	4-11 inches. Dark brown (10YR 4/3) silt loam; weak medium and coarse subangular blocky; very friable, moist; firm, dry; few fine round hard concretions; numerous fine pores and fine roots; pH 5.0; gradual smooth boundary.
6341	A21	11-16 inches. Grayish brown (10YR 5/2-6/2) silt loam; weak fine and medium subangular blocky; friable, moist; few fine roots; numerous fine and medium pores; few fine and medium hard concretions; pH 5.0; clear smooth boundary.
6342	A22	16-21 inches. Light yellowish brown (10YR 6/4) silt loam; weak fine subangular blocky; friable, moist; numerous fine and medium pores; few coarse hard concretions; clayey tongues protruding from layer below; pH 5.5; abrupt wavy boundary.
6343	B21t	21-31 inches. Variegated light brownish gray (2.5Y 6/2, 40%), reddish brown (2.5YR 4/4, 30%), and yellowish brown (10YR 5/6, 20%), clay; colors are coarse and merge gradually; strong medium angular blocky; fracture lines readily observable before breaking; very firm, very plastic; few hair roots; common fine pores; pH 5.0; clear wavy boundary.
6344	B22t	31-41 inches. Variegated gray (10YR 6/1, 45%), dark yellowish brown (10YR 4/6, 45%), moist, stony clay; subrounded sandstone fragments up to 6 inches long make about 50 percent of volume; strong medium angular blocky; very plastic; few fine roots; few small pockets of white crystals which appear to be gypsum; pH 6.0; clear wavy boundary.
6345	B3	41-52 inches. Variegated grayish brown (2.5Y 4/2-5/2, 60%), dark brown (10YR 4/3, 20%) gray (N 6/0, 5%), and red (2.5YR 4/6, 1%), moist, clay; medium angular blocky; very plastic; few fine concretions, many shale fragments; pH 6.0; gradual boundary.
6346	C	52-60+ inches. Clay shale, weathered Fort Smith formation, coal bearing.

Remarks: The Taloka soils are associated with the Parsons soils which are shallow to clay, and grade to the Enders and Pottsville soils in forested bounding areas. Clay films are prominent and continuous on peds of B horizons. Sandstone caps a north-dipping ridge half a mile north of the site. Crawfish holes are common in the site down to the B horizon. The Taloka soils are on wide valley flats in the west central part of Arkansas. They were once mapped as Leflore soils. Colors given are for moist soil unless otherwise noted. pH readings by Hellige-Truog Soil Reaction Tester.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 14, 1958

SOIL TYPE Taloka silt loam **LOCATION** Sebastian County, Arkansas

SOIL NOS. S57Ark-66-2-(1-7) **LAB. NOS.** 6347-6353

DEPTH INCHES	HORIZON	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	0.2-0.02	0.02-0.002	3A1 2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-4	A11	2.6a	1.8a	0.5a	2.0a	7.9a	65.2	20.0	33.8	40.9	2.5	sil
4-11	A12	3.7a	2.1a	0.5a	1.7a	7.5a	63.0	21.5	30.9	41.0	3.9	sil
11-20	A2	3.6b	2.5b	0.7b	1.7b	7.2b	61.3	23.0	29.6	40.3	13.7	sil
20-29	B21tg	0.9b	0.4b	0.1b	0.7b	3.7b	27.3	66.9	14.8	16.8	1.4	c
29-38	B22tg	1.5b	0.9b	0.3b	1.3b	5.4b	32.6	58.0	19.7	19.4	2.5	c
38-48	B3g	1.1b	1.3b	0.6b	2.6b	8.9b	38.3	47.2	27.9	21.3	5.1	c
48-68	C1g	0.8b	0.5b	0.3b	2.3b	8.3b	38.0	49.8	22.3	25.9	3.8	c

8C1a pH 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3%	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS		4B2 15 ATMOS. %
5.0			1.74	.146	11.9							8.3
5.2			0.75	.078	10							8.9
5.6			0.42	.049	9							8.8
5.1			0.50	.074	7							24.1
5.0			0.36									20.9
4.8			0.17									18.7
5.0			0.17									19.5

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	5D1 Ext. Na % on NH_4Ac Exch.	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
11.8	2.3	1.3	10.8	0.2	0.1	33	26	3.9	14.7	1.8	2	
10.0	1.1	0.8	9.8	0.2	0.1	22	18	2.2	12.0	1.4	2	
9.0	0.6	0.7	9.0	0.4	0.1	20	17	1.8	10.8	0.8	4	
28.6	3.6	5.6	20.8	2.9	0.3	43	37	12.4	33.2	0.6	10	
24.9	3.8	6.0	17.5	2.9	0.3	52	43	13.0	30.5	0.6	12	
19.3	4.1	5.9	13.3	3.0	0.2	68	50	13.2	26.5	0.7	16	
22.3	6.6	9.0	8.0	4.8	0.3	93	72	20.7	28.7	0.7	22	

a. Many smooth light brown and black concr. (Fe-Mn?).
b. Many smooth light brown concr. (Fe?).

Soil type: Taloka silt loam
Soil No.: S57Ark-66-2-(1-7)
Location: Sebastian County, Arkansas, 300 feet west of Buell Station sign on railroad which parallels Arkansas-U. S. Highway 71 about 5 miles south of Fort Smith, Arkansas.
Vegetation and use: Natural vegetation was tall grasses; cultural vegetation and use consists of burning over and grazing.
Topography: Slope less than 1 percent. Mounds common. Soil developed on Mazzard Prairie. Sandstone-capped hills surround eroded anticline on which the soils are developed.
Drainage: Somewhat poorly drained.
Samples collected by: H. C. Dean, Marvin Lawson, C. J. Finger, and F. H. Stephens.
Described by: Marvin Lawson.
Date: August 12, 1957.

Lab. No.	Horizon	
6347	A11	0-4 inches. Dark grayish brown (10YR 3/2-4/2) silt loam; weak fine subangular blocky and granular; very friable; numerous roots and pores; few fine hard concretions; pH 6.0; clear wavy boundary.
6348	A12	4-11 inches. Dark grayish brown (10YR 4/2) silt loam; weak fine subangular blocky; very friable; common fine roots; numerous fine and medium pores; common fine and medium round hard concretions; pH 5.0; clear wavy boundary.
6349	A2	11-20 inches. Grayish brown (10YR 5/2) silt loam; weak fine subangular blocky; very friable; fine roots and fine and medium pores common; common medium and coarse botryoidal hard concretions; few small fragments of sandstone and shale; pH 5.0; clear wavy boundary.
6350	B21tg	20-29 inches. Gray (N 5/0) clay mottled 20 percent red (2.5YR 4/6); weak red (10R 4/4) 5 percent and some fine and medium yellowish brown; redmottles are coarse and boundaries with gray are sharp; strong medium and coarse angular blocky; very sticky and very plastic; few fine pores in aggregates; few hair roots; pH 5.5; arbitrary boundary.
6351	B22tg	29-38 inches. Gray (N 5/0) clay mottled with 20 percent coarse red (2.5YR 4/6); 10 percent brown (7.5YR 4/4, moist) and yellowish brown; red mottles coarse and boundaries with gray are sharp; strong fine angular blocky; very sticky and very plastic; few fine roots; few fine pores in aggregates; pH 5.5; diffuse boundary.
6352	B3g	38-48 inches. Gray (10YR 5/1) and yellowish brown (10YR 5/4) about equal amounts in coarse mottles and common coarse streaks and smears of black; clay; weak fine platy; brittle; sticky, plastic; few fine sandstone fragments; few fine pores in aggregates; few hair roots; pH 6.0; diffuse boundary.
6353	C1g	48-68 inches. Yellowish brown (10YR 5/6) 40 percent and gray (N 6/0, moist) clay; color in coarse mottles; massive; very sticky, very plastic; few coarse black spots; no roots or pores; pH 6.0.
	Dr	68-86+ inches. Shale. Could not bore beyond 86 inches.

Remarks: The Taloka soils are associated with the Parsons soils which are shallow to clay, and grade to the Enders and Pottsville soils in forested bounding areas. Clay films are prominent and continuous on peds of B horizons. Sandstone caps a north-dipping ridge half a mile north of the site. Crawfish holes are common in the site down to the B horizon. The Taloka soils are on wide valley flats in the west central part of Arkansas. They were once mapped as Leflore soils. Colors given are for moist soil unless otherwise noted. pH readings by Hellige-Truog Soil Reaction Tester.

SOIL SURVEY LABORATORY
Beltsville, Maryland

LOCATION St. Mary Parish, La. SOIL TYPE Baldwin Silt Loam

Lab. Nos. 52900-52905 Field Nos. 21(1-6)

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1b PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
52900	0-7	Ap	0.1	0.2	0.2	0.8	11.7	69.2	17.8	53.8	27.6	0	
52901	7-10	A3	0.0	0.1	0.2	0.5	9.0	67.7	22.5	45.5	31.5	0	
52902	10-12	B1	0.1	0.2	0.1	0.3	4.0	59.3	36.0	32.5	31.0	0	
52903	12-18	B2	0.1	0.2	0.1	0.2	3.2	59.2	37.0	30.8	31.7	0	
52904	18-32	B3	0.5	0.4	0.2	0.5	3.2	59.5	35.7	29.6	33.3	0	
52905	32-44	C	0.2	0.5	0.2	0.3	1.7	59.4	37.7	23.9	37.4	0	

	pH 8C1a 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	NITROGEN %	C/N	FREE IRON OXIDE Fe_2O_3 %			BULK DENSITY g/cc	MOISTURE RETAINED AT 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
52900	5.8			0.91									
52901	5.9			1.12									
52902	6.2			1.16									
52903	6.4			0.89									
52904	6.8			0.30									
52905	6.8			0.31									

	5A3a CATION EXCHANGE CAPACITY (SUM)	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	BASE SATURATION % 5C3 (SUM)					
	milliequivalents per 100g soil											
52900	20.0	11.0	3.2	0.2	0.1	5.5	72					
52901	22.7	12.8	4.1	0.2	0.1	5.5	76					
52902	32.7	18.7	7.1	0.3	0.2	6.4	80					
52903	32.3	18.6	7.7	0.3	0.2	5.5	83					
52904	29.2	17.1	8.3	0.2	0.2	3.4	88					
52905	30.9	17.4	9.2	0.4	0.3	3.6	88					

BALDWIN SILT LOAM Sample No. 21

Location: St. Mary Parish, Louisiana. 1/2 mile southwest of Katy Sugar Mill.

Samples Collected by: B. N. Driskell and S. A. Lytle, September 24, 1952.

Profile Described by: B. N. Driskell and S. A. Lytle, September 24, 1952.

HORIZON, BELTSVILLE LAB. NO., AND DEPTH		DESCRIPTION
Ap 52900	0-7"	Very dark grayish brown (10YR 3/2) silt loam, moderate medium and small crumb structure. pH 6.
A3 52901	7-10"	Very dark grayish brown (10YR 3/2) heavy silt loam to light silty clay loam; moderate medium platy structure. (Plow sole). pH 6.5
B1 52902	10-12"	Very dark gray (10YR 3/2) plastic clay; strong medium platy structure; hard when dry; many fine mottles of dark yellowish brown (10YR 4/4). (Plow sole). pH 6.5
B2 52903	12-18"	Dark gray (10YR 4/1) mottled light yellowish brown (10YR 6/4), plastic, sticky clay; strong medium angular blocky structure. pH 7.0
B3 52904	18-32"	Mottled gray (10YR 5/1) and pale brown (10YR 6/3), slightly sticky and plastic silty clay; strong medium angular blocky structure with moderate medium columnar cleavage. pH 7.5
C 52905	32-44"	Light brownish gray (10YR 6/2) mottled dark brown (7.5YR 4/4) and dark gray (10YR 4/1); slightly plastic and sticky wet, silty clay loam; weak medium angular blocky structure.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Beauregard silt loam **LOCATION** Beauregard Parish, Louisiana

SOIL NOS. S57La-6-1 **LAB. NOS.** 7096-7103

DEPTH INCHES	HORIZON	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	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-2½	A1	0.4a	0.6a	0.2b	3.1b	17.0b	71.7	7.0	62.6	28.6	Tr.	sil
2½-6	A2	0.5a	0.6a	0.2b	2.5b	16.1b	71.0	9.1	60.5	28.7	Tr.	sil
6-10	A-B	0.8a	0.4a	0.2b	2.2b	14.8b	65.5	16.1	55.9	26.2	Tr.	sil
10-19	B1	0.7a	0.8a	0.2c	1.8c	13.3c	63.3	19.9	50.5	27.6	Tr.	sil
19-29	B21g	0.5a	0.6a	0.2c	1.8c	12.3c	63.1	21.5	48.4	28.5	Tr.	sil
29-41	B22g	0.2a	0.5a	0.2c	1.9c	13.0c	61.8	22.4	48.2	28.2	Tr.	sil
41-50	C	0.1a	0.2a	0.1c	1.4c	10.3c	52.8	35.1	39.9	24.4	Tr.	sicl
50-72+	D12g	0.1a	0.1a	-	0.5c	4.8c	54.6	39.9	27.1	32.7	-	sicl/sic

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.6			2.10	0.086	24			5.0
5.4			0.53	0.030	18			4.3
5.3			0.26	0.022	12			7.2
5.3			0.16	0.019				8.4
5.5			0.10	0.016				8.7
5.4			0.08					9.1
5.5			0.10					14.0
5.7			0.06					16.7

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
9.6	2.4	0.8	7.3	0.1	0.1	35	32	3.4	10.7			
5.3	0.8	0.6	4.5	0.1	-	28	25	1.5	6.0			
7.0	0.9	1.1	5.7	0.2	0.1	33	29	2.3	8.0			
8.0	0.9	1.7	6.9	0.2	0.1	36	30	2.9	9.8			
8.3	1.1	1.5	6.9	0.2	0.1	35	30	2.9	9.8	0.7		
8.8	1.2	1.5	7.4	0.2	0.1	34	29	3.0	10.4	0.8		
13.4	2.9	3.8	8.2	0.5	0.2	55	47	7.4	15.6	0.8		
22.8	9.0	9.5	5.0	1.3	0.5	89	80	20.3	25.3	0.9		

a. Many smooth light brown concr.
b. Common smooth light brown concr
c. Few smooth light brown concr.

S57/La-6-1

Described by Marvin Lawson

Date: 11-5-57
Area: Beauregard Parish, Louisiana
Location: NW, SE, Sec. 32, T-5-S, R-8-W, Beauregard Parish, Louisiana. 1½ miles south of Longville on La.-U.S. Hy. 171, east 1.6 miles on oilfield access road, 100 feet south of road.
Vegetation: At time of settlement longleaf pine. Present vegetation, scattered longleaf, slash and loblolly pine, blackjack and post oaks, and wax myrtle; little bluestem, three awn, and muhly grasses; asters and orchid forbs.
Relief: Gently undulating Pleistocene Terrace. Slope: 2 percent northeast.
Drainage: Surface runoff moderate; internal drainage, moderately well.
Permeability: Slow.
Sampling party: D. L. Fontenot, J. Allen, L. L. Loftin, Warren Cockerham, Francis Ezermack, Marvin Lawson.

BEAUREGARD SILT LOAM

Lincoln Lab. No.			
7096	A_1	0-2½"	Very dark grayish brown (10YR 3/2) silt loam; weak very fine subangular blocky; very friable; many fine roots; many worm casts; charcoal fragments common; pH 6.0; clear wavy boundary.
7097	A_2	2½-6"	Light yellowish brown (10YR 6/4) silt loam with few spots of pale brown (10YR 6/3); pale brown does not appear to be due to reduction; weak fine subangular blocky; very friable; very porous, but tubular pores few; fine roots common; many worm casts; pH 5.5; clear wavy boundary projects several inches into lower horizons; apparently in old root channels or animal burrows, in places.
7098	AB	6-10"	Pale brown (10YR 6/3) light silty clay loam with about 10 percent medium prominent mottles of brownish yellow (10YR 6/8); weak fine angular blocky; friable; tubular pores common and lined with thin clay film; scattered clay films on peds; few fine hard concretions; common soft concretions yellowish red internally; few fine roots; worm casts common; pH 5.0; gradual wavy boundary.
7099	B_1	10-19"	Brownish yellow (10YR 6/6) silty clay loam with many medium and coarse mottles of light gray (10YR 7/2) and occasional red mottles where soft concretions are broken; weak fine angular and subangular blocky; friable; slightly plastic; few fine roots; few fine hard concretions; some friable concretions red internally; few tubular pores, lined with clay film; clay skins scattered on aggregates; pH 5.0; diffuse wavy boundary.
7100	B_{21g}	19-29"	Light gray (10YR 7/1) silty clay loam with common coarse red (10R 4/6) and medium reddish yellow (7.5YR 6/6) mottles; red seams included in soft friable concretionary material; weak medium angular blocky; friable; slightly plastic; few tubular pores with thin clay lining; few patchy clay skins; occasional fine roots; pH 5.0; arbitrary boundary.
7101	B_{22g}	29-41"	Light gray (10YR 7/1) silty clay loam with numerous medium reddish yellow (7.5YR 6/6) mottles; few coarse red (10R 4/6) mottles; red mottles are part of soft concretionary material; weak medium angular blocky; friable, slightly plastic; few tubular pores with thin clay lining; few patchy clay skins; occasional fine root; pH 5.0; gradual wavy boundary.
7102	C	41-50"	Red (2.5YR 5/8) silty clay loam, masses interspersed with masses of light gray (5Y 7/1) clay, clay sections containing some mottles of yellowish brown; medium and coarse angular blocky; red masses firm to friable, gray masses plastic; red soil makes about two-thirds of the soil mass; red soil is more porous than the clay soil; medium tubular pores with clay lining are common; no roots were observed; pH 5.5; diffuse wavy boundary.
7103	Dg	50-72"+	Light gray (5Y 7/1) clay with medium and coarse mottles of red (10R 4/8) and strong brown (7.5YR 5/6) through the soil mass; massive; sticky and plastic; few black streaks, apparently organic matter at 60". pH 6.0 at 72". At 86" brown (7.5YR 5/4) clay, practically unmottled. pH 6.0.

Remarks: Colors are for moist soil. Color of dry soil will be one or two values higher. This soil was recognized as Beauregard very fine sandy loam in Soil Survey Report, Beauregard Parish, Louisiana, 1929. The area has been cut over and until recent years was frequently burned. It is commonly grazed. The source material of these soils is Pleistocene deposits of silts, sands and clays. Upland soils of the parish are underlain at 0 to several feet by red clay, often calcareous, presumably from Red River before it was diverted eastward. There were filled channels 1 to 6 inches in diameter, 1 to 2 feet apart, extending 2 to 4 feet into the profile. The channel fill was silt loam from the A_2. Features at depths below 60 inches were determined by bucket auger.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Beauregard silt loam **LOCATION** Beauregard Parish, Louisiana

SOIL NOS. S57La-6-2 **LAB. NOS.** 7104-7109

DEPTH INCHES	HORIZON	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	0.2-0.02	3A1 0.02-0.002	2A2 > 2 <19mm	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-3	A1	0.8a	0.9a	0.2b	3.8b	29.2b	60.2	4.9	73.3	19.5	Tr.	sil
3-8	A2	0.8a	0.6a	0.2b	3.0b	27.4b	56.7	11.3	67.5	19.3	Tr.	sil
8-16	B1	0.5a	0.5a	0.1b	2.4b	22.5b	54.0	20.0	57.6	21.1	Tr.	sil
16-27	B21g	1.0a	0.6a	0.2b	2.2b	19.3b	52.8	23.9	50.6	23.5	Tr.	sil
27-40	B22g	0.5a	0.3a	0.1b	2.2b	20.9b	53.1	22.9	52.6	23.4	Tr.	sil
40-60+	B3g	0.4a	0.3a	0.1b	1.8b	17.1b	48.1	32.2	44.9	21.9	Tr.	sicl

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.2			1.60	0.063	25			3.6
5.1			0.46	0.023	20			5.0
5.1			0.20	0.019				8.5
5.2			0.14	0.016				10.0
5.4			0.05					9.2
5.3			0.01					13.0

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
6.2	1.0	0.3	6.1	-	0.1	22	19	1.4	7.5			
5.2	0.5	0.3	4.9	0.1	-	17	16	0.9	5.8			
7.3	0.2	0.4	8.1	0.1	0.1	11	9	0.8	8.9			
9.3	0.5	0.7	9.0	0.1	0.1	15	13	1.4	10.4			
8.4	0.4	0.9	8.2	0.1	0.1	18	15	1.5	9.7			
12.6	1.4	2.3	9.8	0.4	0.1	33	30	4.2	14.0	0.6		

a. Many smooth light brown concr.
b. Few smooth light brown concr.

S571a-6-2

Described by Marvin Lawson

Date: 11-5-57
Area: Beauregard Parish, Louisiana
Location: 2 miles south of Longville on La.-U.S. 171; access road 2 miles west, 1 mile south, .15 mile east, 100 feet south of road. NW, NW. Sec. 11, T6S, R9W.
Vegetation: Scattered longleaf pine; little bluestem, muhly, three awn, and some tall panicum grasses; aster, orchid and ambrosia forbs. The area has been clean cut of longleaf pine; was frequently burned until late years; and is commonly grazed on native grasses.
Relief: Gently undulating Pleistocene alluvial terraces. Slope 3% east.
Drainage: Internal, moderately well; surface runoff moderate.
Permeability: Slow.
Sampling party: D. L. Fontenot, J. Allen, L. L. Loftin, Marvin Lawson, Warren Cookerham, Francis Esernack.

BEAUREGARD SILT LOAM

Lincoln Lab. No.			
7104	A_1	0-3"	Very dark grayish brown (10YR 3/2) silt loam; weak fine and very fine subangular blocky; very friable; very porous; many fine roots; pH 6.0; clear smooth boundary.
7105	A_2	3-8"	Light yellowish brown (10YR 6/4) silt loam with light peppering of fine pale brown mottles; tends to be massive but breaks readily into weak fine subangular blocky; many worm casts; porous; few dark spots of humus; few roots; pH 5.0; clear wavy boundary.
7106	B_1	8-16"	Brownish yellow (10YR 6/8) silty clay loam with some shading to light yellowish brown and few medium mottles of reddish yellow (5YR 6/8); fine weak subangular blocky; friable; slightly plastic; worm casts common; patchy clay skins; tubular pores common; pH 5.5; few roots; gradual wavy boundary.
7107	B_{21g}	16-27"	Light gray (10YR 7/2) silty clay loam with many medium mottles of brownish yellow (10YR 6/6) and some mottles of red (2.5YR 5/8) on sliced or broken surfaces due to medium soft friable concretions of red material; weak fine angular blocky; tubular pores common and lined with clay; clay skins common on aggregates; pH 5.0; arbitrary boundary.
7108	B_{22g}	27-40"	Light gray (10YR 7/1) silty clay loam with many coarse mottles of yellowish brown (10YR 5/8) and few red mottles (10R 4/8). The red is from friable concretions which have red internal mass; weak fine angular blocky; friable; occasional fine root; few pores, thinly filmed with clay; pH 5.0; diffuse boundary.
7109	B_{3g}	40-60"+	Light gray (10YR 7/1) silty clay loam with many coarse mottles of yellowish brown (10YR 5/8) and few red mottles (10R 4/8). The red colors seem to be from friable concretions which have red interior mass. The horizon consists of interspersed portions of silty clay, clay, and silty clay loam, the brown portions of the soil coarser in texture than the gray portions; pH 5.0; few patchy clay skins; few pores, the few tubular pores have thin clay skins. Below about 65", determined from bucket auger borings: light gray (5Y 7/1) clay with few large splotches of red (10R 4/6); pH 6+ at 90".

Remarks: Colors are for moist soil. pH by Hellige-Truog field kit. Practically all soils of the parish are underlain by red clay, often calcareous, between 0 and several feet. These clays and associated red sands are of Pleistocene Age and are deposition from Red River before it was diverted eastward. There were common filled channels up to 4 inches in diameter from the surface to a depth of 2 to 3 feet; a few appearing to be root channels to depth of pit. The fill was of the A_2 material.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Bowie fine sandy loam **LOCATION** Beauregard Parish, Louisiana

SOIL NOS. S57La-6-5 **LAB. NOS.** 7123-7128

DEPTH INCHES	HORIZON	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	0.2-0.02	3A1 0.02-0.002	2A2 > 2 <19mm	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-3½	A1	1.2a	2.2a	1.8b	12.4b	34.7b	44.9	2.8	78.4	11.5	2	vfsl
3½-11	A2	0.8a	1.6a	1.7b	11.5b	32.4b	47.1	4.9	75.6	13.5	2	vfsl
11-21	B21	1.1a	1.Ca	0.8b	5.8b	19.3b	40.5	31.5	47.8	17.0	4	cl
21-31	B22	1.3a	1.0a	0.6b	5.8b	19.9b	43.2	28.2	50.6	17.6	3	cl
31-43	B3	0.7a	0.8a	0.6b	5.9b	23.0b	43.7	25.3	54.2	17.7	1	l
43-60+	C	0.5a	1.1a	0.9b	7.2b	22.1b	41.4	26.8	53.5	16.2	1	l

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	MOISTURE TENSIONS 4B1a 1/10 ATMOS. %	4B1a 1/3 ATMOS. %	4B2 15 ATMOS. %
5.0			1.44	0.060	24	31.8	11.6	2.5
5.4			0.39	0.023	17	25.3	11.2	2.3
5.0			0.16	0.020				13.1
5.1			0.08	0.014				11.6
5.1			0.01					10.5
5.0			0.01					11.6

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→						
5.7	0.6	-	5.7	-	0.1	12	11	0.7	6.4		
2.6	0.4	0.2	2.0	-	-	23	23	0.6	2.6		
10.0	1.0	1.4	9.0	-	0.1	25	22	2.5	11.5	0.7	
8.8	-	1.1	8.1	-	0.1	14	13	1.2	9.3		
8.4	-	1.1	6.9	-	0.1	14	15	1.2	8.1		
9.2	-	1.5	8.1	-	0.1	17	16	1.6	9.7		

a. Many smooth light brown and black concr.
b. Common smooth light brown and black concr.

S57La-6-5

Described by Marvin Lawson

Date: 11-7-57
Area: Beauregard Parish, Louisiana
Location: 8.2 miles east on Hy. La-26 from junction with La-US Hy. 171; 5.2 miles southerly; 100 feet east of road. NW Sec. 26, T-3-S, R-7-W.
Vegetation: Trees scattered longleaf pine, post oak, blackjack oak, and wax myrtle. Grasses, which provide nearly all the ground cover at present, are muhly, three awn, little bluestem, split beard bluestem, and a few tall panicums. Forbs consist of a few asters and orchids. The area was frequently burned until late years and is commonly grazed.
Relief: Gently rolling Pleistocene terrace plain. Site slope 4 percent northeast.
Drainage: Surface drainage rapid; moderately well drained, internally.
Permeability: Moderate.
Sampling party: Marvin Lawson, D. L. Fontenot, James Allen, Lester Loftin, A. Kerr, and Warren Cockerham.

Lincoln Lab. No.

BOWIE FINE SANDY LOAM

7123	A_1	0-3½"	Dark gray (10YR 4/1) fine sandy loam; weak fine and very fine subangular blocky; very friable; very porous; including a network of tubular pores; many roots; pH 6; clear wavy boundary; 4-6" thick.
7124	A_2	3½-11"	Grayish brown (10YR 5/2) fine sandy loam; weak fine subangular blocky; very friable; humus spots scattered through horizon; very porous including numerous tubular pores; many worm casts; many roots; pH 5.5; gradual wavy boundary; 6-10" thick.
7125	B_{21}	11-21"	Strong brown (7.5YR 5/6) silty clay loam or sandy clay loam; moderate fine and medium subangular blocky; friable; clay skins nearly continuous; many fine pores, tubular pores with clay film lining; few fine hard concretions; few rounded chert gravels up to 1/2" diameter; common roots; pH 5.0; diffuse smooth boundary.
7126	B_{22}	21-31"	Yellowish brown (10YR 5/6) silty clay loam or sandy clay loam with few medium spots of red (10R 4/6) which seem to be soft concretions; moderate medium subangular blocky; friable; few fine hard concretions; few rounded chert gravels up to 1/2" diameter; clay skins nearly continuous; few tubular pores lined with clay; few roots; pH 5.0; gradual smooth boundary.
7127	B_3	31-43"	Strong brown (7.5YR 5/8) sandy clay loam with few fine mottles; moderate coarse angular blocky; firm; clay skins prominent; common clay lined tubular pores; few fine hard concretions; few rounded chert gravels up to 1/2" diameter; occasional fine root; few coarse friable red concretions; few shrinkage cracks; pH 5.5; diffuse smooth boundary.
7128	C	43-60"+	Variegated strong brown (7.5YR 5/6) and red (2.5YR 5/6) with few fine light gray (10YR 7/1) mottles; sandy clay loam; massive; compact in place; friable; clay film common; common tubular pores coated with clay; few fine hard concretions; few rounded chert gravels up to 1/2" diameter; some coarse gray vertical streaks appear to mark shrinkage cracks; no roots observed; pH 5.5.
		Below 60"	Was examined with bucket auger borings. From a few inches below 60" the material was massive intermixed white clay and reddish brown sandy clay to a depth of 82". 82-100" zone was red (10R 4/6) sandy clay loam. pH 5.5 at 100".

Remarks: There were a few coarse root channels and animal burrows filled with sandy loam to a few feet depth. Colors given are for moist soil. Dry soil color will be 1 or 2 values higher. pH by Hellige-Truog field kit. This soil is apparently developed on a Pleistocene terrace plain, presumably Red River alluvium deposited before the river was diverted eastward. Red clays, often calcareous, are found at depths up to a few feet throughout the parish. This soil was recognized as the Bowie series in the Soil Survey Report, Beauregard Parish, Louisiana, 1929.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Bowie fine sandy loam **LOCATION** Beauregard Parish, Louisiana

SOIL NOS. S57La-6-6 **LAB. NOS.** 7129-7136

DEPTH INCHES	HORIZON	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	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-5½	A1	0.5a	0.4a	0.8b	25.2b	41.8b	28.5	2.8	83.6	6.8	1	vfsl
5½-9	A2	0.4a	0.4a	0.7b	24.5b	40.9b	28.8	4.3	80.7	8.5	Tr.	vfsl
9-18	B21	0.4a	0.4a	0.4b	16.6b	30.5b	26.9	24.8	60.3	10.6	2	scl
18-24	B22	0.5a	0.2a	0.3b	16.3b	30.2b	28.1	24.4	60.6	11.1	2	l/scl
24-36	B23	-	0.1a	0.3b	16.8b	31.8b	26.7	24.3	63.3	9.4	Tr.	scl
36-49	B31	0.1a	0.1a	0.2b	17.6b	31.4b	22.3	28.3	61.4	7.6	Tr.	scl
49-56	B32	-	0.1a	0.2b	22.8b	26.9b	19.2	30.8	58.8	7.2	-	scl
56-60+	C	-	-	0.2b	46.2b	17.3b	6.4	29.9	57.1	3.1	-	scl

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	MOISTURE TENSIONS 4B1a 1/10 ATMOS. %	4B1a 1/3 ATMOS. %	4B2 15 ATMOS. %
5.4			1.16	0.052	22	23.8	8.4	1.8
5.6			0.37	0.023	16	18.7	7.4	1.9
5.2			0.31	0.026	12			9.8
5.2			0.16	0.016				9.6
5.2			0.07					9.9
5.1			0.02					11.5
4.9			0.04					12.2
4.8			-					11.6

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→						
4.0	0.7	0.2	4.0	-	0.1	25	20	1.0	5.0		
2.2	0.6	0.1	2.0	-	-	32	26	0.7	2.7		
6.9	1.2	0.7	6.1	-	0.1	29	25	2.0	8.1	1.7	
6.4	0.6	1.3	6.9	-	0.1	31	22	2.0	8.9		
7.0	-	1.0	6.9	-	-	14	13	1.0	7.9		
7.9	-	1.8	7.3	-	0.1	24	21	1.9	9.2		
9.1	0.7	1.8	7.7	-	0.1	29	25	2.6	10.3		
10.0	0.7	2.1	7.3	-	0.1	29	28	2.9	10.2		

a. Many smooth and irregular light brown to black concr.
b. Common smooth and irregular light brown to black concr.

857La-6-6

Described by Marvin Lawson

Date: 11-7-57
Area: Beauregard Parish, Louisiana
Location: From junction of La. Hy. 26 and La-US Hy. 171, 2.2 miles east on Hy. 26; south on access road, .6 mile, 200 feet east of road near crest of hill.
Vegetation: Scattered longleaf pine, wax myrtle. Grasses, the dominant type of ground cover, include muhly, three awn, little bluestem, split beard bluestem, few tall paspalums and panicums Few scattered forbs of aster, ambrosia, and orchids. Burning was frequent until late years. Commonly grazed.
Relief: Gently rolling Pleistocene terrace plain. Site slops 2 percent southeast.
Drainage: Surface drainage moderate; moderately well drained, internally.
Permeability: Moderate.
Sampling party: Lester Loftin, James Allen, D. L. Fontenot, A. Kerr, Warren Cockerham, Marvin Lawson.

BOWIE FINE SANDY LOAM

Lincoln Lab. No.			
7129	A_1	0-5½"	Dark gray (10YR 4/1) fine sandy loam; weak fine and medium granular; very friable; very porous; many fine roots; pH 6.0; clear wavy boundary; 3-6 inches thick.
7130	A_2	5½-9"	Pale brown (10YR 6/3) fine sandy loam with a few dark gray streaks; weak fine subangular blocky; very friable; many roots; pH 6; clear wavy boundary; 3-5 inches thick.
7131	B_{21}	9-18"	Strong brown (7.5YR 5/6) sandy clay loam or silty clay loam; weak medium subangular blocky; friable, slightly plastic; thin patchy clay skins; few medium hard concretions; common roots; very porous but few tubular pores; pH 5.5; gradual smooth boundary.
7132	B_{22}	18-24"	Yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky; friable; patchy clay skins; few medium and coarse hard concretions; few tubular pores; few roots; pH 5.0; arbitrary boundary.
7133	B_{23}	24-36"	Brownish yellow (10YR 6/6) sandy clay loam; weak medium subangular blocky; friable; patchy clay skins; few medium and coarse hard concretions; few tubular pores; few roots; pH 5.0; gradual wavy boundary.
7134	B_{31}	36-49"	Brownish yellow (10YR 6/6) sandy clay loam with few medium mottles of red (2.5YR 5/8); weak fine and medium angular blocky; friable to somewhat firm; clay skins common but discontinuous; few clay-lined tubular pores; few roots; few coarse hard concretions; pH 5.5; gradual smooth boundary.
7135	B_{32}	49-56"	Brownish yellow (10YR 6/6) light sandy clay with few mottles of red (10R 4/6) and few mottles of light gray (10YR 7/1); strong coarse angular blocky; somewhat brittle, moist, though readily crushed; continuous clay skins; no roots observed; pH 5.5; gradual wavy boundary.
7136	C	56-60"/	Intermixed large segments of red (10R 4/6) coarse sandy loam and light gray and yellowish brown mottled sandy clay; coarse sandy loam very friable; sandy clay sticky and plastic; massive; few tubular pores, some containing red sand; pH 5.
			Below 60" was examined by bucket auger. Some of the sand at 90" and lower was purplish; pH 4.5 at 100".

Remarks: Colors stated are for moist soil. Colors of dry soil will be 1 or 2 values higher. pH by Hellige-Truog field kit. This soil developed on Pleistocene terrace plain, probably derived from Red River alluvium before the river was diverted eastward. Outcrops of red clay, often calcareous, are found on some slopes and are found throughout the parish at depths ranging up to several feet below the surface. This soil was recognized as the Bowie series in the Soil Survey Report, Beauregard Parish, Louisiana, 1929.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Buxin clay **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S57La-8-7 **LAB. NOS.** 5672-5677

DEPTH INCHES	HORIZON	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	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-5	A11	-	-	-	0.1	0.7	24.8	74.4	2.5	23.1	-	c
5-9	A12	-	-	0.1a	0.9a	2.7a	33.6	62.7	10.0	27.0	-	c
9-21	AC	-	0.3a	0.3a	2.0a	5.8a	41.5	50.1	21.6	27.3	-	sic
21-34	C11	-	0.1	0.1	2.1	7.7	41.7	48.3	27.7	23.5	-	sic
34-46	C12	-	0.1	0.1	5.5	14.2	43.9	36.2	42.8	20.2	-	sicl/cl
46-50+	C2	-	0.1	0.1	9.5	21.8	37.6	30.9	53.0	14.9	-	cl

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN %	ORGANIC MATTER C/N	6E1a $CaCO_3$ equivalent %	MOISTURE TENSIONS 1/10 ATMOS. %	MOISTURE TENSIONS 1/3 ATMOS. %	MOISTURE TENSIONS 4B2 15 ATMOS. %
6.7			1.46	0.104	14.0	-			23.2
6.8			1.07	0.085	13	-			22.0
7.0			0.95	0.066	14	-			18.2
7.3			0.44	0.042	10	-			18.1
7.4			0.26			-			14.3
7.4			0.20			-			12.9

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
41.4	28.7	12.7	4.3	0.2	1.3		91	42.9	47.2	2.2		
37.2	25.4	10.6	4.3	0.3	0.8	100	90	37.1	41.4	2.4		
30.7	20.5	9.7	3.4	0.2	0.5		90	30.9	34.3	2.1		
28.8	17.7	10.0	2.5	0.3	0.5	99	92	28.5	31.0	1.8		
22.2	12.1	9.6	1.7	0.4	0.4		93	22.5	24.2	1.3		
18.9	10.1	8.7	1.2	0.5	0.4		94	19.7	20.9	1.2		

a. Common smooth brown concr.

S57La-8-7

Described by Lester L. Loftin

Date: 5-23-57
Area: Bossier Parish, Louisiana
Location: Aerial photograph No. CEX 10G-78; SW, NE, Sec. 11, R14W, T23N; along road 281 feet east of west forty line then 115 feet north of center of road.
Vegetation: Native - hardwood forest; present - mostly Johnson grass.
Relief: Level (0 - .5% slope).
Drainage: Imperfectly or somewhat poorly drained; slow runoff and internal drainage.
Permeability: Slow.
Sampling party: James S. Allen, Head, Soil Conservation Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Alexandria, Louisiana; Bruce Chaffin, Chief of Survey Party, Shereveport, Louisiana.

BUXIN CLAY

Lincoln Lab. No.			
5672	A_{11}	0-5"	Dark brown (7.5YR 3/2) clay; strong medium angular blocky structure that breaks into strong fine subangular blocky structure; very firm; many roots; pH 7.5; abrupt smooth boundary.
5673	A_{12}	5-9"	Dark reddish gray (5YR 4/2) clay with common fine distinct dark reddish brown (2.5YR 3/4) mottles; moderate very fine angular blocky structure; very firm; roots common; pH 8.0; clear wavy boundary.
5674	AC	9-21"	Variegated very dark gray (5YR 3/1) and dark reddish brown (5YR 3/2) clay; moderate very fine angular blocky structure; very firm; roots few; pH 8; clear wavy boundary.
5675	C_{11}	21-34"	Variegated dark reddish gray (5YR 4/2) and dark reddish brown (5YR 3/4) clay; moderate very fine subangular blocky structure; very firm; pH 8.
5676	C_{12}	34-46"	(Same as C_{11} separated for laboratory reasons). Clear wavy boundary.
5677	C_2	46-50"+	Dark brown (7.5YR 4/2) silty clay with many fine to medium faint dark brown (7.5YR 4/4) mottles; moderate medium subangular blocky structure; pH 7.5.

Remarks: All colors are for moist condition. Descriptive terms are from Soil Survey Manual. This soil is recent Red River alluvium deposited over old lake beds.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Buxin clay **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S57Ia-8-8 **LAB. NOS.** 5678-5684

DEPTH INCHES	HORIZON	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	0.2-0.02	0.02-0.002	2A2 > 2 (>19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)								3A1		
0-5	A11	-	0.1a	-	0.3	3.1	25.5	71.0	9.1	19.7	-	c
5-9	A12	-	-	-	0.1	2.0	22.2	75.7	5.3	19.0	-	c
9-17	AC	-	-	-	0.5	21.4	43.5	34.6	47.7	17.7	-	cl
17-26	C11	-	-	-	0.4b	22.0b	41.7	35.9	49.0	15.1	-	cl
26-35	C12	-	-	-	0.5	25.8	42.7	31.0	54.6	14.4	-	cl
35-40	C13	-	-	-	0.4	21.8	55.1	22.7	57.8	19.5	-	sil
40-46+	D	-	-	-	0.1	16.6	61.3	22.0	55.3	22.7	-	sil

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6E1a $CaCO_3$ equivalent %	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
			ORGANIC MATTER						
6.7			1.48	0.114	13.0	-			22.5
6.6			1.25	0.097	13	-			23.6
6.0			0.83	0.068	12				13.3
5.5			0.56	0.054	10				14.6
5.4			0.33						13.0
5.6			0.17						9.9
6.1			0.12						10.0

5A1a CATION EXCHANGE CAPACITY NH_4Ac	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
	EXTRACTABLE CATIONS 5B1a										
← milliequivalents per 100g. soil →											
38.7	24.9	12.9	4.3	0.1	1.4		90	39.3	43.6	1.9	
42.6	27.4	13.4	7.3	0.1	1.1	98	85	42.0	49.3	2.0	
20.3	13.2	5.3	5.4	0.1	0.3	93	78	18.9	24.3	2.5	
21.4	12.4	5.1	7.0	0.1	0.4	84	72	18.0	25.0	2.4	
19.2	10.9	-4.5	6.6	0.1	0.4	83	71	15.9	22.5	2.4	
13.9	8.5	3.6	3.7	0.1	0.3	90	77	12.5	16.2	2.4	
14.2	9.4	3.8	2.9	0.1	0.3	96	82	13.6	16.5	2.5	

a. Organic matter.
b. Common smooth brown concr.

S57La-8-8

Described by Lester L. Loftin

Date: 5-23-57
Area: Bossier Parish, Louisiana
Location: Aerial photograph No. 10G-76; SW, NE, Sec. 23, R14W, T23N; 150 feet east of levee and 50 feet north of fence.
Vegetation: Native - hardwood forest; present - mostly Johnson grass.
Relief: Level (0 - .5% slope).
Drainage: Imperfectly or somewhat poorly drained; slow runoff and internal drainage.
Permeability: Slow.
Sampling party: James Allen, Soil Conservation Service, Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soil Specialist, Alexandria, Louisiana, and Bruce Chaffin, Soil Scientist, Shreveport, Louisiana.

BUXIN CLAY

Lincoln Lab. No.			
5678	A_{11}	0-5"	Dark reddish brown (5YR 3/3) clay with common fine faint dark gray (5YR 4/1) mottles; moderate medium subangular blocky structure that breaks into moderate very fine subangular blocky structure; very firm; many roots; pH 7; abrupt wavy boundary.
5679	A_{12}	5-9"	Dark reddish brown (5YR 3/3) clay with few streaks and pockets of gray and with common fine distinct dark gray (7.5YR 4/0) mottles; moderate medium subangular blocky structure that breaks into moderate very fine subangular blocky structure; very firm; many roots; pH 7.5; abrupt wavy boundary.
5680	AC	9-17"	Dark gray (10YR 4/1) clay with many medium prominent dark reddish brown (2.5YR 3/4) mottles; weak medium subangular blocky structure; very firm; roots common; pH 6.0; clear wavy boundary.
5681	C_{11}	17-26"	Dark brown (7.5YR 4/2) clay with many fine distinct dark reddish brown (2.5YR 3/4) mottles; weak medium subangular structure; very firm; roots common; pH 4.5; boundary clear and wavy.
5682	C_{12}	26-35"	Dark brown (7.5YR 4/4) clay with many fine prominent dark reddish brown (2.5YR 3/4) and dark brown (10YR 4/3) mottles; weak medium subangular blocky structure; very firm; roots common; pH 5.5; clear wavy boundary.
5683	C_{13}	35-40"	Dark brown (7.5YR 4/4) silty clay with fine common faint strong brown (7.5YR 5/6) mottles; weak coarse subangular blocky structure; firm; few roots; pH 6.0; boundary clear and wavy.
5684	D	40-46"+	Yellowish red (5YR 4/6) silty clay loam; weak medium subangular blocky structure; friable; few roots; pH 7.0.

Remarks: All colors are for moist condition. Descriptive terms are from Soil Survey Manual. This soil is recent Red River alluvium deposited over old lake beds.

SOIL SURVEY LABORATORY Lincoln, Nebr. August, 1958

SOIL TYPE Caddo silt loam **LOCATION** Beauregard Parish, Louisiana

SOIL NOS. S57La-6-3 **LAB. NOS.** 7110-7116

DEPTH INCHES	HORIZON	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	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-3	A1	0.3a	0.3a	0.2b	2.1b	15.5b	74.1	7.5	54.4	37.0	Tr.	sil
3-5	A21	0.5a	0.3a	0.2b	2.3b	16.2b	73.3	7.2	54.5	37.0	Tr.	sil
5-12	A22g	1.0a	0.3a	0.2b	2.3b	15.1b	68.5	12.6	50.5	35.1	Tr.	sil
12-18	B2g	0.5a	0.3a	0.2b	2.1b	15.6b	66.8	14.5	45.8	38.4	Tr.	sil
18-26	B31g	0.6a	0.2a	0.2b	2.0b	14.4b	69.2	13.4	49.0	36.4	Tr.	sil
26-39	B32g	0.5a	0.3a	0.2b	1.8b	13.6b	69.2	14.4	46.9	37.5	Tr.	sil
39-60+	Dg	0.4a	0.3a	0.2b	1.6b	12.1b	61.2	24.2	41.8	32.9	Tr.	sil

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	4B2 MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
			ORGANIC MATTER					
4.8			1.77	0.096	18			4.6
5.0			0.64	0.038	17			3.6
5.0			0.20	0.023				5.5
5.0			0.19	0.024				5.8
5.1			0.12	0.017				5.7
5.2			0.09					6.2
5.2			0.08					10.3

5A1a CATION EXCHANGE CAPACITY NH_4Ac	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH.	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
	EXTRACTABLE CATIONS										
←	milliequivalents per 100g. soil				→		5C1				
7.2	0.6	0.1	7.7	-	-	10	8	0.7	8.4		
4.9	0.2	-	5.7	-	-	4	3	0.2	5.9		
5.6	0.1	0.1	6.5	-	-	4	3	0.2	6.7		
5.6	-	0.1	6.5	-	-	2	2	0.1	6.6		
5.6	-	0.1	6.9	-	-	2	1	0.1	7.0		
6.1	0.1	0.2	6.1	0.1	-	6	6	0.4	6.5		
10.7	1.5	1.7	8.6	0.3	0.1	34	30	3.6	12.2	0.9	

a. Many smooth light brown concr. Also few smooth black concr.
b. Few smooth light brown concr.

S57La-6-3

Described by Marvin Lawson

Date: 11-6-57
Area: Beauregard Parish, Louisiana
Location: NW, NE, Sec. 19, R8W, T6S; one mile north of Hollinsworth on La-U.S. 171; .5 mile east on access road; 150 feet north of road opposite gasoline plant.
Vegetation: Reforested slash pine (30 yr.); original cover was longleaf pine. Wax myrtle plentiful. Few loblolly pine, sweetgum, blackgum, and water oak. Thick ground cover of muhly grass.
Relief: Gently undulating Pleistocene terrace. Site of sample, level.
Drainage: Surface drainage slow to very slow; somewhat poorly drained, internally.
Permeability: Very slow.
Sampling party: D. L. Fontenot, James Allen, Lester Loftin, Marvin Lawson, Warren Cookerham, and Francis Ezermack.

Lincoln

CADDO SILT LOAM

Lab. No.			
	A_{oo}	1-2"	Leaf litter
7110	A_1	0-3"	Dark gray (10YR 4/1) silt loam; weak fine and very fine subangular blocky; very friable; very many fine roots; few up to 1/2" diameter; pH 5.5; clear wavy boundary; 2 to 5 inches thick, horizon.
7111	A_{21}	3-5"	Gray (10YR 5/1) silt loam with few fine mottles of brownish yellow (10YR 6/6); weak, fine, and medium subangular blocky; very friable; few fine hard concretions; roots common; few worm casts; pH 5.0; clear wavy boundary; 2 to 8 inches thick, horizon.
7112	A_{22g}	5-12"	Gray (10YR 6/1) heavy silt loam with many medium mottles of brownish yellow (10YR 6/6); weak fine subangular blocky; friable; very porous, tubular pores common; few fine hard concretions; roots common; pH 4.5; gradual wavy boundary; 6-12 inches thick, horizon.
7113	B_{2g}	12-18"	Gray (10YR 6/1) silty clay loam with many medium and coarse brownish yellow (10YR 6/6) mottlings and few medium strong brown (7.5YR 5/8) mottles; weak fine subangular blocky; friable, somewhat plastic; patchy clay skins, tubular pores common with clay films; occasional fine hard concretions; pH 5.6; gradual wavy boundary.
7114	B_{31g}	18-26"	Gray (10YR 6/1) silt loam with many medium and coarse mottles of strong brown (7.5YR 5/8) and brownish yellow (10YR 6/6); weak fine and medium subangular blocky; firm, compact in place ; patchy clay skins; common tubular pores; few roots; pH 5.0; wavy and irregular boundary.
7115	B_{32g}	26-39"	Light brownish gray (10YR 6/2) silt loam; common medium mottles of strong brown (7.5YR 5/8); weak medium subangular blocky; friable; few clay skins; common tubular pores well coated with clay; occasional fine hard concretions; few charcoal fragments; pH 5.0; wavy irregular boundary.
7116	D_g	39-60"+	Gray (10YR 6/1) clay or silty clay with common medium to coarse mottles of reddish yellow (7.5YR 6/8) and brownish yellow (10YR 6/6); massive large clods; firm; considerable red in interiors of clods; reddish material silty clay loam; clay skins prominent; few tubular pores well lined with clay; occasional fine root; pH 5.0 (this horizon has many features of a buried B.) Below 60" was examined by bucket auger. Light gray color extended to a depth of about 100". There were a few coarse splotches of red. pH 6 at 100".

Remarks: Colors stated are for moist soil. pH by Hellige-Truog field kit. Plugs of grayish brown silt loam up to 4" in diameter and extending to various depths, as much as 4 feet, were common around the perimeter of the pit. Most were vertical but some were curved. These soils are developed on Pleistocene material, presumably Red River alluvium deposited before the river was diverted eastward. Clays, often calcareous, occur throughout the parish at various depths up to several feet. The red clay often outcrops on steep slopes.

This soil was recognized as Caddo very fine sandy loam in the Soil Survey Report, Beauregard Parish, Louisiana, 1929. Frequently burned until late years; commonly grazed.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Caddo silt loam **LOCATION** Beauregard Parish, Louisiana

SOIL NOS. S57La-6-4 **LAB. NOS.** 7117-7122

DEPTH INCHES	HORIZON	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	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-4	A21g	0.4a	0.5a	0.1b	2.7b	21.1b	70.1	5.1	62.4	31.3	Tr.	sil
4-10	A22g	0.6a	0.3a	0.1b	2.2b	18.1b	65.1	13.6	53.2	32.0	Tr.	sil
10-16	A23g	0.4a	0.3a	0.1b	2.0b	16.6b	64.7	15.9	51.3	31.8	Tr.	sil
16-27	B1g	0.3a	0.3a	0.1b	1.9b	16.0b	65.3	16.1	50.2	32.9	Tr.	sil
27-50	B2g	-	0.2a	0.2b	1.5b	13.7b	60.7	23.7	46.6	29.2	Tr.	sil
50-60+	Cg	-	0.1a	0.1b	1.5b	13.8b	58.6	25.9	41.4	32.4	Tr.	sil

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
			ORGANIC MATTER					
4.8			1.40	0.062	23			3.6
4.8			0.25	0.023	11			6.4
4.9			0.17	0.020				6.8
5.2			0.11	0.014				6.8
5.3			0.09					10.3
5.2			0.04					11.4

5A1a CATION EXCHANGE CAPACITY NH_4Ac	6N2b Ca	6Q2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	EXTRACTABLE CATIONS milliequivalents per 100g. soil				→							
6.3	0.9	0.5	6.1	-	-	22	19	1.4	7.5			
6.9	0.7	0.9	6.5	-	0.1	25	21	1.7	8.2			
7.4	0.4	0.9	7.3	0.1	0.1	20	17	1.5	8.8			
7.0	-	0.9	7.3	0.1	0.1	16	13	1.1	8.4			
10.8	1.5	2.5	8.6	0.4	0.1	42	34	4.5	13.1	0.6		
12.6	3.6	3.8	4.9	0.7	0.2	66	63	8.3	13.2	0.9		

a. Many smooth light brown concr. (Fe-Mn?).
b. Common smooth light brown concr. (Fe-Mn?).

S57La-6-4

Described by Marvin Lawson

Date: 11-6-57
Area: Beauregard Parish, Louisiana
Location: SW, SW, Sec. 8, R8W, T6S, 4 miles south of Longville on La-US Hy. 171; 1.2 mi. east on access road; 100 feet south of road.
Vegetation: Slash and loblolly pine, occasional longleaf pine, wax myrtle and holly abundant; some annual holly, black gum, and water oak. Muhly grass, rushes and sedges common. Few orchids. Burned frequently until late years; commonly grazed.
Relief: Gently undulating Pleistocene terrace. Site slope, level.
Drainage: Surface drainage slow to very slow; somewhat poor internal drainage.
Permeability: Very slow.
Sampling party: James Allen, Lester Loftin, D. L. Fontenot, Marvin Lawson, Warren Cockerham, Francis E. Eserhock.

Lincoln Lab. No.			CADDO SILT LOAM
	A_{00}		About 2 inches of leaf litter.
	A_0		Patchy and too thin to measure.
7117	A_{21g}	0-4"	Gray (10YR 5/1) silt loam; weak; very fine subangular blocky; very friable; many roots; common fine and medium tubular pores; pH 5.5; clear wavy boundary. 3-5" thick.
7118	A_{22g}	4-10"	Gray (10YR 6/1) light silty clay loam with common medium mottles of brownish yellow (10YR 6/6); weak fine subangular blocky; friable; many roots; medium tubular pores common; occasional fine hard concretion; pH 5.0; arbitrary boundary.
7119	A_{23g}	10-16"	Gray (10YR 6/1) light silty clay loam with common medium mottles of brownish yellow (10YR 6/6); weak fine subangular blocky; friable; medium tubular pores common; many roots; occasional fine hard concretion; pH 5.0; diffuse smooth boundary.
7120	B_{1g}	16-27"	Gray (10YR 6/1) light silty clay loam with common medium mottles of brownish yellow (10YR 6/6) and few medium mottles of reddish yellow (7.5YR 7/8); weak medium angular blocky; friable; common fine and medium tubular pores, clay lined; few patchy clay skins; common roots; pH 4.5; diffuse boundary.
7121	B_{2g}	27-50"	Gray (10YR 6/1) silty clay with inclusions of silty clay loam, with few medium mottles of brownish yellow (10YR 6/6) and common medium mottles of red (2.5YR 4/8); weak fine angular blocky; somewhat plastic; few medium tubular pores with thin clay lining; patchy clay skins; no roots observed; pH 5.0; clear irregular boundary.
7122	C_g	50-60"/	Gray (10YR 6/1) silt loam with few fine and medium mottles of yellow (10YR 7/8); massive; friable; few pores, appears dense; few charcoal fragments; occasional hard concretion; pH 5.0.
		60-103"	Was sampled by bucket auger. pH 5.5 at 103". Below about 70" was massive light gray clay (10YR 7/1) with large splotches of reddish yellow (7.5YR 7/8).

Remarks: Colors stated are for moist soil. pH by Hellige-Truog field kit. Silt filled channels, animal burrows or tree root size were common about the perimeter of the pit. This soil is on Pleistocene material, presumably derived from Red River alluvium deposited before the river was diverted eastward. Red clay, often calcareous, underlies all the parish. In places, on steep slopes, the clay outcrops; in other places it may be several feet underneath the surface. This soil was recognized as Caddo very fine sandy loam in the Soil Survey Report, Beauregard Parish, Louisiana, 1929.

SOIL SURVEY LABORATORY Beltsville, Maryland

SOIL TYPE Cahaba fine sandy loam **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S55La-8-1 **LAB. NOS.** 56460-56465

DEPTH INCHES	HORIZON	1B1b 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	2A2 > 2 (76mm)	TEXTURAL CLASS
0-5	Ap	0.0	0.2	0.2	25.4	36.8	32.8	4.6	83.9	8.8	5	vfsl
5-8	B21	0.1	0.2	0.2	20.9	31.1	37.6	9.9	73.0	14.7	4	vfsl/l
8-18	B22	0.0	0.1	0.0	20.3	31.8	38.2	9.6	73.5	15.4	21	vfsl/l
18-31	B31	0.0	0.1	0.2	18.8	28.0	39.1	13.8	68.9	15.3	7	l
31-43	B32	0.0	0.0	0.1	20.2	31.0	35.0	13.7	69.4	15.2	39	l
43-49+	C	0.0	0.0	0.1	22.1	32.7	33.7	11.4	75.6	11.3	31	vfsl

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC MATTER ORGANIC CARBON %	NITROGEN %	C/N	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL			
6.0			0.37								
5.4			0.15								
5.6			0.15								
5.5			0.06								
5.3			0.04								
5.2			0.02								

5A3a CATION EXCHANGE CAPACITY (Sum)	EXTRACTABLE CATIONS 5B1a 6N2d Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % on Sum Cations 5C3						MOISTURE AT SATURATION %
	milliequivalents per 100g. soil →											
3.2	1.0	0.4	1.5	< 0.1	0.3	53						
4.3	1.3	0.3	0.3	< 0.1	0.4	46						
4.0	1.5	0.5	1.7	< 0.1	0.3	58						
5.2	1.9	1.1	1.9	< 0.1	0.3	63						
5.1	2.0	0.9	1.9	< 0.1	0.3	63						
4.4	1.5	0.9	1.7	< 0.1	0.3	61						

CAHABA FINE SANDY LOAM

S55La-8-1

Location: 100 feet south of farm road, .3 miles west of Highway 157, in NW NE NE NW Sec. 4, T16N, R11W.

Vegetation and Use: Native vegetation was oak spp., hickory spp., sweet gum, black gum, and loblolly and shortleaf pine. Has been in cultivation many years, in corn in 1955. Reported to have had 500 pounds 8-8-8 fertilizer. When in cotton in previous years was sprayed several times each year with sulfur insecticides.

Slope and Land Form: Sample site was a low ridge surrounded by Wrightsville silt loam and other planosols.

Parent Material: River terrace of the Montgomery formation of Pleistocene age.

Samples Collected and Described by: Marvin Lawson, S. A. Lytle, James DeMent, Bruce Chaffin and John Millet.

Date: November 8, 1955.

Depth BSL No.	Horizon	Description
0-5" 56460	Ap	Dark brown (7.5YR 4/4, moist) fine sandy loam; weak medium and fine subangular blocky structure; very friable; pH 6.0 (Hellige-Truog); abrupt wavy boundary.
5-8" 56461	B21	Traffic pan. Yellowish red (5YR 4/6, moist); fine sandy loam; medium and coarse subangular blocky; firm, dry; pH 6.0; a few small dark brown hard concretions; clear wavy boundary.
8-18" 56462	B22	Yellowish red (5YR 4/6, moist) with a few mottles of light reddish brown(5YR 6/3, moist); loam or fine sandy loam; fine and medium moderate subangular blocky; very friable, moist; pH 6.0; some small holes and small brown hard concretions; diffuse smooth boundary.
18-31" 56463	B31	Yellowish red (5YR 4/6, moist) with about 10 percent of light reddish brown (5YR 6/3, moist) mottling; fine sandy loam; medium moderate subangular blocky; very friable, moist; pH 6.0; some root holes and a few small hard brown concretions; diffuse smooth boundary.
31-43" 56464	B32	Yellowish red (5YR 4/6, moist) with a few brown spots and 10 percent light reddish brown mottling (5YR 6/3, moist); fine sandy loam; medium, moderate subangular blocky; slightly brittle dry, very friable, moist; few medium and fine small brown concretions; small root holes common; pH 6.0; clear smooth boundary.
43-49"+ 56465	C	Yellowish red (5YR 4/6, moist), 30 percent coarse brown (7.5YR 5/4) mottles; weak medium subangular blocky; very friable, moist; pH 7.0; some medium brown and black hard concretions.

SOIL SURVEY LABORATORY Beltsville, Maryland

SOIL TYPE Cahaba fine sandy loam **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S55La-8-2 **LAB. NOS.** 56466-56471

DEPTH INCHES	HORIZON	1B1b 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	2A2 > 2 (76mm)	TEXTURAL CLASS
0-5	Ap	0.0	0.1	0.6	46.3	29.4	20.6	3.0	77.1	8.3	4	lfs
5-9	B11	0.0	0.0	0.6	41.3	25.0	24.7	8.4	68.8	13.4	1	fsl
9-16	B12	0.0	0.1	0.6	38.6	24.0	24.0	12.7	64.6	13.1	7	fsl
16-29	B2	0.0	0.1	0.6	37.4	23.6	23.0	15.3	63.5	12.7	8	fsl
29-42	B3	0.0	0.2	0.6	39.0	24.3	22.5	13.4	65.8	12.4	22	fsl
42-52	C	0.0	0.1	0.6	42.6	26.0	18.7	12.0	69.7	9.0	24	fsl

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	NITROGEN %	C/N	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL
5.6			0.18					
5.5			0.15					
5.5			0.11					
5.2			0.06					
5.2			0.04					
5.4			0.02					

5A3a CATION EXCHANGE CAPACITY (Sum)	EXTRACTABLE CATIONS 6N2d Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % on Sum Cations 5C3	MOISTURE AT SATURATION %
	milliequivalents per 100g. soil →						
3.0	0.7	0.2	1.7	< 0.1	0.4	43	
4.3	1.3	0.3	2.3	< 0.1	0.4	46	
4.3	1.3	0.4	2.3	< 0.1	0.3	46	
6.1	2.7	0.7	2.5	< 0.1	0.2	59	
5.5	2.2	0.8	2.3	< 0.1	0.2	58	
4.4	1.7	0.7	1.7	< 0.1	0.3	61	

CAHABA FINE SANDY LOAM

S55La-8-2

Location: 25 miles north of Profile I, Bossier Parish, Louisiana. 7.2 miles east of Plain Dealing, south of Highway 2, located in NW NW NW NW, Sec. 14, T22N, R12W.
Vegetation and Use: Cropland, in cotton, sprayed with sulfur-carrying insecticides. Fertilized.
Parent Material: River terrace of the Montgomery formation of Pleistocene age.
Samples Collected and Described by: Marvin Lawson, S. A. Lytle, James DeMent, Bruce Chaffin and John Millet.
Date: November 8, 1955.

Depth BSL No.	Horizon	Description
0-5" 56466	Ap	Dark brown (10YR 4/3, moist); fine sandy loam; weak medium angular blocky; very friable, dry; pH 6.0 (Hellige-Truog); abrupt smooth boundary.
5-9" 56467	B11	Traffic pan. Dark reddish brown (5YR 3/3, moist); fine sandy loam; massive; firm, moist; fine roots and small brown hard concretions common; pH 6.0; clear wavy boundary.
9-16" 56468	B12	Yellowish red (5YR 4/6, moist); fine sandy loam; fine and medium moderate subangular blocky; very friable, moist; pH 6.0; few dark hard concretions; numerous fine roots; diffuse smooth boundary.
16-29" 56469	B2	Yellowish red (5YR 4/6, moist) with few faint mottles of lighter color; light sandy clay loam; moderate medium and coarse angular blocky; firm to very firm, moist; pH 6.0; few fine roots; few medium black hard concretions; diffuse smooth boundary.
29-42" 56470	B3	Yellowish red (5YR 4/6, moist) mottled 5 percent with light brown (7.5YR 6/4, moist); sandy clay loam; moderate medium to coarse subangular blocky; firm, moist; pH 6.0; few fine roots and small dark hard concretions; gradual wavy boundary.
42-52" 56471	C	Yellowish red (5YR 4/8, moist) mottled 10 percent with medium yellowish red (5YR 5/8, moist); fine sandy loam; weak moderate subangular blocky; very friable, moist; pH 6.5.

Procedure: Pit was dug to depth indicated, well within the C horizon. Samples were taken from the middle third of each horizon.

SOIL SURVEY LABORATORY Beltsville, Maryland

SOIL TYPE Cahaba fine sandy loam **LOCATION** Tangipahoa Parish, Louisiana

SOIL NOS. S56La-53-1 **LAB. NOS.** 56492-56497

DEPTH INCHES	HORIZON	1B1b 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 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										
0-4	Ap	0.4	4.8	16.0	27.2	7.5	31.5	12.6	39.2	10.6	< 1	fsl
4-12	B21	0.3	1.8	6.1	12.9	4.8	47.7	26.4	32.2	25.9	< 1	l/cl
12-17	B22	0.3	1.9	8.0	18.7	6.9	44.6	19.6	35.8	23.2	< 1	l
17-21	B31	0.2	1.7	8.6	20.1	7.9	44.1	17.4	38.7	21.7	< 1	l
21-27	B32	0.1	2.0	8.9	22.4	9.7	41.2	15.7	40.9	19.9	< 1	l
27-34	Bm	0.3	2.8	9.3	25.8	12.8	34.0	15.0	43.5	16.2	< 1	l/sl
34+	D	Horizon not sampled										

8C1a pH 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL
5.8			0.75	0.075	10			
4.8			0.16					
4.4			0.08					
4.7			0.02					
4.4			0.00					
4.3			0.02					

5A3a CATION EXCHANGE CAPACITY Sum	EXTRACTABLE CATIONS 5B1a 6N2d Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % on Sum Cations 5C3	MOISTURE AT SATURATION %
	milliequivalents per 100g. soil →						
7.4	3.0	1.1	2.9	0.1	0.3	61	
10.2	3.5	0.7	5.7	0.1	0.2	44	
7.5	1.9	0.4	5.0	0.1	0.1	33	
6.0	1.3	0.4	4.2	<0.1	0.1	30	
5.3	1.0	0.4	3.8	<0.1	0.1	28	
5.1	0.8	0.6	3.6	<0.1	0.1	29	

CAHABA FINE SANDY LOAM

Classification: Red-Yellow Podzolic.
Parent Material: Coastal plain deposits and loess.
Physiography: Terrace of Tangipahoa River. Headwaters of river cut into tertiary material. Known deposits of Mississippi River alluvium occur a few miles downstream.
Climate: 65" annual rainfall; warm average annual temperature.
Native Vegetation: Mixed pine and hardwood forest.
Location: 1-1/4 miles north, 1/4 mile east of Amite, Louisiana, 400 feet north of home on Dr. Faulkes' farm.
Topography: Gently undulating. 2 percent slope.
Use: Long history of cultivation. In grass - legume pasture past 5 years. Has been limed and had fertilizer applications up to 1000 pounds per acre of 4-8-4 and sodium nitrate in addition when cultivated.
Soil Survey No.: S56La-53-1.

Depth, Lab. No.,	Beltsville and Horizon	Description
0-4" 56492	Ap	Yellowish red (5YR 4/6, moist) fine sandy loam; moderate, medium, subangular blocky; friable; pH 6.0 (Hellige-Truog).
4-12" 56493	B21	Yellowish red (5YR, 5/8, moist) sandy clay loam; moderate, medium, subangular blocky; friable, moist, pH 6.0; wavy diffuse boundary.
12-17" 56494	B22	Yellowish red (5YR 5/6, moist) sandy clay loam; moderate coarse subangular blocky; friable, moist; pH 5.5; smooth diffuse boundary.
17-21" 56495	B31	Strong brown (7.5YR 5/6, moist) sandy clay loam; moderate coarse subangular blocky; friable, moist; pH 5.5; smooth diffuse boundary.
21-27" 56496	B32	Strong brown (7.5YR 5/8, moist) sandy loam; weak coarse angular blocky; pH 5.0; very friable; clear wavy boundary.
27-37" 56497	Bm	Strong brown (7.5YR 5/6, moist) with large common brownish yellow (10YR 6/6, moist) mottles; massive; firm, moist; pH 6.0; many "pinholes"; abrupt smooth boundary.
34+	D	Not sampled. Coarse gravelly (chert) sandy loam; hard, dry.

Remarks: Gravel bed and mottling were not found at auger test hole a few feet away made before digging pit. May not be suitable sample for this purpose.

Sampled and described by: Marvin Lawson, Lester Loftin, and A. G. White Apr. 10, 1956.

SOIL SURVEY LABORATORY Beltsville, Maryland

SOIL TYPE Cahaba fine sandy loam **LOCATION** Tangipahoa Parish, Louisiana

SOIL NOS. S56Ia-53-2 **LAB. NOS.** 56498-56505

DEPTH INCHES	HORIZON	1B1b 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	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-5	A1	0.1	8.7	19.2	23.3	7.6	34.7	6.4	38.5	14.3	< 1	fsl
5-11	A2	0.2	7.8	18.4	22.9	7.9	35.2	7.6	37.4	16.3	< 1	fsl
11-16	B1	0.1	6.7	15.0	19.3	6.9	36.0	16.0	35.8	16.5	< 1	l
16-22	B21	0.1	5.3	11.1	16.4	6.2	37.3	23.6	32.8	19.2	< 1	l
22-31	B22	0.0	4.1	9.4	19.6	8.4	37.4	21.1	38.5	17.7	< 1	l
31-36	B3	0.0	5.2	12.2	26.5	10.9	30.7	14.5	39.9	15.7	< 1	fsl
36-40	C1	0.2	11.7	22.6	30.1	9.2	17.8	8.4	33.0	8.1	< 1	sl/fsl
40-48+	C2	0.6	14.3	34.5	34.8	5.1	7.1	3.6	20.9	3.7	< 1	s

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	$CaCO_3$ equivalent %	GYPSUM me./100g. SOIL
5.7			1.48	0.071	20			
4.9			0.52	0.034	15			
4.5			0.13					
4.5			0.14					
4.7			0.08					
4.6			0.02					
4.6			0.02					
4.7			0.00					

5A3a CATION EXCHANGE CAPACITY Sum	EXTRACTABLE CATIONS 5B1a 6N2d Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % on Sum Cations 5C3	MOISTURE AT SATURATION %
	milliequivalents per 100g. soil →						
8.8	3.1	0.8	4.6	0.1	0.2	48	
5.6	0.6	0.4	4.4	<0.1	0.2	21	
6.3	0.4	0.5	5.2	<0.1	0.2	17	
9.3	0.3	0.8	8.0	<0.1	0.2	14	
8.5	0.2	0.9	7.2	<0.1	0.2	15	
5.9	0.2	0.6	5.0	<0.1	0.1	15	
3.5	0.2	0.3	2.9	<0.1	0.1	17	
1.9	0.6	0.1	1.2	<0.1	<0.1	37	

CAHABA FINE SANDY LOAM

Classification: Red-Yellow Podzolic.
Parent Material: Coastal plain deposits and loess.
Physiography: Terrace of Tangipahoa River. Headwaters of river cut into tertiary material. Known deposits of Mississippi River alluvium occur a few miles downstream.
Climate: 65" annual rainfall; warm average annual temperature.
Native Vegetation: Mixed pine and hardwood forest.
Location: 3/4 mile southeast of Independence, Louisiana, 400 feet east of parish road on farm access road by pine woods.
Topography: Gently undulating. 2 percent slope.
Use: Has not been cultivated nor pastured.
Soil Survey No.: S56La-53-2.

Depth, Lab. No., and Beltsville Horizon		Description
0-5" 56498	A1	Very dark brown (10YR 2/2, moist) fine sandy loam; moderate medium granular; very friable, moist; pH 7.0 (Hellige-Truog); gradual smooth boundary.
5-11" 56499	A2	Brown (10YR 4/3, moist) fine sandy loam; moderate medium subangular blocky; very friable, moist; pH 6.5; gradual smooth boundary.
11-16" 56500	B1	Yellowish red (5YR 4/6, moist) sandy clay loam; moderate medium subangular blocky; friable, moist; pH 6.0; diffuse smooth boundary.
16-22" 56501	B21	Yellowish red (5YR 4/8, moist) sandy clay loam; moderate medium subangular blocky; friable, moist; pH 6.0; clear smooth boundary.
22-31" 56502	B22	Yellowish red (5YR 4/6, moist) sandy clay loam; moderate medium subangular; firm, moist; pH 6.0; clear smooth boundary.
31-36" 56503	B3	Yellowish red (5YR 5/8, moist) light sandy clay loam; moderate medium angular blocky; friable, moist; pH 6.0; clear smooth boundary.
36-40" 56504	C1	Strong brown (7.5YR 5/8, moist) sandy loam; weak medium subangular blocky; very friable, moist; pH 6.0; abrupt wavy boundary.
40-48"+ 56505	C2	Strong brown (7.5YR 5/8, moist) loamy sand; single grain; loose; pH 6.0

Sampled and described by: Marvin Lawson, Lester Loftin, and A. G. White, April 10, 1956.

SOIL SURVEY LABORATORY Lincoln, Nebr. Aug. 1958

SOIL TYPE Crowley silt loam **LOCATION** Acadia Parish, Louisiana

SOIL NOS. S57La-1-2 **LAB. NOS.** 7146-7152

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-3	Ap	0.1a	0.1a	0.1b	5.6b	15.0b	65.6	13.5	49.3	36.8	-	sil
3-7	A1	0.4a	0.7a	0.2b	6.8b	14.2b	63.0	14.7	43.1	40.7	-	sil
7-12	A2g	1.8a	1.5a	0.2c	6.9b	14.6b	61.5	13.5	43.7	39.2	-	sil
12-16	A3g	1.2a	1.1a	0.1c	6.3b	13.6b	56.7	21.0	40.5	36.0	Tr.	sil
16-24	B21g	0.5a	0.2a	0.1c	6.3b	12.0b	47.1	33.8	34.4	30.9	Tr.	sicl/cl
24-39	B22	0.5a	0.3a	0.1c	8.3b	15.2b	45.9	29.7	40.2	29.1	Tr.	cl
39-60+	Cg	0.5a	0.3a	0.1c	15.4b	19.7b	32.1	31.9	49.3	17.7	Tr.	cl

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6E1a $CaCO_3$ equivalent %	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.0			0.89	0.084	11				6.0
6.1			0.57	0.060	10				6.9
5.7			0.32	0.039	8				6.0
5.3			0.43	0.062	7				9.0
5.3			0.52	0.067	8				13.8
6.6			0.20			-			12.8
7.2			0.05			-			13.9

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→						
4.7	2.0	0.7	5.3	0.2	0.1	64	36	3.0	8.3		
8.0	4.0	1.8	2.8	0.4	0.1	79	69	6.3	9.1	2.2	
6.7	2.3	1.3	3.2	0.4	0.1	61	56	4.1	7.3	1.8	
10.0	2.9	1.6	5.7	0.7	0.1	53	48	5.3	11.0	1.8	
15.1	5.8	3.5	7.0	1.4	0.2	72	61	10.9	17.9	1.6	
15.9	8.4	5.0	2.0	2.0	0.3	99	89	15.7	17.7	1.7	
16.0	8.9	5.2	0.8	2.2	0.3		95	16.6	17.4	1.7	

a. Many smooth and irregular light brown to black concr.
b. Few smooth and irregular light brown to black concr.
c. Common smooth and irregular light brown to black concr.

857Ia-1-2 Rev. July 1959

Described by Lester L. Loftin

Date: 11-12-57
Area: Acadia Parish, Louisiana
Location: NW, NE, Sec. 28, T6S, R1W; 1.25 miles east of Iota; 900 feet east of road junction; 77 feet south of road center.
Vegetation: Tall prairie grasses; in rice-pasture rotation for approximately last 50 years.
Relief: Level (0-.6% slope), pimple mounds were present before land leveling.
Drainage: Imperfectly drained; slow internal drainage and runoff.
Permeability: Very slow.
Sampling party: James S. Allen, Head, SCS Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Louisiana; D. L. Fontenot, State Soil Scientist, Louisiana; Henry L. Clark, Soil Scientist, Louisiana.

Lincoln Lab. No.		CROWLEY SILT LOAM	
7146	A_p	0-3"	Gray (10YR 5/1) or dark gray (10YR 4/1) silt loam; moderate fine granular structure; friable, staining around roots yellowish red (5YR 4/8), few pin holes; pH 5.5; abrupt smooth boundary.
7147	A_1	3-7"	Dark gray (10YR 4/1) silt loam; moderate medium to coarse platy structure; firm, (plow pan); dark reddish brown (5YR 3/4) around roots; many fine soft dark concretions; pH 6.5; clear smooth boundary.
7148	A_{2g}	7-12"	Gray (10YR 5/1) silt loam with few fine distinct dark yellowish brown (10YR 3/4) mottles; massive; very firm, (plow pan); common fine soft dark concretions; many pin holes; pH 6.0; gradual wavy boundary.
7149	A_{3g}	12-16"	Gray (10YR 5/1) silty clay loam with few fine distinct dark yellowish brown (10YR 3/4) mottles; massive; friable; pin holes common; common fine soft dark concretions; pH 5.5; clear wavy boundary.
7150	B_{21g}	16-24"	Gray (10YR 5/1) clay with many medium prominent red (10R 4/8) mottles; moderate coarse prismatic structure that breaks into strong fine angular blocky structure; firm; peds have coats of dark gray (10YR 4/1) silt loam over distinct complete clay films; few large vertical cracks filled with dark gray (10YR 4/1) silt loam; pH 5.5; diffuse wavy boundary.
7151	B_{22}	24-39"	Yellowish brown (10YR 5/6) clay with few fine prominent gray (10YR 6/1) mottles; moderate coarse angular blocky structure; firm; peds have coats of gray (10YR 6/1) silt loam over distinct complete clay films; few large vertical cracks filled with dark gray (10YR 4/1) silt loam; few fine dark root fossils; few fine dark hard concretions; pH 6.5; diffuse wavy boundary.
7152	C_g	39-60"+	Gray (10YR 6/1) silty clay with common large distinct yellowish brown (10YR 5/8) mottles; moderate coarse angular blocky structure; firm; many medium dark hard concretions; pH 7.5.
		60-80"	Variegated yellowish brown (10YR 5/8) and light gray (10YR 7/1) sandy clay.
		80-96"	Reddish yellow (7.5YR 6/6) fine sandy loam; pH 7.5.

Remarks: All colors are for moist condition. pH by Hellige-Truog kit. 60-96" by bucket type soil auger. Growing rice and irrigating with variable quality water has had influence on color, pH, and structure of this soil. This sample represents the 5al-CO-A-1 (Crowley silt loam, level) mapping unit in Acadia Parish. This soil was developed on the Prairie formation of the Pleistocene terrace from old alluvium of the Mississippi and/or Red Rivers. There is possibility of loess influence in the surface. This site was mapped Crowley silt loam in the 1903 soil survey report of Acadia Parish. Clay films are present beneath silt coats on the peds in the B horizon in this and other Crowley profiles.

SOIL SURVEY LABORATORY Lincoln, Nebr. Aug. 1958

SOIL TYPE Crowley silt loam **LOCATION** Acadia Parish, Louisiana

SOIL NOS. S57La-1-3 **LAB. NOS.** 7153-7158

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	3A1 2A2 > 2 (<19mm)	TEXTURAL CLASS
0-4	Ap	-	0.2a	0.1b	2.8c	18.8c	68.1	10.0	52.0	37.6	Tr.	sil
4-8	A1	1.0a	1.5a	0.4b	2.6c	17.3c	62.5	14.7	45.9	36.3	-	sil
8-16	A2g	1.8a	2.1a	0.5b	2.6c	15.6c	59.3	18.1	42.2	35.1	Tr.	sil
16-29	B2g	0.5a	0.3a	0.1b	1.9c	12.0c	48.6	36.6	33.1	29.3	Tr.	sicl
29-48	B3g	0.1a	0.3a	0.1b	1.8c	12.7c	55.2	29.8	36.0	33.6	Tr.	sicl
48-60+	Cg	0.4a	0.2a	0.1b	2.7c	18.1c	49.4	29.1	43.3	26.8	Tr.	cl

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N			6E1a $CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.0			1.04	0.085	12							4.9
5.9			0.60	0.059	10							6.7
5.3			0.42	0.050	8							8.0
5.4			0.56	0.064	9							15.2
7.4			0.11					-				13.2
7.9			0.02					-				12.6

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
7.0	1.8	0.7	4.9	0.1	0.2	40	36	2.8	7.7			
8.9	4.2	2.8	3.7	0.3	0.1	83	67	7.4	11.1	1.5		
9.2	2.9	1.8	5.3	0.4	0.1	56	50	5.2	10.5	1.6		
19.0	7.2	5.7	6.7	1.2	0.3	76	68	14.4	21.1	1.3		
18.4	9.1	7.4	0.8	2.0	0.3		96	18.8	19.6	1.2		
17.8	9.3	7.1	0.4	1.9	0.3		98	18.6	19.0	1.3		

a. Many smooth and irregular light brown to dark brown concr.
b. Common smooth and irregular light brown to dark brown concr
c. Few smooth and irregular light brown to dark brown concr.

S57La-1-3

Described by L. L. Loftin

Date: 11-13-57
Area: Acadia Parish, Louisiana
Location: NW, NE, Sec. 3, T9S, R1W; 4.5 miles north of Egan; 2.3 miles east of Highway 91; 69 feet south of road center.
Vegetation: Tall prairie grasses; in rice-pasture rotation for approximately last 50 years.
Relief: Level (0 - .6% slope), pimple mounds were present before land leveling.
Drainage: Imperfectly drained; slow internal drainage and runoff.
Permeability: Very slow.
Sampling party: James S. Allen, Head, SCS Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Louisiana; Henry L. Clark, Soil Scientist, Louisiana.

CROWLEY SILT LOAM

Lincoln Lab. No.			
7153	A_p	0-4"	Gray (10YR 5/1) silt loam; weak fine granular structure; yellowish red (5YR 4/8) around roots; few fine dark hard concretions; pH 5.5; abrupt smooth boundary.
7154	A_1	4-8"	Dark gray (10YR 4/1) silt loam; massive; firm (plow pan); few fine dark hard concretions; few pin holes; pH 6.0; clear smooth boundary.
7155	A_{2g}	8-16"	Light brownish gray (10YR 6/2) silt loam; massive; firm to friable (plow pan); few fine dark hard concretions; pH 6.5; clear wavy boundary.
7156	B_{2g}	16-29"	Dark gray (10YR 4/1) clay with many medium prominent red (2.5YR 5/6) mottles; moderate medium prismatic structure that breaks into strong fine angular blocky structure; firm; few large vertical cracks filled with gray (10YR 5/1) silt loam; pH 6.5; gradual wavy boundary.
7157	B_{3g}	29-48"	Yellowish brown (10YR 5/6) clay with common fine distinct gray (10YR 6/1) mottles; weak coarse angular blocky structure; firm; few fine dark and red soft to hard concretions; few large vertical cracks filled with gray (10YR 5/1) silt loam; pH 7.5; diffuse wavy boundary.
7158	C_g	48-60"	Light gray (2.5Y 7/2) clay with common medium distinct yellowish brown (10YR 5/8) mottles; moderate coarse angular blocky structure; firm; common medium soft to hard dark concretions; occasional rounded cavernous lime concretion approximately 3 inches in diameter. pH 8.0.
		60-85"	Light gray (10YR 7/1) clay mottled with brownish yellow (10YR 6/8).
		85-96"	Light gray (2.5Y 7/2) clay mottled with brownish yellow (10YR 6/6); pH 7.5.

Remarks: All colors are for moist conditions. pH by Hellige-Truog kit. 60-96" by bucket type soil auger. Rice culture has influenced color, pH, and structure of this soil. This sample represents the 5al-CO-A-1 (Crowley silt loam, level phase) mapping unit in Acadia Parish. This soil was developed on the Prairie formation of the Pleistocene terrace from old alluvium of the Mississippi and/or Red Rivers. There is possibility of loess influence in the surface. This site was mapped Crowley silt loam in the 1903 soil survey report of Acadia Parish. Commonly, the peds in the B horizon of Crowley profiles have complete coats of silt loam outside of complete distinct clay coats. The latter are sometimes obscured by the former.

SOIL SURVEY LABORATORY Lincoln, Nebr. Aug. 1958

SOIL TYPE Crowley silt loam, thick surface phase **LOCATION** Jefferson Davis Parish, Louisiana

SOIL NOS. S57La-27-1 **LAB. NOS.** 7168-7174

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-5	Ap	0.2a	0.2a	0.1b	4.1c	28.0c	60.1	7.3	60.9	31.1	Tr.	sil
5-8	A21g	0.2a	0.1a	0.1b	4.1c	26.9c	60.8	7.8	58.8	32.9	-	sil
8-12	A22g	0.7a	0.4a	0.1b	3.8c	25.5c	62.2	7.3	56.7	34.7	-	sil
12-22	A3g	0.9a	0.4a	0.1b	3.8c	24.6c	62.4	7.8	56.0	34.7	Tr.	sil
22-40	B2g	0.2a	0.1a	0.1b	2.8c	17.8c	44.5	34.5	40.2	24.8	Tr.	cl
40-52	C11g	-	-	-	3.2c	21.9c	46.0	28.9	47.9	23.1	-	cl
52-60+	C12g	-	-	-	4.4c	28.3c	42.0	25.3	57.4	17.3	-	l

8C1a pH 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N			6E1a $CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.3			1.28	0.101	12.7							3.9
5.7			0.76	0.072	11							3.9
6.0			0.35	0.040	9							3.6
5.4			0.28	0.034	8							3.5
5.0			0.29	0.053	5							14.0
5.2			0.08									11.9
5.9			0.02					-				10.6

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
6.1	1.7	1.0	3.6	0.2	0.1	49	45	3.0	6.6	1.7		
5.2	1.8	1.0	4.9	0.2	-	58	38	3.0	7.9	1.8		
4.4	1.8	1.1	1.2	0.2	-	70	72	3.1	4.3	1.6		
4.1	0.9	0.8	2.8	0.2	-	46	40	1.9	4.7			
16.4	3.7	3.3	9.4	0.9	0.2	49	46	8.1	17.5	1.1		
14.2	4.8	4.2	4.5	0.9	0.2	71	69	10.1	14.6	1.1		
14.1	6.1	5.2	2.9	1.0	0.2	89	81	12.5	15.4	1.2		

a. Many smooth and irregular light brown to dark brown concr.
b. Common smooth and irregular light brown to dark brown concr.
c. Few smooth and irregular light brown to dark brown concr.

857Ia-27-1

Described by Lester L. Loftin

Date: 11-14-57
Area: Jefferson Davis Parish, Louisiana
Location: SE, SW; Sec. 1, R4W, R8S; 2 mi. NW Raymond, 340 ft. from cross fence; 152 ft. N. of road center.
Vegetation: Tall prairie grasses; in rice-pasture rotation for approximately last 50 years.
Relief: Level (0-.6% slope), pimple mounds were present before land leveling.
Drainage: Imperfectly drained; slow internal drainage and runoff.
Permeability: Very slow.
Sampling party: James S. Allen, Head, SCS Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Louisiana; Henry L. Clark, Soil Scientist, Louisiana.

Lincoln Lab. No.		CROWLEY SILT LOAM, THICK SURFACE PHASE	
7168	A_p	0-5"	Dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; friable: common fine to medium dark hard concretions; staining around roots dark reddish brown (5YR 3/4); pH 5.5; abrupt smooth boundary.
7169	A_{21g}	5-8"	Gray (10YR 5/1) silt loam; moderate medium platy; firm (plow pan); staining around roots and peds dark reddish brown (5YR 3/4); few fine soft to hard dark concretions; abrupt smooth boundary.
7170	A_{22g}	8-12"	Gray (10YR 5/1) silt loam; massive; firm (plow pan); many fine soft to hard dark concretions; staining around roots dark reddish brown (5YR 5/3); pH 6.5; gradual wavy boundary.
7171	A_{3g}	12-22"	Light brownish gray (10YR 6/2) silt loam; massive; friable; few fine soft to hard dark concretions; many pin holes; yellowish red (5YR 4/6) around peds and small root channels; pH 5.5; abrupt wavy boundary.
7172	B_{2g}	22-40"	Light brownish gray (10YR 6/2) clay with many large prominent red (10R 4/8) to strong brown (7.5YR 5/8) mottles; moderate medium prismatic structure that breaks into moderate very fine angular blocky structure; firm; few fine dark soft to hard concretions; peds coated with dark gray (10YR 4/1) silt loam; few large vertical cracks or root channels filled with light brownish gray (10YR 6/2) very fine sandy loam with many pin holes; pH 5.0; diffuse wavy boundary.
7173	C_{11g}	40-52"	Light brownish gray (10YR 6/2) sandy clay with many medium to large distinct red (2.5YR 4/8) to strong brown (7.5YR 5/8) mottles; moderate coarse prismatic structure that breaks into moderate medium angular blocky structure; firm; few fine soft to hard dark concretions; few small dark root fossils; few large vertical cracks or root channels filled with light brownish gray (10YR 6/2) very fine sandy loam with many pin holes; pH 5.0; diffuse wavy boundary.
7174	C_{12g}	52-60"+	Light gray (10YR 7/2) sandy clay with common large prominent yellowish brown (10YR 5/8) mottles; moderate coarse prismatic structure that breaks into moderate medium angular blocky structure; firm; few large vertical cracks or root channels filled with light brownish gray (10YR 6/2) fine sandy loam with many pin holes; few small dark root fossils; pH 5.5.
		60-75"	Light gray (10YR 7/2) sandy clay loam. Mottled with brownish yellow.
		75-90"	Variegated yellowish brown (10YR 5/6) and light gray (10YR 7/1) clay; pH 6.5.

Remarks: All colors are for moist condition. pH by Hellige-Truog kit. 60-90" by bucket type soil auger. Rice culture has influenced color, pH, and structure of this soil. The vertical cracks extend in variable depths from 22" to 60". This sample represents the M5al-Co-A-1 (Crowley silt loam, thick surface, level phase) mapping unit in Jefferson Davis Parish. This soil was developed on the prairie formation of the Pleistocene terrace from old alluvium of the Mississippi and/or Red Rivers and possibly the Calcasieu River. There is possibility of loess influence in the surface. Commonly, Crowley profiles have coats of silt outside of distinct clay films on the peds in the B horizon. The silt coats may obscure the clay films.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Crowley silt loam, thick surface phase **LOCATION** Jefferson Davis Parish, Louisiana

SOIL NOS. S57La-27-2 **LAB. NOS.** 7175-7181

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-5	Ap	0.2a	0.3a	0.1b	0.4c	3.1c	84.8	11.1	37.9	50.3	Tr.	si
5-9	A2g	1.8a	0.8a	0.2b	0.5c	2.8c	78.9	15.0	33.9	48.2	Tr.	sil
9-17	A3g	1.8a	1.1a	0.2b	0.4c	2.8c	79.2	14.5	34.5	47.8	Tr.	sil
17-24	B1g	1.1a	0.6a	0.1b	0.4c	2.3c	74.0	21.5	31.5	45.1	Tr.	sil
24-44	B2g	0.8a	0.4a	0.1b	0.3c	2.0c	59.6	36.8	25.0	36.8	Tr.	sicl
44-50	C11g	0.8a	0.3a	0.1b	0.2c	2.3c	69.1	27.2	30.2	41.4	Tr.	sicl
50-60+	C12g	0.4a	0.3a	0.1b	0.2c	2.1c	65.6	31.3	29.3	38.6	Tr.	sicl

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.1			1.06	0.093	11			5.2
6.3			0.49	0.060	8			6.7
5.1			0.26	0.039	7			6.1
5.2			0.29	0.046	6			9.0
5.4			0.42					15.4
5.5			0.09					11.4
5.7			0.05					13.0

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
7.2	2.0	1.0	4.5	0.2	0.2	47	43	3.4	7.9	2.0		
8.0	3.8	1.6	2.8	0.2	0.1	71	67	5.7	8.5	2.4		
6.6	1.6	1.1	3.6	0.2	-	44	45	2.9	6.5	1.4		
9.6	1.7	1.5	5.3	0.4	0.1	38	41	3.7	9.0	1.1		
17.0	4.4	3.8	9.0	0.9	0.2	55	51	9.3	18.3	1.2		
13.5	5.2	4.4	3.3	0.8	0.2	78	76	10.6	13.9	1.2		
15.3	6.8	5.6	2.5	0.9	0.2	88	84	13.5	16.0	1.2		

a. Many smooth and irregular light brown to dark brown concr.
b. Common smooth and irregular light brown to dark brown concr.
c. Few smooth and irregular light brown to dark brown concr.

857La-27-2

Described by Lester L. Loftin

Date: 11-14-57.
Area: Jefferson Davis Parish, Louisiana
Location: SW, SW, Sec. 17, R3W, T7S; 3 mi. S. Elton; 382 ft. E. of intersection; 100 ft. N. of road center.
Vegetation: Tall prairie grasses; in rice-pasture rotation for approximately last 50 years.
Relief: Level (0-.6% slope). Pimple mounds were present before land leveling.
Drainage: Imperfectly drained; slow internal drainage and runoff.
Permeability: Very slow.
Sampling party: James S. Allen, Head, SCS Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Louisiana; Henry L. Clark, Soil Scientist, Louisiana.
Lincoln

Lab. No.			CROWLEY SILT LOAM, THICK SURFACE PHASE
7175	A_p	0-5"	Grayish brown (10YR 5/2) silt loam; weak very fine granular structure; friable; staining around roots dark yellowish brown (10YR 3/4); many fine hard brownish concretions; pH 5.5; abrupt smooth boundary.
7176	A_{2g}	5-9"	Gray (10YR 5/1) silt loam; moderate medium platy structure; firm (plow pan); dark brown staining around roots and peds; common small soft to hard brownish concretions; pH 6.5; abrupt smooth boundary.
7177	A_{3R}	9-17"	Light brownish gray (10YR 6/2) silty clay loam with common fine distinct yellowish brown (10YR 5/8) mottles; massive; firm (plow pan); common soft to hard brownish concretions; many pin holes; pH 5.0; gradual wavy boundary.
7178	B_{1g}	17-24"	Light brownish gray (10YR 6/2) silty clay with many medium prominent red (10R 4/8) mottles; moderate medium prismatic structure that breaks into moderate very fine angular blocky structure; firm; few fine hard concretions; few large vertical cracks or root channels filled with light brownish gray (10YR 6/2) silt loam with many pin holes; pH 5.0; gradual wavy boundary.
7179	B_{2g}	24-44"	Light brownish gray (10YR 6/2) clay with many large prominent dark red (10R 3/6) to red (10R 4/8) mottles; moderate medium prismatic structure that breaks into strong very fine angular blocky structure; firm; few large vertical cracks or root channels filled with light brownish gray (10YR 6/2) silt loam with many pin holes; peds coated with gray (10YR 5/1) silt loam; common fine dark hard concretions; pH 5.0; diffuse wavy boundary.
7180	C_{11g}	44-50"	Light brownish gray (10YR 6/2) silty clay with many large prominent red (2.5YR 4/8) to yellowish brown (10YR 5/8) mottles; moderate coarse prismatic structure that breaks into weak medium angular blocky structure; firm; few large vertical cracks or root channels filled with light brownish gray (10YR 6/2) silt loam; many fine hard brownish concretions; few small dark root fossils; pH 5.5; diffuse wavy boundary.
7181	C_{12g}	50-60"+	Gray (10YR 6/1) silty clay with many large prominent yellowish brown (10YR 5/8) mottles; moderate coarse prismatic structure that breaks into weak medium angular blocky structure; firm; few large vertical cracks or root channels filled with light brownish gray (10YR 6/2) silt loam; few fine dark hard concretions; few small dark root fossils; pH 6.0.
		65-83"	Mottled gray clay.
		83-96"	Strong brown (7.5YR 5/6) clay; pH 6.5.

SOIL SURVEY LABORATORY

Beltsville, Maryland

LOCATION St. Mary Parish, La. SOIL TYPE Iberia Silty Clay

Lab. Nos. 52906-52910 Field Nos. 22(1-5)

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1b PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
52906	0-4	Ap	0.0	0.1	0.2	1.5	10.9	60.7	26.6	38.6	34.3	0	
52907	4-10	A3	0.0	0.1	0.1	1.0	7.8	62.0	29.0	34.1	36.6	0	
52908	10-22	B2	0.0	0.1	0.3	0.7	8.8	49.3	40.8	33.8	24.8	0	
52909	22-28	B3	0.7	0.9	0.4	1.3	9.6	47.3	39.8	34.2	23.5	0	
52910	28-44	C1	0.1	0.2	0.2	0.5	9.1	56.9	33.0	37.8	28.6	0	

	pH 8C1a 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	NITROGEN %	C/N	FREE IRON OXIDE Fe_2O_3 %			BULK DENSITY g/cc	MOISTURE RETAINED AT 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
52906	6.2			1.65									
52907	6.4			1.66									
52908	7.6			1.06									
52909	7.9			0.69									
52910	7.6			0.29									

	5A3a CATION EXCHANGE CAPACITY (SUM)	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	BASE SATURATION % 5C3 (SUM)						
		milliequivalents per 100g soil											
52906	30.0	14.8	8.8	0.2	0.1	6.1	80						
52907	32.3	15.9	10.2	0.3	0.1	5.8	82						
52908	37.7	19.3	14.6	0.5	0.2	3.1	92						
52909	42.1	26.2	13.9	0.5	0.2	1.3	97						
52910	26.7	13.5	10.8	0.4	0.2	1.8	93						

IBERIA SILTY CLAY Sample No. 22

Location: St. Mary Parish, Louisiana. Home Place Plantation.

Samples Collected by: B. N. Driskell and S. A. Lytle, September 26, 1952.

Profile Described by: B. N. Driskell and S. A. Lytle, September 26, 1952.

HORIZON, BELTSVILLE LAB. NO., AND DEPTH		DESCRIPTION
Ap 52906	0-4"	Very dark gray (10YR 3/1) and black (10YR 2/1) strong fine granular silty clay; slightly plastic moist. pH 6.8
A3 52907	4-10"	Very dark gray (10YR 3/1) compact silty clay; moderate medium platy and moderate medium angular blocky structure; slightly plastic moist. (Plow sole). pH 7.0
B2 52908	10-22"	Very dark gray (10YR 3/1) strong medium angular blocky plastic clay; occasional distinct fine mottles of brown (10YR 5/3) and light yellowish brown (10YR 6/4) in lower part. pH 8.0
B3 52909	22-28"	Dark gray (10YR 4/1) mottled pale brown (10YR 6/3), yellowish brown (10YR 5/4) and brown (10YR 5/3), plastic, sticky clay; strong medium angular blocky structure; few small soft rounded iron concretions; few marble-size, irregular shaped soft and hard lime concretions. pH 8.0
C1 52910	28-44"	Light yellowish brown (10YR 6/4) mottled light brownish gray (10YR 6/2) silty clay loam to light silty clay; friable moist; slightly plastic wet; with large mottles and veins of dark gray (10YR 4/1) and gray (10YR 5/1); massive to weak medium columnar structure; few lime concretions. pH 8.0

SOIL SURVEY LABORATORY Lincoln, Nebr. Revised July 1959

SOIL TYPE Ruston fine sandy loam, hard substratum **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S57La-8-1 **LAB. NOS.** 5640-5646

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-6	Ap	1.7	1.8	2.6	35.2	22.7	29.3	6.7	70.4	9.9	3	fsl
6-10	B1	1.5	1.2	1.9	28.0	20.8	33.6	13.0	64.5	13.6	Tr.	fsl
10-18	B21	1.6	0.8	1.5	24.0	18.5	31.3	22.3	56.6	13.6	Tr.	l
18-24	B22	3.2	3.3	1.5	19.0	16.2	29.9	26.9	47.1	14.4	4	l
24-29	B3	3.2	1.2	1.4	22.6	18.8	28.0	24.8	55.4	10.5	5	l/scl
29-36	D1	3.4	1.5	1.6	24.7	20.0	25.8	23.0	57.2	9.2	8	scl
36-46+	D2	8.1	1.9	1.8	23.5	19.2	22.5	23.0	54.1	7.3	13	scl

8C1a pH 1:1	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	4B1a MOISTURE TENSIONS 1/10 ATMOS. %	4B1a 1/3 ATMOS. %	4B2 15 ATMOS. %
5.7			1.01	0.059	17	16.5	7.6	3.0
5.3			0.28	0.025	11	18.2	10.9	4.4
5.2			0.24	0.027				7.8
5.2			0.14	0.021				9.7
5.1			0.12					9.2
5.2			0.07					8.2
5.2			0.09					9.1

5A1a CATION EXCHANGE CAPACITY NH_4Ac	6N2b Ca	6Q2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. * NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
←	EXTRACTABLE CATIONS 5B1a milliequivalents per 100g. soil				→						
4.7	1.4	0.5	3.2	-	0.2	45	40	2.1	5.3		
3.7	1.0	0.5	2.8	-	0.1	43	36	1.6	4.4		
6.4	1.2	1.4	5.7	-	0.1	42	32	2.7	8.4	0.8	
8.8	0.8	1.7	7.0	-	0.1	30	27	2.6	9.6		
7.1	0.4	1.4	7.0	-	0.1	27	21	1.9	8.9		
6.8	-	1.2	6.1	-	0.1	19	18	1.3	7.4		
7.6	-	1.5	6.6	-	0.1	21	20	1.6	8.2		

Rev. July 1959

S57La-8-1

Described by Lester L. Loftin

Date: 5-20-57
Area: Bossier Parish, Louisiana
Location: Aerial photograph No. CEX 10G-100; NW, NE, Sec. 19, R12W, T22N: 645 feet east from center of road intersection then 156 feet north of center of road up lane then west 21 feet.
Vegetation: Native - pine-hardwood forest; present - pine trees and carpet grass. Was in cultivation approximately 15 years ago.
Relief: Nearly level (1 - 3% slope) upland.
Drainage: Well drained; medium runoff and internal drainage.
Permeability: Moderately slow.
Sampling party: James S. Allen, Head, Soil Conservation Service Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Alexandria, Louisiana; Bruce Chaffin, Chief of Survey Party, Shreveport, La.

Lincoln Lab. No.			RUSTON FINE SANDY LOAM, HARD SUBSTRATUM
5640	A_p	0-6"	Dark brown (10YR 4/3) fine sandy loam, weak medium granular structure, very friable, few small, hard concretions; numerous roots; pH 6; abrupt smooth boundary.
5641	B_1	6-10"	Yellowish red (5YR 4/8) fine sandy loam, weak fine to medium subangular blocky structure; friable; few small hard concretions; many roots; pH 5.5; clear smooth boundary.
5642	B_{21}	10-18"	Yellowish red (5YR 4/8) sandy clay loam, moderate fine to medium subangular blocky structure; friable; few medium hard concretions; roots common; pH 5, clear smooth boundary.
5643	B_{22}	18-24"	Strong brown (7.5YR 5/6) sandy clay loam, moderate medium angular blocky structure; friable; common medium hard concretions; roots common; pH 5; clear wavy boundary.
5644	B_3	24-29"	Strong brown (7.5YR 5/6) loam; with few medium distinct mottles of dark red (2.5YR 3/6); moderate fine subangular blocky structure; friable, common medium hard concretions; roots few, pH 4.5; clear wavy boundary.
5645	D_1	29-36"	Variegated dark red (2.5YR 3/6) and yellowish brown (10YR 5/4) sandy clay loam with pockets of sandy loam; weak fine angular blocky structure; firm; hard and brittle when dry; common medium and large hard concretions; few roots; pH 4.5; gradual smooth boundary.
5646	D_2	36-46"+	Variegated dark red (2.5YR 3/6) and yellowish brown (10YR 5/4) sandy clay loam with pockets of sandy loam; weak fine angular blocky structure; very firm; very hard and brittle when dry; common medium and large hard concretions; very few roots; pH 4.5.

SOIL SURVEY LABORATORY Lincoln, Nebr. Revised July 1959

SOIL TYPE Ruston fine sandy loam, hard substratum **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S57La-8-2 **LAB. NOS.** 5647-5653

DEPTH INCHES	HORIZON	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	0.2-0.02	0.02-0.002	2A2 > 2 (19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										
0-5	Ap	2.8	0.8	0.9	46.7	24.9	20.2	3.7	80.3	7.1	14	lfs
5-10	A31	2.7	0.7	0.5	36.9	22.8	27.0	9.4	70.9	11.0	3	fsl
10-17	A32	2.8	0.5	0.4	37.6	21.9	25.1	11.7	69.4	10.8	5	fsl
17-27	B2	3.0	0.6	0.4	30.7	17.7	19.8	27.8	55.0	9.2	10	scl
27-33	B3	2.4	0.6	0.4	31.1	17.8	15.5	32.2	54.7	6.2	7	scl
33-45	D1	0.6	0.2	0.2	29.7	17.1	11.6	40.6	51.5	4.4	1	sc
45-55+	D2	0.1	0.1	0.1	37.0	17.4	9.8	35.5	56.9	4.5	-	scl

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	MOISTURE TENSIONS 4B1a 1/10 ATMOS. %	4B1a 1/3 ATMOS. %	4B2 15 ATMOS. %
5.9			0.57	0.041	14	11.3	5.5	2.1
5.5			0.25	0.019	13	13.3	7.7	2.7
5.3			0.13	0.013		15.8	9.5	4.1
5.2			0.11	0.021				9.8
5.1			0.08					11.5
4.9			0.06					15.2
4.9			0.06					12.0

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH.	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→	5C1						
2.9	0.8	0.4	2.8	-	0.1	45	32	1.3	4.1			
2.9	0.6	0.4	1.6	-	0.2	41	43	1.2	2.8			
3.5	0.4	0.5	2.8	-	0.1	28	26	1.0	3.8			
8.7	-	2.0	7.0	-	0.2	25	24	2.2	9.2			
10.3	-	2.0	7.8	-	0.2	21	22	2.2	10.0			
11.5	0.6	2.9	8.7	-	0.2	32	30	3.7	12.4			
12.1	-	2.4	7.8	-	0.1	21	24	2.5	10.3			

Rev. July 1959

S57La-8-2

Described by Lester L. Loftin

Date: 5-21-57
Area: Bossier Parish, Louisiana
Location: Aerial photograph CEX 9G-39; SE, SW, Sec. 23, R13W, T22N; 395 feet south of center of road intersection, then 43 feet west of center of road.
Vegetation: Native - pine-hardwood forest; present - volunteer native grasses; was in cultivation three years ago.
Relief: Nearly level (1-3%) upland.
Drainage: Well drained; medium runoff and internal drainage.
Permeability: Moderately slow.
Sampling party: James S. Allen, Head, Soil Conservation Service, Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Alexandria, Louisiana; and Bruce Chaffin, Chief of Survey Party, Shreveport, Louisiana.

RUSTON FINE SANDY LOAM, HARD SUBSTRATUM

Lincoln Lab. No.			
5647	Ap	0-5"	Brown (10YR 5/3) fine sandy loam, moderate fine granular structure; very friable; few medium hard concretions; many roots; pH 6; abrupt smooth boundary.
5648	A31	5-10"	Strong brown (7.5YR 5/6) fine sandy loam; massive structure (traffic pan); friable; few medium hard concretions; many roots; pH 5.5; clear smooth boundary.
5649	A32	10-17"	Strong brown (7.5YR 5/6) fine sandy loam; weak medium subangular blocky structure; very friable; few medium hard concretions; many roots; pH 5.5; abrupt wavy boundary.
5650	B2	17-27"	Yellowish red (5YR 4/8) clay loam; moderate medium subangular structure; firm; few medium hard concretions; roots common; pH 4.5; clear smooth boundary.
5651	B3	27-33"	Yellowish red (5YR 5/8) sandy clay loam; moderate medium angular blocky structure; friable; common medium hard concretions; few roots; abrupt wavy boundary.
5652	D1	33-45"	Red (2.5YR 4/8) sandy clay with pockets of fine sandy loam; with common medium distinct strong brown (7.5YR 5/6) mottles; moderate medium angular blocky structure; firm; hard and brittle when dry; pH 4; gradual wavy boundary.
5653	D2	45-55"+	Dark red (2.5YR 3/6) sandy clay with pockets of fine sandy loam; with common large distinct strong brown (7.5YR 5/8) mottles; moderate fine angular blocky structure; very firm; very hard and brittle when dry; pH 4.

SOIL SURVEY LABORATORY Beltsville, Maryland

SOIL TYPE Tilden very fine sandy loam **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S56La-8-2 **LAB. NOS.** 56614-56621

DEPTH INCHES	HORIZON	1B1b PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) a							3A1		2A2	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	0.2-0.02	0.02-0.002	> 2	
0-7	Ap	0.6	0.7	0.3	5.4	41.9	46.0	5.1	79.5	12.8	-	vfsl
7-9	A3	0.3	0.6	0.2	2.9	24.7	54.3	17.0	59.2	22.1	-	sil
9-20	B2	0.4	0.6	0.2	2.6	25.2	47.6	23.4	54.1	20.9	-	l
20-27	B3	0.2	0.4	0.2	2.6	28.5	45.2	22.9	57.9	18.0	-	l
27-31	A2b	0.2	0.2	0.1	2.4	27.3	47.8	22.0	61.1	16.1	-	l
31-38	A3b	0.1	0.1	0.1	2.0	27.3	45.3	25.1	59.0	15.4	-	l
38-45	B1b	0.1	0.0	0.0	1.3	28.3	39.5	30.8	57.0	11.8	-	cl
45-61	B2b	0.0	0.0	0.0	0.5	31.1	40.1	28.3	60.6	10.9	-	cl

pH 8C1a b 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN b %	C/N	5A3a CATION EXCHANGE CAPACITY (Sum)	EXTRACTABLE CATIONS 5B1a 6N2d Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % on Sum Cations 5C3
						milliequivalents per 100g. soil						
5.8			0.20	0.032		4.3	1.4	0.6	2.1	< 0.1	0.2	51
5.6			0.17			7.4	2.7	1.3	3.1	< 0.1	0.3	58
5.3			0.13	0.029		10.5	2.8	2.4	4.9	0.1	0.3	53
5.1			0.04			10.2	0.9	1.8	7.1	0.1	0.3	30
5.1			0.00			9.2	0.4	1.8	6.7	0.1	0.2	27
5.1			0.00			10.8	0.5	1.9	8.0	0.1	0.3	26
5.0			0.00			13.1	0.2	2.5	9.9	0.2	0.3	24
4.8			0.04			14.9	0.2	3.4	10.8	0.2	0.3	28

7C1 TOTAL ANALYSIS c

DEPTH INCHES	SiO_2 %	TiO_2 %	Fe_2O_3 %	Al_2O_3 %
0-7	92.08	.61	1.24	3.24
7-9	87.33	.74	1.82	5.40
9-20	83.66	.72	2.61	8.42
20-27	84.47	.71	2.39	7.69
27-31	85.60	.70	2.17	7.60
31-38	85.26	.72	2.29	8.28
38-45	82.70	.64	2.85	9.47
45-61	81.25	.62	2.77	9.94

CLAY MINERALOGY 7A

7-9" - Montmorillonite dominates, moderate illite and small amount of kaolinite. No gibbsite.

20-27" - Montmorillonite dominant, illite about the same, increase in kaolinite - twice as much but still only about 10 percent.

31-38" - About the same as above but slight increase in illite and kaolinite.

45-61" - Different. Glycolated pattern consists of random scatter rising continuously past 10 Å mixed layer material. Illite peak fairly strong. According to DTA kaolin increases slightly and about 10 percent gibbsite is present.

a. A few concretions present in sands.
b. Data furnished by B. N. Driskell, Louisiana State University.
c. Complete analysis available from Beltsville Soil Survey Laboratory.

TILDEN VERY FINE SANDY LOAM

S56La-8-2

Location: Bossier Parish, Louisiana near Egan Young's Store.
Date: July 24, 1956. **Described by: Marvin Lawson and L. L. Loftin.**

Depth BSL No.	Horizon	Description
0-7" 56614	Ap	Dark brown (7.5YR 4/4) moist, friable very fine sandy loam, moderate to strong fine granular structure. pH 6.0.
7-9" 56615	A3	Dark brown (7.5YR 4/4) moist, compact very fine sandy loam; massive structure, compact and hard when dry. pH 6.0.
9-20" 56616	B2	Yellowish red (5YR 4/6) moist silty clay loam; friable moist, compact and firm when dry. Clay skins of darker shade of color on peds; moderate medium subangular blocky structure, few roots. pH 5.5.
20-27" 56617	B3	Strong brown (7.5YR 5/6) friable silty clay loam, containing a few small vesicles and small roots, few brown concretions; weak medium subangular blocky structure; some pinkish gray (7.5YR 6/2) silt coating on peds and in cracks. pH 5.0.
27-31" 56618	A2b	Mottled strong brown (7.5YR 5/6) and yellowish red (5YR 5/8), compact and firm, heavy silt loam; contains a few mottles of reddish yellow (5YR 6/8) and a few streaks of light yellowish brown (10YR 6/4), moderate medium subangular blocky structure; contains many fine vesicles. pH 5.0.
31-38" 56619	A3b	Yellowish red (5YR 5/6) mottled red (2.5YR 4/8) friable sandy clay loam; compact and firm when dry; contains many small vesicles; few reddish brown concretions and a few streaks of light brown (7.5YR 6/4); strong medium subangular blocky structure. pH 4.5.
38-45" 56620	B1b	Yellowish red (5YR 4/8) mottled reddish yellow (5YR 6/6) friable silty clay loam; moderate to strong medium angular blocky structure; contains a few streaks of pinkish gray (7.5YR 6/2). pH 4.5.
45-61" 56621	B2b	Red (2.5YR 4/8) mottled dark red (2.5YR 3/6) friable sandy clay loam; strong coarse angular blocky structure; veins of pinkish gray (7.5YR 6/2) very fine sand in cracks and on some peds. pH 4.5.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Tilden very fine sandy loam **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S57La-8-3 **LAB. NOS.** 5654-5660

DEPTH INCHES	HORIZON	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	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-5	Ap	1.0	0.5	0.2	12.4	45.0	36.0	4.9	83.8	9.0	-	vfsl
5-11	B21	0.8	0.4	0.1	7.8	30.1	41.3	19.5	61.7	17.2	-	l
11-17	B22	0.4a	0.4a	0.1a	7.2a	26.7a	39.5	25.7	55.0	18.2	-	l
17-25	B23	0.7a	0.3a	0.1a	5.1a	28.9a	38.7	26.2	54.9	17.7	-	l
25-33	B31	0.8a	0.3a	0.1a	7.7a	30.7a	38.3	22.1	60.0	16.6	-	l
33-44	B32mg	0.5a	0.5a	0.2a	8.9a	34.0a	37.9	18.0	63.7	16.9	-	l
44-54+	Dg	0.1a	0.2a	0.1a	5.6a	24.0a	27.0	43.0	44.3	12.2	-	c

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	MOISTURE TENSIONS 4B1a 1/10 ATMOS. %	4B1a 1/3 ATMOS. %	4B2 15 ATMOS. %
6.1			0.45	0.038	12	14.7	8.2	2.2
5.0			0.20	0.026				6.9
4.7			0.14	0.029				9 8
4.8			0.11	0.026				10.1
5.0			0.06					8.4
5.1			0.05					6.5
4.6			0.06					17.0

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cation	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
3.1	1.4	0.8	2.0	-	0.2	77	54	2.4	4.4			
7.1	1.7	1.6	5.7	0.1	0.2	51	39	3.6	9.3	1.1		
10.5	-	1.5	9.4	-	0.2	16	15	1.7	11.1			
9.8	-	1.2	10.7	0.1	0.2	15	12	1.5	12.2			
8.4	-	1.0	8.6	0.1	0.1	14	12	1.2	9.8			
6.8	-	0.9	6.1	0.1	0.1	16	15	1.1	7.2			
21.7	-	4.8	17.2	1.1	0.4	29	27	6.3	23.5			

a. Common smooth brown concr.

S57La-8-3

Described by Lester L. Loftin

Date: 5-21-57
Area: Bossier Parish, Louisiana
Location: Aerial photograph No. CEX 7G-53; NW, NE, Sec. 17; R11W, T21N; 1288 feet north of center of road intersection (LA-160 and LA-529), then 157 feet east of center of LA-529.
Vegetation: Native - pine-hardwood forest; present - ryegrass and crimson clover.
Relief: Nearly level (1-3% slope).
Drainage: moderately well drained; medium runoff and internal drainage.
Permeability: Moderately slow.
Sampling party: James S. Allen, Head, Soil Conservation Service, Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Alexandria, Louisiana; and Bruce Chaffin, Chief of Survey Party, Shreveport, Louisiana.

TILDEN VERY FINE SANDY LOAM

Lincoln Lab. No.			
5654	A_p	0-5"	Brown (10YR 5/3) very fine sandy loam; weak medium granular structure; very friable; common small soft to hard dark concretions; numerous roots; pH 6; abrupt smooth boundary.
5655	B_{21}	5-11"	Yellowish red (5YR 4/6) clay loam; weak medium subangular structure; friable; many roots; pH 5; clear smooth boundary.
5656	B_{22}	11-17"	Yellowish red (5YR 4/8) clay loam; weak medium subangular blocky structure; friable; many roots; pH 4.5; clear smooth boundary.
5657	B_{23}	17-25"	Yellowish brown (10YR 5/4) silty clay loam with very faint mottling of yellowish red; weak medium angular blocky; friable; few roots; common small soft to hard dark concretions; pH 4.5; clear smooth boundary.
5658	B_{31}	25-33"	Light yellowish brown (10YR 6/4) loam with many medium prominent strong brown (7.5YR 5/6) mottles; strong coarse angular blocky structure that breaks into moderate medium subangular blocky structure; firm; few small soft to hard dark concretions; pH 4.5; abrupt wavy boundary.
5659	B_{32mg}	33-44"	Light gray (10YR 7/2) silty clay loam with common medium and large distinct brownish yellow (10YR 6/6) mottles; weak coarse prismatic structure that breaks into weak medium subangular structure; very firm; very hard when dry; many medium soft to hard dark concretions; pH 4.5; abrupt wavy boundary.
5660	D_g	44-54"+	Light gray (2.5YR 7/2) clay with common medium prominent yellowish red (5YR 4/6) mottles; weak coarse prismatic structure that breaks into strong very fine angular blocky structure; very firm; very hard when dry; films of very fine sand between prisms; pH 4.0.

SOIL SURVEY LABORATORY Lincoln, Nebr. January, 1962

SOIL TYPE Verdun silt loam **LOCATION** East Baton Rouge Parish, Louisiana

SOIL NOS. S61La-17-9 **LAB. NOS.** 15090-15097

DEPTH INCHES	HORIZON	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	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-4	Ap1	2.0a	1.5a	0.3b	0.4b	2.0b	83.5	10.3	46.9	38.8	-	si
4-7	Ap2	1.8a	1.6a	0.3a	0.4a	1.4c	79.5	15.0	40.4	40.7	-	sil
7-11	B21	0.6a	0.4a	0.2b	0.4b	1.1c	68.6	28.7	34.1	35.8	-	sicl
11-15	B22	0.1a	0.1a	0.1b	0.3b	1.3c	69.7	28.4	37.4	33.8	-	sicl
15-21	B3	<0.1	0.1a	0.1b	0.3b	1.4	70.6	27.5	37.8	34.4	-	sicl/sil
21-32	C1	0.2a	0.3a	0.2a	0.3d	1.3d	69.7	28.0	35.7	35.5	5	sicl
32-44	C21	0.2a	0.3a	0.1a	0.3d	1.1d	73.8	24.2	39.3	35.8	-	sil
44-60+	C22	0.1a	0.2a	0.1a	0.3a	1.3	75.4	22.6	32.5	44.4	-	sil

8C1b pH SATURATED PASTE	6E1c $CaCO_3$ Equivalent %	Organic Matter 6A1a O.C. %	6B1a N %	C/N	Bulk Density Field Moist 4B4 % M.	Field Moist 4A1a g/cc	30 Cm. 4B3 % M.	30 Cm. 4A1c g/cc	4A1b A.D. g/cc	MOISTURE TENSIONS 4B1b 1/3 ATMOS. Pieces %	1/3 ATMOS. Sieved %	4B2 15 ATMOS. Sieved %
5.5		1.42	0.115	12	23.8	1.43	29.6	1.38	1.45	24.9		6.2
5.8		0.71	0.072	10								7.8
6.7	< 1	0.52	0.068	8								14.9
7.4	< 1	0.29	0.038	8								14.5
7.9	< 1	0.24	0.031									14.9
8.4	< 1	0.11	0.018		16.7	1.60	29.0	1.40	1.70	26.1		16.2
8.3	< 1	0.06										14.4
8.0	< 1	0.03			21.0	1.60	30.8	1.41	1.68	25.1		13.1

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5B1a Exch. Na on NH_4OAc CEC %	5D2 Sat. Ext. Sol. 6P1a Na	6Q1a K	8A1a Elec. Cond. $ECx10^3$ mmhos.	8A Moist. at Sat. %	6C1a Free Iron Fe_2O_3 %	6G1a Ext. Al me/100g.
←	milliequivalents per 100g. soil				→		me. per liter					
6.8	1.9	1.0	6.2	0.4	0.1	4	3.1	0.1	0.5	42.9	1.8	< 1
7.6	1.7	1.0	6.5	1.2	0.1	14	3.4	<0.1	0.4	37.9	1.9	< 1
15.5	5.6	4.0	4.5	5.2	0.2	32	4.2	<0.1	0.5	65.8	1.3	< 1
17.7	6.4	5.0	1.9	6.2	0.2	33	4.1	0.1	0.5	70.0	0.9	
17.0	6.6	5.3	1.6	6.7	0.2	38	4.1	<0.1	0.5	76.4	0.9	
16.7	8.9	5.1	0.7	7.2	0.2	40	6.4	<0.1	0.8	93.9	1.6	
15.5	9.0	4.2	1.4	5.7	0.2	34	6.6	<0.1	0.8	80.2	1.6	
15.1	8.3	3.8	1.2	4.6	0.2	28	4.8	<0.1	0.6	71.8	1.2	

a. Many Fe/Mn-bearing(?) aggregates.
b. Common Fe/Mn-bearing(?) aggregates.
c. Few Fe/Mn-bearing(?) aggregates.
d. Few Fe/Mn-bearing(?) aggregates. Trace carbonate concr. $CaCO_3$?

VERDUN SILT LOAM
S61La-17-9

Location: East Baton Rouge Parish, Louisiana. 0.5 mile south of Sharp Station and 100 feet east of Sharp Station Road; western part of Sec. 6, T7S, R2E. Photo 1K-203 (1953).
Vegetation and Use: Unimproved pasture; poor growth of Bermudagrass; some carpetgrass and broomsedge.
Slope and Land Form: Level; slightly undulating microrelief in places; less than one percent slope; associated depressions of Iberia, Jeanerette and Frost soils. Elevation 50 feet, which is the high elevation between Comite River on the north and Ward Creek on the south.
Drainage and Permeability: Upper soil layers restricted in drainage and slowly permeable, lower soil layers are moderately permeable; surface runoff slow to very slow; internal drainage slow. Below the surface layer, this soil has the oxidized brown color characteristic of well-drained soils.
Parent Material: Older alkaline alluvium.
Samples Collected by: J. S. Allen, D. C. McMurtry, Leon Nugent, H. L. Clark, J. E. Seaholm. May 11, 1961.
Profile Described by: H. L. Clark, J E. Seaholm, S. A. Lytle. May 11, 1961.

Depth, Lincoln Lab. No., and	Horizon	Description
0-4" 15090	Ap1	Grayish brown (10YR 5/2) silt loam, light brownish gray (10YR 6/2) dry; strong very fine and fine granular structure; friable; many medium and fine roots; few small soft brown concretions; strongly acid (pH 5.5); abrupt smooth boundary.
4-7" 15091	Ap2	Grayish brown (10YR 5/2) silt loam; many fine distinct dark brown or dark grayish brown mottles or stainings of manganese oxide; moderate very fine and fine granular structure; firm; many fine and medium sized roots; common small soft and hard black and brown concretions; strongly acid (pH 5.5); abrupt wavy boundary.
7-11" 15092	B21	Very dark grayish brown (10YR 3/2) light silty clay; moderate to strong coarse prismatic structure; very firm moist, very hard dry; wet sticky clay or silty clay on top of prisms and as coating on upper parts of prisms; common ped coatings of grayish brown (10YR 5/2) silt or silt loam, pale brown to light gray dry (10YR 6/2 to 7/2); common fine roots, most of which are on outside of prisms; few small soft brown concretions; slightly acid (pH 6.5); diffuse wavy boundary.
11-15" 15093*	B22	Olive brown (2.5Y 4/4) light silty clay to silty clay loam, grayish brown (2.5Y 5/2) dry; strong medium subangular blocky structure and moderate coarse prismatic structure; very firm moist; peds commonly coated with light gray (10YR 7/2) silt; few ped coatings and vertical veins of very dark grayish brown (10YR 3/2) silty clay; few fine roots between peds; common small soft black and brown concretions; moderately alkaline (pH 8.0); diffuse wavy boundary.

* Sampled for Bureau of Public Roads and Louisiana Department of Highways.

15-21" 15094	B3	Dark yellowish brown (10YR 4/4) silty clay loam, light olive brown (2.5Y 5/4) dry; massive to weak medium subangular blocky structure; firm; common ped coatings of light brownish gray (10YR 6/2) silt, light gray (10YR 7/2) dry; few patchy ped coatings and root channel fillings of very dark grayish brown (10YR 3/2) silty clay; few fine roots; common small soft brown and black concretions; moderately alkaline (pH 8.0); diffuse wavy boundary.
21-32" 15095*	C1	Olive brown (2.5Y 4/4) silt loam to silty clay loam, yellowish brown (10YR 5/6) dry; few fine distinct mottles of light brownish gray (10YR 6/2); massive; friable moist, firm dry; few vertical veins of brown (10YR 5/3) silt or silt loam and very dark grayish brown (10YR 3/2) silty clay; few small and large (1/8 inch to 3 inch) lime-silica concretions; 3 percent small soft and hard brown and black concretions; moderately alkaline (pH 8.0); diffuse irregular boundary.
32-44" 15096	C21	Light olive brown (2.5Y 5/4) silt loam to light silty clay loam, light yellowish brown (2.5Y 6/4) dry; few fine faint yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles; massive; friable moist, firm dry; occasional small vertical veins of very dark grayish brown (10YR 3/2) silty clay; few small and large (1/8 inch to 3 inch) lime-silica concretions; few small soft black and brown concretions; moderately alkaline (pH 8.0); arbitrary boundary.
44-60"+ 15097*	C22	Light olive brown (2.5Y 5/4) silt loam to light silty clay loam, light yellowish brown (2.5Y 6/4) dry; few fine faint yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles; massive; friable moist, firm dry; few large and small lime-silica concretions; 3 percent small soft black and brown concretions; moderately alkaline (pH 8.0); several feet thick.

Remarks: Colors given for moist soil unless noted. Soil was dry to slightly moist when sampled. Reaction determined by Hellige-Truog field kit.

* Sampled for Bureau of Public Roads and Louisiana Department of Highways.

SOIL SURVEY LABORATORY Lincoln, Nebr. January 1962

SOIL TYPE Verdun silt loam **LOCATION** East Baton Rouge Parish, Louisiana

SOIL NOS. S61La-17-10 **LAB. NOS.** 15098-15104

DEPTH INCHES	HORIZON	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	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-4	Ap1	2.3a	1.8a	0.4a	0.4b	1.7b	85.9	7.5	51.3	36.5	-	si
4-6	Ap2	1.7a	1.8a	0.4a	0.4b	1.6b	82.7	11.4	46.5	38.0	-	si/sil
6-11	B2	0.5a	0.7a	0.2a	0.3a	1.2c	66.1	31.0	33.6	33.9	-	sicl
11-19	B3	<0.1	0.2a	0.1a	0.2a	1.2	65.6	32.7	33.5	33.4	-	sicl
19-35	C1	0.1a	0.2a	0.1a	0.1a	1.2	71.6	26.7	37.1	35.8	-	sil/sicl
35-48	C21	<0.1	0.2a	0.1a	0.2a	1.5	74.0	24.0	39.8	35.8	-	sil
48-60	C22	0.2a	0.4a	0.1a	0.2a	1.9	73.4	23.8	41.4	34.0	-	sil

8C1b pH SATURATED PASTE	6E1c $CaCO_3$ Equivalent %	Organic Matter 6A1a O.C. %	6B1a N %	C/N	Bulk Density Field Moist 4B4 % M.	Field Moist 4A1a g/cc	30 Cm. 4B3 % M.	30 Cm. 4A1c g/cc	4A1b A.D. g/cc	MOISTURE TENSIONS 4B1b 1/3 ATMOS. Pieces %	1/3 ATMOS. Sieved %	4B2 15 ATMOS. Sieved %
5.7		1.50	0.126	12	18.7	1.49	27.8	1.46	1.49	20.3		5.1
6.8	< 1	0.70	0.070	10								6.1
7.5	< 1	0.71	0.081	9								16.3
8.2	< 1	0.28	0.036	8								18.2
8.1	< 1	0.10	0.017		13.0	1.64	24.8	1.48	1.66	28.4		15.8
8.0	< 1	0.05			14.6	1.69	28.1	1.46	1.72	24.6		15.3
7.9	< 1	0.04										13.2

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	5D2 Exch. Na on NH_4OAc CEC %	Sat. Ext. Sol. 8A1 6P1a Na	6Q1a K	8A1a Elec. Cond. (ECx10)^3 mmhos.	8A Moist. at Sat. %	6C1a Free Iron Fe_2O_3 %
←	milliequivalents per 100g. soil				→		me. per liter				
6.4	2.8	1.2	4.0	0.4	0.1	5	3.2	0.1	0.6	43.3	2.0
7.4	3.5	1.4	3.0	1.3	0.1	15	6.5	<0.1	0.8	34.3	2.3
17.6	7.7	4.4	3.3	5.2	0.2	27	5.7	<0.1	0.7	62.9	1.5
19.5	8.7	6.4	1.4	6.6	0.2	31	7.2	<0.1	0.9	82.8	1.7
16.8	6.4	5.4	1.2	6.2	0.2	34	5.2	<0.1	0.6	90.0	1.6
16.2	6.4	5.2	1.2	5.5	0.2	32	3.7	<0.1	0.5	88.2	1.4
15.7	6.7	5.0	0.9	4.8	0.2	29	3.3	<0.1	0.4	78.8	1.2

a. Many Fe/Mn-bearing(?) aggregates.
b. Common Fe/Mn-bearing (?) aggregates.
c. Few Fe/Mn-bearing(?) aggregates.

VERDUN SILT LOAM
S61La-17-10

Location: East Baton Rouge Parish, Louisiana. Approximately 1.1 miles east of intersection of Hammond Highway and Sharp Station Road and 250 feet south of Hammond Highway in pasture of Mr. Lively; southwest 1/4 of southwest 1/4 Section 5, T7S, R2E. Photo No. 2K-12 (1953).

Vegetation and Use: Poor unimproved pasture; poor, very short bermudagrass; occasional clumps of broomsedge; some sedges.

Slope and Land Form: Level to gently undulating slope of less than 1 percent. Elevation 45 feet to 50 feet.

Drainage and Permeability: Surface runoff slow to very slow; internal drainage slow. Upper soil layers very slowly permeable due to the slow permeability of the prismatic silty clay or silty clay loam upper subsoil layer which swells when wet; lower subsoil layers are generally well oxidized and moderately permeable.

Parent Materials: Dominantly silt loams and silty clay loams deposited as older alkaline alluvium.

Samples Collected by: J. S. Allen, D. C. McMurtry, H. L. Clark, J. E. Seaholm and Leon Hugent. May 11, 1961.

Profile Described by: J. E. Seaholm, H. L. Clark, S. A. Lytle. May 11, 1961.

Depth, Lincoln Lab. No., and	Horizon	Description
0-4" 15098	Ap1	Grayish brown (10YR 5/2) silt loam, light brownish gray (10YR 6/2) dry; few fine distinct dark yellowish brown (10YR 3/4) mottles or weak concretions; moderate to strong fine and medium granular structure and weak thin platy structure; friable; many fine and medium roots; common small and few medium black concretions; medium acid (pH 6.0); abrupt smooth boundary.
4-6" 15099	Ap2	Dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; common faint light brownish gray (10YR 6/2) mottles and few fine distinct light yellowish brown (10YR 6/4) mottles; moderate medium platy structure; friable moist; firm dry; many fine roots; common small and a few fine soft and hard black concretions; slightly acid (pH 6.5); abrupt wavy boundary.
6-11" 15100*	B2	Dark yellowish brown (10YR 3/4) light silty clay, dark grayish brown (10YR 4/2) dry; many fine faint very dark grayish brown (10YR 3/2) and many fine distinct strong brown (7.5YR 5/6) mottles or weak concretions; moderate coarse prismatic and moderate coarse subangular blocky structure; very firm moist; peds partially coated with light gray (10YR 7/2) silt; some very dark brown (10YR 2/2) thin staining on some ped surfaces; numerous fine roots, especially in the light gray silt filling between prisms; moderately alkaline, (pH 8.0); diffuse irregular boundary.
11-19" 15101	B3	Olive brown (2.5Y 4/4) light silty clay loam, light yellowish brown (2.5Y 6/4) dry; few fine faint mottles of yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6); 2 percent mottled pale brown (10YR 6/3); weak medium subangular blocky structure; somewhat firm moist, very firm dry; peds partially coated with grayish brown (10YR 5/2) silt, light brownish gray (10YR 6/2) dry; some thin ped coatings of very dark grayish brown (10YR 3/2), dark grayish brown (10YR 4/2) dry; few fine roots between peds; few small lime-silica concretions; common small soft and hard black and brown concretions, moderately alkaline (pH 8.0); diffuse irregular boundary.
19-35" 15102*	C1	Light olive brown (2.5Y 5/4) light silty clay loam to silt loam, light yellowish brown (2.5Y 6/4) dry; few fine faint yellowish brown (10YR 5/8), few fine distinct light brownish gray (2.5Y 6/2) mottles; massive; somewhat firm moist, very firm dry; veins, old root channels, and krotovinas (crayfish burrows) filled with grayish brown (10YR 5/2) silt or silt loam, light gray (10YR 7/2) dry; some very dark brown and black manganese oxide staining in old root channels and vertical veins; few large lime-silica concretions; common medium soft black concretions; moderately alkaline (pH 8.0); diffuse irregular boundary.
35-48" 15103	C21	Light olive brown (2.5Y 5/4) silt loam to light silty clay loam, light yellowish brown dry; few fine faint yellowish brown (10YR 5/8), few fine distinct light brownish gray (2.5Y 6/2) mottles; massive; friable moist, very firm dry; vertical veins, old root channels, and few krotovinas filled with grayish brown (10YR 5/2) silt or silt loam, light gray (10YR 7/2) dry; common very dark brown and black manganese oxide staining, some of which is clay or silty clay, in veins and root channels; few fine pores; few large lime-silica concretions; common medium soft black concretions; moderately alkaline (pH 8.0); arbitrary boundary.
48-60" 15104*	C22	Light olive brown (2.5Y 5/4) silt loam to light silty clay loam, light yellowish brown (2.5Y 6/4) dry; few fine faint yellowish brown (10YR 5/8), few fine distinct light brownish gray (2.5Y 6/2) mottles; massive; friable moist, very firm dry; vertical veins, old root channels, and a few krotovinas filled with grayish brown (10YR 5/2) silt or silt loam, light gray (10YR 7/2) dry; common very dark brown and black stainings and weak concretions of manganese oxide; some small veins or old root channels of very dark brown or black silty clay; few fine pores; few large lime-silica concretions; common medium soft black concretions; moderately alkaline (pH 8.0).

Remarks: Colors given for moist soil except as noted. Soil was dry when sampled. Reaction determined by Hellige-Trung field kit.

* Sampled for Bureau of Public Roads and Louisiana Department of Highways.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Wrightsville silt loam **LOCATION** Acadia Parish, Louisiana

SOIL NOS. S57La-1-1 **LAB. NOS.** 7137-7145

DEPTH INCHES	HORIZON	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	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-1½	A1	1.0a	0.4a	0.1b	1.2b	8.7b	81.6	7.0	48.2	43.1	-	si
1½-5	A21g	1.8a	1.1a	0.2b	1.1b	8.4b	81.9	5.5	47.1	44.2	-	si
5-10	A22g	1.6a	1.3a	0.2c	1.0c	7.5c	80.3	8.1	42.8	45.9	-	si
10-20	B1g	0.2a	0.4a	0.1c	0.8c	4.9c	57.1	36.5	26.9	35.8	-	sicl
20-28	B21g	-	0.1a	-	0.5c	5.1c	57.1	37.2	27.1	35.6	-	sicl
28-34	B22	0.1a	0.1a	-	0.5b	5.2b	59.2	34.9	28.2	36.7	-	sicl
34-41	B23	-	0.1a	0.1b	0.7b	5.6b	60.1	33.4	28.9	37.4	-	sicl
41-53	C1	0.2a	0.2a	0.1b	0.6b	6.3b	60.6	32.0	30.9	36.6	-	sicl
53-60+	C2	0.2a	0.1a	-	4.4b	5.6b	56.2	33.5	35.7	30.1	-	sicl

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N			6E1a $CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.4			4.18	0.186	22.5							6.4
6.0			0.44	0.029	15							2.7
5.6			0.09	0.015								3.5
4.7			0.20	0.024								15.7
4.8			0.16	0.023								16.2
4.9			0.11									15.2
5.6			0.10					-				14.8
7.2			0.15					-				12.9
7.6			0.08					-				14.1

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
12.9	5.7	2.5	8.6	0.1	0.2	66	50	8.5	17.1	2.3		
3.5	1.8	0.4	2.0	-	-	63	52	2.2	4.2			
4.0	1.3	0.5	4.5	0.1	-	48	30	1.9	6.4			
19.3	4.3	3.8	11.1	2.0	0.2	53	48	10.3	21.4	1.1		
19.7	6.1	4.9	5.8	4.1	0.3	78	73	15.4	21.2	1.2		
19.8	6.8	5.2	4.1	4.8	0.3	86	81	17.1	21.2	1.3		
19.0	7.4	5.4	2.9	5.6	0.3	98	86	18.7	21.6	1.4		
18.3	7.9	5.6	1.2	5.9	0.3		94	19.7	20.9	1.4		
19.2	8.3	6.1	0.4	6.2	0.3		98	20.9	21.3	1.4		

a. Many smooth and irregular light brown to black concr.
b. Common smooth and irregular light brown to black concr.
c. Few smooth and irregular light brown to black concr.

S57La-1-1

Described by Lester L. Loftin

Date: 11-12-57
Area: Acadia Parish, Louisiana
Location: SE, NW, Sec. 16, T9S, R2W; 800 feet SE from Bayou Point Aux Loups and 143 feet south of road center.
Vegetation: Pine-hardwood forest (Loblolly pine, sweet gum, oak, French mulberry, and pine hill bluestem grass).
Relief: Level (0-.6% slope), few pimple mounds.
Drainage: Poorly drained; slow to very slow internal drainage and runoff.
Permeability: Very slow.
Sampling party: James S. Allen, Head, SCS Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Louisiana; D. L. Fontenot, State Soil Scientist, Louisiana; Henry L. Clark, Soil Scientist, Louisiana.

WRIGHTSVILLE SILT LOAM

Lincoln Lab. No.			
7137	A_1	0-1½"	Very dark gray (10YR 3/1) silt loam; moderate fine granular structure; very friable; common fine to medium dark hard concretions; pH 6.0; abrupt smooth boundary.
7138	A_{21g}	1½-5"	Light gray (10YR 7/2) silt loam; weak medium platy structure; friable; common fine to medium dark hard concretions; surface of concretions dark brown (10YR 3/3); pH 6.0; clear smooth boundary.
7139	A_{22g}	5-10"	Light gray (10YR 7/2) silt loam with common medium distinct yellowish brown (10YR 5/6) mottles; massive; firm, brittle; many fine to medium dark hard concretions; many pin holes; pH 5.5; clear wavy boundary.
7140	B_{1g}	10-20"	Light brownish gray (2.5Y 6/2) silty clay with many large distinct yellowish brown (10YR 5/6) and light olive brown (2.5Y 5/6) mottles; moderate very fine angular blocky structure; firm; common fine-medium dark hard concretions; a few large vertical cracks or root channels filled with white (10YR 8/2) silt loam mottled with brown; pH 4.5; clear wavy boundary.
7141	B_{21g}	20-28"	Gray (10YR 6/1) clay with many medium prominent red (2.5YR 4/8) mottles; weak medium prismatic structure that breaks into moderate very fine angular blocky structure; very firm; a few large vertical cracks or root channels filled with white (10YR 8/2) silt loam mottled with brown; pH 4.5; gradual wavy boundary.
7142	B_{22}	28-34"	Dark yellowish brown (10YR 4/4) clay; weak medium prismatic structure that breaks into weak fine to medium subangular blocky structure; firm; few dark soft concretions; few large vertical cracks or root channels filled with white (10YR 8/2) silt loam mottled with brown; pH 5.0; gradual wavy boundary.
7143	B_{23}	34-41"	Yellowish brown (10YR 5/4) clay; weak medium prismatic structure that breaks into weak fine to medium subangular blocky structure; firm; many small dark root fossils; few dark and reddish concretions; few large vertical cracks or root channels filled with white (10YR 8/2) silt loam mottled with brown; pH 6.0; gradual wavy boundary.
7144	C_1	41-53"	Variegated gray (10YR 6/1) and yellowish brown (10YR 5/6) clay; moderate coarse prismatic structure that breaks into weak medium subangular blocky structure; very firm; few fine to medium dark hard concretions; few small dark root fossils; few large vertical cracks or root channels filled with white (10YR 8/2) silt loam mottled with brown; pH 7.0; gradual wavy boundary.
7145	C_2	53-60"+	Variegated gray (10YR 6/1) and yellowish brown (10YR 5/6) silty clay; moderate coarse prismatic structure that breaks into weak medium subangular blocky structure; very firm; few fine to medium dark hard concretions; few small dark root fossils; pH 7.5.
		60-84"	Variegated light gray (2.5Y 7/2) and reddish yellow (5YR 6/8) clay; pH 7.5.
		84-96"	Light brown (7.5YR 6/4) fine sandy loam; pH 8.0.

Remarks: All colors are for moist condition. pH by Hellige-Truog kit. The vertical cracks or root channels extend to variable depths from 10 to 53 inches. 60-96"+ by bucket type soil auger. This sample represents the 5a-FCC-A-1 (Wrightsville silt loam, level phase) mapping unit in Acadia Parish. This soil was developed on the Prairie formation of the Pleistocene terrace from old alluvium of Red River. This site was mapped Acadia silt loam in the 1903 soil survey report of Acadia Parish.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Wrightsville silt loam **LOCATION** Acadia Parish, Louisiana

SOIL NOS. S57Ia-1-4 **LAB. NOS.** 7159-7167

DEPTH INCHES	HORIZON	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	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-1	A1	0.8a	0.5a	0.2b	3.8c	16.8c	71.2	6.7	46.7	44.9	Tr.	sil
1-4	A21g	0.7a	0.6a	0.2b	4.0c	17.0c	70.9	6.6	46.5	45.3	Tr.	sil
4-8	A22g	1.6a	1.0a	0.2b	3.6c	15.6c	67.7	10.3	42.9	43.8	Tr.	sil
8-12	A23g	0.8a	0.6a	0.1b	3.3c	15.5c	65.7	14.0	41.8	42.6	Tr.	sil
12-17	B1g	0.6a	0.4a	0.1b	2.5c	12.0c	55.3	29.1	32.7	37.0	Tr.	sicl
17-28	B21g	0.2a	0.1a	-	2.3c	11.4c	48.0	38.0	28.9	32.7	-	sicl
28-34	B22	-	0.1a	-	2.5c	12.8c	51.0	33.6	31.6	34.7	Tr.	sicl
34-46	B23	0.1a	0.2a	0.1b	2.8c	13.6c	51.8	31.4	33.9	34.2	Tr.	sicl
46-60+	C	0.3a	0.3a	0.1b	2.9c	14.9c	48.9	32.6	34.8	31.8	Tr.	sicl

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N		6E1a $CaCO_3$ equivalent %			MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.6			1.94	0.085	23							4.3
5.6			1.04	0.055	19							3.8
5.2			0.17	0.018								4.8
5.0			0.10	0.015								6.0
4.7			0.16	0.019								12.9
4.6			0.14	0.015								16.1
4.8			0.09									14.6
5.8			0.09				-					13.5
7.3			0.06				-					14.6

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
← milliequivalents per 100g. soil →												
9.5	3.6	1.3	6.5	0.1	0.1	54	44	5.1	11.6	2.8		
6.6	2.5	1.1	4.0	0.1	-	56	48	3.7	7.7	2.3		
5.8	1.9	1.1	3.2	0.1	-	53	49	3.1	6.3	1.7		
7.7	1.2	1.0	6.1	0.3	0.1	34	30	2.6	8.7	1.2		
17.9	2.8	2.5	11.5	0.9	0.2	36	36	6.4	17.9	1.1		
20.7	5.2	4.2	11.1	2.0	0.3	56	51	11.7	22.8	1.2		
20.4	6.6	5.1	6.2	2.7	0.3	72	70	14.7	20.9	1.3		
19.6	8.3	5.6	2.0	3.5	0.3	90	90	17.7	19.7	1.5		
20.4	9.6	6.2	0.8	4.6	0.3		96	20.7	21.5	1.5		

a. Many smooth and irregular light brown to dark brown concr.
b. Common smooth and irregular light brown to dark brown concr
c. Few smooth and irregular light brown to dark brown concr.

S57La-1-4

Described by Lester L. Loftin

Date: 11-13-57
Area: Acadia Parish, Louisiana
Location: NW¼, Sec. 26, T8S, R2W; 2000 ft. west of Bayou Des Cannes bridge and 80 ft. south of road. 3 miles west of Iota.
Vegetation: Pine-hardwood forest (loblolly pine, oaks, pinehill bluestem grass).
Relief: Level (0-.6% slope), few pimple mounds.
Drainage: Poorly drained; slow to very slow internal drainage and runoff.
Permeability: Very slow.
Sampling party: James S. Allen, Head, SCS Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Louisiana; Henry L. Clark, Soil Scientist, Louisiana.

WRIGHTSVILLE SILT LOAM

Lincoln Lab. No.			
7159	A_1	0-1"	Dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; very friable; pH 6.0; abrupt smooth boundary.
7160	A_{21g}	1-4"	Light brownish gray (10YR 6/2) silt loam; weak medium platy structure; friable; few fine hard reddish concretions; pH 6.0; clear smooth boundary.
7161	A_{22g}	4-8"	Light gray (10YR 7/2) silt loam with few large faint grayish brown (10YR 5/2) mottles; massive; brittle, firm; many fine to medium hard dark and reddish concretions; many fine pin holes; pH 5.5; clear smooth boundary.
7162	A_{23g}	8-12"	Light gray (2.5Y 7/2) silt loam with common medium distinct brownish yellow (10YR 6/6) mottles; massive; friable to firm, somewhat brittle; few fine hard dark and reddish concretions; pH 4.5; clear smooth boundary.
7163	B_{1g}	12-17"	Light brownish gray (10YR 6/2) silty clay with common medium distinct brownish yellow (10YR 6/6) mottles; moderate fine angular blocky structure; firm; few fine reddish hard concretions; pH 4.5; clear wavy boundary.
7164	B_{21g}	17-28"	Light brownish gray (10YR 6/2) clay with many medium prominent red (2.5YR 5/8) mottles; weak coarse prismatic structure that breaks into moderate very fine angular blocky structure; firm; few large cracks or root channels filled with gray (10YR 5/1) silt loam; pH 5.0; gradual wavy boundary.
7165	B_{22}	28-34"	Yellowish brown (10YR 5/6) clay with many medium faint light brownish gray (10YR 6/2) mottles; weak coarse prismatic structure that breaks into moderate fine to medium angular blocky structure; firm; few fine dark hard concretions; few large cracks or root channels filled with gray (10YR 5/1) silt loam; pH 6.0; diffuse wavy boundary.
7166	B_{23}	34-46"	Yellowish brown (10YR 5/6) clay with many medium faint light brownish gray (10YR 6/2) mottles; weak coarse prismatic structure that breaks into moderate fine to medium angular blocky structure; firm; few fine dark hard concretions; many fine dark root fossils; few large cracks or root channels filled with gray (10YR 5/1) silt loam; pH 6.0; diffuse wavy boundary.
7167	C	46-60"+	Light brownish gray (10YR 6/2) clay with many medium distinct yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure that breaks into moderate medium angular blocky structure; very firm; common medium dark hard concretions; few large cracks or root channels filled with gray (10YR 5/1) silt loam; pH 8.0.
		60-72"	Brownish yellow (10YR 6/6) clay with gray (2.5Y 6/0) mottles.
		72-90"	Brown (7.5YR 5/4) clay with few fine lime concretions.
		90-96"+	Light gray (10Y 7/1) clay; pH 8.0.

Remarks: All colors are for moist condition. pH by Hellige-Truog kit. The vertical cracks or root channels extend to variable depths from 17-55". 60-96" by bucket type soil auger. This sample represents the 5a-FCC-A-1 (Wrightsville silt loam, level phase) mapping unit in Acadia Parish. This soil was developed on the Prairie formation of the Pleistocene terrace from old alluvium of Red River. This site was mapped Acadia silt loam in the 1903 soil survey report of Acadia Parish.

SOIL SURVEY LABORATORY Beltsville, Maryland

SOIL TYPE Wrightsville silty clay (atypical) **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S56La-8-1 **LAB. NOS.** 56608-56613

DEPTH INCHES	HORIZON	1B1b 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	2A2 > 2	TEXTURAL CLASS
0-2	A1	0.2	0.6	0.5	2.5	7.5	54.6	34.1	32.6	31.3	-	sicl
2-9	A2	0.1	0.1	0.1	1.3	8.0	50.8	39.6	28.8	31.2	-	sicl/sic
9-18	B1	0.0	0.1	0.0	1.0	6.0	43.0	49.9	22.5	27.3	-	sic
18-32	B21	0.0	0.1	0.1	1.0	5.7	42.6	50.5	20.4	28.7	-	sic
32-47	B22	0.0	0.1	0.1	1.0	5.5	40.5	52.8	20.7	26.1	-	sic/c
47-60	A1b	0.0	0.1	0.1	1.0	5.7	41.4	51.7	22.7	25.3	-	sic
60-70	Not sampled											
70-100	Not sampled											

pH 8C1a 1:1 a	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN % a	C/N a	5A3a CATION EXCHANGE CAPACITY ← (Sum)	EXTRACTABLE CATIONS 6N2d Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % on Sum Cations 5C3
							milliequivalents per 100g. soil →					
4.6			2.75	0.141	19.5	29.4	7.6	5.6	15.6	0.2	0.4	47
4.5			0.40			26.4	5.8	5.8	14.1	0.3	0.4	46
4.6			0.26	0.028	9.3	32.2	8.9	8.4	13.7	0.7	0.5	57
4.5			0.10			32.6	10.7	10.1	10.3	1.0	0.5	68
4.5			0.19			36.5	12.5	12.0	9.5	2.0	0.5	74
4.5			0.04	0.026		36.5	13.4	12.5	8.0	2.0	0.6	78

DEPTH INCHES	7C1 TOTAL ANALYSIS b SiO_2 %	TiO_2 %	Fe_2O_3 %	Al_2O_3 %
0-2	79.29	.88	2.67	8.58
2-9	79.78	.97	3.06	9.94
9-18	75.17	.94	4.14	13.57
18-32	75.10	.97	4.30	13.17
32-47	74.17	.98	4.58	12.57
47-60	74.00	.91	4.19	13.48

CLAY MINERALOGY 7A

2-9" - Dominantly montmorillonite with illite and some kaolinite.

9-18" - Dominantly montmorillonite with illite and some kaolin. DTA shows endotherm 300°. About 15 percent gibbsite.

18-32" - Dominantly montmorillonite, less illite than above, kaolin about same, less gibbsite.

32-47" - Dominantly montmorillonite, illite increases slightly, kaolinite about the same, slight increase in gibbsite.

47-60" - Dominantly montmorillonite, illite content greater than above, kaolinite the same, gibbsite much less.

a. Data furnished by B. N. Driskell, Louisiana State University.

b. Complete analysis available from Beltsville Soil Survey Laboratory.

WRIGHTSVILLE SILTY CLAY (ATYPICAL)

S56La-8-1

Location: Flatwood about 4 miles north of Benton and west of highway.
Date: July 23, 1956. Described by: Marvin Lawson and L. L. Loftin.

Depth BSL No.	Horizon	Description
0-2" 56608	A1	Gray (10YR 5/1, dry) mottled light brownish gray (10YR 6/2) hard silty clay; scattered small distinct mottles of dark yellowish brown (10YR 4/4); moderate thin platy structure which breaks down into moderate fine granular structure. Contains many fine roots. pH 4.5.
2-9" 56609	A2	Light brownish gray (10YR 6/2) dry hard silty clay or clay, mottled with dark brown (7.5YR 4/4); coarse subangular blocky structure. pH 4.5.
9-18" 56610	B1	Light brownish gray (10YR 6/2) slightly moist massive plastic clay, mottled 30 percent with yellowish brown (10YR 5/6), has strong very large prismatic structure. pH 4.5.
18-32" 56611	B21	Light brownish gray (10YR 6/2) massive, plastic clay; mottled 20 percent with yellowish brown; contains a few roots, few vertical cracks as much as 3/4 inch wide; has a very large prismatic structure. pH 5.0.
32-47" 56612	B22	Grayish brown (10YR 5/2) massive plastic clay, mottled 25 percent dark yellowish brown (10YR 4/4); contains a few roots and a few vertical cracks. 2 or 3 percent of the mass is dark reddish brown (5YR 3/2 and 3/4) organic matter coating on clays. pH 5.0.
47-60" 56613	A1b	Dark grayish brown (10YR 4/2) massive plastic clay; scattered distinct mottles of yellowish brown (10YR 5/6) and light olive brown (2.5Y 5/4); few splotches of dark reddish brown (5YR 3/4) which appear to be organic matter. pH 5.3.
60-70"		Grayish brown (10YR 5/2) massive plastic clay mottled pale brown (10YR 6/3), contains a few roots.
70-100"		Mottled light brownish gray (10YR 6/2) and yellowish brown 5/6 massive plastic clay with numerous black fine vein-like streaks of manganese. pH 7.0.

SOIL SURVEY LABORATORY Beltsville, Maryland

SOIL TYPE Wrightsville silt loam **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S56La-8-3 **LAB. NOS.** 56622-56629

DEPTH INCHES	HORIZON	1B1b PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) a								3A1	2A2	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	0.2-0.02	0.02-0.002	> 2	
0-2	A21	0.1	0.4	0.5	3.6	20.6	57.7	17.1	58.2	22.7	-	sil
2-11	A22,A3	0.0	0.2	0.2	3.2	28.4	55.5	12.5	69.3	17.2	-	sil
11-23	B2	0.1	0.5	0.4	2.4	20.6	55.2	20.8	55.7	22.1	-	sil
23-28	A2b	0.1	0.4	0.2	2.0	17.1	56.5	23.7	51.9	23.2	-	sil
28-40	B21b	0.0	0.1	0.1	1.2	11.7	49.4	37.5	36.2	25.9	-	sicl
40-55	B22b	0.1	0.1	0.1	1.0	12.3	45.5	40.9	33.7	25.0	-	sic/sicl
55-65		0.0	0.0	0.0	0.8	14.7	44.0	40.5	35.9	23.4	-	sic/sicl
65-90		0.0	0.1	0.1	1.3	17.3	44.3	36.9	41.4	21.2	-	sicl

pH 8C1a			ORGANIC MATTER 6A1a	6B1a		5A3a	EXTRACTABLE CATIONS 5B1a					BASE SAT. %
1:1 b	1:5	1:10	ORGANIC CARBON %	NITROGEN % b	C/N b	CATION EXCHANGE CAPACITY ← (Sum)	6N2d Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	on Sum Cations 5C3
							milliequivalents per 100g. soil →					
5.5			2.43	0.116	21.1	16.4	5.7	2.7	7.5	0.2	0.3	54
5.0			0.59			9.2	2.6	1.6	4.8	0.1	0.1	48
5.0			0.04			12.7	3.4	2.6	6.3	0.2	0.2	50
5.0			0.14	0.021		14.2	3.4	3.2	7.0	0.4	0.2	51
5.0			0.17	0.022		22.2	6.6	6.1	8.3	0.8	0.4	63
5.2			0.10			26.8	9.2	8.8	6.4	2.0	0.4	76
5.0			0.10			27.0	10.2	9.7	4.6	2.0	0.5	83
8.0			0.04			30.3	15.8	9.8	0.2	4.0	0.5	99

DEPTH INCHES	7C1 TOTAL ANALYSIS c			
	SiO_2 %	TiO_2 %	Fe_2O_3 %	Al_2O_3 %
0-2	87.75	.83	1.99	4.73
2-11	89.29	.66	1.62	4.94
11-23	87.26	.80	2.23	6.27
23-28	86.82	.80	2.45	6.79
28-40	80.28	.88	3.81	9.90
40-55	77.81	.83	3.93	11.17
55-65	75.94	.85	3.88	12.00
65-90	74.14	.74	4.21	11.77

CLAY MINERALOGY 7A

2-11" - Montmorillonite dominant but reflection is rather broad and disordered. Small amount illite and kaolinite.

11-23" - Also dominated by somewhat disordered montmorillonite; slightly more kaolin.

23-28" - Same disordered montmorillonite dominates; illite and kaolin slightly less than above.

28-40", 40-55" - Montmorillonite dominant, sharper reflection than above; illite and kaolin about same or slightly less.

55-65" - Montmorillonite dominant; possibly somewhat more illite than above.

65-90" - About the same as above with possible slight further increase in illite. (DTA all through profile about same. No gibbsite.)

a. A small amount of concretions present in sands.
b. Data furnished by B. N. Driskell, Louisiana State University.
c. Complete analysis available from Beltsville Soil Survey Laboratory.

WRIGHTSVILLE SILT LOAM

S56La-8-3

Location: Pipeline on road east of Swindleville and east of Rocky Mount.
Vegetation: Willow oak, post oak, shortleaf pine, ash, and red haw.
Date: July 24, 1956. **Described by: Marvin Lawson and L. L. Loftin.**

Depth BSL No.	Horizon	Description
0-2" 56622	A21	Dark brown (10YR 4/3) friable silt loam with many small mottles of pale brown (10YR 6/3) and many roots; strong medium and fine subangular blocky structure. pH 5.5.
2-6" 56623	A22	Light brownish gray (10YR 6/2) compact silt loam with many large distinct mottles of very dark grayish brown (10YR 3/2) and yellowish brown (10YR 5/6); massive structure; many small vesicles and many small roots. pH 5.0.
6-11" 56623	A3	Light brownish gray (10YR 6/2) compact silt loam, mottled dark brown (10YR 3/4); contains numerous small brown concretions; weak subangular blocky structure. pH 5.0.
11-23" 56624	B2	Grayish brown (10YR 5/2) mottled dark reddish brown (5YR 3/4) compact silty clay loam, weak subangular blocky structure; contains a few mottles of yellowish brown (10YR 5/4). pH 5.0.
23-28" 56625	A2b	Brown (10YR 5/3) mottled light brownish gray (10YR 6/2) heavy silt loam; weak medium angular blocky structure; few yellowish brown concretions; few scattered small and medium sized pieces of black carbonaceous materials. pH 5.0.
28-40" 56626	B21b	Grayish brown (10YR 5/2) mottled 20 percent with dark brown (7.5YR 4/4) massive plastic clay. pH 5.2.
40-55" 56627	B22b	Grayish brown (10YR 5/2) mottled yellowish red (5YR 4/8), dark brown (7.5YR 4/4) and dark red (2.5YR 3/6) massive plastic clay, noticeable weak coarse prismatic in places. pH 5.5.
55-60"		Reddish brown (2.5YR 5/4) mottled brown (7.5YR 5/2) massive plastic clay. pH 5.0.
60-65" 56628		Yellowish red plastic clay with fine splotches and veins of black manganese and charcoal. pH 5.8.
65-90" 56629		Yellowish red (5YR 4/8) friable sandy clay with many black concretions; lenses of sandy clay loam and dark red (2.5YR 3/6) plastic clay; contains black streaks, black concretions and clay skins. Buried B. Lime concretions at 90 inches. pH 8.0. Temperature at 90 inches was 69° F.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Wrightsville silty clay (atypical) **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S57Ia-8-4 **LAB. NOS.** 5661-5666

DEPTH INCHES	HORIZON	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	0.2-0.02	0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)								3A1		
0-2	A1	0.5a	0.3a	0.1b	2.3b	9.7b	49.6	37.5	31.9	29.5	-	sicl
2-8	A2g	-	0.1b	0.1b	2.4b	9.6b	48.3	39.5	31.3	28.8	-	sicl
8-15	B21g	-	0.1b	0.1b	2.5b	10.0b	43.7	43.6	31.3	24.7	-	sic
15-22	B22g	0.1b	-	0.1b	1.7b	7.0b	32.6	58.5	22.8	18.3	-	c
22-30	B23g	-	-	-	1.8b	7.6b	35.4	55.2	25.0	19.6	-	c
30-42+	C1g	0.1b	0.1b	0.1b	1.8b	8.4b	37.3	52.2	26.6	20.7	-	c

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN %	ORGANIC MATTER C/N	MOISTURE TENSIONS 1/10 ATMOS. %	MOISTURE TENSIONS 1/3 ATMOS. %	MOISTURE TENSIONS 4B2 15 ATMOS. %
4.5			5.61	0.290	19.3			17.9
4.3			1.88	0.114	16.5			16.2
4.4			0.50	0.032	16			17.4
4.4			0.41	0.019	22			23.6
4.4			0.26	0.018	14			21.4
4.6			0.19					20.4

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
34.4	5.8	5.8	28.8	0.1	0.8	36	30	12.5	41.3	1.0		
28.6	0.6	4.8	27.8	0.1	0.4	21	18	5.9	33.7			
28.0	4.6	7.9	18.2	0.5	0.4	48	42	13.4	31.6	0.6		
38.8	10.6	12.8	18.6	1.1	0.5	64	57	25.0	43.6	0.8		
36.5	12.7	14.2	12.4	1.6	0.5	79	70	29.0	41.4	0.9		
35.7	13.9	15.5	8.2	2.6	0.5	91	80	32.5	40.7	0.9		

a. Organic matter and common smooth brown concr.
b. Common smooth brown concr.

S57La-8-4

Described by Lester L. Loftin

Date: 5-21-57
Area: Bossier Parish, Louisiana
Location: Photograph No. CEX 9G-48; NW, NE, Sec. 11, R13W, T23N; 1007 feet east of railroad track then north 49 feet from center of road.
Vegetation: Hardwood-pine forest.
Relief: Level (1 - .5% slope).
Drainage: Poorly drained; very slow internal drainage and runoff.
Permeability: Slow.
Sampling party: James S. Allen, Head, Soil Conservation Service Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Alexandria, Louisiana; Bruce Chaffin, Chief of Survey Party, Shreveport, La.

WRIGHTSVILLE SILTY CLAY (ATYPICAL)

Lincoln Lab. No.			
5661	A_1	0-2"	Very dark gray (10YR 3/1) silty clay; weak fine granular structure; friable; many roots; pH 4; clear wavy boundary.
5662	A_{2g}	2-8"	Light brownish gray (2.5Y 6/2) silty clay with common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm; roots common; pH 4; clear wavy boundary.
5663	B_{21g}	8-15"	Gray (5Y 5/1) clay with many medium distinct yellowish brown (10YR 5/6) mottles; weak fine angular blocky structure; very firm; few roots; pH 4.
5664	B_{22g}	15-22"	(Same as B_{21g}). Separated for laboratory reasons. Clear wavy boundary.
5665	B_{23g}	22-30"	Gray (5Y 5/1) clay with many medium distinct brownish yellow (10YR 6/8) mottles; weak fine angular blocky structure; very firm; very few roots; pH 5.
5666	C_{1g}	30-42"+	Gray (5Y 5/1) clay with common medium prominent red (2.5YR 4/8) mottles; weak fine angular blocky structure; very firm; pH 5.5.

Remarks: All colors are for moist condition. Descriptive terms are from Soil Survey Manual. This sample represents the approximate modal of the Wrightsville clay and silty clay soil as mapped in Bossier Parish. The soil was developed from material deposited during the Pleistocene age and is regarded as a terrace soil of Red River.

SOIL SURVEY LABORATORY Lincoln, Nebr. August 1958

SOIL TYPE Wrightsville silty clay (atypical) **LOCATION** Bossier Parish, Louisiana

SOIL NOS. S57La-8-6 **LAB. NOS.** 5667-5671

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-4	A1	0.3a	0.3a	0.2b	1.8b	3.0b	47.6	46.8	17.4	34.6	-	sic
4-11	B2g	0.1b	0.2b	0.2b	2.0b	2.9b	46.4	48.2	17.0	33.9	-	sic
11-22	C11g	0.1b	0.2b	0.2b	1.6b	2.7b	43.5	51.7	16.3	31.2	-	sic
22-31	C12g	-	0.1b	0.1b	1.4b	2.5b	41.6	54.3	14.8	30.5	-	sic
31-38+	C13g	-	-	0.1b	1.5b	2.6b	40.7	55.1	15.2	29.4	-	sic

8C1a pH 1:1	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.1			5.95	0.366	16.2			22.2
4.5			1.06	0.094	11			18.6
4.4			0.61	0.050	12			19.4
4.4			0.42	0.030	14			20.0
4.4			0.27					20.7

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg		MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
34.4	15.1	6.7	21.0	0.1	0.7	66	52	22.6	43.6	2.2		
27.5	6.1	5.6	21.6	0.1	0.4	44	36	12.2	33.8	1.1		
29.8	7.0	6.6	19.6	0.2	0.4	48	42	14.2	33.8	1.1		
31.3	9.2	7.8	17.5	0.4	0.4	57	50	17.8	35.3	1.2		
32.0	11.3	9.3	14.5	0.6	0.4	68	60	21.6	36.1	1.2		

a. Organic matter.
b. Common smooth brown concr.

S57La-8-6

Described by Lester L. Loftin

Date: 5-21-57
Area: Bossier Parish, Louisiana
Location: Aerial photograph No. CEX 9G-48; SE, SW, Sec. 11, R13W, T23N; 3494 feet south of road intersection then 105 feet west of center of highway (LA-3).
Vegetation: Hardwood - Pine forest.
Relief: Level (0 - .5% slope).
Drainage: Poorly drained; very slow internal drainage and runoff.
Permeability: Slow.
Sampling party: James S. Allen, Head, Soil Conservation Service Soil Survey Laboratory, Lincoln, Nebraska; Lester L. Loftin, Soils Specialist, Alexandria, Louisiana; Bruce Chaffin, Chief of Survey Party, Shreveport, La.

WRIGHTSVILLE SILTY CLAY (ATYPICAL)

Lincoln Lab. No.			
5667	A_1	0-4"	Very dark grayish brown (10YR 3/2) silty clay; moderate fine granular structure; friable; many roots; pH 5; clear wavy boundary.
5668	B_{2g}	4-11"	Gray (10YR 5/1) clay with many fine distinct dark brown (7.5YR 4/4) mottles; moderate very fine subangular blocky structure; firm; roots common; pH 4.5; clear wavy boundary.
5669	C_{11g}	11-22"	Gray (2.5Y 5/0) clay with common fine distinct strong brown (7.5YR 5/8) mottles; very firm; pH 4.5.
5670	C_{12g}	22-31"	(Same as C_{11g}. Separated for laboratory reasons.)
5671	C_{13g}	31-38"+	(Same as C_{11g}. Separated for laboratory reasons.) pH 4.

Remarks: All colors are for moist condition. Descriptive terms are from Soil Survey Manual. This sample represents the approximate modal of the Wrightsville clay and silty clay soil as mapped in Bossier Parish. The soil was developed from material deposited during the Pleistocene age and is regarded as a terrace soil of Red River.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Clarksville cherty silt loam (non-modal)[a/] SOIL Nos. S59Mo-33-2 LOCATION Dent County, Missouri

SOIL SURVEY LABORATORY Lincoln, Nebraska LAB. Nos. 12113-12122 December 1964

Depth (In.)	Horizon	1B1a Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand (3A1): Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-1½	A1	23.7	65.9	10.4	5.5b	4.8b	3.9c	6.2	3.3	21.6	44.3	27.7	20.4			54		
1½-5½	A21	28.1	63.6	8.3	9.7b	5.5b	3.8c	6.0	3.1	20.6	43.0	26.3	25.0			59		
5½-11½	A22	24.4	67.6	8.0	6.7b	4.3b	3.7c	6.4	3.3	20.6	47.0	26.7	21.1			51		
11½-18	A23	26.1	61.9	12.0	10.3b	4.1b	2.9c	5.4	3.4	18.5	43.4	24.4	22.7			49		
18-23	B1	12.7	62.2	25.1	3.1b	2.3b	1.3c	2.8	3.2	19.5	42.7	24.3	9.5			38		
23-36	B2	14.9	53.1	32.0	5.4b	3.4b	1.5c	2.4	2.2	15.4	37.7	18.8	12.7			28		
36-45	B3	9.7	35.0	55.3	3.8b	2.0b	0.9c	1.7	1.3	8.6	26.4	10.8	8.4			34		
45-51	D1?	18.6	31.4	50.0	1.8b	0.9b	1.1c	5.6	9.2	12.5	18.9	25.3	9.4			15		
51-60	D2?	8.9	14.7	76.4	1.9b	1.0b	0.7c	2.5	2.8	4.2	10.5	8.5	6.1			54		
60-75	D3?	15.4	12.7	71.9	6.4b	2.7b	1.0c	3.0	2.3	2.8	9.9	7.1	13.1			37		

Depth (In.)	6A1a Organic carbon Pct.	6B1a Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	6C1a Ext. Iron as Fe Pct.	Bulk density: Field-State g/cc	30-Cm. g/cc	Oven-Dry g/cc	Extensibility in. per horizon	Water content: Field-State Pct.	4B3 30-Cm. Pct.	4B2 15-Bar Pct.	1/3- to 15-Bar in. per horizon		pH	8C1a (1:1) H_2O
0-1½	7.36	0.203	36			0.4							9.7				4.0
1½-5½	1.39	0.058	24			0.4							4.3				4.4
5½-11½	0.42	0.025	17			0.4							3.0				5.6
11½-18	0.19	0.016				0.5							4.0				5.5
18-23	0.23	0.018				0.9							7.6				5.1
23-36	0.15	0.013				1.3						14.0	9.7				5.3
36-45	0.12					2.1							14.8				4.6
45-51	0.08					0.3							19.1				4.1
51-60	0.10					2.8							25.3				4.6
60-75	0.05				-	2.5						31.6	24.6				7.1

Depth (In.)	Extractable bases: 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	Cat. Exch. Cap.: 5A3a Sum Cations	5A1a NH_4OAc	6G2a KCl Ext. Al	8D3 Ca/Mg	Base saturation: 5C3 Sum Cations Pct.	5C1 NH_4OAc CEC Pct.
	meq/100 g											
0-1½	1.9	1.6	0.1	0.3	3.9	24.0	27.9	18.2	2.5	1.2	14	21
1½-5½	0.3	0.2	tr.	0.1	0.6	8.0	8.6	5.5	1.5		7	11
5½-11½	1.3	0.4	tr.	0.1	1.8	2.1	3.9	2.8	0.2		46	64
11½-18	1.4	0.7	tr.	0.1	2.2	2.4	4.6	3.2	0.2		48	69
18-23	2.2	1.9	tr.	0.2	4.3	4.3	8.6	6.7	0.8	1.2	50	64
23-36	1.1	1.8	tr.	0.2	3.1	6.4	9.5	7.0	3.1	0.6	33	44
36-45	0.6	2.5	0.1	0.2	3.4	10.2	13.6	10.3	4.7		25	33
45-51	1.8	8.0	0.3	0.4	10.5	11.5	22.0	17.7	7.6	0.2	48	59
51-60	3.4	11.4	0.5	0.3	15.6	5.2	20.8	17.0	0.5	0.3	75	92
60-75	4.2	11.4	0.7	0.3	16.6	2.2	18.8	17.0	-	0.4	88	98

Depth (In.)	Ratios to Clay 8D1: NH_4OAc CEC	Ext. Iron	15-Bar Water
0-1½	1.75	.04	.93
1½-5½	.66	.05	.52
5½-11½	.35	.05	.38
11½-18	.27	.04	.33
18-23	.27	.04	.30
23-36	.22	.04	.30
36-45	.19	.04	.27
45-51	.35	.01	.38
51-60	.22	.04	.33
60-75	.24	.03	.34

a. Base saturation too high for Clarksville.
b. > 50% chert fragments.
c. 5-25% chert fragments.

Soil type: Clarksville cherty silt loam (nonmodal, base saturation too high)
Soil No.: S59Mo-33-2
Location: Southeast quarter of northeast quarter of Sec. 9, T32N, R3W, Sinking Experimental Forest, Dent County, Missouri; aerial photo BLG-2p-161.
Vegetation and land use: Mixed oak and pine forest; pine growth is good but hardwoods are of only fair quality; identified species in vicinity of sample pit are shortleaf pine, white oak, post oak, black oak, blackjack, and hickory.
Slope and land form: Site has 25 percent slope gradient with southwest exposure; at end of narrow ridge; slope breaks to 50 percent gradient about 40 feet to northwest of site; rock outcrops on the contour about 100 feet southeast of site.
Drainage: Well drained.
Parent materials: Cherty residuum from siliceous dolomitic limestone of the Gasconade formation.
Sampled by and date: J. S. Allen and R. L. Juve, October 7, 1959.
Described by: John Van Dine and F. J. Carlisle.

Horizon and Lincoln lab. No.	
Aoo	2 to 1/2 inch. Loose oak leaves and pine needles.
Ao	1/2 to 0 inch. Black (10YR 2/1) decomposed litter containing many fine living roots and fungal mycelia which bind the layer into a coherent mat.
A1 12113	0 to 1-1/2 inches. Very dark gray (10YR 3/1) to dark grayish brown (10YR 4/2) cherty silt loam (10YR 5/1 to 6/2 dry); weak fine granular structure; loose; estimated less than 10 percent chert fragments greater than 3/4-inch diameter; clear boundary.
A21 12114	1-1/2 to 5-1/2 inches. Grayish brown (10YR 5/2) cherty silt loam (10YR 8/2 dry); weak fine granular structure; very friable; pH 5.0; estimated less than 10 percent chert fragments greater than 3/4-inch diameter; clear boundary.
A22 12115	5-1/2 to 11-1/2 inches. Pale brown (10YR 6/3) cherty silt loam (10YR 8/3 dry); flat chert surfaces give appearance of blocky structure but peds cannot be identified; friable; common fine tubular pores and many fine and medium vesicles; pH 6.0; gradual boundary.
A23 12116	11-1/2 to 18 inches. Light yellowish brown (10YR 6/3.6) cherty silt loam (10YR 7/4 and 8/2 when dry); structure like horizon above; friable; many fine to medium tubular pores; pH 5.8; estimated less than 10 percent chert fragments greater than 3/4-inch diameter; clear boundary.
B1 12117	18 to 23 inches. Mottled light yellowish brown (10YR 6/4) and yellowish red (5YR 5/6) to strong brown (7.5YR 5/6) in fine faint pattern, cherty light silty clay loam; weak fine blocky structure; friable; common fine tubular pores; there is a weak association of the high value colors with pore spaces; pH 4.8; estimated15 percent chert greater than 3/4-inch diameter; gradual boundary.
B2 12118	23 to 36 inches. Mottled light yellowish brown to reddish yellow (10YR and 7.5YR 6/4 to 6/6) and yellowish red (5YR 5/6) cherty silty clay loam; weak fine blocky structure; friable; common fine tubular pores; evident clay films (5YR 5/6) on ped faces and in tubular pores; when soil is dry there are many very thin gray silt coatings on natural surfaces and these are responsible for the 10YR 6/4 colors in the moist soil; pH 4.8; estimated 25 percent chert fragments greater than 3/4-inch diameter; gradual boundary.
B3 12119	36 to 45 inches. Mottled light yellowish brown (10YR 6/4) and red (2.5YR 5/6) silty clay; weak fine blocky structure; friable under light pressure; slightly to moderately plastic; some clay films (predominantly 2.5YR 5/6); many pale-colored silty surfaces are evident when material is dry; chert fragments are sharply angular with discontinuous clay films and dark oxide dendrites on faces; pH 4.8; estimated 25 percent chert greater than 3/4-inch diameter; there is a slight concentration of chert at the bottom of this horizon and in the top of the underlying material; abrupt boundary.
D1? 12120	45 to 51 inches. White (5Y 8/2) silty clay or silty clay loam; moderate medium to coarse blocky structure with 5Y 7/2 ped surfaces; firm; slightly sticky; many fine strong brown mottles, some of which are tubular pore fillings of clayey material; chert is angular and lacks surface oxide stains; estimated less than 10 percent of chert greater than 3/4-inch diameter; abrupt boundary.
D2? 12121	51 to 60 inches. Mottled yellowish red (5YR 5/6) and red (2.5YR 4/6) cherty clay; weak fine blocky structure; firm; some 10YR 5/6 mottles and a few angular inclusions of white material similar to layer above; 5YR 5/6 clay films on some surfaces account for much of the mottled appearance; pH 4.8; estimated 20 percent chert greater than 3/4-inch diameter; clear boundary.
D3? 12122	60 to 75 inches. Red (2.5YR 4/6) clay; weak fine angular blocky; firm; few brownish yellow (10YR 6/6) mottles; some white (5Y 8/1) clay fragments are included in the matrix; many faces are partially coated with black iron-manganese oxides; estimated less than 10 percent angular chert greater than 3/4-inch diameter. Horizontally this layer grades into material having 5YR 4/6 base color, more 5Y 8/1 and 10YR 4/6 material.

Notes: Colors are for fully moist soil unless indicated otherwise. The highest concentration of fine roots occurs in the Ao and A1 horizons. Roots up to 1-inch diameter are common down to the D1? horizon. In and below the D1? horizon there are a few roots in cleavage planes. Tubular pores are very evident in the friable fine matrix material above the D1? horizon but are not evident in and below the D1? horizon. The D1? layer thins to the southwest and dips slightly to the northeast, as observed in the 8-foot long section of the sampling pit. It is not parallel to the ground surface and is quite obviously not a pedogenic horizon. Chlorphenol red and bromcresol green were used to measure pH.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Clarksville cherty loam SOIL Nos. S59Mo-33-1 LOCATION Dent County, Missouri

SOIL SURVEY LABORATORY Lincoln, Nebraska LAB. Nos. 12105-12112 December 1964

Depth (In.)	Horizon	1B1a Total: Sand (2–0.05)	Total: Silt (0.05–0.002)	Total: Clay (< 0.002)	Sand: Very coarse (2–1)	Sand: Coarse (1–0.5)	Sand: Medium (0.5–0.25)	Sand: Fine (0.25–0.1)	Sand: Very fine (0.1–0.05)	Silt: 0.05–0.02	Silt: Int. III (0.02–0.002)	Silt: Int. II (0.2–0.02)	Silt: (2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19	19 – 76
		Size class and particle diameter (mm) 3A1															Pct. of < 76mm	
		Pct. of < 2 mm																
0-1	A1	36.9	54.5	8.6	6.0b	8.1c	10.1c	11.1	1.6	17.7	36.8	22.7	35.3			37		
1-4	A21	36.4	54.7	8.9	4.9b	8.0c	10.1c	11.8	1.6	14.9	39.8	20.1	34.8			37		
4-11	A22	32.9	56.3	10.8	2.4b	7.2c	10.1c	11.5	1.7	15.2	41.1	20.5	31.2			30		
11-18	A23	41.6	46.9	11.5	2.5b	11.5c	13.3c	12.7	1.6	13.3	33.6	18.7	40.0			23		
18-26	B11	55.6	33.5	10.9	2.5c	16.8c	20.7	14.6	1.0	8.1	25.4	12.5	54.6			43		
26-37	B12(Bm?)	62.5	25.3	12.2	0.3	22.3	27.0	12.5	0.4	5.4	19.9	7.0	62.1			2		
37-52	B21	64.1	3.3	32.6	0.3	19.4	24.8	19.0	0.6	1.1	2.2	5.0	63.5			tr.		
37-52a		18.3	8.3	73.4	-	4.8	7.5	5.8	0.2	1.1	7.2	2.1	18.1			-		

Depth (In.)	6A1a Organic carbon Pct.	6B1a Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	6C1a Ext. Iron as Fe Pct.	Bulk density: Field-State g/cc	Bulk density: 30-Cm. g/cc	4A4 Oven-Dry g/cc	Extensibility in per horizon	Water content: Field-State Pct.	Water content: 30-Cm. Pct.	4B2 15-Bar Pct.	1/3- to 15-Bar in. per horizon		pH		8C1a (1:1) H_2O
0-1	5.55	0.184	30			0.5							7.5					4.0
1-4	2.16	0.077	28			0.5							5.1					4.4
4-11	0.86	0.043	20			0.6							4.2					5.1
11-18	0.46	0.026	18			0.6							3.9					5.0
18-26	0.23	0.021				0.6							3.7					4.7
26-37	0.04					0.5			2.14				2.9					4.8
37-52	0.09					1.9			1.96				10.3					4.6
37-52a	0.26					3.8			2.02				21.5					4.3

Depth (In.)	Extractable bases 5B1a: 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	Cat. Exch. Cap.: 5A3a Sum Cations	5A1a NH_4OAc	6G2a KCl Ext. Al						Base saturation: 5C3 Sum Cations Pct.	5C1 NH_4OAc CEC Pct.
	meq/100 g															
0-1	1.5	0.4	tr.	0.3	2.2	19.0	21.2	14.1	2.5						10	16
1-4	0.1	0.1	tr.	0.2	0.4	10.2	10.6	7.2	2.3						4	6
4-11	0.6	tr.	tr.	0.2	0.8	5.2	6.0	4.0	1.3						13	20
11-18	0.6	0.1	tr.	0.1	0.8	4.2	5.0	3.5	1.0						16	23
18-26	0.1	0.1	tr.	0.1	0.3	4.5	4.8	3.6	2.1						6	8
26-37	tr.	0.2	tr.	0.1	0.3	3.5	3.8	2.4	1.9						8	12
37-52	-	0.4	tr.	0.1	0.5	7.8	8.3	6.3	4.7						6	8
37-52a	-	1.0	tr.	0.3	1.3	18.2	19.5	14.7	12.0						7	9

Depth (In.)	Ratios to Clay 8M1: NH_4OAc CEC	Ext. Iron	15-Bar Water
0-1	1.64	.06	.87
1-4	.81	.06	.57
4-11	.37	.06	.39
11-18	.30	.05	.34
19-26	.33	.06	.34
26-37	.20	.04	.24
37-52	.19	.06	.32
37-52a	.20	.05	.29

a. Special sample of clay pocket.
b. > 50% chert fragments.
c. 5-25% chert fragments.

Soil type: Clarksville cherty loam
Soil No.: S59Mo-33-1
Location: Middle of east boundary of southwest quarter of southwest quarter of Sec. 3, T32N, R3W; on ridge southeast of weather station, Sinking Experimental Forest, Dent County, Missouri; serial photo BLG-2p-161.
Vegetation and land use: Mixed pine and oak forest; largest pine about 8 inches breast-high diameter; oaks mainly less than 8 inches, but a few up to 18 inches; open canopy.
Slope and land form: Site has 18 percent slope gradient and south-southwest exposure; located on shoulder of narrow ridge having a 10 percent longitudinal gradient to south-southeast and a transverse gradient of 12 to 18 percent on the ridge crest which is about 100 feet wide.
Drainage: Well drained.
Parent materials: Cherty and stony residuum from siliceous dolomitic limestone and sandstone of the Rubideaux formation.
Sampled by and date: J. S. Allen and R. L. Juve, October 6, 1959.
Described by: John Van Dine and F. J. Carlisle.

Horizon and Lincoln Lab. Number	
Aoo	1 to 1/2 inch. Loose pine and oak leaves.
Ao	1/2 to 0 inch. Black (10YR 2/1) partially decomposed leaves, twigs, and roots. Many fine living roots bind this layer into a mat.
A1 12105	0 to 1 inch. Dark gray (10YR 4/1) loam (10YR 7/2 dry); weak fine to medium granular structure; friable; estimated 15 percent angular sandstone and chert fragments greater than 3/4 inch in diameter; clear boundary.
A21 12106	1 to 4 inches. Dark grayish brown (10YR 4/2) loam (10YR 7/3 and 6/2 dry); weak fine to medium granular structure; friable and nonsticky; pH 5.0; estimated 15 percent angular sandstone and chert fragments greater than 3/4 inch in diameter; clear boundary.
A22 12107	4 to 11 inches. Brown (10YR 5/3) loam (10YR 7.5/3 dry); weak fine to medium granular structure; friable and nonsticky; pH 5.0; estimated 15 percent sandstone rock fragments greater than 3/4 inch in diameter; gradual boundary.
A23 12108	11 to 18 inches. Brown (10YR 5/3) loam (10YR 7.5/3 dry); no evident aggregation in moist condition; friable; pH 4.8; estimated that sandstone rock fragments between 3/4 inch and 18 inches comprise 50 to 60 percent of horizon; clear boundary.
B11 12109	18 to 26 inches. Yellowish brown (10YR 5/4) loam; no evident aggregation when moist; friable and slightly sticky; fine mottles of 5YR 4/4 to 4/6 which appear to be clay films lining tubular pores and on sand particles; pH 4.6; estimated sandstone fragments between 3/4 inch and 18 inches comprise 50 to 60 percent of horizon; gradual boundary.
B12 (Bm?) 12110	26 to 37 inches. Very pale brown (10YR 7/4) loam with reddish brown (5YR 4/4) clay films nearly continuous on weak medium and coarse blocky peds and lining pores; firm; pH 4.6; sandstone fragments between 3/4 inch and 18 inches estimated to comprise 70 percent of horizon; clear boundary.
B21 12111	37 to 52 inches. Sandstone fragments up to 18 inches diameter comprise about 85 percent of this horizon. The sandstone fragments have yellowish red (5YR 4/8) interior color with a red (2.5YR 4/8) rind. Partially decomposed sandstone fragments have loam to sandy loam texture. Earthy material between rock fragments is reddish brown (5YR 5/4) clay loam with pH 4.6; clear boundary; this horizon contained a pocket about 8 inches in diameter of yellowish red (5YR 4/6) silty clay which was sampled separately (Lincoln Lab. No. 12112). Pore surfaces in the silty clay pocket were lined with 5YR 5/4 clay films.
B2u Not sampled	52 to 58 inches. Mottled red (2.5YR 4/8), yellowish red (5YR 4/8), and light yellowish brown (10YR 6/4) very cherty silty clay; chert fragments are more angular and smaller than the sandstone fragments in horizons above and below.
B23 Not sampled	58 to 62 inches plus. Similar to 37- to 52-inch horizon.

Notes: Colors are for fully moist soil unless indicated otherwise. Roots are abundant in the uppermost three mineral horizons and decrease gradually with depth to few roots in the 37 to 52-inch horizon. In the 26- to 37-inch horizon the roots appear to be confined to the surfaces of the 5YR 4/4 clay films. The numerous 12- to 18-inch diameter rock fragments cause somewhat irregular horizon boundaries throughout the profile. Surface stoniness consists of 5 to 6 sandstone and coarse chert fragments 3 to 12 inches in diameter per square yard with an occasional sandstone boulder 24 to 30 inches in diameter. Chlorphenol red and bromcresol green were used to measure pH.

SOIL SURVEY LABORATORY Lincoln, Nebr. 2/10/58

SOIL TYPE Grundy silt loam **LOCATION** Caldwell County, Missouri

SOIL NOS. S57Mo-13-1 **LAB. NOS.** 6405 - 6412

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	2A2 > 2	TEXTURAL CLASS
0-8	A1p	0.5a	1.1a	0.6	0.7	1.0	69.3	26.8	30.6	40.0	-	sil
8-11	B1	0.1b	0.5b	0.4b	0.5b	0.9b	57.4	40.2	28.3	30.2	-	sic
11-18	B21	-	0.2b	0.2b	0.4b	0.7b	48.8	49.7	21.7	28.0	-	sic
18-25	B22	-	0.1b	0.1b	0.3b	0.7b	54.3	44.5	24.1	31.1	-	sic
25-33	B23	-	0.1b	0.1b	0.3b	0.8b	59.0	39.7	24.7	35.3	-	sicl
33-46	B3	-	0.1b	0.1b	0.3b	0.6b	63.6	35.3	25.8	38.6	-	sicl
46-52	C11	-	0.4b	0.3b	0.7b	1.1b	65.5	32.0	29.0	38.0	-	sicl
52-62	C12	-	-	-	-	0.5	67.5	32.0	25.5	42.5	-	sicl

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	EST% SALT (BUREAU CUP)	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	6E1a $CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.4			1.87	.146	12.8							12.2
5.2			1.33	.115	11.6							17.8
5.6			0.80	.068	11.8							23.0
6.2			0.51	.049	10.4							21.0
6.7			0.25									19.4
6.8			0.13									18.1
6.7			0.11									17.5
6.6			0.13					-				16.6

5A1a CATION EXCHANGE CAPACITY NH_4 Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on sum Cations		5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
24.6	13.0	4.8	13.7	0.1	0.3	74	57		18.2	31.9	2.7	
30.2	15.6	7.1	10.3	0.3	0.4	77	69		23.4	33.7	2.2	
36.2	20.3	10.4	8.4	0.7	0.6	88	79		32.0	40.4	2.0	
33.0	19.5	10.2	6.0	0.9	0.5	94	84		31.1	37.1	1.9	
29.8	18.3	9.4	4.4	1.1	0.5	98	87		29.3	33.7	1.9	
28.4	17.4	9.0	3.2	1.2	0.5	99	90		28.1	31.3	1.9	
26.8	16.5	7.9	2.8	1.2	0.5	97	90		26.1	28.9	2.1	
25.2	15.7	7.5	2.0	1.1	0.4	98	92		24.7	26.7	2.1	

a. Some organic matter
b. Common, smooth and irregular dark brown concr. (Mn?)

Soil type: Grundy silt loam
Soil No.: S57Mo-13-1
Map unit: 11
Location: SW1/4 NE 1/4 SW1/4 Sec. 1, T57N, R29W, Caldwell County, Missouri, 60 feet north of lone cottonwood tree.
Sampling site: Cultivated field (alfalfa); 1½ percent slope to east, elevation 1005 feet; on primary divide of the loess-mantled Kansan till plain.
Sampled and described by: J. S. Allen, F. J. Carlisle, H. E. Grogger, Robert Hamby, and Ed Hughes, August 28, 1957.

Lincoln Lab. No.	Horizon	
6405	A1p	0-8 inches. Very dark brown to very dark grayish brown (10YR 2.5/2) heavy silt loam to light silty clay loam, grayish brown (10YR 5/2) when dry; cloddy, breaking with slight pressure to weak fine granular; friable; abrupt smooth boundary.
6406	B1	8-11 inches. Black to very dark brown (10YR 2/1.5) light silty clay (estimated 40% clay) very dark brown (10YR 2/2) when crushed and dark gray (10YR 4/1) when dry; strong very fine subangular blocky; friable; clear boundary.
6407	B21	11-18 inches. Very dark gray to dark gray (10YR 3/1 to 4/1) silty clay (estimated 50% clay) dark grayish brown (10YR 4/2) when kneaded, compound structure consisting of weak fine blocky peds arranged into moderate medium prisms; firm; common fine distinct dark brown mottles, most of which occur in the interior of peds; oxide concretions one mm. or less in diameter are common and often occur in the middle of a dark brown mottle; distinct very dark gray to dark gray (10YR 3/1 to 4/1) clay skins are nearly continuous on prismatic and blocky ped faces and in fine pores; gradual boundary.
6408	B22	18-25 inches. Dark grayish brown (10YR 4/2) base color with nearly continuous very dark gray (10YR 3/1) coatings on peds; silty clay; weak medium and fine blocky peds arranged in weak, irregular, medium to coarse prisms; very firm; common fine faint dark yellowish brown mottles mostly in ped interiors; nearly continuous very dark gray (10YR 3/1) clay skins on peds; common tubular pores up to one mm. in diameter; gradual boundary.
6409	B23	25-33 inches. Grayish brown (2.5Y 5/2) heavy silty clay loam; weak coarse blocky; firm; common fine distinct yellowish brown to strong brown and black to dark reddish brown mottles; discontinuous very dark gray (10YR 3/1) clay skins on both horizontal and vertical ped surfaces and in fine pores; common tubular pores .07 to 1 mm. in diameter; gradual boundary.
6410	B3	33-46 inches. Grayish brown (2.5Y 5/2) medium silty clay loam; weak coarse blocky; firm; common fine distinct yellowish brown to strong brown and black to dark reddish brown mottles; ped surfaces are slightly darker than interiors, but the difference is not measurable; patchy clay skins mostly associated with fine vertical pores; common tubular pores .07 to 1 mm. in diameter; clear boundary.
6411	C11	46-52 inches. Grayish brown (2.5Y 5/2) with common prominent medium mottles of yellowish red (5YR 4-5/8) and black to dark reddish brown (5YR 2/1-2); light silty clay loam; weak coarse blocky approaching prismatic; slightly firm at moisture content slightly above wilting point; few tubular pores .07 to 1 mm. in diameter are lined with clay skins; clear boundary. (This layer appears to be a zone of oxide accumulation.)
6412	C12	52-62 inches. Grayish brown (2.5Y 5/2) light silty clay loam; massive with occasional vertical cleavage faces; slightly firm at moisture content slightly above wilting point; few prominent red (2.5YR 4/8) mottles (some in the form of vertical pipestems 1 to 2 mm. in diameter); few tubular pores .07 to 1 mm. in diameter are lined with clay skins; abrupt boundary.
	A1b	62-68 inches. Dark gray (10YR 4/1.5) medium silty clay loam (nongritty) that is gray (10YR 5/1) when dry and with thin gray to light gray (10YR 6/1) coatings or small flecks throughout; few fine faint yellowish brown mottles; vesicular with pores mostly about 1 mm. across; common pieces of "black charcoal" 1 to 4 mm. across.
		68-80 inches. Gray to light gray (2.5Y 6/1) medium silty clay loam (nongritty) with many fine distinct yellowish brown to strong brown mottles and common soft yellowish brown to dark brown oxide concretions 1 to 3 mm. across.
		80-92 inches. As above but with fewer mottles and oxide concretions.

Notes: 1. Colors are for moist soil unless indicated as dry. 2. 68- to 92-inch depth examined by bucket auger. 3. Root distribution: Roots are most abundant in horizon 1 and decrease gradually through horizon 5. A few fine fibrous roots are present in horizon 6. In horizons 3, 4, and 5 the roots are primarily vertical and occur both between peds and within peds. In horizons 3 and 4 there appear to be many more roots following horizontal cleavage planes than in other subsoil horizons.

SOIL SURVEY LABORATORY Lincoln, Nebr. 2/10/58

SOIL TYPE Grundy **LOCATION** Caldwell County, Missouri

silt loam, more sand in lower B than modal

SOIL NOS. S57Mo-13-2 **LAB. NOS.** 6413-6421

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	2A2 > 2	TEXTURAL CLASS
0-6	A1p	0.2a	0.4a	0.6a	1.4a	1.6a	68.3	27.5	39.5	31.1	-	sicl/sil
6-11	A3	0.1a	0.3a	0.3a	0.7a	1.0a	63.8	33.8	30.4	34.8	-	sicl
11-15	B21	0.3a	0.6a	0.3a	0.6a	0.9a	58.7	38.6	26.1	33.8	-	sicl
15-23	B22	-	-	0.2a	0.4a	0.7a	59.9	38.8	23.7	37.1	-	sicl
23-29	B23	-	0.1b	0.1b	0.2b	0.5b	56.8	42.3	23.0	34.4	-	sic
29-34	B24	0.1b	0.7b	1.1b	2.2b	1.9b	60.6	33.4	29.4	34.2	-	sicl
34-40	B3	0.6b	1.8b	2.2b	4.7b	4.2b	61.7	24.8	37.7	30.5	Tr.	sil
40-50	C11	0.4b	2.0b	2.4b	4.9b	4.3b	57.8	28.2	36.3	28.2	-	sicl
50-60	C12	0.3b	1.8b	2.2b	4.6b	3.9b	54.9	32.3	33.8	27.3	Tr.	sicl

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	EST% SALT (BUREAU CUP)	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	6E1a CaCO₃ equivalent %	GYPSUM mg./100g. SOIL	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.8			1.97	.149	13.2							11.2
5.3			1.78	.140	12.7							15.3
5.2			1.11	.097	11.4							17.7
6.0			0.36	.038	9.5							18.7
5.8			0.52	.050	10.4							20.7
6.4			0.27									15.6
7.0			0.11									10.4
7.2			0.12									12.0
7.3			0.07					-				13.6

5A1a CATION EXCHANGE CAPACITY NH₄AC	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH₄AC EXCH. 5C1	5C3 Base Sat. % on Sum Cations		5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
23.9	15.8	3.6	9.4	0.1	0.4	83	68		19.9	29.3	4.4	
27.2	14.4	4.8	11.9	0.2	0.4	73	62		19.8	31.7	3.0	
30.3	16.3	6.3	10.4	0.3	0.4	77	69		23.3	33.7	2.6	
29.0	18.8	7.4	9.3	0.8	0.5	95	75		27.5	36.8	2.5	
31.5	19.5	8.2	6.9	0.7	0.6	92	81		29.0	35.9	2.4	
24.1	15.6	6.2	3.2	0.7	0.4	95	88		22.9	26.1	2.5	
16.7	11.2	4.4	2.4	0.6	0.2	98	87		16.4	18.8	2.5	
19.2	12.9	5.0	3.2	0.7	0.2	98	85		18.8	22.0	2.6	
22.0	15.2	5.5	4.8	0.8	0.2	99	82		21.7	26.5	2.8	

a. Common, smooth and irregular dark brown concr. (Mn?)
b. Few, smooth dark brown concr. (Mn?)

Soil type: Grundy silt loam, more sand in lower B than modal
Soil No.: S57Mo-13-2
Map unit: 112-4-1
Location: 90 feet north and 190 feet west of SE corner of NE1/4 SE1/4 of Sec. 14, T57N, R29W, Caldwell County, Mo.
Sampling site: Cultivated field (lespedeza in wheat stubble); on long narrow ridge at slightly lower elevation than the adjacent primary divide level; longitudinal slope of ridge at sampling site is about 1 percent; transverse slope is gently convex 2 percent which grades to 6 percent 55 feet to the west; elevation 978 feet.
Sampled and described by: J. S. Allen, F. J. Carlisle, H. E. Grogger, Robert Hamby, and Ed Hughes, August 28, 1957.

Lincoln Lab.No.	Horizon	
6413	Alp	0-6 inches. Very dark brown (10YR 2/2) heavy silt loam; crushed color is very dark brown to very dark grayish brown (10YR 2.5/2) and dry color is dark gray to dark grayish brown (10YR 4/1.5); cloddy breaking with slight pressure to very weak medium and fine granular; friable; occasional sand grains and gravel-size fragments present; abrupt boundary.
6414	A3	6-11 inches. Black (10YR 2/1) medium silty clay loam which is very dark grayish brown (10YR 3/2) when crushed; weak fine and medium granular; structure approaches weak medium platy in the upper few inches (probably a weak plow sole); friable; clear boundary.
6415	B21	11-15 inches. Very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2) light silty clay; strong fine and very fine subangular blocky; friable; faint dark grayish brown (10YR 4/2) to dark brown to brown (10YR 4/3) mottles in ped interiors; clay skins are nearly continuous on ped surfaces; abundant oxide concretions 2 to 3 mm. in diameter occur in the lower 1/4 to 1 inch of this horizon (immediately above the prisms of the next lower horizon); abrupt boundary.
6416	B22	15-23 inches. Very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2) silty clay with many fine distinct yellowish brown and dark yellowish brown mottles; medium blocky peds arranged into moderate medium to coarse prisms; very firm; faces of prisms are predominantly very dark gray (10YR 3/1); nearly continuous clay skins on peds; few oxide concretions 1 to 2 mm. in diameter; approximately horizontal slickensides about 3 to 4 square inches in area are common at the tops of blocks or prisms in this horizon; gradual boundary.
6417	B23	23-29 inches. Mottled dark grayish brown (2.5Y 4/2) and grayish brown (2.5Y 5/2) colors in fine faint pattern with common fine dark yellowish brown and a few gray to light gray (10YR 6/1) mottles; heavy silty clay loam or light silty clay; medium blocky peds arranged into moderate medium to coarse prisms; very firm; discontinuous very dark gray ped coatings and streaks within peds; few dark oxide concretions 1 to 2 mm. in diameter; sand grains are rare; distinct slickensides, similar to those described in horizon above, are present; clear boundary.
6418	B24	29-34 inches. Dark grayish brown (2.5Y 4/2) heavy silty clay loam; medium to coarse blocky peds mostly arranged into weak to moderate medium prisms; firm; common fine faint grayish brown (2.5Y 5/2) to light brownish gray (2.5Y 6/2) and dark brown to yellowish brown mottles; irregular streaks (roughly planes) of very dark gray (10YR 3/1) color commonly occur on ped surfaces and less frequently extend through peds; patchy dark gray clay skins occur on ped surfaces and line common tubular pores .07 to 1 mm. in diameter; sand grains are scattered throughout the horizon; clear boundary.
6419	B3	34-40 inches. Grayish brown (2.5Y 5/2) gritty silty clay loam; very weak medium to coarse subangular blocky approaching massive; firm; common, distinct, medium and fine dark grayish brown (10YR 4/2) to dark yellowish brown (10YR 4/4) mottles; common tubular pores .07 to 1 mm. in diameter; there is noticeably more sand in this horizon and below than in horizons above; diffuse boundary.
6420	C11	40-50 inches. Similar to horizon above but with more distinct vertical cleavage planes. Diffuse boundary.
6421	C12	50-80 inches. Gray to light gray (2.5Y 6/1) gritty silty clay loam; massive with few indistinct vertical cleavage planes; slightly firm; common fine distinct yellowish brown mottles; few soft dark oxide concretions 1 to 3 mm. in diameter; few tubular pores .07 to 1 mm. in diameter--these are lined with clay skins; diffuse boundary.
	D?	80-110 inches. Gray to light gray (10YR 6/1) heavy silty clay loam with few fine prominent strong brown to yellowish red mottles; slightly gritty.

Notes: 1. Colors are for moist soil unless indicated as dry. 2. Material below 6 feet examined with bucket auger. 3. The 29 to 34-inch horizon appears as a relatively dark band through the profile. This may be a buried surface horizon. It is not known to be characteristic of the mapping unit being sampled. 4. Root distribution: Roots are most abundant in the surface horizon, and they decrease gradually with depth. A few fine fibrous roots occur in the 29 to 34-inch horizon; roots are rare below this depth. Roots occur in both horizontal and vertical planes throughout their extent; horizontal orientation noted in certain horizons of profile S57Mo-13-1 is much less pronounced in this profile.

SOIL SURVEY LABORATORY Lincoln, Nebr. 2/10/58

SOIL TYPE Grundy **LOCATION** Caldwell County, Missouri

silt loam, more sand in lower B than modal

SOIL NOS. S57Mo-13-3 **LAB. NOS.** 6422-6429

DEPTH INCHES	HORIZON	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	2A2 > 2	TEXTURAL CLASS
0-6	A1p	0.1a	0.2a	0.3	0.5	1.0	70.6	27.3	36.4	35.5	-	sicl/sil
6-10	A3	-	0.2b	0.3b	0.5b	1.0b	69.8	28.2	35.3	35.8	-	sicl
10-16	B21	-	0.1c	0.1c	0.3c	0.7c	62.2	36.6	28.4	34.7	-	sicl
16-24	B22	-	0.2c	0.2c	0.3c	0.6c	53.9	44.8	23.2	31.5	-	sic
24-34	B23	0.3c	0.2c	0.1c	0.5c	0.6c	60.1	38.2	23.0	38.0	-	sicl
34-39	B24	0.5d	1.9d	2.4d	4.7d	3.7d	54.8	32.0	31.6	29.3	Tr.	sicl
39-45	C11	1.2d	2.5d	3.1d	6.2d	4.9d	50.2	31.9	33.5	24.9	Tr.	sicl
45-57	C12	1.2d	3.1d	3.6d	6.9d	5.2d	44.5	35.5	32.1	21.2	Tr.	cl

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN %	ORGANIC MATTER C/N	EST% SALT (BUREAU CUP)	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	6E1a $CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS 1/10 ATMOS. %	MOISTURE TENSIONS 1/3 ATMOS. %	4B2 15 ATMOS. %
5.6			2.54	.211	12.0							12.3
5.5			2.29	.191	12.0							13.1
5.6			1.18	.097	12.2							16.8
5.7			0.67	.060	11.2							20.3
6.6			0.41									17.9
7.2			0.28									14.4
7.7			0.16									13.8
8.1			0.09					-				15.6

5A1a CATION EXCHANGE CAPACITY NH_4AC	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4AC EXCH. 5C1	5C3 Base Sat. % on Sum Cations		5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
24.0	13.6	3.7	10.6	0.1	1.1	77	64		18.5	29.1	3.7	
23.6	12.4	4.0	11.4	0.1	1.4	76	61		17.9	29.3	3.1	
26.2	13.4	5.4	10.0	0.3	1.7	79	68		20.8	30.8	2.5	
32.2	20.0	7.8	7.7	0.8	0.9	92	79		29.5	37.2	2.6	
28.5	19.2	7.4	4.4	1.0	0.5	98	86		28.1	32.5	2.6	
23.0	16.1	5.8	2.4	1.0	0.3	100	91		23.2	25.6	2.8	
22.3	15.6	5.8	1.6	1.0	0.3	100	93		22.7	24.3	2.7	
25.1	18.0	7.0	0.8	1.2	0.3	100	97		26.5	27.3	2.6	

a. Some organic matter
b. Common, smooth black concr. (Mn?)
c. Many, irregular light and dark brown concr. (Fe-Mn?)
d. Few, irregular light and dark brown concr. (Fe-Mn?)

Soil type: Grundy silt loam, more sand in lower B than modal
Soil No.: S57Mo-13-3
Map unit: 112-4-1
Location: Near center of SW1/4 SE1/4 NE1/4 of Sec. 3 T55N, R29W, Caldwell County, Missouri.
Sampling site: Cultivated field (red clover in wheat stubble); on narrow N-S trending ridge at slightly lower elevation than adjacent primary divide level; longitudinal slope of ridge at sampling site is 1 percent to south; transverse slope is gently convex 1 percent to east, grading to 5 percent to east; elevation 1005 feet.
Sampled and described by: J. S. Allen, F. J. Carlisle, H. E. Grogger, Robert Hamby and Ed Hughes, August 28, 1957.

Lab. No.	Horizon	
6422	A1p	0-6 inches. Black to very dark brown (10YR 2/1.5) silt loam, which is dark gray (10YR 4/1) when dry; moderate fine to very fine granular; friable.
6423	A3	6-10 inches. Black to very dark brown (10YR 2/1.5) light silty clay loam, which is dark gray to gray (10YR 4.5/1) when dry; weak medium to fine granular with tendency toward cloddy or fragmental structure; friable; in the lower 2 inches of this horizon there are common fine faint yellowish red mottles that occur mostly in a fine dendritic pattern (like fine fibrous root pattern); clear boundary.
6424	B21	10-16 inches. Mottled very dark grayish brown (10YR 3/2) and very dark gray (10YR 3/1) colors in fine faint pattern; the dry color is grayish brown (10YR 5/2) to light brownish gray (10YR 6/2) and the crushed moist color is faintly lighter than very dark grayish brown (10YR 3/2); medium silty clay loam; strong fine to very fine subangular blocky; friable; few very fine faint dark brown mottles; scattered very fine sand grains visible on ped surfaces; abrupt boundary.
6425	B22	16-24 inches. Mottled very dark gray (10YR 3/1) and dark yellowish brown (10YR 4/4) light silty clay; weak medium to coarse prismatic structure which subdivides readily to weak-moderate, medium and coarse blocky; which in turn subdivides to fine subangular blocky; very firm; very dark gray (10YR 3/1) colors occur on ped surfaces and dark yellowish brown on ped interiors in a fine distinct pattern; clay skins nearly continuous on all ped surfaces; few fine dark reddish brown oxide concretions mainly 1 mm. diameter; a few sand grains are present; gradual boundary.
6426	B23	24-34 inches. Dark grayish brown (2.5Y 4/2) to grayish brown (2.5Y 5/2) heavy silty clay loam; compound weak medium to coarse blocky and medium to coarse prismatic structure; common fine faint yellowish brown and few fine distinct yellowish red mottles; few fine yellowish red and black oxide accumulations; discontinuous clay skins present on horizontal and vertical ped faces and in tubular pores; slickensides are present and are orientated at an angle to the horizontal but more nearly horizontal than vertical; occasional sand grains are present but some less than in horizon 6 and much less than in horizons 7 and 8; clear boundary.
6427	B24	34-39 inches. Dark gray (10YR 4/1) to dark gray to dark grayish brown (10YR 4/1.5) heavy silty clay loam; weak coarse blocky with tendency toward medium prismatic; firm; common fine faint dark yellowish brown mottles; common to few soft dark oxide accumulations about 1 mm. in diameter; common very dark gray (10YR 3/1) ped coatings and pore fillings within peds; discontinuous clay skins on vertical and horizontal ped surfaces and in tubular pores are predominantly very dark gray (10YR 3/1) to dark gray (10YR 4/1) in color; occasional coarse sand grains and gravel-size rock fragments; clear boundary.
6428	C11	39-45 inches. Dark grayish brown to grayish brown (2.5Y 4.5/2) clay loam which is stickier than horizon 6 and has slightly more clay than horizon 8; very weak coarse blocky structure which approaches the massive condition; firm; common fine to medium, distinct yellowish brown to strong brown mottles; few patchy very dark gray (10YR 3/1) clay skins on horizontal and vertical surfaces; oxides as in horizon below; few tubular pores 0.07 to 1 mm. in diameter mostly lined with clay films; some coarse sand and fine gravel fragments; gradual boundary.
6429	C12	45-57 inches. Dark grayish brown to grayish brown (2.5Y 4.5/2) clay loam; massive with occasional cleavage planes; firm; common fine to medium, distinct yellowish brown mottles; few soft dark oxide accumulations 2 to 3 mm. across; few tubular pores 0.07 to 1 mm. in diameter; occasional coarse sand and gravel fragments--some of granitic composition. This horizon extends to about 63 inches but was sampled between 45 and 57 inches. (Hamby estimated the texture to be a heavy clay loam and Carlisle's estimate was a medium clay loam.)
		63-75 inches. Gray (5Y 5/1) gritty clay with few prominent strong brown (7.5YR 5/6) mottles; occasional pebbles about 1/2 inch in diameter.
		75-93 inches. Mottled gray (5Y 5/1) and strong brown (7.5YR 5/6) gritty clay.
		93-108 inches. Gray (5Y 5/1) gritty clay with many large prominent strong brown (7.5YR 5/6) mottles; large prominent oxide accumulations increase in abundance with depth; some more sandy pockets occur in lower part.

Notes: 1. Colors are for moist soil unless indicated as dry. 2. Material below 63 inches was examined with a bucket auger. 3. The 34- to 39-inch horizon appears as a faint dark band through the profile. 4. Root distribution: Most abundant in the surface horizon and diminishing gradually with depth to about 3 feet. Very few roots observed below 3 feet. Most roots follow the pore spaces between peds, but some roots go through peds.

SOIL SURVEY LABORATORY Lincoln, Nebr. 2/10/58

SOIL TYPE Grundy silt loam **LOCATION** Caldwell County, Missouri

SOIL NOS. S57Mo-13-4 **LAB. NOS.** 6430-6437

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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	3A1 2A2 > 2	TEXTURAL CLASS
0-6	A1p	0.5a	0.9a	0.5a	0.5a	1.3a	70.9	25.4	40.8	31.6	-	sil
6-9	A3	0.4a	0.9a	0.5a	0.4a	1.0a	64.7	32.1	34.2	31.7	-	sicl
9-13	B1	0.6	0.8a	0.3a	0.4a	0.9a	59.3	37.7	30.4	30.0	-	sicl
13-19	B21	-	0.2a	0.2a	0.2a	0.6a	49.2	49.6	22.9	27.0	-	sic
19-29	B22	0.1a	0.2a	0.2a	0.2a	0.8a	56.3	42.2	26.0	31.2	-	sic
29-39	B31	0.2a	0.4a	0.2a	0.4a	0.9a	63.6	34.3	27.6	37.1	-	sicl
39-50	B32	-	0.3a	0.2a	0.4a	0.7a	64.9	33.5	29.4	36.4	-	sicl
50-60	C	-	0.1z	0.1a	0.2a	0.6a	67.2	31.8	29.1	38.8	-	sicl

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	EST% SALT (BUREAU CUP)	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM @25°C.	6E1a $CaCO_3$ equivalent %	GYPSUM me./100g. SOIL	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.7			2.23	.169	13.2							11.5
5.4			2.06	.164	12.6							15.3
5.4			1.62	.129	12.6							17.1
5.6			0.88	.075	11.7							22.2
6.3			0.46	.051	9.0							19.9
6.9			0.20									17.1
6.8			0.15									17.2
6.6			0.13									16.4

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4AC EXCH. 5C1	5C3 Base Sat. % on Sum Cations		5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
←	milliequivalents per 100g. soil				→							
23.0	12.8	4.0	11.5	0.2	0.2	75	60		17.2	28.7	3.2	
26.5	14.4	5.3	10.8	0.1	0.3	76	65		20.1	30.9	2.7	
29.3	15.0	6.8	10.8	0.2	0.4	76	67		22.4	33.2	2.2	
36.6	20.2	10.0	9.3	0.5	0.6	86	77		31.3	40.6	2.0	
31.8	19.1	9.6	5.2	0.7	0.6	94	85		30.0	35.2	2.0	
28.3	18.0	8.7	3.2	0.8	0.5	99	90		28.0	31.2	2.1	
28.1	18.0	8.8	2.8	0.9	0.5	100	91		28.2	31.0	2.0	
26.4	16.6	8.0	3.2	0.9	0.5	98	89		26.0	29.2	2.1	

a. Many, smooth light and dark brown concr. (Fe-Mn?)

Soil type: Grundy silt loam
Soil No.: S57Mo-13-4
Map unit: 11
Location: NE1/4 NW1/4 NE1/4 of Sec. 26, T55N, R29W, Caldwell County, Missouri, 215 feet south of the center of Missouri Highway No. 116 south of Prairie Ridge Cemetery.
Sampling site: Cultivated field (lespedeza following wheat); near center of N-S primary divide ridge of the loess-mantled Kansan till plain; at sampling site the longitudinal slope of the ridge is less than 1 percent; transverse slope is very gently convex 1 percent about 150 feet wide grading to 3 to 4 percent slope to east and west. Elevation 1020 feet.

Lincoln Lab.No.	Horizon	
6430	A1p	0-6 inches. Black to very dark brown (10YR 2/1.5) heavy silt loam which when dry is dark gray (10YR 4/1); cloddy, crushing with a slight pressure to weak medium to fine granular; friable; abrupt boundary.
6431	A3	6-9 inches. Black to very dark brown (10YR 2/1.5) medium silty clay loam; moderate very fine subangular blocky and medium granular structure; friable; clear boundary.
6432	B1	9-13 inches. Very dark gray (10YR 3/1) heavy silty clay loam or light silty clay; (estimated clay content 40 percent ±3); strong fine subangular blocky; few dark brown to dark yellowish brown mottles 1 mm. in diameter in ped interiors; clear boundary.
6433	B21	13-19 inches. Mottled dark gray (10YR 4/1), very dark gray (10YR 3/1), dark grayish brown (2.5Y 4/2) and yellowish brown silty clay; compound weak to moderate prismatic and weak to moderate angular blocky; very firm when slightly moist; fine distinct yellowish brown mottles occur in the interior of peds; a few dark reddish brown mottles about 1 mm. in diameter occur in the upper part of this horizon; nearly continuous very dark gray (10YR 3/1) clay skins on all ped surfaces; gradual boundary.
6434	B22	19-29 inches. Mottled grayish brown (2.5Y 5/2) dark brown to brown (10YR 4/3) and brown (10YR 5/3) colors in fine distinct pattern; silty clay; compound moderate medium prismatic and weak medium to coarse blocky; very firm when slightly moist; discontinuous very dark gray (10YR 3/1) coatings 1 to 3 square cms. in area on faces of prisms and blocky peds; gradual boundary.
6435	B31	29-39 inches. Grayish brown (2.5Y 5/2) medium silty clay loam; compound weak coarse blocky and medium-coarse prismatic structure; firm; common fine distinct yellowish brown mottles; few dark soft oxide concretions 1 to 2 mm. in diameter; discontinuous clay skins on vertical and horizontal ped faces; common tubular pores .07 to 2 mm. in diameter usually lined with very dark gray clay films; in the lower part of this horizon is a conspicuous band ranging from 2 to 5 inches thick of oxide concretions and mottles. The upper part of this band contains many soft dark oxide concretions about 2 to 4 mm. in diameter; the lower part of the band contains many medium to large yellowish red mottles. Gradual boundary.
6436	B32	39-50 inches. Gray (2.5Y 5/1) to grayish brown (10YR 5/2) light silty clay loam; massive with common vertical cleavage planes; friable; many medium to fine prominent yellowish brown to strong brown mottles; dark gray to very dark gray clay films line tubular pores .07 to 2 mm. in diameter and are discontinuous on vertical cleavage faces; concentrations of yellowish red oxides about 1 mm. thick occur adjacent to tubular pores; diffuse boundary.
6437	C	50-60 inches. Grayish brown (2.5Y 5/2) heavy silt loam; massive; friable; common fine dark yellowish brown to yellowish red mottles; few dark soft oxide accumulations 2 to 3 mm. in diameter; common tubular pores .07 to 1 mm. in diameter are mostly lined with dark clay films. This horizon is loess.
	C	60-70 inches. Same as horizon above.
	A1b	70-73 inches. Dark gray (2.5Y 4/0) silty clay loam; massive; moderately firm when moist; some strong brown (7.5YR 5/6) streaks.
	A2b	73-80 inches. Light olive gray (5Y 6/2) silty clay loam with a crushed color of grayish brown (2.5Y 5/2). Dark yellowish brown (10YR 4/6) to olive brown (2.5Y 4/6) mottles.
	B1b	80-97 inches. Gray (5Y 5/1) heavy silty clay with numerous large yellowish brown (10YR 5/6) mottles; crushed color is yellowish brown (10YR 5/4); gradual boundary.
	B2b	97-108 inches. Plastic clay mottled as above with occasional sand grains.

Notes: 1. Colors are for moist soil unless indicated as dry. 2. Material below 6 feet was examined with a bucket auger. 3. Root distribution: Most abundant in the surface horizon and diminishing gradually with depth to about 50 inches. No roots observed below 50 inches. In horizons 1 through 5, the roots are mainly vertical. In horizon 6 the roots are mainly horizontal.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL *Hobson loam SOIL Nos. S59Mo-33-3 LOCATION Dent County, Missouri

SOIL SURVEY LABORATORY Lincoln, Nebraska LAB. Nos. 12123-12134 December 1964

Depth (In.)	Horizon	1B1a Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (< 0.002)	Sand Very coarse (2-1)	Sand Coarse (1-0.5)	Sand Medium (0.5-0.25)	Sand Fine (0.25-0.1)	Sand Very fine (0.1-0.05)	Silt (0.05-0.02)	Silt Int. III (0.02-0.002)	Silt Int. II (0.2-0.02)	(2-0.1)			Coarse fragments 2A2 > 2 Pct.	2-19	19-76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
0-6	Ap	35.5	51.8	12.7	-	4.5d	12.4	16.7	1.9	20.9	30.9	28.5	33.6			-		
6-9	B1	18.7	53.0	28.3	-	2.4d	6.6	8.6	1.1	16.7	36.3	20.8	17.6			-		
9-12	B21	20.6	44.1	35.3	-	2.7d	7.3	9.5	1.1	12.9	31.2	17.3	19.5			-		
12-16	B22	26.5	37.9	35.6	0.1e	3.4d	9.2	12.3	1.5	11.9	26.0	17.8	25.0			-		
16-21	B23	34.0	33.8	32.2	0.1e	3.7d	11.7	16.5	2.0	11.4	22.4	19.1	32.0			-		
21-27	IIA'X1	53.1	31.0	15.9	0.2e	6.2	18.2	25.5	3.0	10.5	20.5	22.3	50.1			-		
27-41	IIA'X2	69.9	24.1	6.0	0.4d	9.4	24.4	31.7	4.0	10.1	14.0	24.9	65.9			tr.		
41-47a	IIB'X1																	
47-51	IIB'X2	59.0	18.9	22.1	0.5	11.9	20.8	20.2	5.6	6.1	12.8	18.4	53.4			tr.		
51-60	IIB21bt	59.1	11.0	29.9	-	8.5	21.7	21.5	7.4	4.3	6.7	18.4	51.7			-		
60-70+b	IIB3b	77.8	3.9	18.3	0.3	17.6	32.8	23.1	4.0	2.0	1.9	11.6	73.8			-		
60-70+c	IIB3b	53.0	8.8	38.2	0.1	10.0	20.4	18.1	4.4	3.6	5.2	13.3	48.6			-		

Depth (In.)	6A1a Organic carbon Pct.	6B1a Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	6C1a Ext. Iron as Fe Pct.	Bulk density Field-State g/cc	4A4 30-Cm. g/cc	4A4 Oven-Dry g/cc	4D1 Extensibility in per horizon	Water content Field-State Pct.	4B3 30-Cm. Pct.	4B2 15-Bar Pct.	1/3- to 15-Bar in per horizon		pH		8C1a (1:1) H_2O
0-6	0.68	0.067	10			0.6							4.1					4.8
6-9	0.46	0.051	9			1.3							9.8					4.6
9-12	0.42	0.048	9			1.4							13.3					4.5
12-16	0.38	0.046	8			1.4							13.8					4.6
16-21	0.25	0.035				1.1		1.60	2.04	.40		22.2	13.6					4.7
21-27	0.13	0.017				0.7		1.77	1.99	.23		16.4	6.2					4.8
27-41	0.04					0.4		2.00	2.06	.14		7.8	2.2					4.9
41-47a								2.10	2.12	.02		7.6						
47-51	0.04					0.9		1.95	1.97	.01		10.7	5.8					5.0
51-60	0.04					1.3			1.90	-			9.1					4.9
60-70+b	0.05					1.0			1.87				7.2					4.9
60-70+c	0.10					1.3							13.0					4.9

Depth (In.)	Extractable bases 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	Cat. Exch. Cap. 5A3a Sum Cations	5A1a NH_4OAc	6G2a KCl Ext. Al						8D3 Ca/Mg		Base saturation 5C3 Sum Cations Pct.	5C1 NH_4OAc CEC Pct.
	meq/100 g																	
0-6	1.4	1.1	tr.	0.2	2.7	6.1	8.8	5.9	1.0						1.3		31	46
6-9	2.4	2.6	0.1	0.3	5.4	10.5	15.9	11.8	3.8						.9		34	46
9-12	2.7	3.6	0.1	0.4	6.8	14.1	20.9	16.3	6.4						.8		32	42
12-16	2.1	3.7	0.1	0.4	6.3	15.1	21.4	17.0	8.5						.6		29	37
16-21	1.9	3.7	0.2	0.4	6.2	15.6	21.8	16.2	7.1						.5		28	38
21-27	0.9	2.0	0.1	0.2	3.2	8.1	11.3	8.5	4.3								28	38
27-41	0.4	0.6	tr.	0.1	1.1	3.5	4.6	3.3	2.1								24	33
41-47a																		
47-51	1.6	1.5	0.2	0.1	3.4	5.7	9.1	6.6	2.2						1.1		37	52
51-60	2.7	2.1	0.4	0.1	5.3	6.2	11.5	9.0	2.2						1.3		46	59
60-70+b	2.1	1.7	0.3	tr.	4.1	3.1	7.2	5.3	0.6						1.2		57	77
60-70+c	4.6	3.6	0.6	0.2	9.0	7.2	16.2	12.9	2.4						1.3		56	70

Depth (In.)	Ratios to Clay 8D1 NH_4OAc CEC	Ext. Iron	15-Bar Water		
0-6	.46	.05	.32		
6-9	.42	.04	.35		
9-12	.46	.04	.38		
12-16	.48	.04	.39		
16-21	.50	.03	.42		
21-27	.53	.04	.39		
27-41	.55	.07	.37		
41-47a					
47-51	.30	.04	.26		
51-60	.30	.04	.30		
60-70+b	.29	.05	.39		
60-70+c	.34	.03	.34		

a. No bulk sample.
b. Red material from the B3 horizon.
c. Gray material from the B3 horizon.
d. 5-25% Fe-Mn nodules.
e. > 50% Fe-Mn nodules.

Soil type: *Hobson loam
Soil No.: S59Mo-33-3
Location: Middle of northwest quarter of northeast quarter of Sec. 9, T35N, R7W, on the Jack Sturgeon farm, Dent County, Missouri; aerial photo BLG-5p-125.
Vegetation and land use: Sparse cover of weeds, grass, and lespedeza; no evidence that the field has been used recently. Cleared of timber about 100 years ago and has been in small grains about every third year since 1940 until 1954 when it was seeded down; in 1953 there was 1200 pounds per acre of rock phosphate applied and 3-1/2 tons per acre of lime in 1954; pasture since 1954.
Slope and land form: 7 percent east-facing slope; about 6 feet lower than north-south ridge crest and about 40 feet above adjacent north-south drainage way. Some accelerated erosion in the past seems likely at this site.
Drainage: Moderately well drained.
Parent material: Residuum from sandstone and siliceous dolomitic limestone of the Rubideaux formation.
Sampled by and date: J. S. Allen and R. L. Juve, October 7, 1959.
Described by: John Van Dine and F. J. Carlisle.

Horizon and Lincoln Lab. No.	
Ap 12123	0 to 6 inches. Brown (10YR 4/3) loam (10YR 6/3 dry); massive; friable; few medium and common fine tubular pores; pH 5.0; abrupt boundary.
B1 12124	6 to 9 inches. Brown (7.5YR 4/4) gritty medium silty clay loam (10YR 6/4 dry), with thin faint patches of grayish silty material on ped faces; weak fine blocky structure; friable; few medium and many fine tubular pores; indistinct lower boundary.
B21 12125	9 to 12 inches. Brown (7.5YR 4/4) gritty heavy silty clay loam; weak medium blocky structure; firm; common fine tubular pores; appears to be a few thin discontinuous clay films when material is moist but these are not evident when the soil is dry; dry material has grainy surfaces with thin faint patches of grayish silty material; pH 5.0; gradual boundary.
B22 12126	12 to 16 inches. Brown (7.5YR 4/4) heavy clay loam; moderate medium and fine blocky structure; firm; common fine and few medium tubular pores; few thin patches of clay film and numerous faint patches of grayish silt on peds; clear boundary.
B23 12127	16 to 21 inches. Dark yellowish brown (10YR 3/4) heavy clay loam; strong medium blocky structure; firm; common fine and few medium tubular pores; patches of thin brown clay films intermingled with very thin patches of grayish silt on ped faces; the grayish silt patches are not evident when the soil is fully moist; pH 4.8; clear boundary.
IIA'X1 12128	21 to 27 inches. Grayish brown (10YR 5/2) medium clay loam; weak thick platy structure; very firm; common fine distinct yellowish brown (10YR 5/6 to 5/8) mottles parallel the platy cleavage; common fine and few to common medium tubular pores; occasional vertical cleavage along clay seams which are dark grayish brown (10YR 4/2); clear boundary.
IIA'X2 12129	27 to 41 inches. Brown (10YR 5/3) sandy loam; massive but with occasional horizontal cleavage having discontinuous 7.5YR 4/4 clay films; very firm; common fine and few medium tubular pores are lined with distinct reddish brown to brown clay films; occasional soft dark spherical oxide concretions; pH 5.0; clear boundary.
IIB'X1 12130	41 to 47 inches. Closely packed sandstone fragments with pale brown loam in interstices; massive and extremely firm; in the lower part of this horizon is a discontinuous pale brown (10YR 6/3) loam layer about 2 inches thick that is extremely firm in place, brittle when removed, contains common vesicles and fine to medium tubular pores, and contains a few faint brownish clay films, most pore spaces being lined with grayish silty material; clear boundary.
IIB'X2 12131	47 to 51 inches. Yellowish brown (10YR 5/4) clay loam; moderate thick platy structure; very firm; distinct and nearly continuous dark yellowish brown clay films occur on the horizontal cleavages; few fine prominent dark red (10R 3/6) mottles; many fine to medium tubular pores; pH 5.4; clear boundary.
IIB21bt 12132	51 to 60 inches. Mottled yellowish brown (10YR 5/6) and dark red (10R 3/6) in a prominent medium to coarse pattern, clay loam; very weak thick platy structure with dark yellowish brown to dark reddish brown clay films on horizontal cleavages and lining the few to common, medium to fine tubular pores; very firm; gradual boundary.
IIB3b 12133 (red mat'l) 12134 (gray mat'l)	60 to 72 inches plus. Dark red (10R 3/6) with prominent medium to coarse grayish brown (2.5Y 5/2) mottles; the dark red material has about sandy clay loam texture and appears to be weathered sandstone; the grayish brown material has a gritty clay texture and occurs as seams or planes; the horizon is massive and very firm; thick dark yellowish brown (10YR 4/4) clay films occur on occasional cleavage faces; pH 5.6.

Notes: Colors are for fully moist soil unless indicated otherwise. pH was measured in the field with chlorphenol red and bromcresol green indicators. Roots are common above 21 inches and very rare below 21 inches. The above-ground vegetation is so sparse that the root distribution may not be very meaningful. From the morphology observed in the pits, it appears that the dark red mottled horizons that occur below the fragipan (51 inches plus in profile S59Mo-33-3 and 47 inches plus in S59Mo-33-4) may consist of material weathered in place. The strong concentrations of rock fragments in the fragipan horizons (41 to 47 inches in profile S59Mo-33-3 and 32 to 47 inches in S59Mo-33-4) may represent a rather thick lag gravel resulting from past erosion of the land surface. The materials above these layers may be pedisediment of local origin. This hypothesis was not tested by additional field observations.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL *Hobson loam SOIL Nos. S59Mo-33-4 LOCATION Dent County, Missouri

SOIL SURVEY LABORATORY Lincoln, Nebraska LAB. Nos. 12135-12144 December 1964

Depth (in.)	Horizon	1B1a Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand: Very coarse (2–1)	Sand: Coarse (1–0.5)	Sand: Medium (0.5–0.25)	Sand: Fine (0.25–0.1)	Sand: Very fine (0.1–0.05)	Silt: 0.05–0.02	Silt: Int. III (0.02–0.002)	Silt: Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19 (Pct. of < 76mm)	19 – 76 (Pct. of < 76mm)
		Pct. of < 2 mm																
0-5	Ap	39.3	51.6	9.1	0.3b	4.1c	13.2	19.4	2.3	19.7	31.9	28.7	37.0			-		
5-8	B1	27.8	57.5	14.7	0.1b	3.0c	9.2c	13.7	1.8	18.6	38.9	25.4	26.0			-		
8-12	B21	23.4	53.6	23.0	0.1b	3.0c	7.9c	10.9	1.5	16.8	36.8	22.1	21.9			-		
12-17	B22	29.4	42.2	28.4	0.1b	3.7c	9.9c	13.8	1.9	11.5	30.7	18.2	27.5			-		
17-20	B23	42.1	36.2	21.7	0.2	4.9	13.9	20.1	3.0	10.9	25.3	21.2	39.1			-		
20-32	IIA'X1	52.5	36.3	11.2	0.6	6.3	16.7	24.4	4.5	12.2	24.1	25.9	48.0			tr.		
32-38a	IIA'X2																	
38-47a	IIA'X3																	
47-61	IIB21bt	30.3	6.5	63.2	0.3	6.1	12.7	9.1	2.1	1.3	5.2	5.5	28.2			-		
61-72	IIB22bt	63.4	6.1	30.5	-	2.8	19.7	36.7	4.2	2.3	3.8	18.3	59.2			-		

Depth (in.)	6A1a Organic carbon Pct.	6B1a Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	6C1a Ext. Iron as Fe Pct.	Bulk density: Field-State g/cc	Bulk density: 4A4 30-Cm. g/cc	Bulk density: 4A4 Oven-Dry g/cc	4D1 Extensibility in per horizon	Water content: Field-State Pct.	Water content: 4B3 30-Cm. Pct.	Water content: 4B2 15-Bar Pct.	1/3- to 15-Bar in per horizon		pH		8C1a (1:1) H_2O
0-5	0.72	0.067	11			0.6							3.6					5.4
5-8	0.46	0.054	8			0.8							4.9					5.3
8-12	0.32	0.047	7			1.0		1.59	1.70	.08		20.0	8.0					5.3
12-17	0.36	0.040	9			1.3		1.65	1.80	.14		19.8	11.4					5.1
17-20	0.23	0.026				0.8		1.72	1.81	.05		17.5	8.9					5.0
20-32	0.06	0.014				0.4		1.96	2.06	.20		11.0	3.5					4.9
32-38a									2.23d									
38-47a									2.00d									
47-61	0.13					2.9		1.45	1.57	.38		29.1	20.6					4.7
61-72	0.06					1.0			1.74				10.8					4.6

Depth (in.)	Extractable bases 5B1a: 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	Cat. Exch. Cap.: 5A3a Sum Cations	5A1a NH_4OAc	6G2a KCl Ext. Al						8D3 Ca/Mg		Base saturation: 5C3 Sum Cations Pct.	5C1 NH_4OAc CEC Pct.
	meq/100 g																	
0-5	2.1	0.6	tr.	0.1	2.8	4.5	7.3	5.3	0.2								38	53
5-8	3.0	1.0	tr.	0.1	4.1	4.5	8.6	6.4	0.1						3.0		48	64
8-12	4.9	2.1	0.1	0.2	7.3	4.8	12.1	9.6	0.2						2.3		60	76
12-17	6.0	3.6	0.1	0.3	10.0	6.9	16.9	13.4	1.4						1.7		59	75
17-20	4.1	2.7	0.1	0.3	7.2	6.9	14.1	10.9	1.7						1.5		51	66
20-32	1.8	0.9	tr.	0.1	2.8	4.3	7.1	4.7	1.6								39	60
32-38a																		
38-47a																		
47-61	4.4	4.6	0.1	0.3	9.4	13.5	22.9	18.2	5.2						1.0		41	52
61-72	1.9	2.0	0.1	0.1	4.1	5.9	10.0	6.9	1.7						1.0		41	59

Depth (in.)	Ratios to Clay 8D1: NH_4OAc CEC	Ext. Iron	15-Bar Water		
0-5	.58	.06	.40		
5-8	.44	.05	.33		
8-12	.42	.04	.35		
12-17	.47	.04	.40		
17-20	.50	.04	.41		
20-32	.42	.04	.31		
32-38a					
38-47a					
47-61	.29	.04	.32		
61-72	.23	.03	.35		

a. No bulk sample.
b. > 50% Fe-Mn nodules.
c. 5-25% Fe-Mn nodules.
d. One clod.

Soil type: *Hobson loam
Soil No.: S59Mo-33-4
Location: Northeast corner of southwest quarter of southwest quarter of Sec. 28, T35N, R7W, Dent County, Missouri; aerial photo BIG-5p-122.
Vegetation and land use: Pasture with sparse vegetation of weeds and lespedeza; used for continuous wheat prior to 1946; pasture since 1946; has not received applications of lime or commercial fertilizer.
Slope and land form: Very gently convex 5 percent slope with north-northwest exposure; about 8 feet lower than crest of northeast-southwest trending ridge with 4 percent longitudinal slope to northeast; about 15 feet above drainage way that lies to the northwest.
Drainage: Moderately well drained.
Parent materials: Residuum from sandstone and siliceous dolomitic limestone of the Rubideaux formation.
Sampled by and date: J. S. Allen and R. L. Juve, October 8, 1959.
Described by: John Van Dine and F. J. Carlisle.

Horizon and Lincoln Lab. Number	
Ap 12135	0 to 5 inches. Brown (10YR 4/3) loam (10YR 6/3 dry); weak medium to thin platy structure; friable; pH 5.0; abrupt boundary.
B1 12136	5 to 8 inches. Yellowish brown (10YR 5/4) loam (10YR 6/4 dry) with faint patches of lower chroma; weak fine blocky structure; friable; common soft spherical oxide concretions < 1-mm. diameter; pH 5.4; clear boundary.
B21 12137	8 to 12 inches. Brown (7.5YR 4/4) medium clay loam; weak fine blocky structure; firm; pH 5.4; gradual boundary.
B22 12138	12 to 17 inches. Yellowish brown (10YR 4.6/4) clay loam with slightly higher clay content than the horizon above; weak fine and medium blocky structure with very thin discontinuous brown (7.5YR 4/4) clay films; firm; pH 5.2; clear boundary.
B23 12139	17 to 20 inches. Brown (10YR 4/3) heavy loam; moderate medium subangular and angular blocky structure; firm; discontinuous 10YR 5/3 silty coatings on peds in the lower part of horizon; pH 5.0; clear irregular boundary. Funnel-shaped projections of this horizon extend into the fragipan below. These projections are spaced from 1 to 3 feet apart and range from 3 to 18 inches in width at the top. In the 8-foot long face of the pit two of these tongues extend through the subjacent horizon.
IIA'X1 12140	20 to 32 inches. Mottled yellowish brown (10YR 5/4 to 5/6) and light brownish gray (10YR 6/2) loam (near sandy clay loam); massive and extremely firm; numerous dark brown (10YR 3/3 to 3/4) clay films lining pores and on cleavage faces; pH 4.8; the pattern of the 10YR 6/2 mottling is variable within this horizon, ranging from fine faint mottling to distinct vertical seams and irregular patches 8 to 10 inches across; clear boundary.
IIA'X2 12141	32 to 38 inches. Yellowish brown to light yellowish brown (10YR 5/4 to 6/4) sandy loam in the interstices between sandstone and chert fragments; massive; extremely firm; distinct dark yellowish brown clay films lining tubular pores and on a few cleavage faces; estimated 70 percent rock fragments greater than 3/4-inch diameter; pH 5.0; gradual boundary.
IIA'X3 12142	38 to 47 inches. Similar to horizon above except color is brown to yellowish brown (7.5YR 4/4 to 10YR 5/4) with a few light brownish gray (10YR 6/2) mottles and rock fragments greater than 3/4-inch diameter are estimated to comprise 85 to 90 percent of the material. Clear boundary.
IIB21bt 12143	47 to 61 inches. Mottled dark red (10R 3/6) and yellowish brown (10YR 5/8) sandy clay; weak fine blocky structure; firm; distinct brown (7.5YR 4/4) clay films on ped faces and in tubular pores; pH 5.0; clear boundary.
IIB22bt 12144	61 to 72 inches. Mottled red to dark red (10R 4/6 to 3/6) and light gray (10GY 7/1) clay loam; massive; firm; pH 5.2; distinct brown (7.5YR 4/4) clay films line tubular pores and cleavage faces; the red color is that of decomposed sandstone; the light gray material has sharp boundaries, occurs in a roughly rectangular horizontal and vertical pattern, and appears to be the product of rock material weathered in place. Some dark gray clay seams occur that are lined with light gray (10GY 7/1) and then a band of yellowish brown between the light gray and the red matrix color.

Notes: Colors are for fully moist soil unless indicated otherwise. Roots are common above 20 inches but very rare below 20 inches. The above-ground vegetation is so sparse that root distribution is probably not very meaningful. Chlorphenol red and bromcresol green were used to measure pH in the field. The extent to which differences within the profile are the result of differences in parent materials is not clear.

SOIL SURVEY LABORATORY
Beltsville, Maryland

LOCATION Cape Girardeau County, Missouri SOIL TYPE Loring silt loam

LAB NOS. D 4018 - D 4035 SURVEY NOS. Z-1-2-8-364 to 381

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1b 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	INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
D 4018	0-3		0.1	0.2	0.2	0.6	3.8	81.7	13.4	49.7	36.3	0	
D 4019	3-5		0.0	0.1	0.1	0.4	3.6	82.3	13.5	49.2	36.9	<0.5	
D 4020	5-7		0.0	0.1	0.2	0.5	4.0	81.6	13.6	49.3	36.5	0	
D 4021	7-9		0.0	0.1	0.2	0.6	3.8	81.4	13.9	48.2	37.4	0	
D 4022	9-12		0.0	0.1	0.2	0.4	3.4	79.6	16.3	46.9	36.4	0	
D 4023	12-18		0.0	0.1	0.2	0.5	3.9	76.1	19.2	45.8	34.5	0	
D 4024	18-22		0.1	0.2	0.2	0.6	3.0	70.3	25.6	39.7	34.0	0	
D 4025	22-26		0.0	0.1	0.1	0.3	2.6	68.4	28.5	35.7	35.5	0	
D 4026	26-31		0.0	0.1	0.1	0.3	2.5	67.5	29.5	35.3	34.9	0	
D 4027	31-36		0.0	0.0	0.1	0.2	2.5	68.6	28.6	35.8	35.4	0	
D 4028	36-38		0.0	0.2	0.2	0.5	2.5	68.7	27.9	35.4	36.0	0	
D 4029	38-40		0.0	0.0	0.1	0.2	2.5	69.3	27.9	34.3	37.6	0	
D 4030	40-45		0.0	0.0	0.1	0.3	2.5	68.5	28.6	35.6	35.6	0	
D 4031	45-50		0.1	0.2	0.2	0.5	3.1	67.7	28.2	36.2	35.0	0	
D 4032	50-55		0.0	0.1	0.1	0.4	2.8	69.8	26.8	37.9	34.9	0	
D 4033	55-60		0.0	0.0	0.0	0.2	2.9	71.3	25.6	39.7	34.6	0	
D 4034	60-65		0.0	0.0	0.0	0.1	2.3	72.1	25.5	37.8	36.6	0	
D 4035	110-120		0.0	0.1	0.1	0.3	3.4	76.7	19.4	47.1	33.2	0	

	pH 8C1a 1:1		ORGANIC MATTER 6A3a H_2O_2 %	ORGANIC CARBON %	NITROGEN %	C/N	FREE IRON OXIDE Fe_2O_3 %			BULK DENSITY g/cc	MOISTURE RETAINED AT 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
D 4018	6.9		4.1										
D 4019	6.2		2.2										
D 4020	6.0		1.3										
D 4021	5.6		0.7										
D 4022	5.7		0.5										
D 4023	6.2		0.3										
D 4024	5.1		0.2										
D 4025	4.8		0.1										
D 4026	4.8		0.0										
D 4027	4.7		0.0										
D 4028	4.6		0.0										
D 4029	4.8		0.0										
D 4030	4.7		0.0										
D 4031	4.7		0.0										
D 4032	4.7		0.0										
D 4033	4.7		0.0										
D 4034	4.7		0.1										
D 4035	5.6		0.1										

	CATION EXCHANGE CAPACITY (SUM)	EXTRACTABLE CATIONS 5B2 6N4a Ca	6O4a Mg	Na	K	6H3a H	BASE SATURATION % (SUM)						
		milliequivalents per 100g soil											
D 4018		11.3	2.0			2.0							
D 4019		5.3	1.1			4.0							
D 4020													
D 4021		3.3	0.9			3.6							
D 4022													
D 4023		5.2	1.9			2.9							
D 4024													
D 4025		4.0	3.7			9.0							
D 4026		4.1	4.1			9.3							
D 4027		4.3	4.0			9.1							
D 4028													
D 4029		4.8	3.8			10.5							
D 4030		5.2	4.0			10.7							
D 4031													
D 4032		5.7	4.1			10.3							
D 4033													
D 4034		6.5	4.4			8.9							
D 4035		6.8	3.1			3.6							

Soil type: Loring silt loam
Location: NE corner of Survey 2284, immediately west of the junction of the Ranney and old Gordonville-Benton roads. Sample taken in a woodlot, the only forested area near and west of the road junction, 4½ miles west, slightly southwest, of the center of the town of Cape Girardeau, Cape Girardeau County, Missouri. Vegetation is oak-hickory with elm, mulberry, walnut, maple, pawpaw, and grapevines. Profile very dry. Yellowish cast of entire profile, absence of platy structure, and very light gray coating indicate relationship to southern soils. In all color designations yellowish brown is brighter or stronger than that of the color chart. Slope 5.5 percent.
Sampled by: R. J. Muckenhirn, H. H. Krusekopf, L. T. Alexander, and A. M. O'Neal, October 13, 1944.

Beltsville
Lab. No.

D 4018 0-3 inches. Pale brown silt loam. Medium to coarse granular structure; aggregates crush easily without color change. Worm casts and roots abundant.

D 4019 3-5 inches. Pale brown to light yellowish brown silt loam. Granular or weakly developed medium nut structure; aggregates moderately vesicular, penetrated by roots, crushing easily to pale brown. Worm casts and roots abundant.

D 4020 5-7 inches. Very pale to pale brown silt loam. Weakly developed coarse granular to medium nut structure; aggregates moderately vesicular, penetrated by roots, crushing easily to light yellowish brown. Worm casts and roots abundant.

D 4021 7-9 inches. Light yellowish brown silt loam. Similar to 5-7 inch layer but aggregates are more vesicular and more resistant to crushing and have more abundant worm casts.

D 4022 9-12 inches. Moderate to light yellowish brown silt loam. Weakly developed medium nut structure; aggregates moderately vesicular, crushing fairly easily to light yellowish brown. Worm casts and roots abundant.

D 4023 12-18 inches. Moderate yellowish brown silt loam. Medium nut structure; aggregates slightly vesicular, crushing easily to light to moderate yellowish brown. Worm casts and roots abundant.

D 4024 18-22 inches. Moderate to strong yellowish brown heavy silt loam. Medium blocky structure; aggregates slightly vesicular, very lightly sprinkled with gray, crushing with slight resistance to light to strong yellowish brown. Worm casts fairly abundant, roots abundant.

D 4025 22-26 inches. Moderate yellowish brown silty clay loam. Medium blocky structure; aggregates slightly vesicular, crushing with slight to moderate resistance to moderate or light yellowish brown. Roots fairly abundant.

D 4026 26-31 inches. Moderate yellowish brown to moderate brown silty clay loam. Medium blocky structure; aggregates slightly vesicular, generally coated with dark yellowish brown to moderate brown sprinkled with gray, and crushing with moderate resistance to light to moderate yellowish brown. Roots fairly abundant, present only in crevices.

D 4027 31-36 inches. Moderate yellowish brown silty clay loam. Medium to coarse blocky structure; aggregates slightly vesicular, lightly coated with gray, surface color more brown than the moderate yellowish brown of the chart, interiors approaching light yellowish brown. Aggregates crush with moderate resistance to light yellowish brown.

D 4028 36-38 inches. Moderate yellowish brown heavy silt loam or light silty clay loam. Fine to medium blocky structure; aggregates slightly vesicular, well-coated with gray, and crushing with slight to moderate resistance to light yellowish brown. Because of the smaller size of the aggregates, the gray coating gives this layer a whitish appearance in contrast to the yellowish brown of the 31-36 inch layer.

D 4029 38-40 inches. Moderate yellowish brown heavy silt loam. Medium to coarse blocky structure; aggregates slightly vesicular, moderately to heavily gray-coated, crushing with moderate resistance to moderate yellowish brown. Coatings of moderate brown irregularly distributed on aggregates and penetrating the aggregates in short tongues. This layer, because of the somewhat smaller aggregates, appears whiter than the 40-45 inch layer. Roots few.

D 4030 40-45 inches. Moderate to dark yellowish brown light silty clay loam. Very coarse blocky structure; aggregates very slightly vesicular, well-coated with gray and irregularly coated and penetrated by dark yellowish brown to moderate brown clayey material. Occasional dark orange and very pale brown mottlings and dark specks. Few roots.

D 4031 45-50 inches. Moderate yellowish brown light silty clay loam. Very coarse blocky structure; aggregates very slightly vesicular, coated with gray and dark yellowish brown, and crushing with strong resistance to light to moderate yellowish brown. Few roots in as well as between the blocks.

D 4032 50-55 inches. Dark yellowish brown heavy silt loam. Massive or extremely coarse blocky structure; aggregates slightly vesicular, generally coated with gray, and generally covered and penetrated by moderate brown clayey material. Occasional mottlings of dark orange. Few roots.

D 4033 55-60 inches. Moderate to dark yellowish brown heavy silt loam. Extremely coarse blocky structure to massive; aggregates very slightly vesicular, with pronounced gray and irregular moderate brown coatings as well as moderate brown and dark brown mottlings. Crush with moderate resistance to moderate yellowish brown. Very few roots.

D 4034 60-65 inches. Moderate to dark yellowish brown heavy silt loam. Extremely coarse blocky structure; aggregates slightly vesicular, moderately to heavily gray-coated, specked with dark brown, and crushing with strong resistance to moderate to strong yellowish brown.

D 4035 110-120 inches. Moderate to strong yellowish brown silt loam. Noncalcareous loess; depth of loess not known.

SOIL SURVEY LABORATORY
Beltsville, Maryland

LOCATION Cape Girardeau County, Missouri SOIL TYPE Loring silt loam

LAB NOS. D 4036 - D 4053 SURVEY NOS. Z-1-2-8-382 to 399

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1b 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	INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
D 4036	0-4		0.1	0.2	0.2	0.6	1.8	83.1	14.0	43.3	41.9	<0.5	
D 4037	4-7		0.1	0.1	0.1	0.4	1.7	83.1	14.5	42.4	42.6	0	
D 4038	7-10		0.0	0.1	0.1	0.2	1.5	81.2	16.9	40.7	42.1	0	
D 4039	10-13		0.0	0.0	0.1	0.2	1.5	77.8	20.4	38.8	40.6	0	
D 4040	13-16		0.0	0.0	0.1	0.2	1.3	74.8	23.6	35.8	40.4	<0.5	
D 4041	16-21		0.0	0.0	0.1	0.2	1.2	70.8	27.7	32.0	40.0	0	
D 4042	21-24		0.0	0.1	0.2	0.4	1.7	69.7	27.9	32.6	39.0	0	
D 4043	24-27		0.0	0.2	0.2	0.5	1.7	68.7	28.7	32.0	38.6	0	
D 4044	27-30		0.0	0.1	0.1	0.4	1.5	65.7	32.2	30.6	36.8	0	
D 4045	30-34		0.0	0.1	0.1	0.3	1.5	67.5	30.5	32.0	37.2	0	
D 4046	34-38		0.0	0.1	0.1	0.5	1.7	69.1	28.5	32.4	38.7	0	
D 4047	38-42		0.0	0.0	0.1	0.2	1.3	69.4	29.0	32.3	38.5	0	
D 4048	42-46		0.0	0.0	0.1	0.2	1.3	72.4	26.0	32.3	41.5	0	
D 4049	46-50		0.0	0.0	0.1	0.3	1.2	73.7	24.7	34.2	40.8	0	
D 4050	50-54		0.0	0.0	0.1	0.2	1.3	74.4	24.0	34.4	41.3	0	
D 4051	54-60		0.0	0.1	0.1	0.3	1.6	75.7	22.2	36.4	41.0	0	
D 4052	60-72		0.1	0.2	0.3	0.5	1.9	76.0	21.0	39.0	39.3	<0.5	
D 4053	93-105		0.1	0.4	0.5	0.7	2.9	71.7	23.7	41.1	33.9	0	

	pH 8C1a 1:1		ORGANIC MATTER 6A3a H_2O_2 %	ORGANIC CARBON %	NITROGEN %	C/N	FREE IRON OXIDE Fe_2O_3 %			BULK DENSITY g/cc	MOISTURE RETAINED AT 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
D 4036	6.3		4.7										
D 4037	5.0		1.4										
D 4038	4.8		0.9										
D 4039	4.8		0.6										
D 4040	4.6		0.5										
D 4041	4.6		0.4										
D 4042	4.7		0.3										
D 4043	4.8		0.2										
D 4044	4.9		0.2										
D 4045	5.0		0.1										
D 4046	5.3		0.0										
D 4047	5.4		0.0										
D 4048	5.4		0.0										
D 4049	5.4		0.0										
D 4050	5.4		0.1										
D 4051	5.0		0.1										
D 4052	5.2		0.0										
D 4053	6.4		0.0										

	CATION EXCHANGE CAPACITY (SUM)	EXTRACTABLE CATIONS 5B2 6N4a Ca	6O4a Mg	Na	K	6E3a H	BASE SATURATION % (SUM)					
		milliequivalents per 100g soil										
D 4036		9.6	2.0			5.7						
D 4037		2.4	1.1			6.1						
D 4038												
D 4039		2.3	1.6			7.0						
D 4040												
D 4041		3.3	2.6			10.5						
D 4042												
D 4043		5.7	3.8			9.1						
D 4044		7.3	4.6			9.5						
D 4045												
D 4046		8.7	5.7			6.3						
D 4047		8.7	6.2			5.5						
D 4048												
D 4049		7.9	6.3			4.6						
D 4050												
D 4051												
D 4052		6.0	5.1			4.1						
D 4053		6.5	4.5			2.8						

Soil type: Loring silt loam

Location: Near center of Survey 3158, T31N, R12E, Cape Girardeau County, Missouri. Sample pit in dense woodlot 0.2 mile northwest from junction of Missouri Highway 34 and U.S. 61 on U.S. 61, then east on gravel road 0.4 mile to southeast edge of woods, then northeast 200 feet along old road, east 40 feet to about 40 feet from east edge of woods. The vegetation is oak, hickory, tulip poplar, and maple. The profile was very dry when sampled. The light yellowish color of the A, lack of blocky structure, gray coating in upper 24 inches, and thick massive B below 30 inches indicate that this profile is related to the southern soils. Slope 5 percent.

Sampled by: R. J. Muckenhirn, H. H. Krusekopf, L. T. Alexander, A. M. O'Neal, and Grant Mickelson, October 14, 1944.

Beltsville

Lab. No.

D 4036 0-4 inches. Pale brown silt loam. Fine to medium granular structure; aggregates moderately vesicular, crushing easily to very pale brown. Network of roots.

D 4037 4-7 inches. Light yellowish brown silt loam. Medium to coarse granular structure; aggregates slightly vesicular, crushing easily to very pale brown. Roots and worm casts abundant.

D 4038 7-10 inches. Light yellowish brown silt loam. Rather massive, but breaks into coarse granular or very weakly developed medium nut structure; aggregates slightly vesicular, crushing easily without color change. Roots and worm casts abundant.

D 4039 10-13 inches. Light to moderate yellowish brown silt loam. Rather massive but breaks into fine to coarse granular structure; aggregates moderately vesicular with some pores up to 2 mm. in diameter, and crushing easily to light yellowish brown. Insect burrows and worm casts abundant.

D 4040 13-16 inches. Light to moderate yellowish brown silt loam. Weakly developed coarse nut structure; aggregates slightly vesicular, sprinkled with gray, and crushing easily to light yellowish brown. Roots fairly abundant.

D 4041 16-21 inches. Moderate yellowish brown silt loam. Coarse to very coarse nut structure; aggregates vesicular, lightly coated with gray, and crushing with slight resistance to light yellowish brown.

D 4042 21-24 inches. Moderate to strong yellowish brown silt loam. Coarse to very coarse nut structure; aggregates slightly vesicular, crushing with slight resistance to moderate yellowish brown. Roots fairly abundant.

D 4043 24-27 inches. Moderate to dark yellowish brown heavy silt loam. Medium nut structure; aggregates moderately vesicular, heavily coated with gray, irregularly spotted with dark brown, occasionally mottled with orange in the interiors, crushing with slight resistance to light yellowish brown. Roots abundant.

D 4044 27-30 inches. Dark yellowish brown heavy silt loam. Medium to coarse blocky structure; aggregates slightly vesicular, moderately to heavily coated with gray, generally specked with dark brown, occasionally mottled with dark orange, and crushing with slight resistance to light yellowish brown. Roots abundant.

D 4045 30-34 inches. Dark yellowish brown silty clay loam. Coarse to very coarse blocky structure. Aggregates nearly covered with dark brown spots and splotches, lightly gray-coated; penetrated by occasional tongues of dark brown, crushing with moderate resistance to moderate yellowish brown.

D 4046 34-38 inches. Same as 30-34 inch layer except that blocks are a little larger, gray coating is a little more pronounced, and no dark brown tongues were noted. Fibrous roots abundant in crevices.

D 4047 38-42 inches. Dark yellowish brown silty clay loam. Massive to very coarse blocky structure; dark brown specks on surface of blocks, occasional tongues of gray silty material; aggregates crush with strong resistance to light to moderate yellowish brown. Roots abundant.

D 4048 42-46 inches. Light to strong yellowish brown silty clay loam. Massive, with irregular streaks and coating of gray and dark yellowish brown to moderate brown; dark brown specks common. Fibrous roots fairly abundant.

D 4049 46-50 inches. Moderate yellowish brown light silty clay loam. Massive; some cleavage planes, irregularly coated with moderate to dark yellowish brown and spotted with gray and dark brown. Crushes with moderate resistance to light yellowish brown.

D 4050 50-54 inches. Same as 46-50 inch layer except that fragments crush with strong resistance to light to moderate yellowish brown.

D 4051 54-60 inches. Moderate yellowish brown heavy silt loam. Massive; fragments very hard when dry, partially coated with dark yellowish brown to moderate brown and some gray, and mottled with dark brown and very pale brown. Crushes to light yellowish brown. Fibrous roots fairly abundant in crevices.

D 4052 60-72 inches. Moderate yellowish brown heavy silt loam. Massive, with moderate coatings, and sprinkled with gray.

D 4053 93-105 inches. Moderate yellowish brown silt loam.

SOIL SURVEY LABORATORY Lincoln, Nebr. 2/10/58

SOIL TYPE Sharpsburg silt loam (nonmodal) **LOCATION** Caldwell County, Missouri

SOIL NOS. S57Mo-13-5 **LAB. NOS.** 6438-6445

DEPTH INCHES	HORIZON	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	0.2-0.02	0.02-0.002	3A1 2A2 > 2	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-7	A11	-	0.3	0.3a	0.5a	1.0a	71.5	26.4	39.4	33.4	Tr.	sil
7-12	A12	-	0.2	0.2a	0.4a	1.0a	68.4	29.8	37.4	32.2	-	sicl
12-18	B1	-	0.2	0.2a	0.4a	0.8a	63.0	35.4	33.4	30.6	-	sicl
18-27	B21	-	0.2	0.2a	0.3a	0.6a	58.2	40.5	29.0	30.0	-	sic
27-35	B22	-	0.2	0.2a	0.3a	0.6a	57.0	41.7	26.7	31.1	-	sic
35-47	D1?(B21b?)	-	0.3	0.3a	0.5a	0.8a	57.4	40.7	26.1	32.4	Tr.	sic
47-59	D2?(B22b?)	-	0.4	0.4a	0.7a	0.8a	58.8	38.9	26.9	33.1	Tr.	sicl
59-70	D3?(B3?)	0.2	0.4	0.7a	1.3a	1.4a	52.4	43.6	24.8	29.7	Tr.	sic

DEPTH INCHES	pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	ORGANIC MATTER 6B1a NITROGEN %	ORGANIC MATTER C/N	EST% SALT (BUREAU CUP)	ELECTRICAL CONDUCTIVITY EC-10³ MILLIMHOS PER CM @25°C.	6E1a CaCO₃ equivalent %	GYPSUM mg./100g. SOIL	MOISTURE TENSIONS 1/10 ATMOS. %	MOISTURE TENSIONS 1/3 ATMOS. %	MOISTURE TENSIONS 4B2 15 ATMOS. %
0-7	6.1			2.45	.215	11.4							11.3
7-12	5.7			1.72	.151	11.4							12.2
12-18	5.2			1.44	.128	11.2							14.4
18-27	5.2			1.10	.105	10.5							17.1
27-35	5.4			0.69									17.9
35-47	5.5			0.47									17.5
47-59	5.7			0.37									16.1
59-70	5.7			0.32									16.5

DEPTH INCHES	5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations		5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
	← milliequivalents per 100g. soil →												
0-7	20.1	12.8	2.5	7.5	-	1.2	82	69		16.5	24.0	5.1	
7-12	19.8	11.6	2.5	8.7	-	0.5	74	63		14.6	23.3	4.6	
12-18	21.7	10.9	3.0	11.5	0.1	0.4	66	56		14.4	25.9	3.6	
18-27	24.8	14.9	3.8	11.2	0.1	0.5	78	63		19.3	30.5	3.9	
27-35	26.3	13.9	4.2	9.2	0.1	0.5	71	67		18.7	27.9	3.3	
35-47	25.8	16.8	4.3	7.6	0.2	0.5	84	74		21.8	29.4	3.9	
47-59	24.7	17.0	3.5	6.8	0.2	0.4	85	76		21.1	27.9	4.8	
59-70	24.1	17.4	2.7	7.6	0.2	0.4	86	73		20.7	28.3	6.4	

a. Few, irregular dark brown concr. (Mn?)

Soil type: Sharpsburg silt loam (nonmodal)
Soil No.: S57Mo-13-5
Map unit: 22-4-1
Location: Northeast corner of NE1/4 NW1/4 NE1/4 Sec. 3, T56N, R27W, Caldwell County, Missouri. Sixty feet west of east pasture fence and 140 feet south of road center on north.
Sampling site: Pasture; just east of center of N-S trending ridge about 300 feet wide; at sampling site the longitudinal slope of the ridge is 1 percent to the south; transverse slope is gently convex 2 percent to each grading to 4 percent slope to east within 150 feet of sampling site. Elevation 850 feet.
Sampled and described by: J. S. Allen, F. J. Carlisle, H. E. Grogger, Robert Hamby and Ed Hughes, August 29, 1957.

Lab.No.	Horizon	Lincoln
6438	A11	0-7 inches. Very dark brown (10YR 2/2) heavy silt loam; crushed moist color is very dark brown to very dark grayish brown (10YR 2.5/2) and dry color is grayish brown (10YR 5/2); moderate fine platy in upper part grading to weak fine platy and fine granular in lower part; friable; clear boundary.
6439	A12	7-12 inches. Very dark brown (10YR 2/2) light silty clay loam; crushed moist color is very dark brown to very dark grayish brown (10YR 2.5/2) and dry color is grayish brown (10YR 5/2); soft coarse subangular clods which break with gentle pressure to weak medium and fine granular; friable; clear boundary.
6440	B1	12-18 inches. Very dark gray (10YR 3/1) medium silty clay loam with a crushed color of very dark grayish brown (10YR 3/2); weak fine and very fine subangular blocky; friable; clay skins not identifiable; gradual boundary.
6441	B21	18-27 inches. Medium silty clay loam mottled with dark brown (10YR 3/3) very dark grayish brown (10YR 3/2) and very dark gray to dark gray (10YR 3.5/1) in fine faint pattern; slightly less clay than horizon below; moderate fine subangular blocky; friable; few dark soft oxide concretions about 1 mm. in diameter; crushed moist color is dark brown (10YR 3/3); discontinuous clay films on ped surfaces; gradual boundary.
6442	B22	27-35 inches. Dark brown (10YR 3/3) medium silty clay loam;moderate medium and fine subangular blocky; common fine faint dark grayish brown (10YR 4/2) mottles and few faint fine brown to dark brown (7.5YR 4/4) mottles; crushed moist color is dark yellowish brown (10YR 4/4); nearly continuous clay skins; occasional soft dark oxide accumulations 1 mm. in diameter; few pores .07 to 1 mm. in diameter within peds but most pores are between peds; gradual boundary.
6443	D1? (B21b?)	35-47 inches. Dark brown to brown (7.5YR 4/4) medium silty clay loam; moderate medium and coarse blocky; distinct nearly continuous clay skins having dark brown (7.5YR 3/2) grading to dark reddish brown (5YR 3/3) and very dark gray (10YR 3/1) colors on ped surfaces; few fine to medium faint dark grayish brown (10YR 4/2) mottles; common fine dark oxide accumulations on surfaces of peds and within peds; common tubular pores .07 to 2 mm. in diameter lined with clay films; gradual boundary.
6444	D2? (B22b?)	47-59 inches. Reddish brown (5YR 4/4) heavy silty clay loam; kneaded color is dark brown to brown (7.5YR 4/4); moderate medium to coarse subangular blocky peds arranged into weak medium and coarse prisms; nearly continuous thin dark reddish brown to reddish brown (5YR 3.5/3) clay skins on ped surfaces; tubular pores are lined with very dark gray (10YR 3/1) clay films; a few fine faint dark grayish brown (2.5Y 4/2) mottles; few fine soft dark oxide accumulations mostly less than 1 mm. in diameter; gradual boundary.
6445	D3? (B3b?)	59-78 inches. Yellowish red (5YR 4/8) slightly gritty silty clay; weak coarse subangular blocky; slightly firm; discontinuous dark reddish brown (5YR 3/2) and very dark gray (10YR 3/1) clay skins on ped faces and in tubular pores; common tubular pores .07 to 1 mm. in diameter; few tubular pores 2 to 5 mm. in diameter lined with very dark grayish brown (10YR 3/2) material; few fine soft dark oxide accumulations; gradual boundary.
		78-84 inches. Yellowish (shaly?) slightly gritty silty clay.
		84+ inches. Limestone bedrock.

Notes: 1. Colors are for moist soil unless indicated as dry. 2. Material below 6 feet observed with bucket auger. 3. Occasional sand grains and gravel-size rock fragments occur throughout the profile. 4. The distinct change in properties, especially color, at 35 inches indicates the change in parent material at this point. More study is needed to determine whether or not the properties of the material below 35 inches are inherited from a previous cycle of soil formation. Concentrations of and and/or gravel fragments were not observed in any horizon of the profile. 5. Root distribution: Roots are most abundant in the surface horizon and gradually diminish with depth to 4 feet; occasional fine fibrous roots are present between 4 and 6 feet. (In both profiles, S57Mo-13-5 and S57Mo-13-6, the mollic-epipedon is thicker than normal; the loess is thin enough that there seems to be no C in loess which is typical for Sharpsburg. R. I. Turner, November 22, 1963.)

SOIL SURVEY LABORATORY Lincoln, Nebr. 2/10/58

SOIL TYPE Sharpsburg silt loam (normodal) **LOCATION** Caldwell County, Missouri

SOIL NOS. S57Mo-13-6 **LAB. NOS.** 6446-6453

DEPTH INCHES	HORIZON	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	2A2 > 2	TEXTURAL CLASS
0-7	A11	-	0.1	0.2a	0.4a	0.9a	69.9	28.5	35.7	35.3	-	sicl
7-13	A12	-	0.2	0.2a	0.4a	0.9a	66.4	31.9	33.8	33.7	-	sicl
13-19	B1	-	0.1	0.1a	0.3a	0.7a	62.9	35.9	31.0	32.8	-	sicl
19-25	B21	-	0.1	0.1a	0.2a	0.6a	59.0	40.0	27.8	31.9	-	sic/sicl
25-33	B22	-	0.2	0.1a	0.2a	0.6a	56.9	42.0	25.7	31.9	-	sic
33-42	B31	-	0.5	0.1a	0.3a	0.6a	57.7	40.8	24.0	34.5	-	sic
42-56	B32	0.1	0.4	0.1a	0.3a	0.4a	62.9	35.8	24.6	38.9	-	sicl
56-68	D?(B26?)	-	0.1	0.4a	0.9a	1.9a	60.1	36.6	29.4	33.1	Tr.	sicl

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	EST% SALT (BUREAU CUP)	ELECTRICAL CONDUCTIVITY EC×10³ MILLIMHOS PER CM 25°C.	6E1a CaCO₃ equivalent %	GYPSUM mg./100g. SOIL	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
6.0			2.58	.223	11.6							12.8
5.9			1.91	.169	11.3							13.6
5.8			1.46	.125	11.7							15.3
5.8			1.06	.096	11.0							17.4
5.8			0.66									18.0
6.0			0.41									18.0
6.3			0.27									16.4
6.7			0.23									14.4

5A1a CATION EXCHANGE CAPACITY NH_4AC	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4AC EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg	MOISTURE AT SATURATION %
	milliequivalents per 100g. soil →										
21.9	12.8	2.5	9.1	-	1.4	76	65	16.7	25.8	5.1	
21.2	12.3	2.7	9.1	-	0.7	74	63	15.7	24.8	4.6	
21.9	12.3	3.4	9.9	0.1	0.5	74	62	16.3	26.2	3.6	
24.0	14.4	3.7	9.6	0.1	0.5	78	66	18.7	28.3	3.9	
26.9	17.0	4.4	8.4	0.2	0.5	82	72	22.1	30.5	3.9	
26.1	18.9	4.3	6.8	0.2	0.5	92	78	23.9	30.7	4.4	
24.8	19.0	3.8	5.2	0.2	0.5	95	82	23.5	28.7	5.0	
22.2	17.5	2.6	4.8	0.2	0.4	93	81	20.7	25.5	6.7	

a. Few, irregular dark brown concr. (Mn?)

Soil type: Sharpsburg silt loam (nonmodal)
Soil No.: S57Mo-13-6
Map unit: 22-4-1
Location: Southeast corner of SW1/4 of NE1/4 of NE1/4 of Sec. 20, T57N, R26W, Caldwell County, Missouri.
Sampling site: Pasture (no evidence of cultivation); sampling site is near the center of a long N-S trending ridge about 300 feet wide that extends northward about 400 yards where it rises about 30 feet and joins the higher loess-covered divide; longitudinal slope of ridge at sampling site is less than 1 percent; transverse slope is gently convex 2 percent to west which breaks to 7 percent slope 100 feet west of sampling site; approximate elevation 870 feet.
Sampled and described by: J. S. Allen, F. J. Carlisle, H. E. Grogger, Robert Hamby and Ed Hughes, August 30, 1957.

Lincoln Lab.No.	Horizon	
6446	A11	0-7 inches. Very dark brown (10YR 2/2) silt loam; crushed moist color is very dark brown to dark grayish brown (10YR 2.5/2) and dry color is dark grayish brown (10YR 4/2); weak medium and coarse granular, uppermost 2 inches are weak medium platy; friable; gradual boundary.
6447	A12	7-13 inches. Very dark brown (10YR 2/2) light silty clay loam with a crushed color of very dark brown to dark grayish brown (10YR 2.5/2); moderate medium granular; friable; clear boundary.
6448	B1	13-19 inches. Black to very dark brown (10YR 2/1.5) medium silty clay loam; with a crushed color of very dark grayish brown (10YR 3/2); weak fine and very fine subangular blocky; friable; few thin patchy clay skins on peds; gradual boundary.
6449	B21	19-25 inches. Variegated very dark grayish brown (10YR 3/2) and dark brown (10YR 3/3) medium to heavy silty clay loam; color is apparently due to physical mixing of materials; kneaded moist color is dark brown (10YR 3/3); moderate fine subangular blocky, nearly continuous clay skins on peds; clear boundary.
6450	B22	25-33 inches. Dark brown (10YR 3/3) silty clay loam; kneaded moist color is dark brown to brown (10YR 4/3); moderate medium subangular blocky peds arranged into coarse blocky peds which are in turn arranged into strong medium to coarse prisms; slightly firm; the faces of prisms and coarse blocks are dark grayish brown (10YR 4/2) in color; clay skins are nearly continuous on all ped surfaces; few fine soft dark oxide accumulations are present; gradual boundary.
6451	B31	33-42 inches. Dark brown to brown (10YR 4/3) mottled with dark grayish brown (10YR 4/2) to dark gray (10YR 4/1) silty clay loam; moderate medium to coarse subangular blocky peds arranged in moderate medium prisms; somewhat firm; ped surfaces coated with dark grayish brown (10YR 4/2) to dark gray (10YR 4/1); clay skins are nearly continuous on ped faces; common soft dark oxide concretions 2 to 3 mm. in diameter; gradual boundary.
6452	B32	42-56 inches. Dark brown to brown (10YR 4/3) medium silty clay loam; compound weak coarse subangular blocky and weak medium prismatic; common fine distinct grayish brown (2.5Y 5/2) mottles; prism faces predominantly dark grayish brown (2.5Y 4/2) to grayish brown (2.5Y 5/2); discontinuous clay films on ped faces; tubular pores .07 to 2 mm. in diameter are common and usually lined with very dark gray clay films; few fine dark soft oxide accumulations; clear boundary.
6453	D? (B2b?)	56-76 inches. Dark brown (7.5YR 3/4) silty clay loam with a crushed color of dark brown to brown (7YR 4/4); weak medium to coarse subangular blocky; slightly firm; fine to medium distinct grayish brown (10YR 5/2) to dark gray (10YR 4/1) mottles; nearly continuous clay skins on peds; very dark gray to black clay films line tubular pores .07 to 2 mm. in diameter; few fine soft dark oxide accumulations; gradual boundary.
		76-83 inches. Dark reddish brown (5YR 3/4) silty clay with few fine faint dark grayish brown (10YR 4/2) to grayish brown (10YR 5/2) mottles.
		84+ inches. Firm limestone bedrock.

Notes: 1. Colors are for moist soils unless indicated as dry. 2. Material below 6 feet examined with bucket auger. 3. Root distribution: Roots are most abundant in the surface horizon and gradually diminish with depth to $3\frac{1}{2}$ feet. Occasional fine roots are present between $3\frac{1}{2}$ and 6 feet. 4. The color profile indicates the change in parent material at about 56 inches similar to that occurring at about 35 inches in profile S57Mo-13-5. (In both profiles, S57Mo-13-5 and S57Mo-13-6 the mollic-epipedon is thicker than normal; the loess is thin enough that there seems to be no C in loess which is typical for Sharpsburg. R. I. Turner, November 22, 1963.)

SOIL SURVEY LABORATORY
Beltsvi lle, Maryland

LOCATION St. Charles County, Missouri SOIL TYPE Weldon silt loam

LAB NOS. D 4000 - D 4017 SURVEY NOS. Z-1-2-8-346 to 363

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1b PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 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 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
D 4000	0-4		0.2	0.4	0.3	0.6	2.0	82.5	14.0	44.3	40.6	<0.5	
D 4001	4-6		0.1	0.4	0.3	0.5	2.1	82.8	13.8	44.8	40.4	0	
D 4002	6-10		0.0	0.2	0.3	0.3	1.7	81.7	15.8	42.5	41.0	0	
D 4003	10-14		0.0	0.2	0.2	0.4	1.8	79.7	17.7	40.4	41.3	<0.5	
D 4004	14-17		0.0	0.2	0.2	0.4	1.5	78.2	19.5	38.1	41.8	<0.5	
D 4005	17-19		0.0	0.2	0.2	0.6	2.0	72.9	24.1	34.2	41.0	0	
D 4006	19-23		0.1	0.1	0.2	0.4	1.3	59.3	38.6	26.6	34.4	0	
D 4007	23-27		0.0	0.1	0.1	0.3	1.0	59.4	39.1	26.6	33.9	0	
D 4008	27-31		0.0	0.1	0.1	0.4	1.1	61.4	36.9	27.7	35.1	0	
D 4009	31-35		0.0	0.1	0.1	0.4	1.5	64.2	33.7	28.8	37.3	0	
D 4010	35-39		0.0	0.0	0.1	0.4	1.4	66.4	31.7	32.3	33.7	0	
D 4011	39-41		0.0	0.0	0.1	0.3	1.4	68.8	29.4	34.6	35.8	0	
D 4012	41-44		0.0	0.0	0.0	0.2	1.2	71.4	27.2	36.0	36.7	0	
D 4013	44-48		0.0	0.0	0.1	0.2	1.4	72.1	26.2	38.8	34.8	0	
D 4014	48-54		0.0	0.1	0.1	0.2	1.5	72.9	25.2	38.8	35.8	0	
D 4015	54-60		0.0	0.1	0.1	0.3	1.3	74.8	23.4	39.2	37.1	0	
D 4016	60-66		0.1	0.1	0.1	0.3	1.5	77.5	20.4	40.1	39.1	0	
D 4017	66-72		0.1	0.1	0.2	0.3	1.6	76.3	21.4	35.3	42.8	<0.5	

	pH 8C1a 1:1		ORGANIC MATTER 6A3a H_2O_2 %	ORGANIC CARBON %	NITROGEN %	C/N	FREE IRON OXIDE Fe_2O_3 %			BULK DENSITY g/cc	MOISTURE RETAINED AT 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
D 4000	6.6		2.7										
D 4001	5.6		1.0										
D 4002	4.4		0.5										
D 4003	4.4		0.3										
D 4004	4.4		0.2										
D 4005	4.4		0.1										
D 4006	4.5		0.2										
D 4007	4.6		0.1										
D 4008	4.7		0.2										
D 4009	4.8		0.1										
D 4010	5.0		0.1										
D 4011	5.2		0.1										
D 4012	5.4		0.1										
D 4013	5.6		0.0										
D 4014	6.0		0.0										
D 4015	6.4		0.1										
D 4016	6.9		0.1										
D 4017	7.0		0.2										

	CATION EXCHANGE CAPACITY (SUM)	EXTRACTABLE CATIONS 5B2 6N4a Ca	6O4a Mg	Na	K	6H3a H	BASE SATURATION % (SUM)					
		milliequivalents per 100g soil										
D 4000		8.5	0.7			3.4						
D 4001		4.1	0.4			4.4						
D 4002		1.1	0.5			6.6						
D 4003												
D 4004		1.5	2.1			7.4						
D 4005												
D 4006		5.3	6.6			12.4						
D 4007		6.5	7.2			12.6						
D 4008												
D 4009		7.2	7.1			9.6						
D 4010												
D 4011		7.4	7.0			6.7						
D 4012												
D 4013		7.6	6.6			4.3						
D 4014		8.0	6.7			3.7						
D 4015												
D 4016		7.5	5.5			2.1						
D 4017		8.0	5.6			2.1						

Soil type: Weldon silt loam
Location: NW corner of NW1/4 of NE1/4 Sec. 10, T46N, R3E, St. Charles County, Missouri. Sampled in pastured woodland; vegetation white oak, hickory, small elms, coralberry, fair bluegrass, and some weeds. Entire profile very dry.
Sampled by: R. J. Muckenhirn, H. H. Krusehopf, L. T. Alexander, and A. M. O'Neal, October 11, 1944.

Beltsville Lab. No.

D 4000 0-4 inches. Light brownish gray silt loam. Thin platy structure; aggregates slightly vesicular, finely granular, flattened, crushing easily to pale brown. Grass roots abundant.

D 4001 4-6 inches. Moderate yellowish brown silt loam. Medium platy structure; aggregates slightly vesicular, crushing easily to light yellowish brown. Tongues of material from the layer above extend into this layer. Worm casts, burrows, and roots abundant.

D 4002 6-10 inches. Light yellowish brown silt loam. Weakly developed medium platy and medium to coarse granular structure; aggregates crush easily to light yellowish brown. Wormholes few, roots abundant.

D 4003 10-14 inches. Moderate to light yellowish brown silt loam. Weakly developed coarse granular structure; aggregates moderately vesicular, crushing easily to light yellowish brown.

D 4004 14-17 inches. Moderate yellowish brown silt loam. Medium nut structure; aggregates slightly vesicular, heavily coated with gray, crushing easily to light yellowish brown. This layer and the two immediately above have a distinct yellowish cast, but in this layer the yellow is masked by the gray coating. Roots abundant.

D 4005 17-19 inches. Moderate yellowish brown silty clay loam. Medium nut structure; aggregates slightly vesicular, heavily gray-coated, crushing with slight resistance to light yellowish brown. Roots fairly abundant.

D 4006 19-23 inches. Moderate brown silty clay loam. Medium blocky structure; aggregates very slightly vesicular, angular, irregularly sprinkled with gray, and crushing with moderate resistance to moderate yellowish brown. Few roots. This layer is abruptly separated from the one above by its brown color, light sprinkling of gray, and well-developed blocky structure.

D 4007 23-27 inches. Moderate brown silty clay loam or silty clay. Medium to coarse blocky structure; aggregates not vesicular, nearly lacking in gray coating, crushing with strong resistance to moderate yellowish brown; weakly developed prismatic form. Fibrous roots fairly common in crevices.

D 4008 27-31 inches. Same as 23-27 inch layer.

D 4009 31-35 inches. Moderate brown silty clay loam. Medium to coarse blocky structure; aggregates slightly vesicular, specked with dark brown, crushing with moderate resistance to moderate yellowish brown. Roots very few.

D 4010 35-39 inches. Moderate brown silty clay loam. Coarse blocky structure; aggregates similar to 31-35 inch layer but brown and black spots and very pale brown mottling abundant.

D 4011 39-41 inches. Moderate brown to dark yellowish brown light silty clay loam. Medium blocky structure; aggregates spotted with gray, usually mottled with very pale brown, crushing with moderate resistance to moderate yellowish brown. Very few roots.

D 4012 41-44 inches. Same as 39-41 inch layer.

D 4013 44-48 inches. Dark yellowish brown light silty clay loam. Coarse blocky structure; aggregates mottled and spotted with dark brown and very pale brown, crushing with slight resistance to moderate yellowish brown.

D 4014 48-54 inches. Dark yellowish brown silt loam. Very coarse blocky structure; aggregates splotched and mottled with very pale brown to dark brown, crushing with slight resistance to light yellowish brown.

D 4015 54-60 inches. Light yellowish brown silt loam. Massive; fragments slightly vesicular, splotched with very pale brown and specked with dark brown, crushing with slight resistance to light yellowish brown. This layer and the one below are compact and hard, difficult to break into fragments.

D 4016 60-66 inches. Moderate yellowish brown silt loam with occasional chert fragment. Mottled with strong brown, very pale brown and brownish black. Massive; fragments are hard.

D 4017 66-72 inches. Same as 60-66 inch layer.

SOIL SURVEY LABORATORY
Beltsville, Maryland

LOCATION Pike County, Missouri SOIL TYPE Winfield silt loam

LAB NOS. D 3961 - D 3980 SURVEY NOS. Z-1-2-8-307 to 326

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1b 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	INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	> 2	TEXTURAL CLASS
D 3961	0-2		0.2	0.3	0.2	0.6	2.0	82.2	14.5	46.6	38.1		
D 3962	2-5		0.0	0.2	0.1	0.6	2.0	82.7	14.4	44.4	40.6		
D 3963	5-9		0.0	0.1	0.1	0.3	1.7	83.3	14.5	44.5	40.8		
D 3964	9-13		0.0	0.1	0.1	0.3	2.1	83.1	14.3	44.6	40.8		
D 3965	13-16		0.0	0.1	0.1	0.3	1.7	79.7	18.1	40.2	41.3		
D 3966	16-19		0.0	0.1	0.1	0.3	1.6	74.0	23.9	36.1	39.7		
D 3967	19-23		0.0	0.1	0.1	0.3	1.4	68.8	29.3	32.2	38.2		
D 3968	23-27		0.0	0.1	0.0	0.2	1.3	64.4	34.0	28.4	37.4		
D 3969	27-31		0.0	0.0	0.0	0.2	1.4	63.7	34.7	27.9	37.2		
D 3970	31-33		0.0	0.1	0.1	0.4	1.6	64.0	33.8	28.8	37.0		
D 3971	33-36		0.0	0.0	0.0	0.2	1.3	65.6	32.9	29.4	37.5		
D 3972	36-40		0.0	0.0	0.0	0.1	1.1	67.4	31.4	30.7	37.7		
D 3973	40-44		0.0	0.1	0.1	0.2	1.1	67.7	30.8	30.8	38.2		
D 3974	44-48		0.0	0.0	0.0	0.2	1.1	68.9	29.8	32.5	37.6		
D 3975	48-52		0.0	0.0	0.0	0.2	1.2	69.7	28.9	34.1	36.9		
D 3976	52-55		0.0	0.0	0.1	0.5	1.0	70.1	28.3	33.6	37.6		
D 3977	55-60		0.0	0.0	0.1	0.4	1.0	71.7	26.8	36.2	36.7		
D 3978	60-67		0.0	0.0	0.0	0.3	0.7	74.1	24.9	33.3	41.6		
D 3979	67-71		0.0	0.0	0.1	0.3	0.5	73.6	25.5	28.8	45.4		
D 3980	71-77		0.0	0.1	0.6	1.0	0.8	69.8	27.7	29.3	41.7		

	pH 8C1a 1:1		ORGANIC MATTER 6A3a H_2O_2 %	ORGANIC CARBON %	NITROGEN %	C/N	FREE IRON OXIDE Fe_2O_3 %			BULK DENSITY g/cc	MOISTURE RETAINED AT 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
D 3961	6.7		6.6										
D 3962	6.6		2.0										
D 3963	6.4		1.3										
D 3964	6.1		0.8										
D 3965	6.0		0.5										
D 3966	5.8		0.5										
D 3967	5.6		0.4										
D 3968	5.5		0.4										
D 3969	5.3		0.2										
D 3970	5.2		0.2										
D3971	5.1		0.2										
D3972	5.1		0.2										
D3973	5.0		0.1										
D3974	5.1		0.1										
D3975	5.1		0.1										
D3976	5.1		0.1										
D3977	5.2		0.1										
D3978	5.2		0.2										
D3979	5.3		0.1										
D3980	5.4		0.2										

	CATION EXCHANGE CAPACITY (SUM)	EXTRACTABLE CATIONS 5B2 6N4a Ca	6O4a Mg	Na	K	6H3a H	BASE SATURATION % (SUM)					
		milliequivalents per 100g soil										
D 3961		12.3	2.6			4.0						
D 3962		6.8	1.3			3.3						
D 3963												
D 3964		4.9	1.0			2.9						
D 3965		5.5	1.5			3.1						
D 3966												
D 3967												
D 3968		10.8	5.3			5.9						
D 3969		10.8	5.8			7.3						
D 3970		10.0	5.4			7.0						
D 3971												
D 3972		9.6	5.1			7.0						
D 3973												
D 3974		9.7	5.1			6.6						
D 3975												
D 3976		9.8	5.2			6.0						
D 3977												
D 3978		9.4	4.7			5.3						
D 3979												
D3980		9.8	5.0			4.9						

Soil type: Winfield silt loam
Location: NE1/4 Sec. 26, T52N, R1E, Pike County, Missouri, about one mile south of Paynesville, 585 feet north and 75 feet west of southeast corner of above section in grazed woodlot.
Sampled by: R. J. Muckenhirn, H. H. Krusekopf, L. T. Alexander, and A. M. O'Neal, October 9, 1944.

Beltsville Lab. No.	
D 3961	0-2 inches. Weak brown silt loam. Fine granular structure, platy in lower part, high in organic matter, with numerous fibrous roots.
D 3962	2-5 inches. Dark yellowish brown (when moist) silt loam. Medium platy and medium granular structure, with weak brown worm casts and burrows. Roots abundant.
D 3963	5-9 inches. Dark yellowish brown (when moist) silt loam. Medium to coarse granular structure; aggregates slightly vesicular, somewhat flattened, crushing easily without color change. Fibrous roots fairly abundant.
D 3964	9-13 inches. Dark yellowish brown silt loam. Medium nut structure; aggregates moderately vesicular, crushing easily to dark yellowish brown. Roots abundant.
D 3965	13-16 inches. Same as 9-13 inch layer. Pale brown worm casts abundant. Roots abundant.
D 3966	16-19 inches. Moderate yellowish brown silty clay loam. Medium nut structure; aggregates very slightly vesicular, lightly sprinkled with gray, and crushing with slight resistance to moderate yellowish brown. Few roots or worm casts.
D 3967	19-23 inches. Same as 16-19 inch layer except that structure is medium blocky.
D 3968	23-27 inches. Moderate brown heavy silty clay loam. Coarse blocky structure; aggregates slightly vesicular, angular, strongly coated with gray, and crushing with moderate resistance to moderate yellowish brown.
D 3969	27-31 inches. Moderate brown silty clay loam. Medium blocky structure; aggregates slightly vesicular, well-coated with gray, and crushing with moderate resistance to moderate yellowish brown.
D 3970	31-33 inches. Same as 27-31 inch layer except that gray coating is more abundant and aggregates are less resistant to crushing.
D 3971	33-36 inches. Moderate brown to dark yellowish brown silty clay loam. Coarse blocky structure; aggregates slightly vesicular, moderately gray-coated, crushing with moderate resistance to moderate yellowish brown.
D 3972	36-40 inches. Same as 33-36 inch layer.
D 3973	40-44 inches. Moderate yellowish brown to moderate brown silty clay loam. Coarse blocky structure; aggregates gray-coated.
D 3974	44-48 inches. Moderate to dark yellowish brown silty clay loam. Coarse blocky structure; aggregates gray-coated.
D 3975	48-52 inches. Moderate to dark yellowish brown silty clay loam. Aggregates specked with brown and gray-coated.
D 3976	52-55 inches. Moderate to dark yellowish brown light silty clay loam. Very coarse blocky structure; aggregates same as in 48-52 inch layer.
D 3977	55-60 inches. Moderate yellowish brown heavy silt loam. Very coarse blocky structure; aggregates moderately vesicular, strongly gray-coated.
D 3978	60-67 inches. Moderate yellowish brown heavy silt loam. Weakly developed coarse blocky structure; aggregates moderately coated with gray.
D 3979	67-71 inches. Same as 60-67 inch layer.
D 3980	71-77 inches. Strong brown silty clay loam. Aggregates moderately coated with gray. Apparently the subsoil of a buried soil.

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