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Site 4021[B]: Arena, Iowa County, Township 8N, Range 5E, Section 9. 1960-08-04

[s.l.]: [s.n.], 1960-08-04

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STAND HISTORY DATA FORM

Plant Ecology Lab.
Univ. of Wisconsin

Stand No. 4021

Name: Arena

T: 8N R: 5E Sec, 9

Locality Arena

County: Iowa

Observers: Swan

Date: 4 & 5 August 1960

Size of stand: 30A.

Name(s) of person(s) questioned: None
(State whether owner or not)

1. Burned in the last 5 years No

Burned in last 10 years

Burned more than 10 years ago

Information on severity of the fire:

2. Grazing within the last 5 years No

Grazing within the last 10 years

Grazing more than 10 years ago

Information on grazing intensity

3. Cutting Small amount

Selective

For lumber ✓

For fence posts

For fire wood

Clear

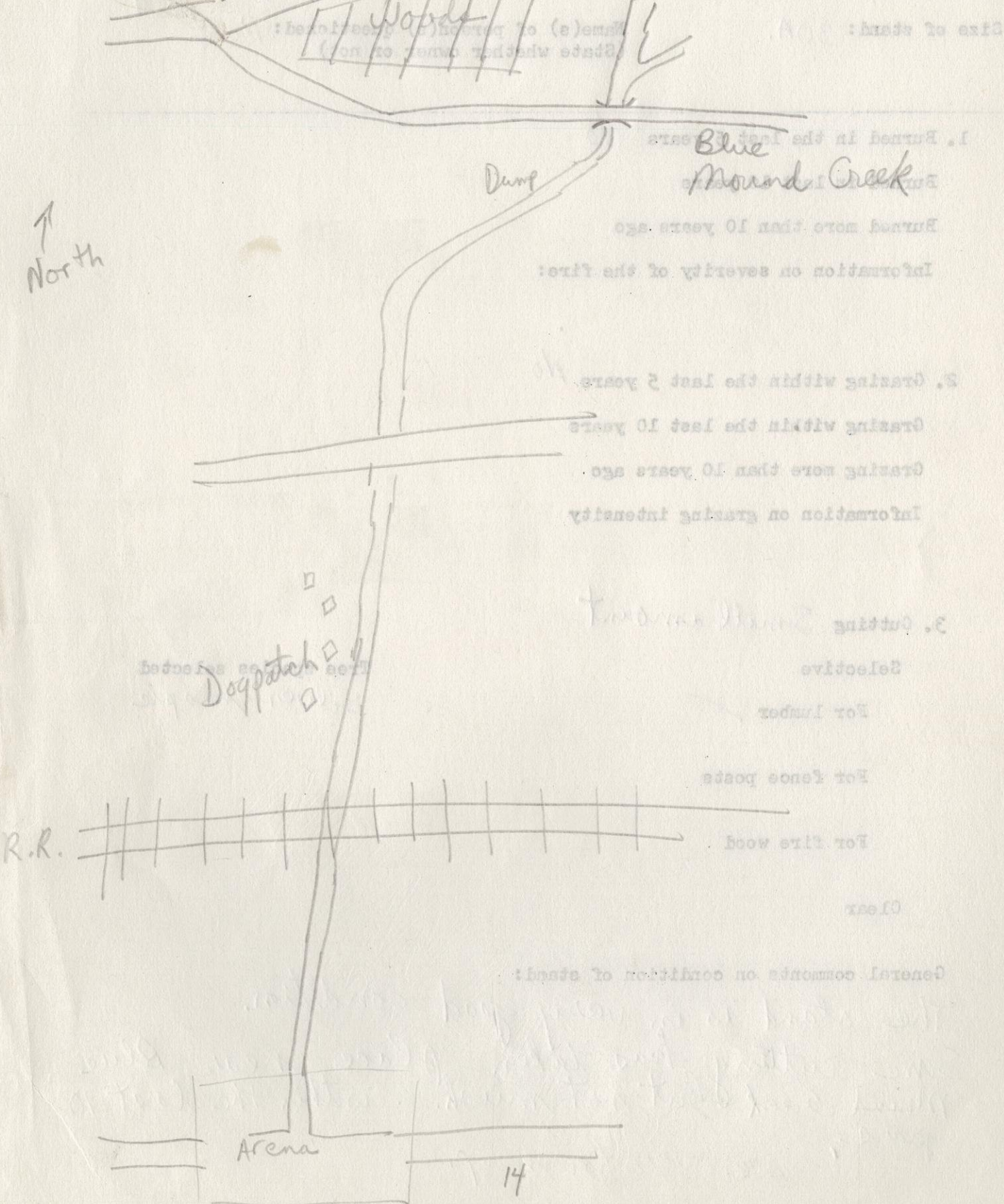
Tree species selected

Silver maple

General comments on condition of stand:

The stand is in very good condition.
Some cutting has taken place near Blue
Mound Creek but not much— within the last 10
years, see over for map.

STAND HISTORY DATA FORM
 Name: _____
 County: _____
 Date: _____
 Operator: _____
 Size of stand: _____
 Name(s) of person(s) who collected: _____
 State where collected (not country): _____
 Locality: _____
 Plant Ecology Lab.
 Univ. of Wisconsin



Arena: 4021: CI = 1356.7

Acer saccharinum; P ##### (40)
 new P (1)
 new Vitis (1)
 Rhus ##### (93)
 new Rhus (1) Vitis (5)
Ulmus americana; P ##### (18)
 new P (6)
 (119)
 Rhus (25) Vitis (2)
Betula nigra P (7) Vitis (1)
 Rhus (36) new Vitis (2)
Fraxinus pennsyl. P ##### (35)
 new P (2)
 Rhus (16) Vitis (3) new Rhus (1)
Quercus bicolor P (1)
 Rhus (9)
Celtis occidentalis P 0
 Rhus 0

	Trees Rel. Dens.	Parth. Dens.	Parth. Rel. Dens.	Rhus Dens.	Rhus Rel. Dens.	Rel. Circum.
<i>Acer sacch.</i>	41.2	40	39.6	93	34.1	41.7
<i>Ulmus amer.</i>	24.4	18	17.8	119	43.6	28.2
<i>Betula nigra</i>	16.3	7	6.9	36	13.2	18.5
<i>Frax. pennsyl.</i>	13.1	35	34.7	16	5.9	7.5
<i>Q. bicolor</i>	4.4	1	1.0	9	3.3	3.4
<i>Celtis occid.</i>	0.6	0	0	0	0	0.7
	100.0	101	100.0	273	100.1	

Arena- 4021- Circumferences

Betula nigra

Fraxinus penn.

Ulmus amer.

Acer saccharinum

Q. bicolor

Celtis occid.

43.5	32.0	15.5
40.5	13.3	25.0
45.5	22.5	39.0
39.0	24.0	12.8
38.0	17.0	28.5
34.0	12.8	28.5
39.0	22.5	100.5
61.5	26.5	16.5
22.5	16.0	27.5
43.5	15.5	50.0
54.0	18.5	23.3
43.5	19.5	62.5
53.0	19.5	28.5
43.0	16.0	25.0
39.0	16.0	29.5
32.0	17.0	14.5
97.0	16.0	21.0
48.0	21.0	37.0
22.5	22.5	19.0
31.0	25.0	25.0
22.5	37.0	25.0
37.0	430.1	33.0
22.5	35.8	29.5
37.0		21.0
18.5		95.0
53.0		90.0
1060.5		22.5
40.5		78.0
1101.0		100.0
91.8		100.0
		16.3
		12.3
		100.0
		18.8

24.0	129.4
47.0	16.0
21.8	27.5
21.8	27.0
33.0	22.5
50.0	17.8
15.0	18.8
53.0	21.0
19.5	35.5
29.5	23.8
19.5	55.5
25.0	35.5
35.5	55.5
76.0	50.0
22.5	94.0
59.5	16.5
17.8	17.0
12.8	29.5
32.0	18.8
50.0	21.0
29.5	22.5
22.5	27.5
43.5	27.5
43.5	35.5
71.0	35.5
26.5	55.5
28.5	39.0
26.5	43.5
31.0	70.0
19.5	63.0
21.0	25.0
22.5	1179.1
129.4	1204.1
24.0	2383.2

19.5
24.0
24.0
77.0
17.8
16.0
13.8
192.1
16.0

41.0
3.4'

1
17
31
34
40
21
26
160

198.6'

Arena- 4021- Host specificity of lianas occupying more than the lower 1/4 of the host tree. ### = 5

Acer saccharinum: Parth. ##### 12

Rhus: ##### 25

Ulmus americana: Parth.

Rhus: ##### 38

Betula nigra: Parth.:

Rhus: ### 12

Fraxinus pensyl. Parth. ### 10

Rhus: ### 9

Quercus bicolor: Parth.

Rhus: ### 6

Celtis occidentalis: Parth. 0

Rhus: 0

12	25
10	38
22	12
	9
	+ 6
	90

Rhus radicans: Arena, 4021: Liana stem size classes present at $4\frac{1}{2}$ ft. on each tree species excluding lianas reaching only the lower $\frac{1}{4}$ of the host tree, at .25" diam.

	<u>Acer saccharinum</u> :	1.0 IIII (8) ✓	2.0
(29) CK.	.25 II (3)	1.5 (1) ✓	2.5
	.5 IIII IIII (18) ✓	2.0 III (3) ✓	
	<u>Ulmus americana</u> :	1.0 IIII (5) ✓	2.0
(42) CK.	.25 IIII (6) ✓	2.5 (1) ✓	
	.5 IIII IIII IIII (24) ✓	1.5 III (3) ✓	2.0
	<u>Betula nigra</u> :	1.0 IIII (4) ✓	2.5 (1) ✓
(12) CK.	.25	1.5 II (2) ✓	2.0
	.5 III (5) ✓	2.5 (1) ✓	
	<u>Fraxinus pennsylvanica</u> :	1.0 IIII (4) ✓	2.0
(9) CK.	.25 II (2)	1.5 (1) ✓	2.5
	.5 II (2) ✓	2.0	
	<u>Quercus bicolor</u> :	1.0	2.5
(6) CK.	.25	1.5	2.0
	.5 IIII (6) ✓	2.0	
	<u>Celtis occidentalis</u> :	1.0	2.5
(0) CK.	.25	1.5	2.0
	.5	2.5	

Parthenocissus : arena, 4021: Liana stem size classes present at 4 1/2 ft. on each tree species, excluding lianas reaching only the lower 1/4 of the host tree.

Acer saccharinum : .25 IIII (8) ✓
12 ✓ ck. .5 IIII (3) ✓ 1.0 (1) ✓

Ulmus americana : .25
0 ✓ ck. .5 1.0

Betula nigra : .25
0 ✓ ck. .5 1.0

Fraxinus pennsylvanica : .25 IIII (5) ✓
10 ✓ ck. .5 IIII (5) ✓ 1.0

Quercus bicolor : .25
0 ✓ ck. .5 1.0

Celtis occidentalis : .25
0 ✓ ck. .5 1.0

none of the seeds are observed from the host tree. The percentage of the seeds that are observed to have the host tree's name on them is 100%.

the seeds are observed to have the host tree's name on them.

TABLE 1

TABLE 2

TABLE 3

Lowland stands: Number of trees in each size class:

	1	2	3	4	5	6	7	8	9	10
<u>Arena:</u>	 	 	 	 						
	(66)	(38)	(23)	(14)	(6)	(3)	(3)	(5)		(2)
					(160)					

Summary of # of trees in each size class:

$\begin{array}{r} 63 \\ 66 \\ 28 \\ 33 \\ \hline 57 \\ 66 \\ \hline 313 \\ \hline 18 \end{array}$	$\begin{array}{r} 24 \\ 63 \\ 17 \\ 40 \\ \hline 30 \\ 63 \\ \hline 237 \\ 30 \\ \hline 7110 \end{array}$	$\begin{array}{r} 19 \\ 19 \\ 16 \\ 31 \\ \hline 20 \\ 19 \\ \hline 124 \\ 42 \\ \hline 248 \\ 496 \\ \hline 5208 \\ 42 \end{array}$	$\begin{array}{r} 18 \\ 6 \\ 14 \\ 20 \\ \hline 14 \\ 72 \\ 54 \\ \hline 288 \\ 360 \\ \hline 3888 \\ 54 \end{array}$	$\begin{array}{r} 15 \\ 3 \\ 3 \\ 16 \\ \hline + 18 \\ 55 \\ \hline \times 66 \\ 330 \\ \hline 330 \\ 3630 \\ \hline 66 \end{array}$	$\begin{array}{r} 9 \\ 3 \\ 6 \\ \hline 10 \\ 28 \\ \hline \times 78 \\ 224 \\ 196 \\ \hline 2184 \\ 78 \end{array}$	$\begin{array}{r} 5 \\ 1 \\ 12 \\ \hline + 7 \\ 25 \\ 90 \\ \hline 2250 \\ \hline 202500 \\ 90 \end{array}$	$\begin{array}{r} 5 \\ 1 \\ \hline + 1 \\ 76 \\ \hline 102 \\ \times 7 \\ \hline 714 \end{array}$	$\begin{array}{r} 12 \\ \hline 1 \\ 2 \\ \hline 114 \\ \times 2 \\ \hline 228 \end{array}$	$\begin{array}{r} 1 \\ 2 \\ \hline 1225 \\ 1325 \\ \hline 26015 \end{array}$
---	---	--	---	--	--	---	---	--	--

See other sheet for summary
this one is wrong.

With
P-
add

$$\begin{array}{r} 96 \\ + 313 \\ \hline 409 \end{array}$$
$$\begin{array}{r} 313 \\ 18 \\ \hline 2504 \end{array}$$
$$\begin{array}{r} 409 \\ 18 \\ \hline 3272 \end{array}$$
$$\begin{array}{r} 313 \\ 409 \\ \hline 5634 \end{array}$$
$$\boxed{7362}$$

~~409~~

~~##~~

$$\begin{array}{r} 237 \\ 36 \\ \hline 273 \end{array}$$
$$\begin{array}{r} 273 \\ x 30 \\ \hline 8190 \end{array}$$
$$\begin{array}{r} 124 \\ 13 \\ \hline 137 \end{array}$$
$$\begin{array}{r} 137 \\ x 42 \\ \hline 274 \end{array}$$
$$\begin{array}{r} 548 \\ 5754 \\ \hline \end{array}$$

16

$$\begin{array}{r} 72 \\ + 14 \\ \hline 86 \end{array}$$
$$\begin{array}{r} 86 \\ x 54 \\ \hline 344 \end{array}$$
$$\begin{array}{r} 430 \end{array}$$
$$\boxed{4644}$$
$$\begin{array}{r} 55 \\ + 1 \\ \hline 56 \end{array}$$
$$\begin{array}{r} 56 \\ x 66 \\ \hline 336 \end{array}$$
$$\begin{array}{r} 336 \end{array}$$
$$\boxed{3696}$$

$$\begin{array}{r} 15 \\ \times 12 \\ \hline 30 \\ 150 \\ \hline 180 \end{array}$$

$$\begin{array}{r} 718 \\ \times 160 \\ \hline 4308 \\ 45080 \\ \hline 114880 \end{array}$$

With p-add 160

Total
Lines
in each tree
size class

Total circum.

$$\begin{array}{r} 1.31 \\ 18.0 \\ \hline 13 \\ 40 \end{array}$$

$$\begin{array}{r} 7962 \\ 8190 \\ \hline 228 \\ 7962 \end{array}$$

$$\begin{array}{r} 7962 \\ 8190 \\ \hline 228 \\ 7962 \end{array}$$

$$\begin{array}{r} 8200 \\ 200 \\ \hline 8000 \\ 100 \end{array}$$

$$T = 1325$$

$$r^2 = 3.1411225$$

$$\frac{7}{55}$$

$$\frac{80}{560}$$

$$0.7 \quad r^2 = 3.1411225$$

$$\begin{array}{r} 8190 \\ 228 \\ \hline 7962 \end{array}$$

the one 2.3

105

114

152

$$\begin{array}{r} 7962 \\ 8190 \\ \hline 228 \\ 7962 \end{array}$$

$$\begin{array}{r} 7962 \\ 8190 \\ \hline 228 \\ 7962 \end{array}$$

$$\begin{array}{r} 7962 \\ 8190 \\ \hline 228 \\ 7962 \end{array}$$

$$\begin{array}{r} 7962 \\ 8190 \\ \hline 228 \\ 7962 \end{array}$$

$$\begin{array}{r} 7962 \\ 8190 \\ \hline 228 \\ 7962 \end{array}$$

Stand No. 4021
Arena

Rel.
Circum. Circum.:

Rel. Rel. Rel.

Tree	No.	No.	No.	Pts.	No.	F.%	D.%	Saps	F.%	D.%	Dom.%	Trees	acre
	Pts.	Tr.	Dom.	Sap.	Sap.	Sap.	Sap.	acre	Tr.	Tr.	Trees	I.V.	C.I.
Acerrubrum													
A. saccharum	36	65	9778	2383.2	41.5	66	41.2		36.4	40.6	42.5	119.5	478.0
Carya cord.													
C. ovata	1	1	135	41.0	0.7				1.0	0.6	0.6	2.2	17.6
Betula nigra													
Cornus alba	18	26	3927	1101.0	19.2				18.2	16.3	17.1	51.6	154.8
Fagus grand.													
Fraxinus amer.													
F. lanceolata													
F. pennsylvani	13	21	754	430.1	7.5				13.1	13.1	3.3	29.5	147.5
Juglans cinere													
J. nigra													
Ostrya virgin.													
Populus grand.													
P. tremuloides													
Prunus serotin													
Quercus alba													
Q. ellipsoidalis													
Q. macrocarpa													
Q. rubra bicolor	5	7	650	192.1	3.3				5.0	4.4	2.8	12.2	48.8
Q. velutina													
Tilia american													
Ulmus american	26	40	7735	1397.8	27.8	39	24.4		26.3	25.0	33.7	85.0	510.0
U. rubra													
	99	160	22,979	5745.2	100.0				100.0	100.0	100.0	300.0	1356.7

Acer sacch. +1

$$1330 = \pi r^2$$

Ulmus amer. -1

$$\begin{array}{r} .24375 \\ 160 \overline{) 39.0000} \\ \underline{320} \\ 700 \\ \underline{640} \\ 600 \\ \underline{480} \\ 1200 \end{array}$$

$$\begin{array}{r} .4125 \\ 160 \overline{) 66.0000} \\ \underline{640} \\ 200 \\ \underline{160} \\ 400 \\ \underline{320} \\ 80 \end{array}$$

$$r = 20.6$$

$$\begin{array}{r} 6.28 \\ 20.6 \\ \hline 3768 \\ 12560 \\ \hline 129,368 \end{array}$$

$$\begin{array}{r} 423.5 \\ 3.14 \overline{) 1330.00.0} \\ \underline{1256} \\ 740 \\ \underline{628} \\ 1120 \\ \underline{942} \\ 1780 \\ \underline{1570} \\ 210 \end{array}$$

$$\begin{array}{r} 20.5 \\ \sqrt{423.60} \\ 4 \\ 405 \overline{) 2360} \\ \underline{2025} \\ 335 \end{array}$$

Arena - 4021

Betula nigra		
Pts.	Trees	Dom.
1	1	150✓
1	1	130✓
1	1	165✓
1	2	120✓
1	2	115✓
1	3	90✓
1	1	120✓
1	1	300✓
1	1	40✓
1	1	150✓
1	1	230✓
1	1	150✓
1	1	220✓
1	2	145✓
1	2	120✓ ²⁶ ck.
1	2	80✓
1	2	750✓
1	2	185✓
1	2	40✓
1	2	75✓
1	2	40✓
1	2	110✓
1	2	40✓
1	2	110✓
1	2	27✓
1	2	225✓
18	26	3927

Fraxinus		
Pts.	#	Trees
1	1	1
1	2	2
1	2	2
1	3	3
1	1	1
1	2	2
1	3	3
1	1	1
13	21	

Ulmus amer.		
Pts.	Trees	Dom.
1	2	80✓
1	1	14✓
1	2	40✓
1	1	45✓
1	3	23✓
1	1	13✓
1	1	40✓
1	3	55✓
1	2	20✓
1	2	19✓
1	2	27✓
1	2	30✓
1	1	30✓
1	1	20✓
1	1	20✓
1	1	23✓
1	1	20✓
1	2	35✓
1	2	40✓
1	2	50✓
1	1	110✓
26	40	754

Acer saccharinum		
Pts.	Trees	Dom.
1	1	50✓
1	2	120✓
1	1	13✓
1	1	65✓
1	1	65✓
1	2	810✓
1	4	22✓
1	1	200✓
1	2	43✓
1	2	310✓
1	2	65✓
1	2	50✓
1	2	70✓
1	2	17✓
1	3	35✓
1	3	110✓
1	1	26✓
1	1	50✓
1	1	50✓
1	2	85✓
1	2	70✓
1	2	35✓
1	3	720✓
1	3	640✓
1	3	40✓
1	3	480✓
1	4	790✓
1	2	790✓
1	1	21✓
1	1	12✓
1	3	795✓
1	2	28✓
1	2	19✓
1	1	65✓
1	3	335✓
1	1	290✓
1	1	14✓
1	1	250✓
1	1	25✓
1	1	7675
1	1	60✓
36	65	7735

Q. bicolor		
Pts.	Trees	Dom.
1	1	30✓
1	1	45✓
1	2	45✓
1	1	470✓
1	2	25✓
1	7	20✓
5	7	15✓
		650
		70✓
		30✓
		30✓
		50✓
		100✓
		460✓
		40✓
		280✓
		25✓
		13✓
		80✓
		200✓
		70✓
		40✓
		150✓
		150✓
		400✓
		55✓
		65✓
		55✓
		75✓
		30✓
		35✓
		40✓
13		30✓
13		45✓
		30✓
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Stand No. 4021

Plant Ecology Laboratory
University of Wisconsin

Name: Arena

LIANA DATA FORM

T: 8N R: 5E sec. 9 NE: NE No. of points:

Date:

Observers: Swan

40

4 + 5 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
1. <i>Betula nigra</i>	150 ✓	P ✓	.25 ✓	1/4 ✓ 10'	NNW ✓	flat
<i>Acer sacch.</i>	45 ✓	<i>Rhus</i> rod. ✓	.5 ✓	2/4 ✓ 34'	ENE ✓	"
<i>Ulmus amer.</i>	50 ✓	/				
<i>Ulmus amer.</i>	120 ✓	/				
2. <i>Acer sacch.</i>	175 ✓	2 <i>Rhus</i> ✓	(.25) ✓	(1/4) ✓	2 SE ✓	"
		<i>Rhus</i> ✓			WE ✓	"
<i>Acer sacch.</i>	38 ✓	/				
<i>Acer sacch.</i>	dead 130	1 <i>Rhus</i> ✓	.5 ✓	2/4 ✓	NW ✓	"
		2 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	NW SE ✓	
<i>Ulmus amer.</i>	13 ✓	/				
<i>Betula nigra</i>	130 ✓	<i>Rhus</i> ✓	.25 ✓	1/4 ✓	NW ✓	"
3. <i>Acer sacch.</i>	38 ✓	/				
<i>Ulmus amer.</i>	65 ✓	2 <i>Rhus</i> rod. ✓	.50 ✓	3/4 ✓	2 NE ✓	
		<i>Rhus</i> ✓	.25 ✓	1/4 ✓	NW ✓	
<i>Betula nigra</i>	165 ✓	1 <i>Rhus</i> ✓	1.0 ✓	3/4 ✓	SW ✓	
		1 <i>Rhus</i> ✓	.5 ✓	3/4 ✓	SW ✓	
		2 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	2 SW ✓	

(Acer sacch. = *Acer saccharinum*)

Stand No. 4021

Plant Ecology Laboratory
University of Wisconsin

Name:

LIANA DATA FORM

T: R: sec.

No. of points:

Date:

Observers:

Swan

4 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
<i>Ulmus</i> <i>amer.</i>	65 ✓	2 <i>Vitis</i> rip. ✓	.50 ✓	1/4 ✓	loose	flat
		<i>Rhus</i> ✓	.25 ✓	2/4 ✓	SW ✓	"
		<i>Rhus</i> ✓	.5 ✓	2/4 ✓	SE ✓	
4. <i>Ulmus</i> <i>amer.</i>	810 ✓	2P ✓	.25 ✓	1/4 ✓	SE SW ✓	
		3 <i>Rhus</i> ✓	.5 ✓	1/4 ✓	2SW NE ✓	
		22 ✓ <i>Rhus</i>	.25 ✓	1/4 ✓	4SW 2NW ✓ 1NE	
		<i>Rhus</i> ✓	1.5 ✓	3/4 ✓	NE ✓	
	same one counted twice	2P ✓			SW SW ✓	
		1 <i>Rhus</i>	1.5	3/4	NE	
		2 <i>Rhus</i> ✓	2.0 ✓	4/4 ✓	2NE ✓	
		1 <i>Rhus</i> ✓	1.0 ✓	3/4 ✓	NE ✓	
<i>Betula</i> <i>nigra</i>	120 ✓	2 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	13' 3 SW SE ✓	flat
		<i>Vitis</i> rip. ✓			loose	
		P ✓	.25 ✓	1/4 ✓	2' NW ✓	"
<i>Betula</i> <i>nigra</i>	115 ✓					

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Name:

LIANA DATA FORM

T: R: sec.

No. of points:

Date:

Observers:

Swan

4 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
<i>Acer sacch.</i>	85 ✓	2 <i>Rhus</i> ✓	.5 ✓	1/4 ✓ 2/4 ✓	SE ✓ NW ✓	flat
		2 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	2 SE ✓	
5. <i>Acer sacch.</i>	200 ✓	3 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	2 SE ✓ NE ✓	
		1 <i>Rhus</i> ✓	.5 ✓	1/4 ✓	SE ✓	
<i>Betula nigra</i>	90 ✓	4 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	SE ✓ NE ✓ NW ✓	"
		P ✓	.25 ✓	1/4 ✓ 3'	NE ✓	
<i>Betula nigra</i>	120 ✓	2 <i>Rhus</i> ✓	2.25 ✓	1/4 ✓ 13'	SW ✓ SE ✓	
		<i>Vitis</i> ✓ rip ✓			loose	
		P ✓	.25 ✓	1/4 ✓ 2'	NW ✓	
<i>Ulmus amer.</i>	22 ✓	/				
6. <i>Ulmus amer.</i>	60	/				
<i>Acer sacch.</i>	18 ✓	/				
<i>Ulmus amer.</i>	200 ✓	3 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	2 SW ✓ NW ✓	"
<i>Ulmus amer.</i>	43 ✓	/				
7. <i>Acer sacch.</i>	220 ✓	4 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	2 NE ✓ 2 SW ✓	"
		2 P ✓	.25 ✓	1/4 ✓	2 SW ✓	

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University of Wisconsin

Name:

LIANA DATA FORM

T: R: sec.

No. of points:

Date: 4 August 1960

Observers: Swan

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
<i>Ulmus</i> <i>amer.</i>	310 ✓	<i>Rhus</i> ✓	.25 ✓	1/4 ✓ 3'	NE ✓	flat.
<i>Acer</i> <i>sacc.</i>	30 ✓	<i>Parth</i> ✓	.25 ✓	3/4 ✓	SW ✓	
<i>Betula</i> <i>nigra</i>	300 ✓	P ✓	.25 ✓	1/4 ✓ 3'	NW ✓	"
		<i>Rhus</i> ✓	.5 ✓	2/4 ✓ 30'	SW ✓	
8. <i>Betula</i> <i>nigra</i>	40 ✓	/				
<i>Betula</i> <i>nigra</i>	150 ✓	P ✓	.25 ✓	1/4 ✓	SW ✓	"
		<i>Rhus</i> ✓	.25 ✓	1/4 ✓	SW ✓	"
<i>Ulmus</i> <i>amer.</i>	65 ✓	<i>Rhus</i> ✓	.5 ✓	3/4 ✓	SE ✓	
		5 P ✓	.25 ✓	1/4 ✓	2 SW ✓ 3 NW ✓	
		3 <i>Rhus</i> <i>rad.</i> ✓	.25 ✓	1/4 ✓	SW ✓ 2 NW ✓	
		2 <i>Rhus</i> <i>rad.</i> ✓	.25 ✓	2/4 ✓	2 NW ✓	
<i>Betula</i> <i>nigra</i>	230 ✓	/				
9. <i>Ulmus</i> <i>amer.</i>	50 ✓	/				
<i>Betula</i> <i>nigra</i>	150 ✓	P ✓	.25 ✓	1/4 ✓	SW ✓	"
		<i>Rhus</i> ✓	.25 ✓	1/4 ✓	SW ✓	

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Name:

LIANA DATA FORM

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No. of points:

Date:

Observers:

Swan

4 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
Ulmus amer.	70 ✓	2 Rhus ✓	.5 ✓	2/4 ✓	2 SW ✓	flat
Rhus dead at 1.0		P ✓	.25 ✓	1/4 ✓	SW	"
Ulmus amer.	17 ✓	/	.25	1/4	SW	
10. Acer sacch.	70 ✓	/				
Acer sacch.	30 ✓	P ✓	.25 ✓	1/4 ✓	SE ✓	"
Acer sacch.	50 ✓	/				
Acer sacch.	100 ✓	/				
11. Fraxinus sp.	80 ✓	/				
Acer sacch.	460 ✓	P ✓	.25 ✓	1/4 ✓	NE ✓	
		3 Rhus ✓	.25 ✓	1/4 ✓	3 NW ✓ SW ✓	
		2 Rhus ✓	.25 ✓	2/4 ✓	NW ✓ SW ✓	
Ulmus amer.	35 ✓	2 Rhus ✓	.25 ✓	2/4 ✓	2 SE ✓	"
		Rhus ✓	.5 ✓	3/4 ✓	SE ✓	
Ulmus amer.	110 ✓	2 Rhus ✓	.5 ✓	2/4 ✓	SE ✓ NE ✓	
		Rhus ✓	.25 ✓	(1/4) ✓	NE ✓	

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No. of points:

Date:

Observers:

Swan

40

4 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
12. <i>Acer sacch.</i>	40 ✓	<i>Rhus</i> ✓	.5 ✓	2/4 ✓	SSE ✓	flat
<i>Fraxinus</i> sp.	14 ✓	/				
<i>Acer sacch.</i>	280 ✓	<i>Rhus</i> ✓	.5 ✓	2/4 ✓	SSE ✓	"
		<i>P</i> ✓	.25 ✓	1/4 ✓	NE ✓	
		<i>Rhus</i> ✓	1.0 ✓	1/4 ✓	NW ✓	
		2 <i>Vitis</i> rip. ✓	.5 ✓	1/4 2/4 ✓	loose	
		<i>Rhus</i> ✓	.25 ✓	1/4 ✓	NE ✓	
<i>Betula</i> <i>nigra</i>	220 ✓	/				
13. <i>Fraxinus</i> sp.	40 ✓	3 <i>Rhus</i> <i>Vitis</i> rip. ✓	.25 ✓ 1.0 ✓	1/4 ✓ 3/4 ✓	3 SE ✓ loose	flat
<i>Fraxinus</i> sp.	45 ✓	/				
<i>Acer sacch.</i>	25 ✓	<i>Rhus</i> ✓	.25 ✓	1/4 ✓ 10'	NE ✓	"
<i>Q.</i> <i>bicolor</i>	30 ✓	/				
14. <i>Fraxinus</i> sp. penn.	23 ✓	/				
<i>Acer sacch.</i>	13 ✓	/				
<i>Fraxinus</i> pennat.	13 ✓	<i>P</i> ✓	.25 ✓	1/4 ✓ 1 1/2'	ESE ✓	"
<i>Acer sacch.</i>	80 ✓	<i>Rhus</i> ✓	.5 ✓	1/4 ✓ 7'	NE ✓	"

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No. of points:

Date:

Observers: Swan

40

4 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
15. Fraxinus sp.	40 ✓	Rhus ✓	1.5 ✓	3/4 ✓	SW ✓ loose	flat
		Rhus ✓			NE ✓	"
Acer sacch.	200 ✓	Rhus ✓	1.0 ✓	3/4 ✓	NE ✓	"
		2 Rhus ✓	.25 ✓	1/4 ✓	NW ✓ NE	"
Acer sacch.	70 ✓	Rhus ✓	.25 ✓	1/4 ✓	SW ✓	"
Fraxinus	55 ✓					
16. Acer sacch.	40 ✓					
Ulmus amer.	26 ✓					
Ulmus amer.	50 ✓	Rhus ✓	.25 ✓	1/4 ✓ 2'	SW ✓	"
Acer sacch.	150 ✓	Rhus ✓	1.0 ✓	3/4 ✓ 40'	NNE ✓	
		2 Rhus ✓	.5 ✓	2/4 ✓	2 NE ✓	
		2 Rhus ✓	.25 ✓	1/4 ✓	SW ✓ SE	
17. Acer sacch.	150 ✓	Rhus ✓	1.0 ✓	3/4 ✓	NNE ✓	
		2 Rhus ✓	.5 ✓	2/4 ✓	2 NE ✓	
		2 Rhus ✓	.25 ✓	1/4 ✓	SW ✓ SE	
Ulmus amer.	50 ✓	Rhus ✓	.25 ✓	1/4 ✓ 2'	SW ✓	

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No. of points:

Date:

Observers:

Swan

4 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
17. <i>Acer sacch.</i>	480 ✓	2 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	SW ✓ SE ✓	flat
<i>Acer sacch.</i>	55 ✓	/				
18. <i>Acer sacch.</i>	65 ✓	<i>Rhus</i> ✓	.25 ✓	1/4 ✓	NE ✓	"
<i>Acer sacch.</i>	55 ✓	/				
<i>Fraxinus</i> sp.	20 ✓	/				
<i>Acer sacch.</i>	75 ✓	/				
19. <i>Acer sacch.</i>	30 ✓	/				
<i>Q. bicolor</i>	45 ✓	2 <i>Rhus</i> ✓	.5 ✓	3/4 ✓	due west ✓ SE ✓	
<i>Ulmus</i> amer.	85 ✓	3 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	NE ✓ NW ✓ NE ✓	
		<i>Rhus</i> ✓	.25 ✓	2/4 ✓	NW ✓	
		<i>Rhus</i> ✓	.5 ✓	2/4 ✓	NW ✓	
<i>Ulmus</i> amer.	70 ✓	<i>Rhus</i> ✓	1.0 ✓	3/4 ✓	ENE ✓	"
20. <i>Acer sacch.</i>	35 ✓	/				
<i>Q. bicolor</i>	45 ✓	2 <i>Rhus</i> ✓	.5 ✓	3/4 ✓	due west ✓ SE ✓	"
<i>Betula</i> <i>p. nigra</i>	145 ✓	/				

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Plant Ecology Laboratory
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LIANA DATA FORM

T: R: sec.

No. of points:

Date:

Observers: Swan

4 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
Q. bicolor	470 ✓	2 Rhys ✓	.5 ✓	2/4 ✓ 30	SW ✓ NE ✓	
		3 Rhys ✓	.25 ✓	1/4 ✓	SW ✓ NNW ✓ ESE ✓	
21. Acer sacch.	40 ✓ 2P	✓	.25 ✓	1/4 ✓ 15 21	SE ✓ SE ✓	
Fraxinus	19 ✓	/				
Fraxinus	27 ✓	/				
Fraxinus	30 ✓	2 Rhys ✓	.25 ✓	2/4 ✓	2 NE ✓	flat
		Rhys ✓	1.0 ✓	2/4 ✓	NW ✓	
		P ✓	.25 ✓	1/4 ✓	NW ✓	
22. Acer sacchar.	1330 ✓	6 Rhys ✓	.25 ✓	1/4 ✓	2 NE 2 NW ✓ 2 SE ✓	
Ulmus ametr.	35 ✓	/				
Fraxinus sp.	30 ✓	Rhys ✓	.5 ✓	2/4 ✓	SE ✓	
		Rhys ✓	.25 ✓	1/4 ✓	NW ✓	
		2 Rhys ✓	1.0 ✓	2/4 ✓	2 NE ✓	
Acer sacch.	45 ✓	/				
23. Acer sacch.	1330 ✓	6 Rhys ✓	.25 ✓	1/4 ✓	2 NE ✓ 2 SE ✓	2 NW
Betula nigra	120 ✓	/				

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Plant Ecology Laboratory
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LIANA DATA FORM

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No. of points:

Date:

Observers:

Swan

4 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
23. Q. bicolor Ulmus amer.	25 ✓	/				
	720 ✓	6 Rhus ✓	.5 ✓	2/4 ✓	NE ✓ SE ✓	4 NW
		6 Rhus ✓	.25 ✓	1/4 ✓	3 SE ✓ NW ✓	2 NE
	4 P ✓		.25 ✓	1/4 ✓	SE ✓ 3 NW	
		2 P ✓	.25 ✓	1/4 ✓	NE ✓ NE	
		Rhus ✓	1.5 ✓	4/4 ✓	NW ✓	
24. Ulmus amer.	640 ✓	Rhus ✓	1.5 ✓	2/4 ✓ leans over and spreads	SE ✓	on adj. Q. bicolor
		5 Rhus ✓	.25 ✓	1/4 ✓	2 SE ✓ 3 NW ✓	
	2 P ✓		.25 ✓	1/4 ✓	2 SW ✓	
Q. bicolor	20 ✓	P ✓	.25 ✓	1/4 ✓ 7'	SW ✓	"
Q. bicolor	15 ✓	Rhus (Don't count)	1.5 in top	2/4 from adj. Ulmus	SE	"
Betula nigra	80 ✓	/				
25. Celtis occid.	135 ✓	/				
Ulmus amer.	40 ✓	2 Rhus ✓	.25 ✓	1/4 ✓ 15' 4'	2 NE ✓	flat
Fraxinus sp.	20 ✓	Rhus ✓	.25 ✓	1/4 ✓	SW ✓	
		Vitis ripi ✓	1.0 ✓	4/4 ✓	loose	

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Name:

LIANA DATA FORM

T: R: sec.

No. of points:

Date:

Observers: Swan

4 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
25. Acer sacch.	20 ✓	/				
26. Fraxinus sp.	20 ✓	Rhus ✓	.25 ✓	1/4 ✓	SW ✓	flat
		Vitis rip. ✓	1.0 ✓	4/4 ✓	Loose	
Acer sacch.	60 ✓	/				
Acer sacchr.	65 ✓	/				
Fraxinus sp.	23 ✓	P ✓	.5 ✓	3/4 ✓	NW ✓	
		P ✓	.25 ✓	2/4 ✓	NE ✓	
27. Fraxinus sp.	20 ✓	8P ✓	.25 ✓	1/4 ✓	3 NW ✓ 2 SE ✓	2 SW NE
		P ✓	.5 ✓	4/4 ✓	NW ✓	
		Rhus ✓	.25 ✓	1/4 ✓	SW ✓	
		P ✓			SW ✓	
Fraxinus	35 ✓	9P ✓	.25 ✓	1/4 ✓	6N ✓ 2SW	SSE
		P ✓	.25 ✓	2/4 ✓	N ✓	
		P ✓	.5 ✓	3/4 ✓	N ✓	
Acer sacch.	40 ✓	P ✓	1.0 ✓	4/4 ✓	SW ✓	"

Stand No. 4021

Plant Ecology Laboratory
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Name:

LIANA DATA FORM

T: R: sec.

No. of points:

Date:

Observers:

Jwan

4 + 5 August 1960

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
Fraxinus sp.	40 ✓	6 P ✓	.25 ✓	1/4 ✓	5 N ✓ SW	flat
		2 P ✓	.5 ✓	4/4 ✓	SW ✓ SE	
		3 P ✓	.25 ✓	2/4 ✓	2 NE ✓ SE	
28 Ulmus amer.	480 ✓	Rhus ✓	.25 ✓	1/4 ✓ 10	WNW ✓	11
		4 P ✓	.25 ✓	1/4 ✓	3 SE ✓ SW	
Acer sacch.	25 ✓					
Acer sacch.	28 ✓	Rhus ✓	1.0 ✓	3/4 ✓	SW ✓	
Acer sacch.	35 ✓	3 P ✓	.25 ✓ (1)	2/4 2 (3/4 ✓	NE ✓	
		P ✓	.5 ✓	4/4 ✓	NE ✓	
		5 P ✓	.25 ✓	1/4 ✓	5 NE ✓	"
29. Ulmus amer.	790 ✓	5 Rhus ✓	.25 ✓	1/4 ✓	SSE ✓	(2 dead Rhus at 2.0
Acer sacch.	100 ✓					
Acer sacch.	45 ✓					
Acer sacch.	245 ✓	Rhus ✓	.25 ✓	1/4 ✓	SE	
on edge of slough -	which was on	Rhus ✓	1.0 ✓	3/4 ✓	NW	
direction probably invalid here.	South side	Rhus ✓	.5 ✓	2/4 ✓	NW	

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LIANA DATA FORM

T: R: sec.

No. of points:

Date:

5 August 1960

Observers: Swan

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
30. <i>Ulmus</i> <i>amer.</i>	790 ✓	5 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	5 SSE ✓	flat 2 dead Rhys at 2.0
<i>Acer</i> <i>sacch.</i>	100 ✓	/				
<i>Acer</i> <i>sacch.</i>	245 ✓	<i>Rhus</i> ✓	.25 ✓	1/4 ✓	SE	
on edge of slough which was to the south, direction probably invalid		<i>Rhus</i> ✓	1.0 ✓	3/4 ✓	NW	
<i>Acer</i> <i>sacch.</i>	200 ✓	<i>Rhus</i> ✓	.5 ✓	2/4 ✓	NW	
31. <i>Acer</i> <i>sacch.</i>	700 ✓	5 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	SW 2 NW ✓	2' SE
		<i>Rhus</i> ✓	1.0 ✓	3/4 ✓	NW ✓	
		<i>Vitis</i> <i>rip.</i> ✓	.25 ✓	1/4 ✓	Loose	"
		2 <i>Rhus</i> ✓	.5 ✓	2/4 ✓	2 SSE ✓	
		<i>Rhus</i> ✓	1.5 ✓	4/4 ✓	SSE ✓	
<i>Ulmus</i> <i>amer.</i>	21 ✓	<i>Rhus</i> ✓	.5 ✓	2/4 ✓	SW ✓	"
		2 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	NNW SW ✓	
<i>Betula</i> <i>nigra</i>	750 ✓	<i>Rhus</i> ✓	2.5 ✓	4/4 ✓	NE ✓	
		3 <i>Rhus</i> ✓	.5 ✓	2/4 ✓	NE SW NW ✓	
		5 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	NE 3 NW ✓	SW

Stand No. 4021

Plant Ecology Laboratory
University of Wisconsin

Name:

LIANA DATA FORM

T: R: sec.

No. of points:

Date: 5 August 1960

Observers: Swan

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
31. #3 cont.		2 Rhus ✓	1.5 ✓	4/4 ✓	SE ✓ SW ✓	
31. #4 Ulmus amer.	12 ✓	2 Rhus ✓	1.0 ✓	3/4 ✓	NE ✓ NW ✓	
32. Ulmus amer.	795 ✓	2 P ✓			2 SSE ✓	
		3 Rhus ✓	1.0 ✓	3/4 ✓ 2(2/4)	2 NE ✓ SW ✓	
		Rhus ✓	.5 ✓	1/4 ✓	NW ✓	
		Rhus ✓	.25 ✓	1/4 ✓	NW ✓	
Betula nigra	185 ✓	Vitis rip. ✓	1.0 ✓	3/4 ✓	all on south side	
Direction not valid here because of slough	3	Rhus ✓	.25 ✓	1/4 ✓	away from slough	
Fraxinus sp.	50 ✓	Rhus ✓	1.0 ✓	3/4 ✓	NW ✓	"
		Rhus ✓	.15 ✓	2/4 ✓	NE ✓	
		P ✓	.25 ✓	1/4 ✓	WE ✓	
Ulmus amer.	28 ✓					
33. Betula nigra	40 ✓					
Acer sacch.	22 ✓					

Stand No. 4821

Plant Ecology Laboratory
University of Wisconsin

Name:

LIANA DATA FORM

T: R: sec.

No. of points:

Date: 5 August 1960

Observers:

Swan

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
33. <i>Betula nigra</i>	75 ✓	3 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	NE ✓ 2NW ✓	flat
<i>Acer sacch.</i>	23 ✓	<i>Rhus</i> ✓	.5 ✓	2/4 ✓ 30'	NE ✓	"
		<i>Rhus</i> ✓	.25 ✓	1/4 ✓	NW ✓	
34. <i>Acer sacch.</i>	70 ✓	P ✓ ✓			NE ✓	
		P ✓	.15 ✓	3/4 ✓	NW ✓	
		3 P ✓	.25 ✓	1/4 ✓	NW ✓ SW	SE
		<i>Rhus</i> ✓	.25 ✓	1/4 ✓	SW ✓	
<i>Acer sacch.</i>	28 ✓	P ✓	.5 ✓	3/4 ✓	ROOSE to NE ✓	
		4 P ✓	.25 ✓	1/4 ✓	SE 3SW ✓	
<i>Acer sacch.</i>	35 ✓	5 P ✓	.25 ✓	1/4 ✓	2NW ✓ NE ✓	2SE 2SW
		2 P ✓	.25 ✓	2/4 ✓ 30'	2SE ✓	
<i>Acer sacch.</i>	40 ✓	4 P ✓	.25 ✓	1/4 ✓	3SW ✓ SE ✓	
35. <i>Ulmus amer.</i>	19 ✓					
<i>Acer sacch.</i>	60 ✓	2 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	2 SE SW ✓	
<i>Acer sacch.</i>	60 ✓	2 P ✓	.25 ✓	2/4 ✓	2 SSE ✓	

Stand No. 4021

Plant Ecology Laboratory
University of Wisconsin

Name:

LIANA DATA FORM

T: R: sec.

No. of points:

Date:

5 August 1960

Observers:

Swan

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
35. <i>Ulmus amer.</i>	65 ✓	3 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	NW 2SE ✓	flat
36. <i>Betula nigra</i>	40 ✓	/				
<i>Ulmus amer.</i>	335 ✓	<i>Rhus</i> ✓	.5 ✓	2/4 ✓ 35'	NE ✓	"
<i>Acer sacch.</i>	100 ✓	<i>Rhus</i> ✓	.25 ✓	1/4 ✓ 2'	SW ✓	
<i>Betula nigra</i>	110 ✓	/				
37. <i>Betula nigra</i>	40 ✓	/				
<i>Acer sacch.</i>	100 ✓	<i>Rhus</i> ✓	.25 ✓	1/4 ✓ 2'	SW ✓	
<i>Betula nigra</i>	110 ✓	/				
<i>Ulmus amer.</i>	290 ✓	/				
divided into 4 small stems at 4 ft.		<i>Rhus</i> (6) ✓	.25 ✓	1/4 ✓	SE 2NE ✓	3NW
		<i>Rhus</i> ✓	.5 ✓	2/4 ✓	NE ✓	
38. <i>Acer sacch.</i>	245 ✓	<i>Rhus</i> ✓	.25 ✓	1/4 ✓ 2'	SW ✓	"
<i>Acer sacch.</i>	120 ✓	/				
<i>Acer sacch.</i>	150 ✓	<i>Rhus</i> ✓	.5 ✓	2/4 ✓	SSE ✓	
		5 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	SE 3NE ✓	NW
<i>Fraxinus sp.</i>	110 ✓	/				

Stand No. 4021

Plant Ecology Laboratory
University of Wisconsin

Name:

LIANA DATA FORM

T: R: sec.

No. of points:

Date: 5 August 1960

Observers: Swan

(1) Tree sp.	(2) B.A.	(3) Liana sp. Indicate if new this yr.	(4) Diam. at 1 ft.	(5) Present on 1/4, 2/4, 3/4 or 4/4 of trunk	(6) Direction at base	(7) Slope
39. <i>Acer sacch.</i>	385 ✓	5 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	5 SE ✓	flat
		<i>Vitis</i> ✓ <i>rip.</i> ✓			loose	
		<i>Vitis</i> ✓ <i>rip.</i> ✓	1.0 ✓	3/4 ✓	"	
		<i>Vitis</i> ✓	.25 ✓	1/4 ✓	"	
<i>Betula nigra</i>	27 ✓	/				
<i>Acer sacch.</i>	315 ✓	/				
<i>Betula nigra</i>	225 ✓	/				
40. <i>Ulmus amer.</i>	14 ✓	/				
<i>Ulmus amer.</i>	250 ✓	<i>Rhus</i> ✓	2.0 ✓	3/4 ✓	SE ✓	flat
		<i>Rhus</i> ✓	2.5 ✓	3/4 ✓	SE ✓	
		<i>Rhus</i> ✓	.5 ✓	2/4 ✓	SE ✓	
		5 <i>Rhus</i> ✓	.25 ✓	1/4 ✓	5 SE ✓	sw
<i>Acer sacch.</i>	50 ✓	/				
<i>Ulmus amer.</i>	25 ✓	<i>Rhus</i> ✓	.25 ✓	1/4 ✓	sw	"

Parthenocissus: % freq. of ground form: $7/40 = 17.5\%$

% freq. of liana: $32/160 = 20.0\%$

Ratio of frequencies: $\frac{20.0}{17.5} = 1.14$

Density of groundform: $\frac{56}{40} = 1.4$

Density of liana: $\frac{101}{160} = 0.63$

Ratio of densities: $\frac{0.63}{1.4} = 0.45$

% freq. of new lianas on trees: $\frac{6}{160} = 3.75\%$

Density of new lianas: $\frac{9}{160} = 0.056$

Abundance of new lianas: $\frac{9}{6} = 1.5$

Abundance of ground form: $\frac{56}{7} = 8$ } Ratio = $\frac{3.16}{8} = 0.395$

Abundance of liana: $\frac{101}{32} = 3.16$ {

Height: % in each $1/4$:

$1/4$: $\frac{79}{101} = 78.2\%$

$3/4$: $\frac{7}{101} = 6.9\%$

$4/4$: $\frac{5}{101} = 5.0\%$

$2/4$: $\frac{10}{101} = 9.9\%$

Height — size distribution:

.25 | $1/4$: $\frac{79}{101} = 78.2\%$

 | $2/4$: $\frac{10}{101} = 9.9\%$

.5 | $3/4$: $\frac{4}{101} = 4.0\%$

 | $4/4$: $\frac{4}{101} = 4.0$

1.0 | $4/4$: $\frac{1}{101} = 1.0\%$

Arena - 4021

Rhus radicans: % freq. of ground form: $29/40 = 72.5\%$

% freq. of liana: $79/160 = 49.4\%$

Ratio of frequencies: $\frac{49.4}{72.5} = 0.68$

Density of ground form: $\frac{288}{40} = 7.2$

Density of liana: $\frac{274}{160} = 1.71$

Ratio of densities: $\frac{1.71}{7.2} = 0.24$

2 new lianas were found on 2 trees.

Heights: % in each $1/4$: $1/4$: $\frac{181}{274} = 66.1\%$

Height distribution according to size class:

$2/4$: $\frac{58}{274} = 21.2\%$

$3/4$: $\frac{28}{274} = 10.2\%$

$4/4$: $\frac{7}{274} = 2.5\%$

$$0.25 \begin{bmatrix} 1/4 & 176 \\ 2/4 & 10 \end{bmatrix}$$

$$0.5 \begin{bmatrix} 1/4 & -7 \\ 2/4 & -39 \\ 3/4 & -7 \end{bmatrix}$$

$$1.0 \begin{bmatrix} 1/4 & -1 \\ 2/4 & -5 \\ 3/4 & -15 \end{bmatrix}$$

$$1.5 \begin{bmatrix} 2/4 & -2 \\ 3/4 & -3 \\ 4/4 & -4 \end{bmatrix}$$

$$2.0 \begin{bmatrix} 3/4 & -1 \\ 4/4 & -2 \end{bmatrix}$$

$$\text{Abundance of ground form: } \frac{288}{29} = 9.93$$

$$2.5 \begin{bmatrix} 3/4 & -1 \\ 4/4 & -1 \end{bmatrix}$$

Abundance of liana: $\frac{274}{79} = 3.47$

Ratio of abundances: $\frac{3.47}{9.93} = 0.35$

Arena: 4021: Lianas $> \frac{1}{4}$

① Parthenocissus

$$\begin{array}{r} 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 5 \\ 4 \\ 1 \\ 2 \\ \hline 19 \end{array}$$
$$\frac{1}{2}$$

Rhus

1✓
 3✓
 1✓
 1✓
 2✓
 2✓
 3✓
 3✓
 1✓
 1✓
 1✓
 19

$$\begin{array}{r} 2\checkmark \\ 2\checkmark \\ 1\checkmark \\ 3\checkmark \\ 2\checkmark \\ 2\checkmark \\ 1\checkmark \\ 2\checkmark \\ \hline 15 \end{array}$$
$$\begin{array}{r} 1\checkmark \\ 2\checkmark \\ 2\checkmark \\ 3\checkmark \\ 3\checkmark \\ 1\checkmark \\ \hline 12 \\ 1 \\ \hline 13 \end{array}$$

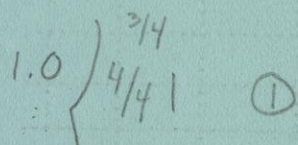
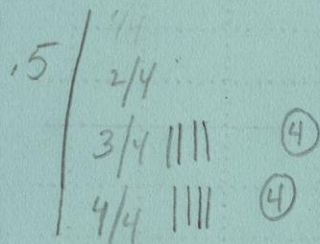
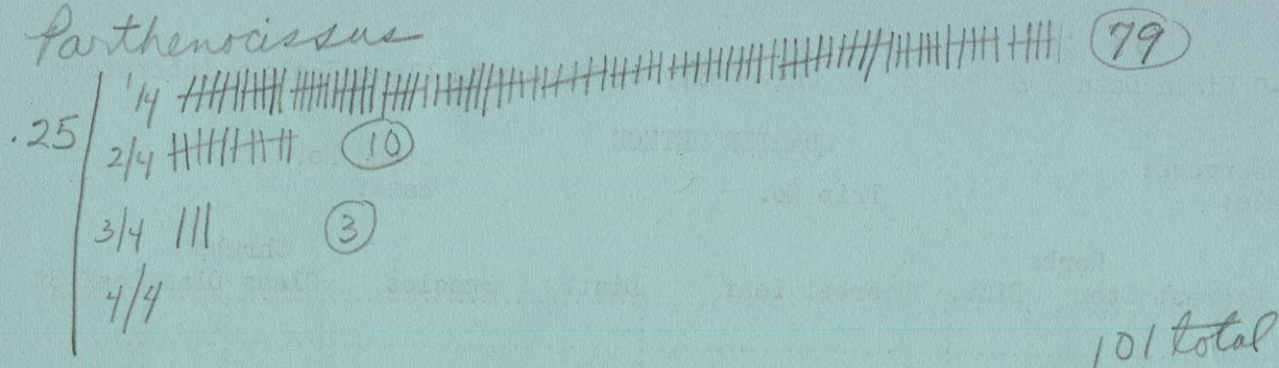
1✓
1✓
2✓
2✓
1✓
£
3✓

10

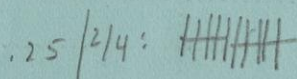
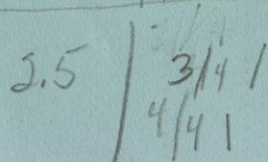
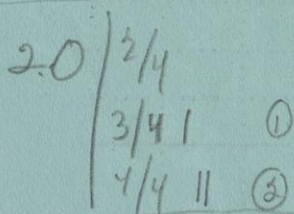
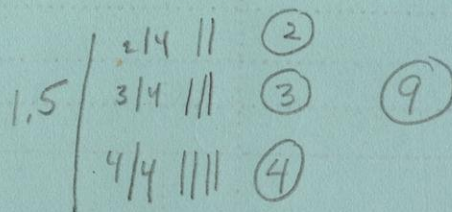
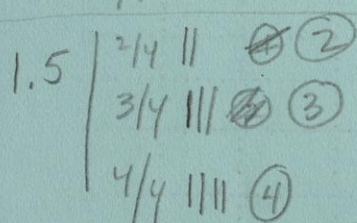
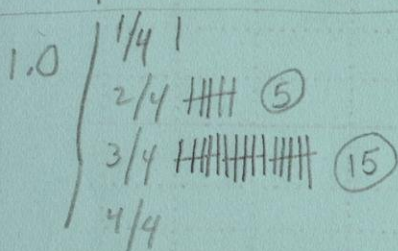
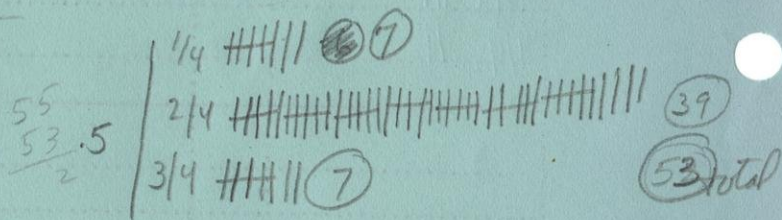
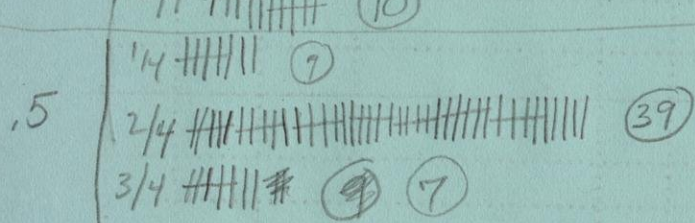
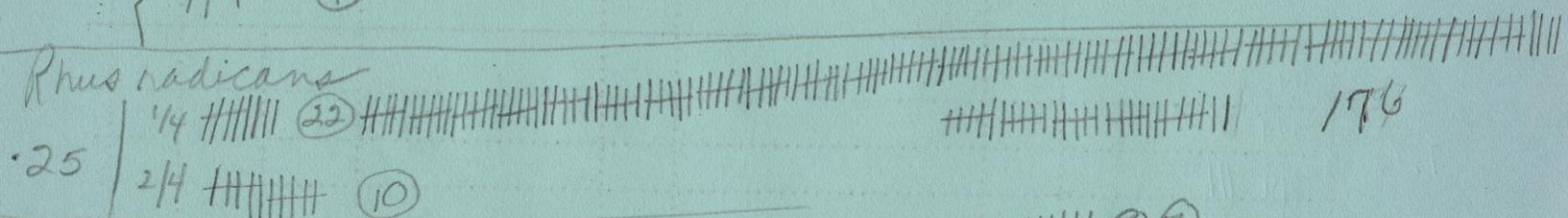
$$\begin{array}{r} 1\checkmark \\ 1\checkmark \\ \hline 2 \end{array}$$
$$\begin{array}{r} 2\checkmark \\ 2\checkmark \\ \hline 4 \end{array}$$
$$\begin{array}{r} 7\checkmark \\ 1\checkmark \\ 4\checkmark \\ \hline 12 \end{array}$$
$$\begin{array}{r} 4 \checkmark \\ 8 \checkmark \\ 3 \checkmark \\ \hline 15 \end{array}$$
$$\begin{array}{r} 2 \\ 10 \\ 46 \\ 20 \\ 9 \\ 5 \\ \hline 90 \end{array}$$
~~$$\begin{array}{r} 2 \\ 58 \\ 28 \\ 7 \\ \hline 93 \end{array}$$~~
$$\begin{array}{r} 3 \\ 19 \\ 15 \\ 12 \\ 11 \\ 2 \\ 4 \\ 12 \\ 15 \\ \hline = 90 \end{array}$$

Standa No. 4021 - Distribution of height according to size class:

Parthenocissus



Rhus radicans



(over)

S-C Field Data # 4

University of Wisconsin Plant Ecology Laboratory

Observers:

QUARTER METHOD

Stand No.

Date:

Trip No.

Name:

Herbs

Shrubs

Nearest Stem	Dist.	Nearest Leaf	Dist.	Species	Class	Diam.	Leaf	St
--------------	-------	--------------	-------	---------	-------	-------	------	----

1/4 III

2/4

3/4

1/4 III

2/4 I

3/4

1/4

2/4

3/4 III

4/4 II

Urtica
pungens

.25

.50

1.0

Stand No. 4021 - arena
Parthenocis ~~no~~

Trees, # old lianas

Trees

Rd Lianas

$$\begin{array}{r} 78 \\ 23 \\ \hline 101 \end{array}$$
$$\frac{1}{32}$$
$$\begin{array}{r} 2 \\ \hline 101 \end{array}$$

Trees # new lianas

1

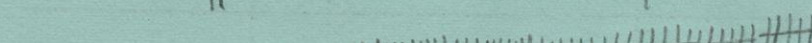
$$\begin{array}{r} 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ \hline 9 \end{array}$$

$\frac{1}{4}$

}	N		
	S		
}	N		(39) missing
	S		

$\frac{2}{4}$ } N ### (5)
 $\frac{2}{4}$ } S ### (5)
 $\frac{3}{4}$ } N ##### (6)
 $\frac{3}{4}$ } S / (1)

4/4 { N II
S III

25  92

50  (8)

1.01 (1)

1.5

$\frac{1}{4}$  (79)

2/4  (10)

$3/4$  (7)

4/4 HHHH (5)

58
77
30 (146) Trees
new lianas
1

Trees	Old Lianas
1✓	1✓
1✓	2✓
1✓	3✓
1✓	1✓
1✓	3✓
1✓	4✓
1✓	2✓
1✓	29✓
1✓	2✓
1✓	4✓
1✓	4✓
1✓	4✓
1✓	2✓
1✓	3✓
1✓	4✓
1✓	1✓
1✓	1✓
1✓	1✓
1✓	6✓

(274)

(186)

N ||

S

25

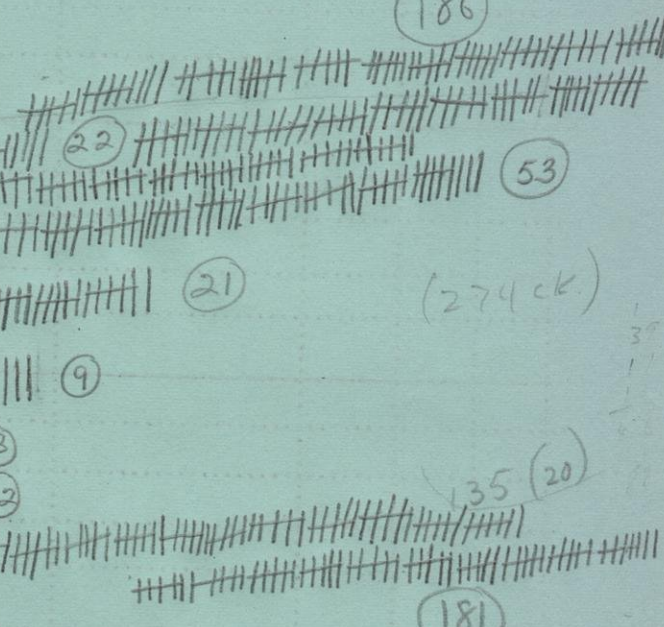
5

1.0

1.5

2.0

2.5



(274 ck.)

(181)

(135) (20)

(274 ck.)

(270 missed)
4

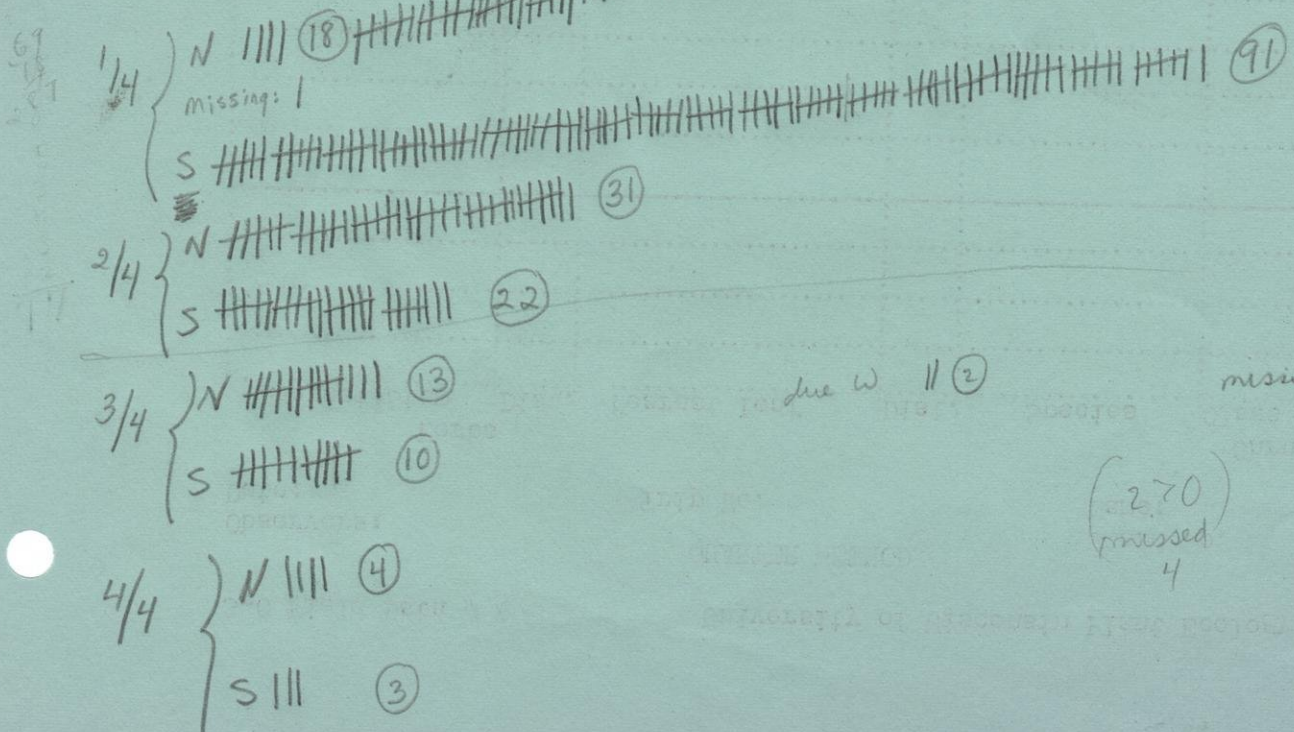
missing ||||| (6)

due W || (2)

69
127
287

177

79



Stand No.: 4021 - Arena

Vitis riparia

Trees	# old Lianas
1	2
1	2
1	1
1	1
1	1
1	2
<u>1</u>	<u>11</u>
8	

Trees	# new Lianas
1	1
<u>1</u>	<u>1</u>
3	3

.25 || (2)
 .5 |||| (4)
 1.0 ##### (5)
 1.5
 2.0

1/4 ##### (5)
 2/4 | (1)
 3/4 ||| (3)
 4/4 || (2)

.25
 1/4

FREQUENCY OF LIANA GROUND FORMS*

Stand No. 4021

Name: Arena

T: 8N R: 5E sec. 9 NE: NE Locality

County: Iowa

Observers: Swan

Date:

445 August 1960

Size of area sampled: 10A.

	1	2	3	4	5	6	7	8	9	10
<u>Celastrus scandens</u>	20	19	18	17	16	15	14	13	12	11
	21	22	23	24	25	26	27	28	29	30
	40	39	38	37	36	35	34	33	32	31

Parthenocissus

	1	2	3	4	5	6	7	8	9	10
	20	19	18	17	16	315	614	1313	12	11
	21	22	23	524	125	26	2327	228	29	30
	40	39	38	37	36	35	1634	33	32	31

Rhus radicans

	101	132	3	184	175	6	7	8	19	10
	20	419	18	817	16	515	1714	1313	312	311
	21	2522	23	1224	825	1726	1027	128	29	30
	1240	239	1038	137	336	1735	534	1733	3032	531

Vitis aestivalis

	1	2	3	4	5	6	7	8	9	10
	20	19	18	17	16	15	14	13	12	11
	21	22	23	24	25	26	27	28	29	30
	40	39	38	37	36	35	34	33	32	31

Vitis riparia

	1	2	3	4	5	6	7	8	9	10
	20	19	18	117	16	15	14	13	12	11
	21	22	23	24	25	26	27	28	29	30
	40	39	38	37	36	35	34	33	32	31

* ✓ indicates the presence of a species in a square meter quadrat.