Figures 32 – 42

Silvagram

Explanation

———— Known life span without radial growth rates

— — — — Probable estimated life span or portion thereof without radial growth rates.

..... Standard error of estimated ages.

- - - - - - - - - - - Portion of cross section missing due to decay.

● Stump which had sprouted

X stump which had not sprouted.

U uprooting

B bole or crown broken-off

P death due to pathogen – chestnut blight.

I death due to or contributed to by insect defoliation – gypsy moth.

The dendrograms of the live trees have been blocked in on Figs. 32, 33, and 42. Major patterns become

more apparent, but usually at the expense of a loss in detail.

 – Live tree-life span and growth rates.

 – Live tree-life span without growth rates.

 – Probable life span or portions thereof with growth rates. (Dead trees & stumps etc.)

 – Probable life span or portions thereof without growth rates. (Dead trees and stumps etc.)

 – Portion of cross-section missing due to decay.

 – Standard error of estimate based upon stump diameter-age relationships of live trees and dead trees by species.

● = stump resulting from logging operation and subsequently sprouted.

X = Stump resulting from logging but did not sprout.

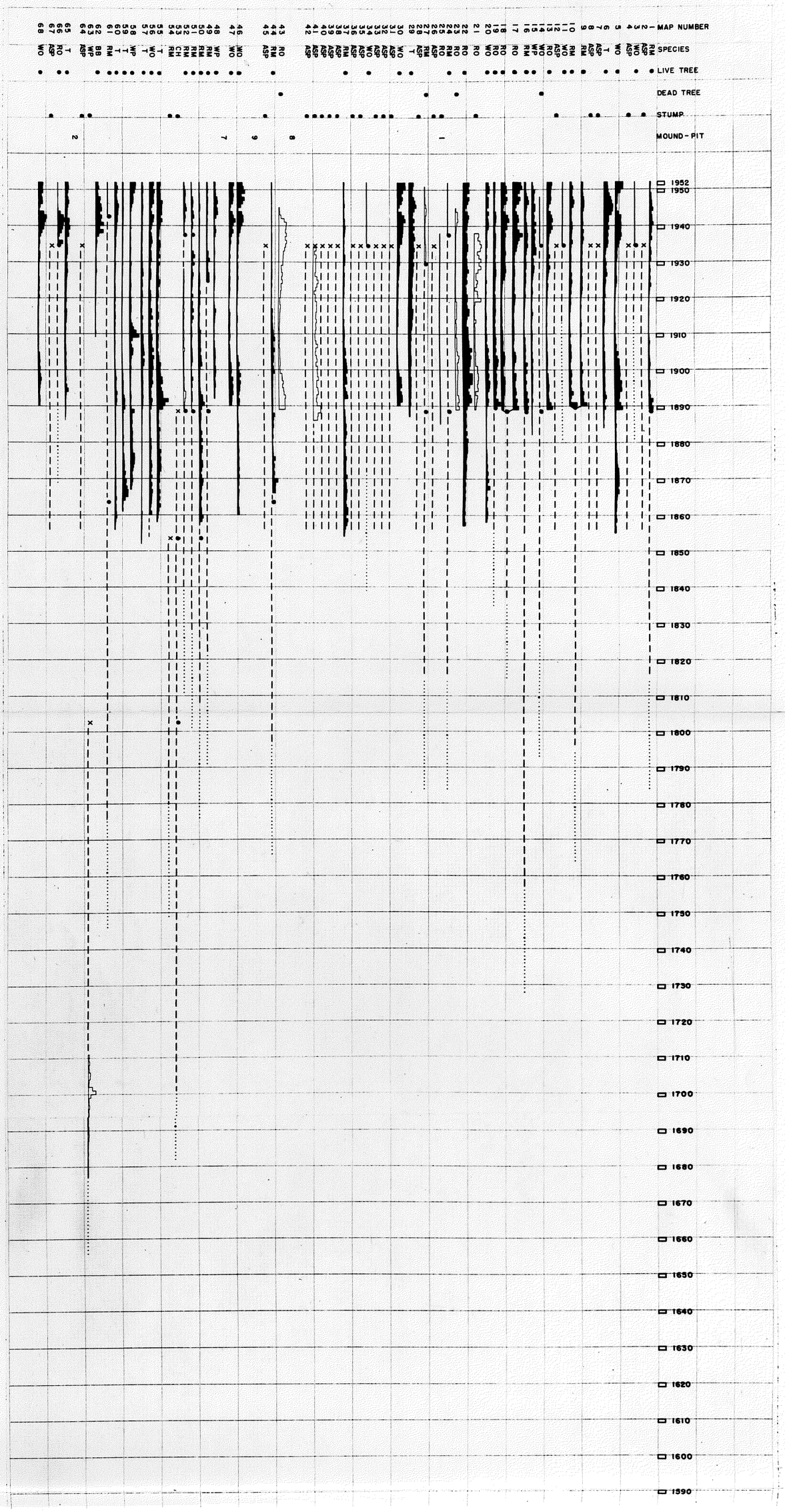
P = pathogen.

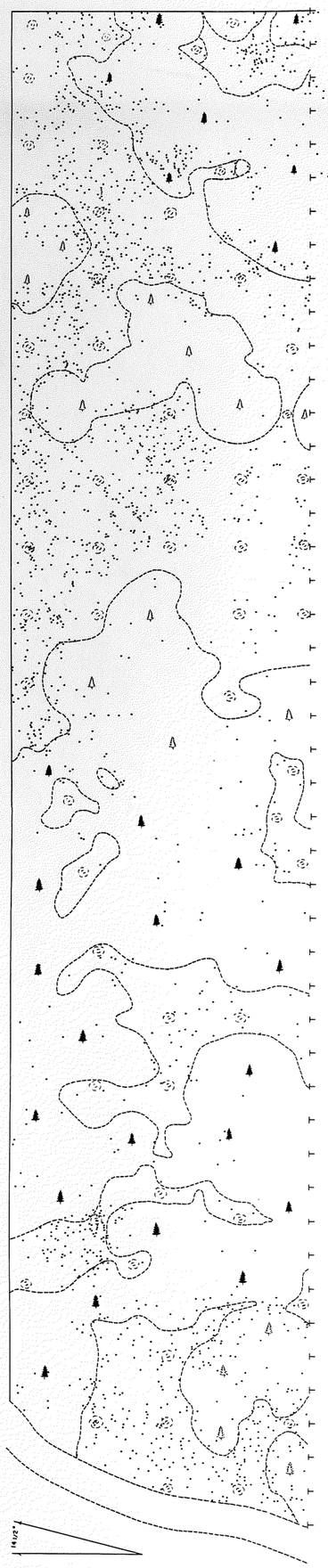
I = insect.

U = uprooting

B = broken off-wind, falling tree, etc.

1850 1840 1830 1820 1810 1800 1790 1780 1770 1760 1750 1740 1730 1720 1710 1700 1690 1680 1670 1660 1650 1640 1630 1620 1610 1600 1590 1580 1570 1560 1550 1540 1530 1520 1510 1500 1490 1480 1470 1460 1450 1440 1430 1420 1410 1400


MAP NUMBER
SPECIES
LIVE TREE
DEAD TREE
STUMP
MOUND - PIT
1952
1950
1940
1930
1920
1910
1900
1890
1880
1870
1860
1850
1840
1830
1820
1810
1800
1790
1780
1770
1760
1750
1740
1730
1720
1710
1700
1690
1680
1670
1660
1650
1640
1630
1620
1610
1600
1590



LIVE AND DEAD TREES LESS THAN 1 1/2" D.I.B B.H. - 1952

AND

FOREST CANOPY - 1952

HARDWOODS

HEMLOCK - DEEP

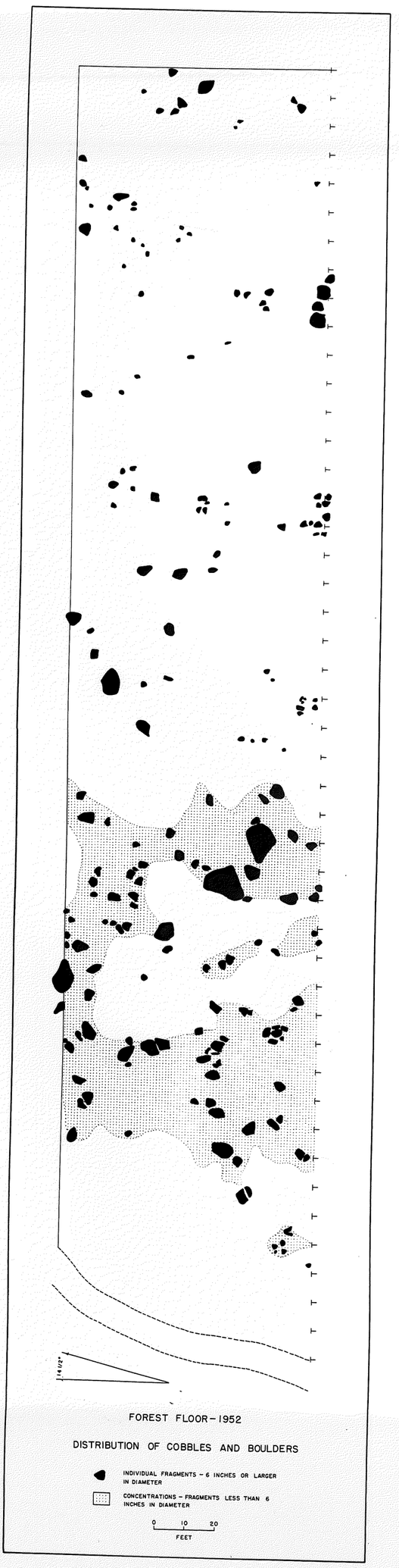
OPEN

HEMLOCK

* - ONE OR MORE TREES

0 10 20

FEET



FOREST FLOOR – 1952

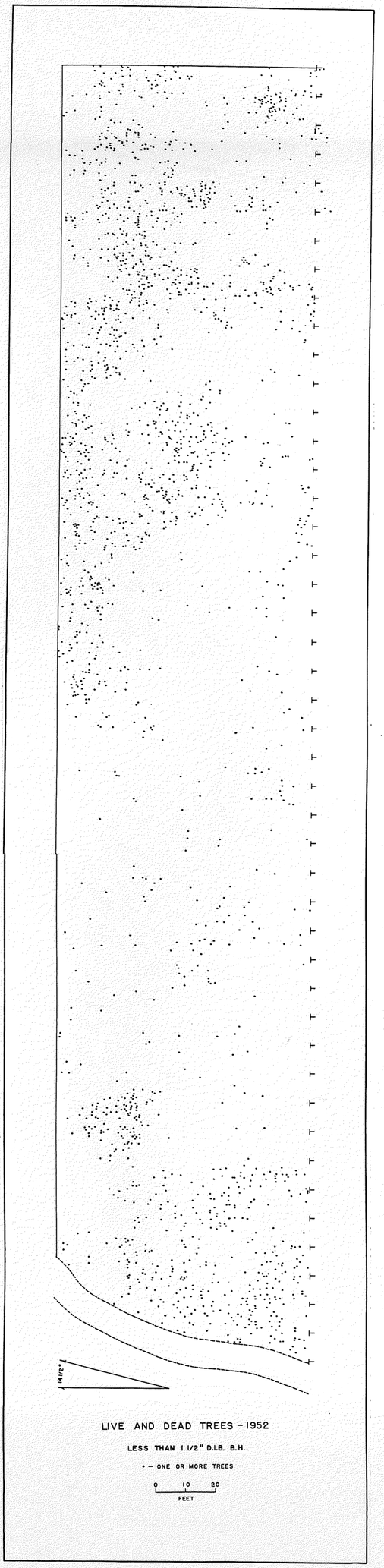
DISTRIBUTION OF COBBLES AND BOULDERS

INDIVIDUAL FRAGMENTS – 6 INCHES OR LARGER IN DIAMETER

CONCENTRATIONS – FRAGMENTS LESS THAN 6 INCHES IN DIAMETER

0 10 20

FEET

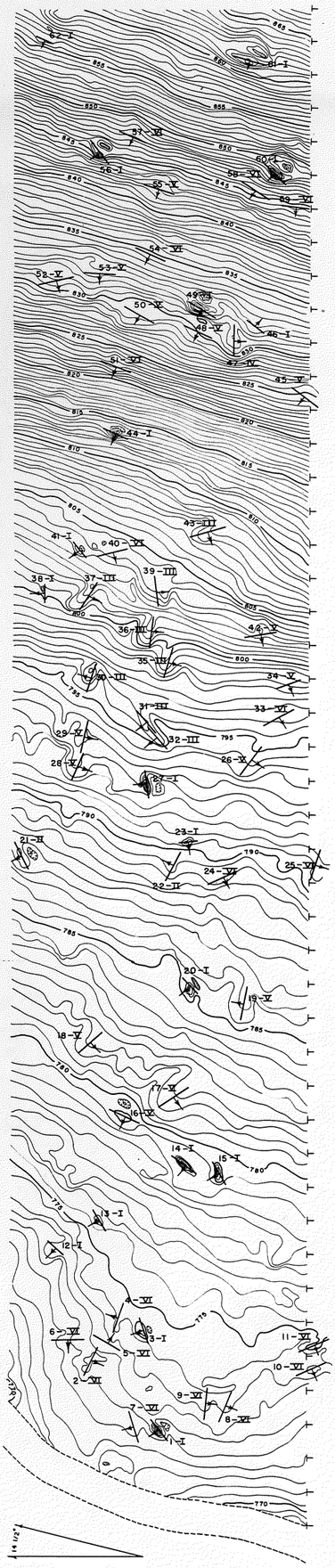


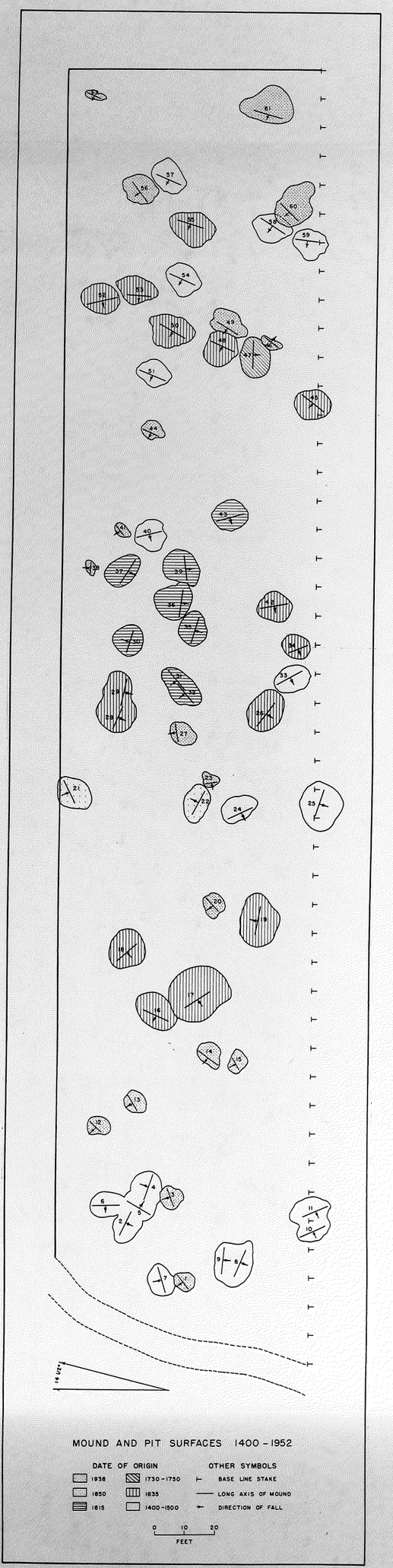
LIVE AND DEAD TREES - 1952

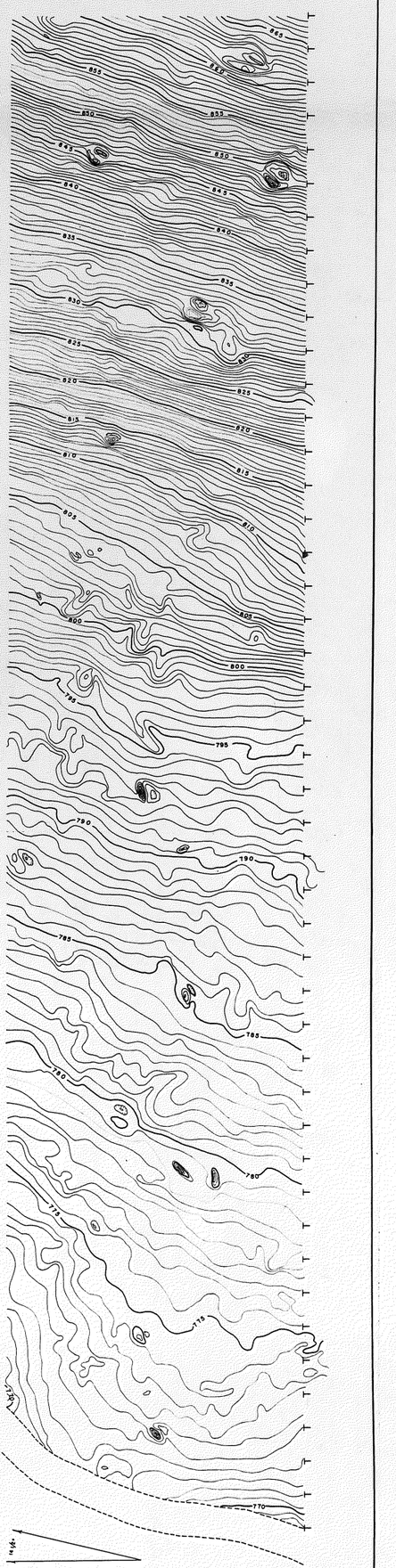
LESS THAN 1 1/2" D.I.B. B.H.

• — ONE OR MORE TREES

0 10 20
FEET


MOUNDS AND PITS
RELATIVE AGE CLASSES I-VI
BASE LINE STAKE
LONG AXIS OF MOUND
DIRECTION OF FALL
0 10 20
FEET


MOUND AND PIT SURFACES 1400 - 1952
DATE OF ORIGIN
1938
1850
1815
1730 - 1750
1635
1400 - 1500
OTHER SYMBOLS
BASE LINE STAKE
LONG AXIS OF MOUND
DIRECTION OF FALL
0 10 20
FEET



FOREST FLOOR - 1952

CONTOUR INTERVAL - 6 INCHES

0 10 20

FEET

- A Woodlot -
The Historical Approach
to
Silvical Research

Introduction -

Description of the area -
General Procedure -
Part I - The Vegetation
Part II - Subject Matter
Part III - Methodology
A - Field
B - Laboratory

Part IV - Appendix

Thoreau, Henry D.

"Humboldt has written an interesting chapter of the primitive forest, but no one has yet described for me the difference between that wild forest which once occupied our oldest townships, and the tame one which I find there today. It is a difference which would be worth attending to. The civilized man not only clears the land permanently to a great extent, and cultivates open fields, but he tames and cultivates to a certain extent the forest itself. By his mere presence, almost, he changes the nature of the trees as no other creature does."

p. 155 – The Maine Woods
Houghton, Osgood and Co. Boston
The Riverside Press, Cambridge
1878

When Henry David Thoreau stated these thoughts, some contemporary readers might well have considered his words solely as well written literary effusion. Others certainly regarded them with a philosophical air, as subjects of academic discourse. While a few, no doubt, read such opinions with contempt, contempt for the author who dared to suggest that the primeval forest was anything more than an impediment to the progress of an expanding society or ~~[illegible]~~ a means to achieve the human endeavors associated therewith. Surely the citizenry of Thoreau's time did not place the same perspective upon the forest primeval as ~~that of~~ today's ~~[illegible]~~. During his lifetime the supply of wood seemed inexhaustible.

Like so many ~~much~~ of his other ~~works~~ observations, these few ~~simple~~ ~~statements~~ cited here of ~~his~~ would appear to be more appropriate ~~during the current~~ now

than when they were written almost one hundred years ago.

Since the beginning of the twentieth century, the people of North America have generally recognized the current popular as an exhaustible but renewable resource. Great effort is being expended to learn the means of sustaining the wood supply at a level commensurate with the demands that are being thrust upon it. As a result in the United States has forestry progressed rapidly. Forestry as a science and a profession has long since developed to the stage where before it can be wisely put into proper perspective it must be analyzed separated into its basic disciplines

~~the aspects of forestry~~

Forestry is commonly divided in three major aspects: protection, production,

era Than when they were written.

and utilization. Each of these aspects can in turn be characterized by particular disciplines or allied sciences which tend to contribute most to it. Together, they constitute the general field of Forestry.

General Field Procedure:

The area to be investigated was chosen because it supported a stand of trees and it was readily accessible by automobile. Since one of the primary objectives was to trace the development of the vegetation to pre-colonial time, it was essential that the area had never been cleared of trees in the past for agricultural purposes. The general appearance of the area suggested that it had been forested since pre-colonial time. The intensity of the investigation demanded the area be accessible by automobile to permit frequent visitation and easy transportation of specimens from the field to the laboratory.

After the site of the investigation had been selected the following general procedure was conducted:

1. A 10-foot grid 84 feet wide and 460 feet long was established with an engineer's transit. The belt transect ran in general at right angle to the contours. The grid provided a basis for a series of maps constructed to the scale of 10 feet to the inch.

2. A belt transect 6.6 feet wide was established which bisected the larger transect parallel to its long axis. The frequency and occurrence of the lesser vegetation were recorded along this smaller transect.

3. All of the trees ranging in size from less than 1½ inches in diameter inside bark at breast height to the smallest recognizable seedling were mapped and described. At the same time, a cross-section for age determination was removed from the base of each conifer and broadleaf tree of seedling origin and from the stem and primary root of each broadleaf tree of sprout origin.

4. The remaining stumps, boles, and larger fragments of trees which had grown on this area in the past were mapped and described. Every element or a specimen thereof was collected for species confirmation and age determination in the laboratory.

5. (other side)

6. A six inch contour map was constructed in the field.

7. Boulder concentrations and all the individual boulders to a minimum diameter of six

5. All of the trees 1 1/2 inches in diameter inside bark at breast height and larger were mapped and described.

(3)

8. A map of the present forest canopy was cont

inches on the surface of the forest floor were mapped.

9. The 6-inch contour map vividly delineated the microrelief of the area which included — mounds and pits created by the uprooting of trees. The next phase concerned primarily these mounds and pits. Each was sectioned at a right angle to its long axis to depths of from 2 to 5 feet. Ten mounds and pits, the ages of which could be most closely determined, were profiled to the scale of one foot to the inch. The remaining sections were diagrammatically profiled to the same scale and described.

Coincident with sectioning, specimens were collected of buried wood from the trees that had been uprooted, buried organic layers of the pre-disturbed forest floor, and buried charcoal. The wood and charcoal were collected for identification, as was the pollen content of the organic layers.

10. The final stage in the field consisted of clear-cutting the area. Cross-

sections for height and diameter growth reconstruction were removed at 4-foot intervals from most of the trees. The sections were taken to the laboratory for analysis.

man days

1. Grid — one man — 6 days ------ 6
2. 6.6' transect — one man — 2 days ------ 2
3. reproduction — three men — 14 days ---- 42
4. Tempo etc. — } Aug, Sept, Oct. — 70 days --- 70
5. Taxa 1½" days — } 1951 - one man
6. contour map — 3 men — 16 days ------ 48
7. boulders — 1 man — 1 day ---------- 1
8. canopy — 1 man — 2 days ---------- 2
9. macuds — 1 man - 30 days, 5 men - 2 days ------- 40
10. elevation — 1 man 20 days, 3 men 20 days, 2 men 5 days } ---------- 90

301

Part III

— Methodology —

Introduction

A - Field

1. Selection of the area.
2. Construction of grid
3. Belt transect - between ground cover
4. Small trees — less than 1½" DBH IB
   to smallest recognizable seedling.
5. Trees - big dead, stumps, fragments,
   1½" DBH IB and larger.
6. Contour map - 6"
7. Rockiness and boulder concentration
   on surface of forest floor.
8. Canopy map - open, shade tile
   year around.
9. Mounds and pits
10. Clearcutting - stem analyses

B. Laboratory —

1. Macroscopic —
   a - stump sections
   b - root sections from stumps
   c - branch wheels

2. Microscopic —
a – Thin hair sections
b – Thin root sections
c – charcoal
d – pollen and plant fragments etc.