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*About the Institute*

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

EASTERN KENTUCKY



1.

E. Lucy BRAUN  
2702 MAY ST.  
CINCINNATI, OHIO  
OR  
UNIVERSITY OF CINCINNATI

Black Mt. - Clements Trip, Oct. '31.

Black Mt., Aug 27, 1931



Lewis fork - rd up  
to ~~Shelby Gap~~ beyond  
Pikeville

#11 Beech maple moss  
tulip  
buckeye  
white oak  
hemlock  
nyssa  
cucumber

Do  
#12 Beech birch buckeye  
sugar maple Lilia  
hemlock maytrap  
moss, ferns, valets

Black Mt

#1 1" m 16

SE.

Slope facing us is  
N.E.

Sugar maple very prominent

Alternate convex & concave

Concave - sugar maple prom.

convex - oak & chestnut

The concave is mixed

The convex is oak chestnut

Locust on South cutover  
Liriodendron on north

#2 - more to east

Black Mt summit -

Oak - chestnut summit

red oak - chestnut -

S. maple - red maple

occ. Nyssa

Under -

chestnut

red oak

occ. ch. oak

locust

Azalea, vib acer

with Amel



bee  
Papilion  
Aster penn

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Herbs

Hacksnia	Clem. bronca
S. Lysimachia grand	Helianthus
Aster div	
Gentiana	Polygonata com
Lilium	
Sol. curtissim	Cornif
bird	Osmunda
Eup. mac	Hydrangea
R. Thalictrum	Reb. alle. can.
Gen	Smilax herb
Aster cord	
Thaspium	
Gamp. div. ferr, open	
Pedicularis	
Ran. hisp	
Eup. vertic	
Amphicarpa	
Smilacina	
Ascl. phyt	
Viola palmata	

Clements picture -  
down, maple more  
abundant, N.W., chestnut  
up slope, red oak chestnut

#3 Large birch  
emerging from a mass  
lower layer of maple  
Buckeye behind birch

(Clements picture south  
from bend in trail,  
three chestnut)

#4 patch where chestnut  
on oak maple

ridge type

Azalea abundant in

When (Clements picture,  
also)

#5 north -

Chestnut 1st, on ridge  
then (down) sugar maple  
birch (Clements, also)

Osmanthus - Rubus



#6. Oak-chestnut slope  
on road down.

not far below summit -  
S-SW slope along Lynch rd.

Canopy  
Chestnut  
red oak  
cucumber

understory  
red oak  
chestnut  
nyssa  
acer

acer  
nyssa  
chestnut  
acer

acer penn  
Aral  
bac  
Sax

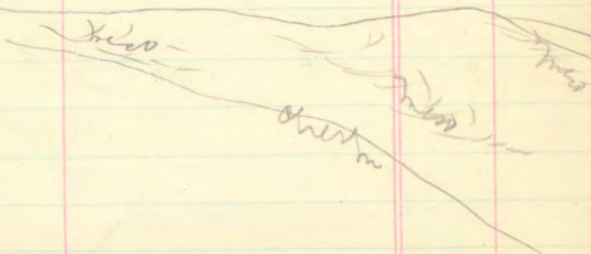
Kalmia  
Opul

Azalea  
Rubus allegh

Panicum

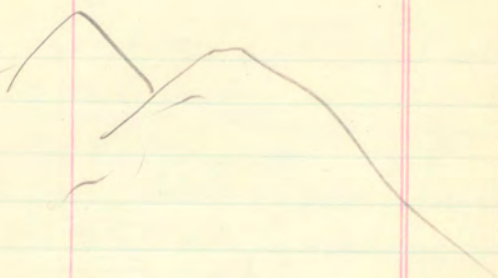
#7  
Looking SW across  
to Bl. Mt summit

Shows alt. mixed mass  
& chestnut - chestnut on  
ridges





#8  
grassy  
gap



Several Clements pictures  
me toward grassy gap  
" nearly  
Then around bend of rd,  
a south slope, mixed  
chestnut-red oak 1+2  
(another into core)

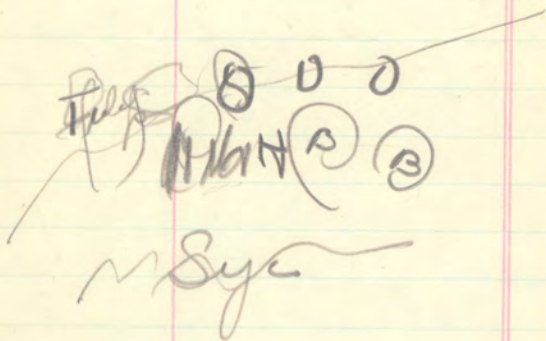
#9 Down valley, N.W.  
Slope to right is  
on which is old  
Chestnut ridge.

Clements picture -  
nearly north slope -  
mixed meso - maple  
most abundant

Secondary, north slope on  
tulip  
Secondary south, passafra  
abundant

10 }  
11 } Cumberland Plateau  
from Pine Mt

#12 Sycamore in  
front  
Hemlock, beech  
(tulip) - then oak



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terocline  
mesocline  
pan-climax

terocline - used in connection  
with the warm dry slope  
community  
mesocline, of the north  
slope

pan-climax -

"I am thinking in terms  
of pan-climaxes." The  
Eur. climax, (beech-maple)  
lacks the genera which  
you would include. Similarly  
over cont. of northern hem.  
perhaps a clue to climax.



Clements view of the  
eastern decid forest -  
Composed of 3 great  
climaxes:

- (1) Beech-maple (north)
- (2) Oak-hickory (sw)
- (3) Oak-chestnut (E)

In the area where these  
meet, i.e. ecotone,  
aspect more complex

Recognizes "fasciations" &  
gives "locations" of each.

For instance

Considers beech-maple the  
climax ass.

our mixed meso. a  
"fasciation" of this due  
to incr. moisture & the  
fact that it merges

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with adjacent climaxes,  
Southward, -

Inclined to consider oak-  
chestnut as climax &  
mixed meso. as post-climax,  
i.e. repr. a condit.  
moister than the climate pres.  
will support.

I hold -

mixed meso. is the  
climax - that oak-chestnut  
which is confined to southerly  
& westerly slopes & ridges is  
"pre-climax"; that it does  
not represent the average  
conditions; that at an  
old top. world being about  
a lessening in oak-chestnut  
& an incr. in area of beech-  
mixed meso.

I hold that beech-hemlock  
the core type, is post-climax



that it is confined to the  
lowest slopes & deepest crevices  
where greater ground water  
or (and) snow melt make  
conditions more moist than  
average for the climax

Beech extend  $\frac{1}{2}$  to  $\frac{2}{3}$   
way up most slopes of  
the dissected plateau  
& some spp. of the mixed  
mess. extends to the top  
on Black Mt.

I hold that -

Certain climax assoc'n  
have resulted from a  
thinning & segregation of  
the So. App. mixed mess

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type -

There, the high rainfall,  
the hist. background (dating  
back to, perhaps, Cret. period)  
the lack of temp. extremes  
favors the development of  
the highest type of forest  
deciduous forest on this  
continent - a complex  
association of many mes.  
species, including

beech

sugar maple

blackwood

y. birch

ty. buckeye

tulip

cucumber tree

red maple

white oak (crotone sp)

(+ more in great Smokies,  
as Halesia)

no. 132

As the three causal factors (two climatic, one geologic) gradually change with inc. dist. from favorable center, the association becomes less & less complex.

One by one, its constituent species drop out, due to one or more of the following causes: -

(1) Lower rainfall or lower humidity to both.

Effective in all directions, perhaps more abruptly eastward -

~~Also of~~

Causes increase in area occupied by one of the other climatic -  
oak - chestnut or

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oak hickory

(2) Greater temperature extremes  
Effective northward &  
an hist. factor in limiting  
or slowing migration.

(3) Historical, i. e. post-glacial  
migrations, & perhaps some  
pre-glacial veg. pattern  
The time elements  
in migration.

Supported by  
(a) Rapid change westward  
& absence of anything  
akin to it in O zones  
(b) Abrupt change at Allegh  
Pl. - Bluegrass basin  
boundary. A rainfall  
diff. note 1930 R. J. Cond.  
c. local ecotones



- (2) is supported by  
(a) absence of many sp. northward (partly (3))  
(b) failure of some of these to produce trees even in favorable soil, e.g. *Halasia*

[A combination of 1 + 2 reflected in cult. plants, as crepe myrtle]

- (3) is supported by  
(a) gradual dropping out of sp. northward (partly due to 1 + 2., but mostly, the term element, particularly in the glaciated plains.  
(b) effectiveness of barriers at least in temp. holding back or slowing up very much

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Ex., the Kinnikinnick - Old divide

The principal woodland is similar to that of the great lat. zones -

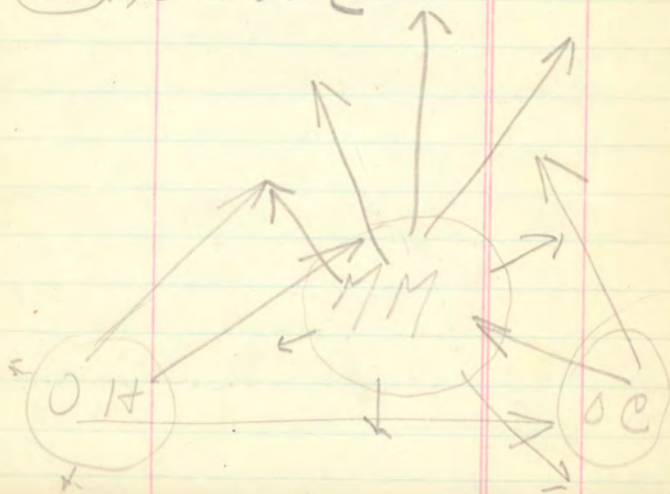
The trop. p. of the richest type of forest - a vast variety & an absence of dominance. With increasing lat. a tendency toward dominance of certain sp. & the division of forests into common, which def. dominant

The complexity of the meso-tropical & sub-tropical climate is further complicated by the adm. of sp. from the other climatic - a close tally of areas, & local as well as regional variations



Oak-beechy center  
is somewhat &  
Dzarily dominated by  
Oak-beech type.

The most meso-sp  
have pushed farthest  
n.e., & even become a  
part of the meso-forest,  
as white oak +  
red red oak



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The same, or similar  
varieties of the M.M.  
occur on higher sites  
as an altitudinal  
response. White (1) does  
not decrease (2) does.

Shown on Black Mt  
by change in comp. of  
meso. vs summit  
more birch, less beech,  
more maple

The northern beech-maple  
is maple-beech-birch  
The highest M.M. is  
maple-beech-birch

Oak, chestnut take the form of

1. Chestnut - red oak  
red oak - chestnut  
chestnut - maple

Chestnut oak is scarce

Oak-hickory appears in places for no reason that is apparent. They seem in this section at least to be ecol. equivalent

### Pine

*Pinus virginiana* - a reforestation type, on a few cleared slopes

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Pitch pine - yellow pine type, usually with oaks or oak & chestnut

Represent a "facies" of the oak-chestnut

The abundance of these pine in some places - eg on certain parts of Pocahontas is due to:

(1) Soil - the underlying rock is a sandstone of coarse texture - there in Pine Mt., Pocahontas - which yields a very sandy soil

(2) Sandstone rock at surface

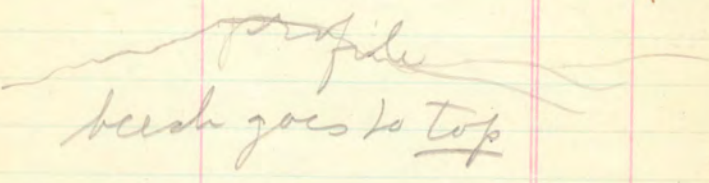
(3) Fire - tends to increase pine area.



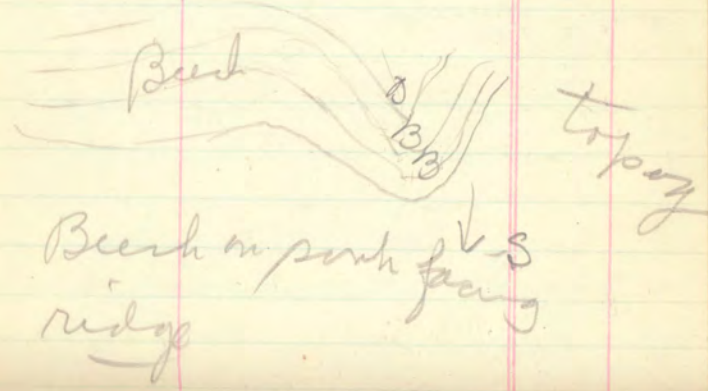
From N. + W. nr.

Further evidence that  
the forest with beech is  
climatic

Big Sandy valley below <sup>43</sup> <sub>rock</sub>  
where ruggedness gives way  
to low rounded hills -



In one place -



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Beech not always on top -  
+ of course more abundant, in  
ravines, nevertheless it is  
present on at least 3/4 of  
topog. cond. Most of land  
cleared; <sup>some</sup> but only scattered  
trees; some secondary.

This is from Cassville  
(about) down [is across from <sup>Lois</sup>]

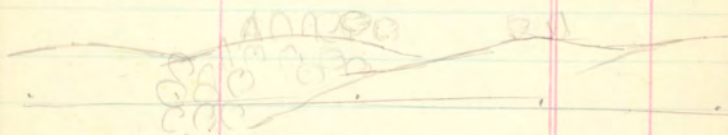
As topog becomes less  
extreme the meso sp. can  
occupy a larger % of area  
of the area.

That is, climatic first  
& topog. 2<sup>nd</sup>, climatic  
infl. is overcome by extreme  
of top., the meso-type  
in course becoming more  
imp. on the ridge & a  
post climatic type ~~appears~~  
& appearing in the deep



ravines & north slopes

Type of topog.



③ Band

Also -

Coming westward, as  
Civ., climatic change to  
~~greater dryness~~ less  
p.f., m. m. restricted  
to north slopes & ravines,  
or south slopes on some  
soils.

But it is still Chimaph-  
the ass. which develops

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at the end of a variety of  
series.

4000

3000

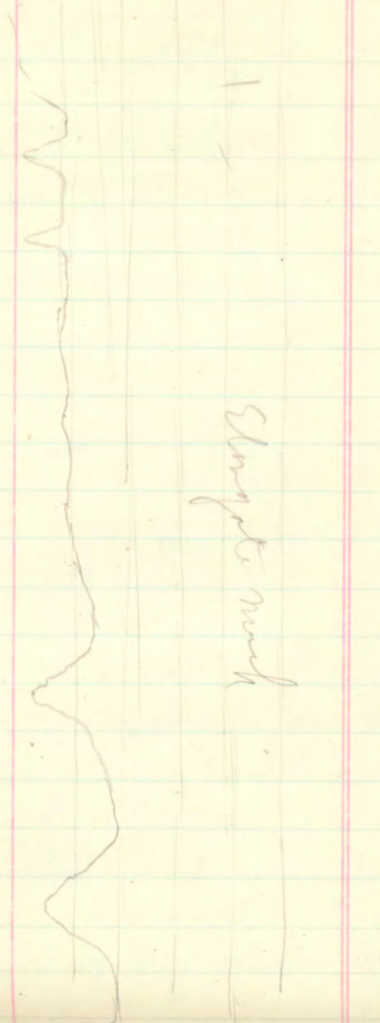
2000

1000

500

0

Stomach mud



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Black Mountain, Ky - Va.  
Aug 27, 1931

Summit forest:

ridge { white oak  
chestnut  
sugar maple  
red oak

core,  
n. slope { beech - just off on north  
buckeye, sweet  
ash, white  
birch  
occasional cucumber,  
walnut, basswood

Chestnut on ridge

M. meso. on slopes of valley  
heads but higher elevation  
than chestnut in places

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(*Vaccinium*, 6 ft - sorbush).

Chestnut-red oak type conspic.  
on ridges. Has sugar maple  
& white oak with it  
Azalea & vac. abundant in  
understory

Lots of ferns - Osmunda

Shrubs:-

Azalea

*Vaccinium* spt

? *Stewartia*

*Ilex monticola*

Red oak on ridge 12 ft. circ. BH  
at 4000 ft. elev.

Buckeye, birch & maple  
increase on north slope  
Chestnut drops out

General - Ky. va trip, Aug 14, 3.

Forest of Big Sandy valley,  
route thru Prestonsburg

Mixed meso. prevails, in  
which beech & sugar maple, &  
buckeye are conspic.

Direction of slope does not  
appear to be much of a factor -

High ridge crossed before  
entering Prestonsburg contained  
more oak (not much good  
forest down valley from Prest.)

Prestonsburg - Pikeville

Much virgin forest  
mixed meso.

*Magn. tripetala* enters

Pikeville - Jenkins

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Hemlock enters on lower  
slopes in streams

Jenkins - Wise

Pine (Cumberland) mt.

Forest varies with exposure  
& rocks (?)

near summit on Ky side,  
considerably disturbed: -

oak - chestnut - hickory  
with heaths in understory,  
as Azalea, mt. laurel,  
baccinium, *tr. arbutus*

The rock here is sandstone,  
Rhododendron in sheltered places

Descent on va side

Rich meso. forest in cores  
& valleys, contains much  
beech & hemlock, buckeye,  
rich Rhododendron, *Magn.*  
*tripetala* conspic

This type of mixed meso.



continues all the way to Appalachee

Black Mt - on side  
considerably disturbed.

Ky side - descending red  
Southwesterly slope -  
a fine forest (virgin) of  
oak & chestnut

In prairies & all slopes  
of other directions, mixed meso.  
Sugar maple the first tree  
to mix with oak & chestnut.  
Also prominent in mixed meso,  
which is beech, birch (more abundant  
high up) tulip, sugar & red maple  
hickory, basswood, walnut,  
cucumber, & in stream at base  
hemlock

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### Poor Fork of Cumberland

Cumberland, n.e.

Mixed mesophytic, with large  
amount of hemlock, esp. on  
slopes of spurs of Black Mt.  
On Pine Mt., (to left) more  
cutting; many places where  
pine is conspicuous

### Pine Mt

Type varies w. exposure & soil  
mixed meso.

Pitch pine - yellow pine, more rocky  
(ss.) southerly slopes

Heaths very prom. near  
summit in pine belt -

Mt Laurel, vac., Gayl.,  
tr. Arb., Gaultheria, Galax

Entire region from  
Whitesburg to west of Jackson  
mixed woods. prevails in  
parts which can be seen  
from rd.

Magn. tripetala conspic  
Hemlock not as conspic as  
in cores of higher mts, but  
present.

White pine absent throughout  
area traversed, appearing  
for first time bet.

Campton + Pine Ridge +  
continuing nearly to Slade

Tulip first became conspic  
on Ky side of Black Mt.

There many 2<sup>nd</sup> growth almost  
pure stands. Also in m. woods, tall



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Expenses, 1932

Geol. map of Ky 2.00

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Oct 1931

Sunday	RR	5 80
	dinner	1 35
		10
		10
Monday	Supper	85
	Pusher	3 00
	Br.	50
Tues.	dinner App	85
	App.	2 25
		50
		65
Wed.	J. Hatcher	2 25
		40
		10
		10
		<hr/> 18 80
	rr.	7 86
Total		<hr/> 26 66
		<hr/> - 10 00
	Cost	16 66
	dinner	9 90
		<hr/> 17 56