Collection and Field Note Book
No. 66
(43245 ---- 43403)

Mexico ............................................. Pages
(from air) 1-5
Guatemala ........................................... 6-9
( from air)
El Salvador ......................................... 10
(from air)
Nicaragua ......................................... 10
(from air)
Costa Rica ......................................... 11-31
Specimens collected 24-31 43245-43288
Panama ............................................... 30-34
Colombia ............................................ 34-39
(from air)
Ecuador ............................................. 39-41
" "
Peru .................................................. 41-47
" "
Brazil ................................................ 48-87
Specimens collected( 58-65 43289-43332
Sao Paulo ( 68-73 43333-43367
Guanabara 84-87 43368-43390
Virginia ............................................. 88-99
............................................. 108-109
Fairfax County 90-97 43391-43397
Specimens collected 90-91
Stone House, w. of Bull Run 98-99
Wildcat Mt. Preserve 98-99
Fairfax County .........108-109
Culpepper-Sleepy Hollow
Maryland ........................................... 100-107
............................................. 110-111
Worcester County 100-107 43398
Specimens collected 106-107
Prince Georges County 100
South River-Tarnnan Br. 110
Ivy Neck 111
France ............................................... 112-114
Fontainebleau
Specimens collected 112-113 43399-43403
Those plants collected by Dr. Fosberg at "Alta da Serra" have the following data: Brazil, State of São Paulo, Município de Ribeirão Pires, nature reserve of "Alto da Serra", about 1/2 to 1 km west of city of PARANAPIACABA. Subtropical, montane low rainforest or scrub.

Those plants collected in the cerrado at Emas...the following data; Brazil, State of São Paulo, Município de Piracicaba, Emas. Cerrado vegetation, open to semi-closed scrub or scrub forest. 27 Oct. 1962.

George Eiten
F. R. Forleng
Field notebook
# 66
Begin 43245
End 43403

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A front is apparently a real thing — two parallel sinuous bands of cloud some 100 miles apart perhaps a mile wide, the south side lower, sloping evenly down and from a lumpy cumulus at north to a smooth cottony strato-cumulus at stratus to north, this simply fading out.

Another big even piece of similar cloud further south.

Must be either from a north wind sliding up over an air mass or a south wind furiously in under one — probably.

The Gym 11:05 a. pet. at Mr. J.
no. of mts. in sparsely settled area, generally forested are some broad, thinly vegetated sand hills (3 or elevated sand flats). Into these, from north, and somewhat also from south, are what look like systems of tidal channels, filled with work.

Photos of Alaman, Lagos coast, ott nral plantation.

z. of Merida - a patchwork of nral patches, abandoned nral patches, scrub and scrub forest. Beyond the main plantation area, a few miles south, the large scrub, open scrub forest, and scrub forest areas, are spotted with small clearings. The scrub and forest are a patchwork of regrowth of various ages. Broad strips of nral plantation extend south along highways, and are scattered along a new road running transversely to course.

South of this, cultivated patches are abundant - active and just abandoned ones occupying perhaps 10-20% of area, as far as first range of low hills. South of this there are some patches, and locally plenty of regrown abandoned ones, but mainly forest over larger areas, even along the road parallel to course on left. Some for area are quite heavily cleared of hill. Also some local savanna areas, with irregular mosaic of wooded patches and grass. Area n/w. of tell. Vicinity is rather heavily cleared for shifting agricultural crops, but still heavily wooded around Santos Clinic. Beyond this large area, of fair forest with only faint angular pattern alternating with area that is mostly cleared, irregular patches of savanna, then mostly unbroken forest with no visible evidence
with some swamp next
of it across course, a meandering
tributary entering from south
along course. Then several
medium savanna areas in front with pond,
and a large, muddy lake.

Then forest, then
a patch of savanna
of large size somewhat
to left, surrounded
by forest, low hills
nearer course densely
fringed then flat forest
and a savanna patch
along course, then a muddy
river across course with
a black, winding lake
south of it, a village on it
to left, then a large swamp
south of this, south of it
a black lake of same size.
Then next forest, a small
meandering stream with
meadows or marsh along it
a clearing on it with
a road leading to it from south
otherwise forest. Then a
swallowed bit of beach
and a course a large
meandering muddy river
with some brown patches, then
a mountain front with
hills behind it, all densely fringed.
Guatemala

Some faint streams. Extreme hard, with flat ground between hills, forested, flat grain meadows. Then a stream. Green, more and more grassy meadows. Scattered tiny houses. Small cultivated valley, then a deep canyon across came with a steady stream in it. Then dissected country, no longer limestone. 45° slope, partially wooded, ridges tending to be grassy, steeper, higher, very mountainous. Made and made denser, then cleared patchwork, hills very much cultivated except steeper, gentler, looser. Green, then semi-cleared, semi-grazed, very dissected country. Mostly densely settled, locally not, but becoming more and more cleared and cleared southward. Few forest areas, locally 75% worked, locally 16%. Hanging streams in canyons become red muddy.

Country generally cleared, grassy, sparsely, only a few patches of forest. Almost a New world, on ridge. Approaching Guatemala City, thinly dissected plateau, intricate canyons with very steep sides, flat topped or sharp ridges, mostly wooded sides, irrigated. This north of Guatemala City. The city is on the western but less directly south of Guatemala City, around Collex Anamitlan, flat topped hill, possibly wooded, some cleared, flat tops cleared and cultivated. Visibility very poor.

Rolling country, south partly wooded, partly cleared, mostly part cleared, rougher front wooded. Mountain to right of course mostly mostly wooded, to left cleared to tops. Dissected country to right, mostly cleared. All cleared ground is of Guatemala bright green. Most gently rolling cleared country, ravines wooded.
1944 Guatemala

Relief gets lower but dissection more intricate. Ravines still wooded. Visibility very poor. After a few minutes, a mountainous region with long ravines converge back toward the airport, mostly cleared. Higher peaks ahead in clouds. Some parts apparently cultivated. Hedges between patches, mostly pasture with some scattered bushes. Bottom of ravines wooded.

Then no visibility; A sharp, mostly wooded peak sticking up out of the clouds, a few clearings on slope. Then a cluster of wooded mountains to left, a plain, mostly open to right. A city (Huehuetenango) at base of mountains. Course turns left, along a broad flat valley, mostly cleared. Hedgerows between fields. Fields green. Then, broad flat valley, laid out in squares—double sugar cane, but if no, would be planted. Man, field, formed, green, railroad cross, etc. Feeling quite beyond it. Ravines in plain with gallery. Course turns left to pass a high mountain, wooded. Must be slowly, black lava flow or slide. Beyond this densely wooded slope, a high cone on end of this range, beyond it begins with rainforest.

This area just before the lava flow is green, grassy. Possibly a flow that is not yet wooded, but possibly also cleared. Considerable forest locally around farm fields. Area around airport a deeply dissected plateau, ravines are wooded gorge. Plant at airport—Dolicho lablab

- Hibiscus idrisia
- Cyphellus bracteatum
- Dendrophanium kennedyanum
- Alternanthera versicolor
- Chrysobalanus intusosus
S. Salvador - Managua

The highland around Lake, flat ground is cultivated, steep slopes, partly wooded, partly gras. Hills go steadily down to lake. Eastern relief is not great but there is dissection. Ravines are wooded, flat land is cultivated.

Coastal plain largely cleared; large fields separated by hedge rows. Most inland the fields are small.

Plain of Rio Lempa almost all cleared and in plantation fields, sugar cane. Complex area of swamps and sloughs east of Rio Lempa. Sugar plantations inland and along coastal strip where it is wide enough. Swampy gets narrower eastwards toward mouth. Visibility very poor.

Managua airport - plant

Cedrela diversifolia
Caudex marmellarum cinnamomea
Cassisia incana

Costa Rica

San Jose -

Euphorbia cotinifolia and E.
E. coccinea
E. papyracea
E. polydropus auranticus
E. heliotropium
E. hirta hirta
E. hirta canifolia

Euphorbia exigua
E. compressa

Alpinia purpurata
Agave americana
Acacia dealbata
Mangrove acacia
Cordylina tepinata
Anacardia odoratissima
Bidens leiocantha
Euphorbia deltocephala

This season has been very rainy - rain every afternoon. Oct. Nov. said to be rainiest period.

Gladia cus
Dianthus caryophyllus
Dendroseris regis
Dendroseris montana
Lobelia mantique
Euphorbia lophii (a mile)
Phumbagia coriacea
Bryonia coriacea
Astrumph compressus
Thuja orientalis
Burinio nivea
Viticus maculii
Cedrella eujete
Yucca alata
Europa tricolor
Calandus verticillata
Sphynx spathulata
Blechnum pyramitatum
Blechnum pinnatum
Lantana camara
Pimentellis pulver
Blechnum occidentale
Creosus undatus
Pilea microphylla
Abium leptoptyllum
Caladium bicerin
Xanthosoma sagittifolios
Synedrella nitidos
Nephrolepis antiplopa
Pittie statice
Euphorbia crucifera
Chevelia peruviana
Ficus elastica
Cotylor西亚 japonica
Asparagus plumosu
Cardublavus saltata
Vannona
Caesalpinia pulchrosa
Casimiroa edulis
Monstera deliciosa
Passion american
Saccharum officinarum

Gliricidia secundum
Grypadia Rubra
Bistum grajanum
Bolopeum griffata
Philadelphus (lang sp)
Alcypha wilkesiana
Cyperus alternifolius
Schinus mollis
Netrium oleanda
Hibiscus schizolosus
Musca sabinum
Codiaeum varigatum
Grevilles rubusta
 Coffea arabica
Colocasia esculenta
Canica papaya
Carica candoarensis
Cremosus (Plimolla) spstricta
Pilea microphylla
Bauhinia sp fucuces
(C. utinum)

Cassia alata
Chrysanthemum pyramicium
Marrica sultana
Physcia frutcosa
Chenopodium ambrosiades
Abium leptoptyllum
Glanum microphyll
Ephedra sinuirus
Verena virginia teretes
Haita officinarum
Antropus melpomene
Lithospermum officinarum
Hedera helix
Oct. 15 - trip by auto from San Jose to Turrialba.

Out of San Jose - coffee plantations, trimmed to about 1.5 - 2 m. shaded by scattered Erythrina, Inga, and locally bananas. The Erythrina trimmed down to approximate the habit of the Inga.

The canopy varies from almost complete but thin to perhaps as little as 15%. Clumps of taller trees around house: Capparis, Cemaria, etc.

Tres Rios

Mts. have patches of forest and patches of bright green grass. The forest mostly in same heads and on steep slopes. Many patches of shade to dense brush.

Climbing up from Tres Rios road enters a plateau of rolling hills, green except for small mud patches, watered by small bottom and hedgerows separating fields. These are very conspicuous. Banana patches and small

Plant seen or noted not already seen in for: Dacryodes excelsa, Tribonchium semidecandra, Impatiens, Balsamia, Jatropha, Reina communis, Agave cf. nizalana, Cosmos tinctorius, Hespéridea, corinnellae, Nectria indica, Falco sp., Phaeolus reticulatus, Duranta sp., (large fl.) Passiflora herbacea, Pericoma purpurea, Melanis, minutiflora, Stachydris tephra (large fl.) Catharanthus roseus, Pteridium aquilinum, Boerhavia sexflora, Asclepias curassavica, Moroaria sp., Miscanthus sinensis, (?), (Cheit, Cemaria, & Juan Víñas)

Jugeria sp., Cassia alata, Cennonius eypamulotis, Hoya flora, longiflora, Philoeca divaricata, Atrois sp., (Tobin in castas), Calamois argentea.
Coffee plantations in this place, Nevertheless are very conspicuous - of Clovision, Guapotea, both pollarded, many other plant.

Beyond Cartago are a few ravines. Mt. plat an to left a patchwork of cultivation, patches bounded by hedges. In distance to north, partially wooded mt.

Several miles out an area of sugar cane patches.

Paraiso

Rolling plateau with pastures, maize, cane, patches. Some coffee, tobacco, citrus, etc. Some coffee, clones & sagebrush.

Mt. range to it; largely wooded on higher slopes & ridges, largely cleared on lower slope.

West beyond Paraiso considerable bare, also considerable rocky land.

This in pasture, but locally with many scattered trees. Patches of second growth, much fruit and shade. Coffee, sugar cane in the best sites.

Arrieta.

More and more cane, except on steeper slope. Fava and volcanic trees are seen in all roadcuts.


Less cane, more pasture. Coffee & bananas.

Some open secondary scrub pastures with matting brush. Some guano.

Mt. C with a mixture of clouds & grass. Desolate.
slopes coffee.

Descending toward Tunella coffee farm, predominatantly

Plants seen in Tunella
- Emilia javanica
- Iberis sempervirens
- Gynura coccinea
- Callistemon citrinus
- Rosella madagascariensis
- Araucaria araucana
- Cyathea cooperi
- Cyathea heterophylla
- Grevia bracteata
- Eucalyptus deglupta
- Cupressus macrocarpa
- Cupressus lusitanica

Cartago
- Cupressus sempervirens
- Cupressus lusitanica
- Eucalyptus deglupta

Dec. 16 - A visit to Tunella &

Cerro del Monte Irazú

Volcan Tunella - view
- SLOPES WOODED, lower
- slopes cleared. Considerable
- area on summit is open,
- surrounded by mainly
- covered by Vaccinium

Hedges of Gymnocalycium -
- Stapfia - Euphorbia cattleyfolia
- Erythrina borealana,

Alnus juncifolia is
- along rivers found to be
- planted to improve
- pasture - frutescens
- Large trees left after
- clearing are Erythrina
- costaricensis mexicana

Cupressus lusitanica

Slopes of Irazú - Patch
- works of fields surrounded
- by hedges of Erythrina
- Acnistus arboreus - Erythrina
- melanastes - Castilla
- endiviifolia - Quercus - Cupressus

2400 m. Montane forest in areas
- of Quercus, Alnus, Morus, -
- Bresciella, Drimys - Nothofagus,
Photos

Denudation, Cottonwood, and aspen, Characteristically with compact rounded crown

Upward, Alnus, Quercus, and Buddleia become abundant, increasing also scotch pine, juniper, and Chilean汆

San Juan de Chepilo

More and more trees in pasture upward, mostly Buddleia and some

Chamaecyparis, Quercus, growing on open-paned rocks.

Gunnerson in wet

Chusquita, Criancas

Km 26

C. wood becomes wetter

Vegetation, mainly, California weed. Bick

Trees become smaller and closer together, upward,

Past still run with

Acorns along road

outside fence.

Change to a sparse

scrub just below summit

at about 3200-3300 m.

Bed of ash, cinders,

scoria. Ferns, large

sparsely damaged by cattle, on

west side closed, at least

just below rim.

Crater is a multiple

one with at least 4 opening

at different levels, each

with a lake or depression flat

in it. Complicated patterns

of ash beds, much erosion

of some slopes into narrow

small gullies.

Very little vegetation a

smaller slope. Some petunias,

Gunnerson, grapes. Old trunks

of large tamarisks, apparently

dried

much steam coming up

CUSTOM, with some coming

from ground on rain.

Slightly 50° on ridgeline.
Eucrid scrub lines inner slopes of Vaccinium, Berberis, Gaultheria, Myrtus, Heterostaphylus, Myrcia, Hedyphorum, and with Bomarea, Oxalis, Neatra, Anicia.

...a


The pattern in central Costa Rica seems to be that the lower slopes of the mountains are cleared and either in grass cultivated fields, moderate sized, separated by hedges or iron fence. Locally small trees are scattered in the pastures. On the upper parts of the clear slopes trees become more frequent, and Alnus pseudomini is actually left or encouraged, even planted in the pastures to increase fertility (and so, as will of roots, help much drained, caused by action on its alni, a nitrogen fixer). Such around mountain summits locally dense, locally grown up by cattle.

Hilly or rolling plateau land is generally cleared, and in pasture or cultivation, apparently depending on age of the land as well as consequent amount of sheathing. The best land are in sugar, bananas, and coffee. The fore in pasture. Here again the fields are separated by hedges. The upper slopes of most of the mountains seem to be largely still forested.

Coffee here is shaded, mostly by Inga, anything.

Coffee plantations all the way from San Jose to Heredia and most of the way to the airport. Bananas commonly planted in with coffee.
Oct. 16 - hills west of Turrialba in hedgerow along road

Mycaria perrigenea
Casuarina

Oct. 16 - S. slope of Irazú in patch of open wood

Alnus jorullensis common

same - in wet ravine

7 48 Nertera granadensis hanging from wet cliff
Nertera granadensis
in wet ground

4 50 Asplenium common on cliffs

2 51 Asplenium rare on cliffs

1 52 Grammitis
rare on rock

1 53 Elaphoglossum occasional on rock

2 54 (rum)
common on rock

same - edge of deep ravine in pasture

1 55 Cynodon?
in grass

1 56 Pennisetum clandestinum forming a dense mat

6 57 Alnus jorullensis common in forest
1962 Costa Rica

41258 Quercus sapotaeformis

1 common in forest

2 59 Euphorbia

epiphytic on tree trunk
in edge of forest

3 60 Polypodium

common epiphyte

161 Cinnamomum salicifolium

common

4 62 Monina

nars in edges of forest

1 63 Fuchsia

local in edges of forest

1 64 Eryngium

abundant on grassy slopes

2 65 Drimys winteri var.

common

4 66 Valeriana

rare in earth banks
at edges

2 67 Cheilanthera karguana Link at.

common on vertical earth walls

2 68 Cyanea diaphora (Boiv.) Blandell et al.

occasional in vertical earth walls

4 69 Citharexylum lanceolatum

common in forest

6 70 Drymaria

common on ground in edge
of forest

Tree 20 m tall

erect, flowers greenish,

root tuberous, fleshy,

forming a close mat

Tree 20 m tall; fruit green

Shrub 7-4 m tall

flowers bright blue

with yellow nect. rib

fruit black, fleshy

Shrub 1 m tall

bending somewhat

distichous; flowers pink

heads blue, bracts white

Tree 10 m tall, flowers white

Leaves white beneath,

brittle

Leaves white beneath,

brittle

Tree about 10 m tall

spikes pendulous, flowers white
Oct. 14 - summit of
Irazu Volcano
in dense evergreen scrub
on steeple slopes
on inner slope of crater rim

28 29

47 71
Myrsine
3 occasional
3 72 Heliconiales
occasional
2 73 Hypericum strictum
rare
2 74 Vaccinium
common
2 75 Castilleja
occasional

76 (gen.) Ericssonea warzea (spec.) Apell
common
77 (gen.) Ericssonea warzea (spec.) Apell
common
3 78 Gaultheria donnellsmithii
common
1 79 Elaphoglossum conspurcum Christ
rare
2 80 nettersgranadensis
common on ground
between clumps of trees

1 81 Hedycarya variegatum
common
1 82 Myristicandrea donnellsmithii
occasional
2 83 Vaccinium
common
4 84 Myrtus denstedii
common
30 1962 Costa Rica

47285 Acanthostypheus rubescens
common

2 86 Perovskya
common

2 87 Conicaria
common

Oct. 16 - north slope of
Irazu Volcano

Oct. 16 - Central Granadina;
abundant on road cut

Plants seen: bat, banana, Airplane (Cyanis hredda);
Phlox, daisylf, Mora encate

Chamaesana
Nicholaena rosea
Jambowe mexicana
Lemurium maximum
Terminalia catappa

Oct. 17 - air trip from Pico - continuous
desert-like valley - does not arch left; level 7000; generally
in sugarcane, also many
of gentle slopes - worse
highway to reach a "sea
truth side slope" atop 5
mtrs. Largely coffee plantation
some pasture

Shrub 2 m tall, flowers
creamy white,
seeds at axil; fruit
black, juicy.

Compact shrub 2-4 m;
tall; flowers white.

Scandent shrub, branchy distichous;
tremes, manna.

3000 m.

Forming a dense mat;
flowers yellowish, fruit
scarlet, soft, juicy.

Considerable fog at altitude,
then a short stretch of
visibility - a river winding
across a river; course but in a canyon.
About 3/8 a V sign; next
forest in valley, tundra.

South east of this solid
forest in mts.

Panama is green at this time.
On Pacific side the shore is
muddy, a lot of mangroves
off front airport.
Oct. 17 - Arrive at Truchas Pass. Plants seen:

* Gracinaria acellosa
* Terminalia catappa
* Eryx microps
* Cassinia eugonostaphyta
* Phellinus nigricans
* Cemarina purpurea
* Quava melanophylla
* Musa sapientum
* Panax maximum
* Aleuris acidum
* Jacaranda officinalis
* Antocarpa altissima
* Cassinia bluntica australis
* Araucaria occidentalis
* Calyptris terminalis
* Mangifera indica
* Acapuchus wilkesii
* Cana palata
* Alchornea macrophylla
* Hibiscus ros-sinensis
* Codiaeum variegatum
* Campseur acus
* Zastic grandis
* Kryptocoryne africana
* Caladenia pulcherrima
* Eunia hybrid
* Hydrangea hybrida
* Plumeria rubra
* Kryptocoryne aquatica
* Euphorbia micropura
* Caladenia Fiona
* Cypripedium calceolus

Panax indica
* Alpinia purpurata
* Steffenia (spotted)
* Chrysalidocarpus, Integens
* Echinopsus aurantium
* Cassia cinnamomum
* Chloroxylon obtusum
* Setcreasea purpurea
* Calofyllium inophyllum
* Ricinus communis
* Rhus opaltha
* Cassia spectabilis
* Rhus eugonostaphyta
* Calodendron patula
* Celtis spiramisma
* Alpinia nitens
* Catharanthus roseus
* Polysia guinol
* Priuaria viridiana
* Aristolochia chinensis
* Ilex (omega with large 0)
* Plumeria fruticoso
* Rhanvericia guineense
* Cleomina indica
* Anthophytum
* Acalypha wilkesii
* Polytrichum

Phascolus africanus
* Helobia nigra
* Rarenals madagascariensis
* Caladenia pulcherrima
* Quisqualis indica
* Indica sebertana
* Bougainvillea spectabilis
* Eugenia aphthulata
* Hypochaeris campanulata
* Dracaena draco
1962 Panama - Columbia

Oct 13 - Panama & Bogota
via Medellin to Constablation
- and

2:17 2 1/2 hr out over Pacific, following coast, but well out.

2:31 Very complicated coast line with many
    short sandy beaches.
Vegetation: a patchwork of
    shifting agriculture. A large
    island well out from coast,
    many tiny ones between; red
    cacti, swampy estuaries,
    or sandbars, perhaps. No deep.

Small dirt strip on end of a
    hooked peninsula which points
    southeast.

2:37 over water again.

2:50 Occasional glimpses of
dense forest and of the
    coast in the distance.
    In the night, through deep
    cumulus clouds.
Gradually leaving coast.
    Clouds thin out.
    Forest below unbroken, streams
    deeply incised.

3:06 A few clearings along small
    river, then entrance to
    one small clearing. Other
    streams run east.
    Then more unbroken forest.

3:09 More scattered clearings and
    narrow cleared strips along
    small streams.

A lake with black water,
surrounded by marsh, a
    course, and an endless strip
    of green extending south from
    the lake in the forest. Then
    another large lake, also
    surrounded by marsh.
    Then a large, very muddy,
    meandering river (about
    angling to it), with many
    large black lakes to right
    of it and a whole series
to the left of it. Between
    it and a meandering smaller
    tributary flowing south,
    and joining it. More
    lakes to east of this
    tributary - much of country
    here seems inundated.
    Mostly with black, rather
    than muddy water.

Then forest, then
    heavy cloud.
A very deep valley in rugged
    hills, and some other deep valley
    forming down into it.
    The high ridges wooded,
    slopes cleared.

To south tremendous
    complicated mountain
    with many very deep
    valleys with steep cliffs.
1945 Left Colombia

3:30

rises, very little work left - a few tiny patches or
highs. This man of work is very extensive,
despite the very high
rises for it south - mountain views,
its canvas - large, very mudded,
a little space north of the densely
slopes end of it. Most of
the landscape grassy,
with some bits of wood
in the ravines.

3:33

Pens a great deal almost
scraped the plains, some woods
on high ridges, mostly grassy,
valleys with some partially
buildings.

3:35

Medellin. Hill green, with
some red or scarlet scar.
wooded ravine. Banana
pitches, hacienda, on low
spoonland around city.
Circling in to airport.
River & tributaries channelize.
Citrus gardens.
Handed off

Plants:

* Euphorbia tirucalli
* Hibiscus schimpfiana
* Mentha deliciosa
* Cattleya trianae
* Euphorbia fulchervina

Colombia

4:10

Left Medellin.

Slopes to ridge - east,
gently grassy, fairly busy.
bit of woods near
tops brush more
continuous, seen tops.
New construction in Medellin.

Seem unusually ugly for
air - long shed-like
new house.

Lower slopes on west side
of valley are severely ends
and bay, at least beach
down stream from city.

Coming out over last
river. Barely brushed are,
the ridges.

New valley, almost entirely
denuded. Flat bottomed
ravines, cultivated, rich
grassy or brushy.

Then a beat cultivates
valley with a tightly winding
river. (Rio Turz?)

Gently sloping hill.

Land rising southwest
mostly cultivated, to
rough small mountain.

Visibility poor.

Rio Magdalena muddy.
Hills generally green.

Sweeping slopes up from
Magdalena to the mountain
rim of the Fabana.
Inside this rim are several low ridges that are divided by sink holes. But do not have much the form of a crest, then a wooded range, then the flat, green cultivated fields.

A flooded meandering river winds southwest through it, then another.

Scattered across, some closely, some drained by wide rills that go nowhere. Then a channelized and winding river, not flooded.

An elongated, curved lake north of El Dorado Airport.

Clusters of trees indicate some homes. Known as Leoncillos. New frame homes seem to have no trees, mostly.

10:05


9:45

"The southern part of the Llanos is considerable less ground, and apparently result of flooding, and many more windbreaks than in north. Hills around south end are dry and brown rather than green, again with. Over the rim, along Puracanga, green again.

"Soutwest in Magdalena Valley, a patchwork of green and brown. Not done apparently from bad soil, result of erosion - principally in bare slopes. - Coffee valley below Colombia, Toward Neiva, seem to be a good new east from Colombia.

Cloudy for several minutes. Country to west after Magdalena Valley is terribly denuded, only a few high ridges still stand.

Clouds, rain, bare mountain solid for a great distance.

Inter Andes Valley? (Pai, Latacunga?)

Large meandering river, at very fast region and

Patia J.

A great patchwork, almost entirely cultivated. Sea in distance to west which a very large estuary may be杀了.

Mountains as yet mostly very well wooded, locally much shifting agriculture, but still much forest.

Good forest extending most of way to sea.

Hopwood path, extending through clouds, apparently level.

Vast forest, southwest of it,
To a large meandering jet. Brochine clouds or no good idea of the terrain in possible. The western Cordillera of Margan, so far as can be seen less much good fact, left through the inner slope is being cut very rapidly.

10:45 Entirely cloudy.
10:55 Mountains entirely wooded seen through brochine clouds.
10:50 Some shifting aqueduct, same forest. Southward considerable forest.

Clouds

10:40 Very rough country, 2/4 dry denuded, 0/4 on steep slope. Southward more denuded, same hill, middle distance appear rather dry country.

10:49 Most clouds.
10:54 My in distance & west often well wooded, much less so close to course. Generally clouds.
10:49 Mts. mostly denuded along course. Clouds everywhere are low, sit on west.

10:49 Hole in clouds - wooded hills with conspicuous white trees, a road trending east.

10:55 Wooded hills with scattered clearings, solid clouds.

11:03 Clouds thinning out, relief seems to be rather minor, general ascent seems to be dry and brown, with many wooded patches and green areas, a large closely meandering river, cultivation locally not at all obvious where thin.

Clouds

11:07 Coast indistinct, and a strong turn to left, then a tremendous estuary line, with mangroves and sides with mangrove line channels, bare brown areas back of mangroves are very extensive. Both of this estuary a point reaches parts west, estuary tranverse to course after turn.

11:11 Clouds extending far to sea. Must have been mouth of Guayas. Brown hills with green valleys, this extending some distance to right.

11:19 Mostly cloudy.

11:20 A winding road we from hills. Country quiet enough, very little wind, great in wires.
Very rough, dry country, deep canyons, we are far inland on hills can be seen far to night.

11:31 A valley, with considerable settlement, surrounded by mostly denuded hills, brown with greenish ravines, dense clouds.

11:35 Break in clouds show valley dry hills, but with few

11:39 sleds of muddy, misty clouds not in cloudy. Shows

11:42 upland hilly country, draining soil, rich

11:45 Prairie type grassland.

11:49 Mesa, plain sloping westward, as woods. Very

11:52 sandy, even in certain

11:54 ridges. Coastal desert visible beyond several

1:00 ridges in distance. Great gravel wash in mouth of valley, leading down to coast.

1:03 Gravel come closer to coast, hills are very

1:06 and completely treeless. Valley bottoms are

1:09 cultivated as they become

1:10 wide enough, some of hills are slightly

1:13 hilly.

12:00 Trees in valley, thick

12:03 a pattern of cult field, and shrubs (bushes). Coastal

12:06 flats, very sandy, far in valley. A number of stone islets

12:09 and a jutted peninsula on coast.

12:11 Clouds, then another coastal area that is mostly sandy.

12:14 Hills away from coast are brown. A few ravines

12:17 show gallery woods, but most show gray sand

12:20 in bottom that must be gravel.

12:23 Clouds.

12:26 Hill, approach very closely the coast. Set a peak

12:29 valley behind first

13:00 range. A river valley leading down to.

12:33 has a bridled pattern, considerable vegetation

13:03 in bottom, some cultivated.

12:35 Field, green. Hills brown. Desert hills with

13:05 some open scrub in.

12:38 Flatter ravine beds.

12:41 Then complex valley

12:43 systems, sandy

12:46 hills with, little sandy

12:49 bottoms, major washes

13:02 with sage scrub; spreads very...
A very extensive system of flat sandy beaches leading to wide coast, looking like a river of sand - lower courses have some vegetation. There does not appear to have an entirely logical drainage pattern - perhaps some falling with sand.

Cloudy.

Descending to wide drainage area is complete.

Landed in Lima.

The city has built up practically to the edge of the sea cliffs south of airport. The cliffs are remarkably straight with no vegetation at all. Near airport are green truck farms. A braided stream with some water in its channels. The landscape around airport is more or less dominated by trees - planted, of course, largely foray. In chileo.

7:00 A.M. 700' off from Lima airport.

Field is north green to east. Hills appear very bare. They have some darkening near tops, probably due to islands. Landed out over Pacific and back east. Large island off coast is bare, as hills on mainland.

Crossed coast that started south along coast.

2:18 Crossed the coast a bit north of Lima - a broad beach, very flat, sand. Dry looking cultivation in ports area. Peninsula Larryco looks completely bare, light tawny color. Completely cloudy for a moment. Then country east of Peninsula Larryco - some small farm, apparently struggling against the wind. The rest of the entire area south of Lima is desert, largely sandy, no vegetation visible. Wasteland of dunes. Areas of brush, oriented with flow about parallel to coast, southwest. A flat agricultural area. Visibility far.

The low desert mountain with
sandy areas between them.

Clouds.

4:19 Hole in the cloud, showed dry brown hill, very rocky country.

Another hole, fort right - thistle.

Clouds, continuous, at high altitude. An extremely hilly mountain range. Crossed a very broad, very sandy river bed. Transverse to mountain. General vegetation not at all open, but practically vertical. The altitude is extreme and the haziness such that details are not at all visible.

Another broad sandy river bed, in distance. Transverse to stream, but starting abruptly from a very hilly, very rocky area which is not even visible in near middle distance. General terrain seems flat.

4:07 A couple of tiny birds.

rather abrupt mountain range in middle distance. Crossed at an angle a series of low ridges, a lake (?). In the distance, altitude is great and haziness too great to discern any detail. A meandering river running off to a bit forward of transverse course, but crosses country at an angle, becoming Dilm. but look like savanna country.
Brazil

Oct. 21, São Paulo -
Institute of Botany

150 acres of practically untouched forest is to be preserved.

Complete rather smooth canopy - trees small,
up to 40 m. maximum height.

Road to Santos -
For hills covered with
second growth largely
Thysanocarpus, around
big reserves - this is
a dense scrub or brush
forest 4-10 m.

Chusquea, Bambusa
Cystiches

Some marshy areas.
Toward sea the forest
become more scrubby, more
grassy.

Then on the break-off,
the relief is great and
there are deep canyons cut
in the granite densely
covered with a low forest
would be called mountain
rain forest.

Plants seen - São Paulo
Eucalyptus robusta
E. saligna
Felsicola robusta
Pinus caribaea
Cyrtocarya racemosa
Ficus spp.
Acacia curassavica
Nypa nana
Musa sapientum
Melinia minutiflora
Rubus rosaceus
Tambouc maccus
Cerox alcides
Codiaeum variegatum
Hibiscus tiliaceus
Terminalia catappa
Cyperus cincinnus
Helianthus regia
Caesal pinzeyi
Podocarpus quinquangulatus
Ravena americana
Clerodendrum cucumerosum
Cordylines laevigata
Polypharum guaymasi
Ravena mariçales
Acalypha vitoriana
Passerina guineensis
Celtis
Malvaviscus arboreus
Phoenicurus bakeri
Euvissa chinenis
Cryptocaryopsis
R. oliverae
Country rock is generally granite.

At foot of range is an extensive mangrove swamp, with winding channel.

On lower slopes the forest is severely, largely sectamnia, Veronica e. in fruit is a component. The white puffs making the trees stand out in places even dominant. Cocomia common.

In mangrove swamp - Avicennia aurea, Hibiscus tiliaceus

Reedmace in front of Cerco Le Mon, about 900 m. Wooded except some lower slopes which have shifting vegetation, mon Glenelgina, Bananas.
Alpina nutans
Jacaranda acutifolia
Anancaria exalata
Dalili variabilis
Nerium oleander
Coffea arabica
Tabernaclea splendens
Ipomoea calycina
Cypripedium keaylingii
Nicholea rosae
Tiquana tipu? (com. et. 5)
Capsicum sempervirens
Ficus carica
Eubulania maritima
Xanthosoma violaceum
Washingtonia filifera (ilinde)
Pantheria hyperphora
Hibiscus syriacus
Cultrum eytopapium
Galinsoga parviflora
Sztaria palmaris
Passiflora quindulce
Tableaum carassus
Ficus japonica
Punica granatum
Euphorbia tirucalli
Cypersus stunki
Asus elastis
Oct. 27 - Trip to Sao Paulo - Eva

Just outside Sao Paulo town potential an irregular mosaic of "caatinga", second-growth scrub or semi forest - marked by casuarina, open fields, eucalyptus forest etc.

Around Cordeirol e Paraguay is a little original forest, and some caatinga on rough ground.

Just beyond this, but still in hilly, eucalyptus plantations dominate (several photos). Menino abundant in area.

Weeds - Cynodon dactylon

Echinochloa

Melinis minutiflora

Brachiaria sp.

This extends for some distance with only a few small patches of "caatinga". This plateau extends to Jonathan.

Beyond this, grazed and pig culture, in small farms, forming a mosaic with eucalyptus.

Locally a clump of introduced banana in low areas. A very few coffee plantations, not shaded.

Country becomes much more open near campings. On drastically eroded areas clumps of annuals, wafer, and conspicuous, and indicate extreme degradation. Not eaten by cattle. Large terraneous. Typhon marbles in low areas.

More de fauna. Beyond here country becomes very open. Much pasture, large fields, rolling land.


A few scattered Camanu. More and more many more, and Eucalyptus plantation toward town. Some sugar cane. This increases until to the left of highway it dominates landscape. Very dark red-brown soil, from weathering of basalt. Deep. Not at all rocky.

Some patches of fairly good secondary forest. Whole area was formerly coffee.
They large open area
much used now as site
frequent tours

Some small areas of Acacia
fandii. Palestine wattle, clumps
and patches of Eucalyptus
kame

Large Eucalyptus plantation.
More open country near
range grown. Patches of
second growth. Zezim
stems in fence. Thrusters
Aegroemia nileripe.
Rotting land. Quite a
few palm. Woods in
growing and few spots
fence Eucalyptus.
Park Santa Cruz.

App. Tamarindus
Cotton (ties) abundant
locally in towns.
Lycopersicon esculentum.
Emilia (= pantanal)
Pinus ericksonii.

Large orange groves. Baraboo
in low areas.

Towards Cachoeira
Poor roads — burned
relatively recently. Vehicel
in motion.

Cachoeira — Emsas
Ficus microcarpa in
street. Mangos.
Rue Mogifquara — has
many species of fish,
some very good.

Phyllodendron bifurcatum
Allamandra cathartica
Gomphocarpus catharba
Eugenia vulgaria

Campos Cerrados near
Emsas

This area was on one
side of road a protected
tract belonging to the
University. Not burned
for 15-20 years. On the
side not protected —
(photos of both, B, C, 9, etc.)

The protected part
is an open to closed
scrub to scrub forest.
General level 4-6 m.
But emergents to 10 m.
Generally mesophyllous
to microphyllous,
both on most species.
Some thick and ridged,
Checkered, or ribbed.
A few macrophyllous,
species. Varying from
58 Brazil labels all done

Mistletoe & selaginella
Badly invaded by
Melina, which forms
a complete ground cover
up to 1 m. deep.
Soil a muckish layer
fine loamy sand.
Much dug up by
armadillos.
Thick brush, sweets

59

Forest near Cacheiro
is a closed forest
about 10-20 ft. tall
with a few trees
up to 4-50 ft. dbh., which
are emergent, others 1-5 ft.
dbh. 1-9 m. spaced.
some small saplings
between these. An almost
layer 1-5-20 ft. tall,
throughout.
mostly

Another side a road
where there has been
burning, grass is
low, patches of m.
shrubs & to lower
distribution, more open,
moving to nearly closed,
many to open, open
small forest. On this
side of road mostly
myriophyllous.
This is more typical
and an aspect in contrast
as this

Sao Paulo (under Pl. of Brazil)

Oct. 24 - near Piranomunga
roadside in red soil
in estuar "campo cerrado",

437289 Emilia javanica (Burm.f.) Ret.

flora and fauna

Byron's

we call of this territory

Chalk locality in Bible

F. de F. Emery

1962

Mun. Piranomunga

flowers red.
Byssonima

coll. by F. A. Teixeira

check locality in book

are E. iten "if someone else"

no 443301

fa 1962

prof. from Ermes
Brazil, label all down:

Mayphyll, are melinhas
Badly invaded by Melinhas, which forms a complete ground cover up to 1 m. depth.

dish and hard ground
Much dug up by armadillos
Thick bushy shrubs

On the side of road where trees have been burned grass is lower, and lower shrubs dominate. More open, ranging to nearly closed, ranging to very open, some forest, on this side of road mostly mesophyllous.

This is most typical as far as aspect is concerned, as this

Sao Paulo (under Pl. 4 Brazil)

Oct. 27 - near Pirassununga: roadside in red soil in cattown "campo cerrado"

Emilia javanica (Burm.f.) Boer.

Forest near Cachoeir is a closed forest about 15-30 ft. tall with a few trees about 4-5 dm.dbh. which are emergent, others 3-4 dm dbh. 3-4 m. spaced.

Some small saplings between these, and shrub layer 1.5 m. tall with a slight herb layer, mostly seedlings.

Bare layer; mostly Pampas
Byuanaes common. Epiphytes not plentiful. Adjacent to this is an area where it has been cleared except a few scattered trees. All cerrado plants have come in. It is because of grazing: Forest is gray. 60.

Forest is probably one that has been degraded but not cleared.
1962  Brazil

Oct. 27 - Eman near Cana de Muru do Piauí, vegetation badly invaded by Melinis.

1 43 490  Randia  occasional
2  91 (det.) Coromana fulva Planch.
  92 (cont.)  occasional
3  93  Stylosanthes guanensis (Andr.) S. 
  local

3 94 occasional
1  95 Taubera?  Zeyheria digitata (Vell.) Hochne
  rare, one plant seen
3  96  Randia  occasional
1  97 rare

1  98 (cont.) Blenhesodion lineare (Rexne)  det. Spellman
  rare
3  99 Adiantum common locally

43 00  rare
3  01  rare
1  03 rare
3  03 Wedelia?  occasional
1  04 Aristida falsena  common locally on rather bare soil

 Sao Paulo

24 Apr. 1962

1 43 233  eremicana, a small bush
2  95  shrub 1.5 m. tall, port. not open.
3  92  shrub 1.5 m. tall.
4  91  pods inflated.
5  97  marginal flowers tubular, fruible.
6  94  erect

3  98  shrub 1.5 m. tall.
4  93  fruit, flower.
5  99  slender, unbranched.
6  94  shrub 1.5 m. tall, erect, small tree; flower
7  97  greenish.
8  95  shrub 1 m. tall.
9  96  fruit green.
10  94  yellow shrub, fruit green.
11  96  flowers bright yellow
12  95  flowers
1962 Brazil

47705 Spermacoce
occasional

2 06 Gomphrena maculata, heart.
common in trails

4 07 (male)
common

3 occasional

3 08 ?
ocasional

3 09 Canavans
occasional

3 10 Smilax
occasional

1 11 (male)
ocasional

1 12 gesneriaceae
occasional

1 13 Stevia
rare

2 14 Micromicia albicans (Sm.) Triana (det. Wurdack
1968)
common

4 15 Eugenia
commun.

2 16 Eugenia
occasional

3 17 (unknown)
ocasual

1 18 Didymopanax

2 19 Erythroxylum tortuosum Mart. det.
occasional Flowman 1983.

red, flower white.
not enlarged; heads white.

shrub 2 m. tall (often seen much taller); petals
pink.

small shrub.

shrub 2 m. tall,
just past flowering.

fruit very young.

semi-esculent shrub

several in long, fl.; yellow.

erect from buried
tuber, flowers with
calyx and corolla

deep orange.

erect, flower dull

shrub 2 m. tall,

leaves dark green above.

shrub 1 m. Tall,

flowers white.

shrub 1½ m. tall,

fruit immature.

shrub 2 m. tall,

fruit immature.

sharply branched

shrub 1½ m. tall.

shrub, bark very thick

leaves glabrous.
Oct. 28, 1 h.m. n.e. Campos Grandes
railway station, Mun. de Ribeirao in open upland bog.

1. 28 Polygala rubra var. Chod. ex Brandon
common in wettest spots.

2. 29 Paepalanthus L. Leitichix flavescens (Bong.) Puhl.
common locally.

3. 30 Paepalanthus planifolius (Bong.) Kern det. common
Paepalanthus planifolius var. villosus Moldenke det. Moldenke Nov 74

4. 31 Paepalanthus occasional, in mineral-rich

3. 32 Cladium abundant, dominant locally.

shrub 1.5 m. tall,

shrub 1.5 m. tall;

fruit very immature

shrub 2 m. tall
branches ascending
rather strictly

climber, flower white.
top 5 m. tall, branches
fleshy.

shrub 2 m. tall,
fruit immature

depressed shrub; flowers


inept, spreading
from central root crown,
extensively branching,

heads whittish.

Mun. de Ribeirao: Pires

exact, flowers reddish-purple

with wintergreen odor.

Moldenke Nov 74
Oct. 23 - Cerrado del Mar

Grass, 2 in. high, mostly brown, surrounded by low hills.

Ground rather irregular, cut into by narrow, partly dry, grassy strips. Few clusters of small, very springy grasses, about 1 in. tall, Blechnum sp. (or with red young growths, or without) scattered irregularly, as are Paraphleum sp. & Erodanthes sp. Small shrub thicket 1-3 ft tall in low spots.

Melastomaceae: Piptadenia stellata, a beautiful dicotyledon, leafy, sapote, huge, with black flowers, Sphagnum & Dracena sp.

Oct. 22 - Estancia Biologica.

Lema da Graji, Paranaapiacaba, above Santos, 1.5 hrs. by car. About 3 hrs. drive from Santos. One dirt road, through the low hills of the coastal range. Much industry here.

A large marsh at the fall is probably included in the water reserve so may be protected. The hills become partially wooded with a scrub forest, partly clear, and sometimes marshy.

From Paranaapiacaba station on the railroad at 14 min. walk up to the station (biological), which is on top of a hill surrounded by a typical montane scrub forest. Santos is visible on a clear day below. But clear days are rare at this time.

The southeast trade, but the afternoon and are pushed up. The range line is between 700-1000 m high, and the rain at the station is over 2500 mm a year. Cloudiness is frequent and drizzle rain prevalent.

The entire reserve of 740 acres is wooded. It is deeply dissected into ridges and canyons, with many streams, in several places there is a divide between 16.
Oct. 28 - Serra de Moji, above Santos, Mun. de Santo Andre, in montane rain forest.

4333 Peperomia
1 34 ml. occasional or scrubby ridge
1 35 apo. rare on scrubby ridge
36 Utricularia
common on ground and in decomposed matter on wet scrubby ridge
1 37 lingularia
in open trail on wet ridge
3 38 Hedyosmum
occasional or wet scrubby ridge
1 39 rare on wet scrubby ridge
5 40 (empt.)
3 rare on wet scrubby ridge
4 41 (empt.) Reandra collinaWundel (pencil)
42 on wet ridge, broad leaf, blue flowers.
1 42 Pteris
in open shot on wet ridge
3 43 (empt.)
3 44 Pleurostachys
very common in semi-open places and along trail on wet scrubby ridge
3 45 Helagynella
common on wet cut banks in canyons.
1962  Brazil

493 46  Hymenophyllum
abundant on leaning tree trunk

47  Trichomanes rigidae (Sw.) det. Sellinger
very local on steep banks
in canyon

48  Cochlidium pervidens (Sw.) S. E. Bishop
in moist sandy bank
in canyon

49  Grammitis
common abundant on tree trunks

50  Aplectania monanthoid. det. Sellinger
ocasional

51  Aplectania polyphyllorum Bert. det
rare on tree trunks

52  (melast.) Salpinga margaritacea (Nard.) Triana
ocasional on cut bank above
trail in canyon

53  Vaccinium
rare in undergrowth
in deep canyon

54  (melast.) Leandra quinque dentata (DC.) Cogn. (det
rare in undergrowth
in deep canyon

55  Elaphoglossum
on banks along trail in canyon

56  Trichomanes
abundant on tree trunk

57  Hymenophyllum
common on tree trunks

58  Hymenophyllum
on tree trunks, polyanthos (Sw.) Sw.
det. Sellinger 1978

1978

San Paulo

1978

friends present.

1978

small splashier...

D. K. Wood (1968)

Sellinger 1978

Leaves dark green above
with 2 rows of white
spots, purple beneath,
scale erect.

spreadling shrub
3 m tall, calves white,
s-angled.

shrub 2 m tall, flowers
white, fruit immature.

erect
1962 Brazil

**43359** Hymenophyllum polyarthre (Sw.) Sw. det. Delling, 1978
- in small tree trunk
- on tree fern trunk

**61** (label)
- on scrubby slope

2. **62** (genus)
- common on scrubby ridge

3. **63** (Stevia?)
- rare on scrubby ridge

4. **64** Helenium parviflora, Kund. det. Delling, 1978
- rare on scrubby ridge

3. **65** Byssomeria intermedia, Tuss.?
- rare on scrubby slope

4. **66** (leguminosae)
- occasional on scrubby ridge

2. **67** abundant on earth banks, in canyon

Los Pauls

twining in bushes, corolla compressed, rose pink, scramble, leaves fleshy, corolla bright purple, strongly gibbous, calyx alate, twine.

- erect

- shrubs, fruit immature

- small trees 12'-18' tall, stamens white.
1962 Brazil

(forestry) Panama and Atlantic drainage.

On ridges the forest is low and scrubby, in places very dense, generally uninvaded except for a thin ground cover of lichenic mosses and ferns. This tending to be thinned away from trails. In some places where ridges are wider, or where there are flat areas, the vegetation becomes more scrubby and tends to be more open, with much lichen growth.

In the ravines the forest becomes much taller, up to 10-25 (even 50) ft tall, with trees perhaps 4-5 dm dbh, canopy complete.

Epiphytes are plentiful, especially orchids, and bromeliads, also Bryaceae and other ferns, mosses, etc.

More so in the deep ravine than on exposed ridges. However, they are not so scarce as plentiful enough so that this could be designated as true forest, a cloud forest. Usual not swollen with masses of heparics and mosses. Varying mosses and liverworts.

Certain Andean elements are notable in the flora -

Weinmannia, Tacazze,
Hedyotis, Velleia parasitic, Melastomataceae common but scarcely abundant.

Rubiaceae, surprisingly abundant.

Tone lianas - Bignonia, sleek, with white fluff, Sterna (?), various, etc. Aroids and ferns, with stems clinging close to tree trunks, very frequent.

Urticariai of humboldtiana, mostly common along edge of forest along trail or side of railroad - show rhizomes deep in moss, and then a stem in bromeliad tanks. Rhizomes in white, fleshy, have soft, silvery green, much branded branches that seem to sprout tiny white ones.

The reserve is traversed by a network of graded trails, which on steep leads follow made by putting in small logs. Fleshy fungi are common along the soil in a misty

If clay, soil very fine sand. It is pale yellowish to white, very thin on ridges, where rocks are exposed.
1967 Brazil

Oct. 29 - Rio de Janeiro

plant
Hibiscus tiliaceus
Terminalia catappa (committu)
Kopsia tenuicaulis
Aegle marmelos (mango)
Eugenia eleotris
Ficus "grandifolia"
Cotylanthus varius
Cydiaxylon parvum
Vernicia chinensis
Xanthosoma violacea
Cyrtomum parviflorum
Eichhornia crassipes
Anacardium occidentale (ca. 250)
Celtis phaleriana
Goss weberi
Hundaparr amicus
Dacryodes metilis
Nictria tabacum
Ficus carica
Psidium guineense
Passionaria dubia?
I. tectum?
Malvaviscus
Salvadora quinicus
Galinsoga paniculata
Euphorbia indica
Camptotermes
Mangifera indica
Diospyros kaki
Morela deliciosa
Xanthosoma sagittifolium
Canna hybrida
Euphorbia pulcherrima

Plumeria rubra
Flamboyante grandiflora
Fondamorina candelabra
Ficus macrocarpa
Flitana
Gomera finidora
Delonix rega
Ravenala madagasacarica
Gynerium auratum
Phyllanthus amarus
Raccolphis indica
Moqilobus setatus (20) eich
Atrocarpus albidus
Impatiens sultana
Capriphora daeymeri
Debryx exile plena
Humbugia alata
Ficus junqua
Capsicum intaste
Rotspia quit liquida
Antocarpus tetrahydric
Plumbago auriculata
Ranunculus mesnyi
Phthiracpa campfonata
Nyctandra calcarata
Psydracia charantia
Balanites aegagropal
Ficus umbra
Wedelia tribulata
Gynura robertiana
Sida acuta
Gomera canina
Canna tomentosa
Mimosa pudica
Buxus succulenta
This palm is bitter, not eaten, but ground and mixed with bread with an occasional bit of toasted bread. Pernambuca.

Low spots have black, patchy sand, are domed by Eugenia; little undergrowth.
Many monkeys.

Along margins of sand what appears to be a browning in sand, young trees rising. The sand is Acrostichum auratum, common in swamps, and in woods.

Peppers of (glaucescens) very common in sand. Ystaha marsh, blade - marsh common.


(photos)
East along this next small dune - the belt of clump Narragansettia, but the belt of palm scrub spread down onto the land and flat beach of dune. On this flat & complex mosaic of sand and marsh vegetation. Then see lagoon, laced with Cladium marsh Fahup 10-8 m. w. Between this and the dune ridge on which is the road, palm scrub with scattered Cenusa, Acranthus, Echinopoa, Euphorbiaceae.

On the beachside of the road belt of Euphorbiaceae virginianum with little Ceranthera f. scabrella, a few scattered Eriogonum.

Eastward along coast the low palm scrub tends to give way to more xerophytic scrub and sparse, sand 2-4 m. tall. Inland on nesting behind lagoon is a stand of Senecio clavellatus about 7 m. tall.
very much like that at Ootahoudome, but just not at all indeterminant. Pancum maximam

Commend in the ground with Nicholson.

Some casuaries of

Stucta (Aquistifolia?) planted, called "junkheirs." Most of this restings covered by a general of

Eucalyptus. The rest of it, I'm not too sure. Much Eucalyptus, eucalyptus palm + Ceranista.

Westward this gave way to a slow, broadleaf scrub with many genera of shrubs, eucalyptus, Composite, Cotton, Cuphea, Crododora, Vaccinium, Ceram, Depoldthammy, mile-high tree etc. On white sand.

(Photo)

Preliminary on poop deck.

Furnas de Tiguex

Photos of opwhite claus

Cascada de Alta da 3700 Verde

en Floresta de Tiguex

(Photo)

Surrounded by cactus,

Tall Montane Chine forest

Perhaps 70 m. + very mixed.
Nov. 2 - Restinga
desde Tijuca
in low scrub vegetation on sand flat

1. Vaccinium
   very common
2. 69 (maroja)
3. 70 Polygordium
   occasional
4. 71 Cassia nanosa Vogel
   rare
5. 72 Cotton
   occasional
6. 73 rare
7. 74 (carna)
   occasional
8. 75 Berberis tonquiflora (Willd. ex. P. 1. 3)
   rare on bare sand
9. 76 Dioica
   occasional on bare sand
10. 77 (sawth) Maronan
    rare on sand
11. 78 Baronia
    common on sand

Nov. 2 - Restinga de Barra de Tijuca
on dune ridge of white quartz
sand just back of beach

12. Delthtium mantimum
    common
13. Delthtium mantimum
    occasional
14. Delthtium mantimum
    rare
15. Delthtium mantimum
    spreading
16. Delthtium mantimum
    spreading
17. Delthtium mantimum
    spreading
18. Delthtium mantimum
    spreading
19. Delthtium mantimum
    spreading
20. Delthtium mantimum
    spreading
21. Delthtium mantimum
    spreading
22. Delthtium mantimum
    spreading
23. Delthtium mantimum
    spreading
24. Delthtium mantimum
    spreading
1962 Brazil

81. Chitraria Antrocuma virginianum (L.) Hitch
2. occasional on loose sand

84. Bresenia
common on loose sand

82. Hydrocotyle
very common on open sand

83. Boecharia
rare on loose sand

84. Euphorbia

87. Emilia sonchifolia
common on loose sand
same on sand flats well away from beach

85. Limonium
common along edge of water in channel

86. Paspalum distichum
common

87. Eugenia cumini
dominant in forest on low dunes sand.

88. Richardia brasiliensis
common

Nov. 1 - Gruta de Imprensa
on wet rocks just above sea

89. Ficaria
common

90. Agolla
abundant on wet rocks
Nov. 4 - corner circumference
Highway + Bradock Rd.
Rolling land with
deciduous woods 30-300m
high, with a few large
trees - Guernica coronaria

A scattered tall shrub
large of Hel opaca, Cercus
locally some lime viny.
several old roadways
across.

Toward Bradock Rd.,
Juglans becomes larger
more abundant. valor he
pine absent, except to west
where are several patches.
and a scattering of large
lime viny.

(red) quietly
Rudbeckia laciniata
Goodenia pubescens
Trifolium planum

Fairfax Co.
Plants: - Guernica

Lec. 1005 Vau. nigida

Cercus
Juglans
Fagaceaee
Quercus alba
Quercus velutina
Allie rubrum
Carpax
Pratex americana

Virginia

Hel opaca
Cercus

Cornus florida

Viburnum acerifolium
Viburnum virginiense

Herbs x low shrubs
Polygala acris acris acris

Mitchella ather.
Chimaphila umbellata
Chimaphila maculata
Lamium montanum
Monotropa uniflora

Vaccinium micellum

Koeleria complanata

Dipsis rotundifolia

Sabal yarrellii
Viola sp.
Galium spicatum

Monotropa hookeriana
1962 Virginia

Nov. 11 - Circumferential Highway of Braddock Road

in deciduous forest

with Box Sassafras understory

391 Guercemus rubra L.
rare

92 Lycopodium obscurum
small colony

93 Goodenia pubescens -
rare

94 Poplar odcumsp. american
local, under Fagus trees

95 Mitchellella repens L.
abundant

96 Lycopodium alopecuroides -
rare

97 (red) Asplenium hydrostale
rare

Fairfax Co.

Tall tree, leaves yellow
at this season,
leaves more less in one plane.

Leaves gray-green, veins white.

Creeping; fruit scarlet.

Leaves purple beneath.

Leaves long-filful, veins white.
A. 0

Shrub layer 0 - 1 m. Tall
irregular
- Prunus serotina
- Fraxinus americana
- Rosa multiflora
- Liquidambar vulgare
- Cephalis sp.
- Lindera benzoin
- Viburnum prunifolium
- V. dentatum
- Calycanthus carolinianus

Tangled up to about 1 m. with Lonicera japonica
- Vitis sp.
- Rhamnus carolinianus

Tree trunks
- Ground covered locally by Lonicera japonica
- Locally by Glechoma
- Some A. of. Eranthis

Upstream the forested bottom
broader out.
One tree with bark coming off in round flakes unidentified.
Small patch of Prunus virginians on slightly higher ground to left.
This adjoins private property at back of lots. Has many paths - at least 2 pine, cut down.
Considerable Lonicera japonica tangled up to 5 m.

Above this, toward stream, Acer rubrum become abundant.

Then there is a transverse strip where the forest has been cut some time ago. Notably in a band of the Trump Run sewer.
Virginia

This has some open grass, some Alnus scrub, some brush of Quercus

swamp white oak, 3-5 in tall.
The ground is sandy.
Coles 36
Dulichium
Astilbe x arendsii

Hodges

Above this is a flat
of some width covered
by a forest of
Acer rubrum
Diospyros virginiana
Quercus velutina
F++/A++

Mostly rather small-
i.e. 20-30 ft, occasional
much larger trees.
Lonicera much more
local here, in places the
forest is quite open.
Viburnum dentatum
forms clumps.

Fairfax Co.

Much of this area
is swampy, some with
hummocks of fern
roots, etc.
This swampy land
has
- Vaccinium corymbosum
- Lindera benzoin
- Sambucus canadensis
- Fraxinus
- Alnus serrata
- Smilax rotundifolia
- Cinna arundinacea

This swampy area
is drained by a small
stream with dendritic
branching system.

Across the marsh, part of this flat, just
downstream from the
stream draining the swamp
a ditch was apparent,
dug, sometime back,
which drains the west
of the flat toward the
houses to the southwest.
This apparently keeps
the adjacent ground
less swampy than it
would otherwise. This
1962 Virginia

Virginia has much Allium vineale, locally, and Glaucina heteroceras on the ground. Here the Viburnum dentatum is most abundant. Cimos australis is common. Some binders.

Southeast of this is a wood with little undergrowth. Cimos australis is very abundant, Agaricus communis

Near Tripps run considerable evidence of small logs — chopped fallen trees, paths, etc. Digging on sandy stream terraces. Conifers abundant near Tripps Run.

At lower end of the open strip is a swampy area. One ditch has been dug draining this into Tripps Run.

About half way to Sheep Hollow Road a small channel pond has been partly drained by a ditch on the recently dug

Fairfax County

One Quercus triolea tree perhaps 15 m. from Tripps Run - only one seen. The leaves from it are very conspicuous on ground (heavy wind last night). These scattered to Tripps Run, about 35 m. in S.E. direction away from Run, about 25 m. by stream, perhaps 40 m. from stream. Perhaps more of influence of one rather small tree - perhaps 15 m. tall 25 cm dbh. Much overgrown by surrounding trees.

Another ditch has been cut to Tripps Run just north of 40 facing Sheep Hollow Rd.
1942 Virginia

Nov. 30 - Stone House, just west of Bull Run near Manassas Battlefield finds

- Photos of Platanus occidentalis, along small stream, in pasture, with junipers, etc.

- Nov. 30 - Wildcat Mt. Preserve

- Birds: blue jay, crow, owls

- Mr. Arndell saw grouse this morning and no wild turkeys yesterday.

- Achillea millefolium

- Echinacea vulgare, tall flowers

- Chrysanthemum leucanthemum

- Lupins: blue, purple, white

- Ageratum plantagineus

- Veronica spicata

- Plantago lanceolata

- Fragaria virginiana

- Veratrum viride

- Berberis vulgaris

- Evergreen fern

- Asplenium platyrrhynchos

- Polypodium acrostichoides

- Polygala vulgaris

- Osmunda obtusa

- Oenothera biennis

- Chrysanthemum leucanthemum

- Achillea millefolium

- Ageratum plantagineus

- Veronica spicata

- Plantago lanceolata

- Fragaria virginiana

- Veratrum viride

- Berberis vulgaris
Dec. 3 - Baltimore Parkway
Just before College Park Exit
Photos of Linum virginicum

2.5 mi. before Beltsville Exit
Photos of mixed deciduous woods with Acer rubrum,
Liquidambar, oaks, "cherry".
6 mi. before Beltsville Exit
Photos of stream-bottom
land forest.

Just beyond first Laurel Park exit: Photos of Betula nigra

Dec. 9 - near locomotive state
Forest - Renata Farm
Harvested soy bean fields
abundant deer tracks.
Deciduous second growth.
Largely Liquidambar, up
to 15 m. dbh, about 2 m.
sapling, 15-22 m. tall.
much similar.
Eucalyptus cicutarium
abundant in cleared field.

Abandoned grey farm sandy
farm soil.

Along edge of field
is a single row of Linum
seeds, then deciduous

Just east of corn
a patch of pine trees.

Varia: virginica (?) abundant
at edge of field under trees,
less common back in
second growth.

Similar: very abundant
in undergrowth. Much of
it bitter. At 74 dm.
Magnolia virginiana. "Ches.
areas common in undergrowth.

This is very thin second
growth with much
Quercus alba, scattered


Miscellaneous: Scattered
furnace gases, a little Fagus grandifolia.
Abundant Gaultheria in
ground. Some tree trunks
here has been logged not
too long ago.
her Salix alba
mostly Rhizophila in
the low areas, these low
spots vegetation even
away from streams.
Asmundo regalis.

Vegetation abundant,
forming an understory
up to 2-3 m. tall.
Few trees in swamp
areas have characteristic
swollen base, small
Taxodium common locally
in swamps from Queen
Mountains.

Large area of shrub
swamps with Alnus, Myrica,
Rosa, Malvastrum, Chamaenerion
with small Liquidambar Taxodium mixed.

Quilt a few Taxodium
about 25 m. tall, 3 dm. thick
with enlarged plates base,
abundant knees around
edges this.
Considerable open wild
with sedges, Eriophorum

Adjacent in rather
more wooded swamp
with Alnus rubrum, Rhizophila,
to 25 m. tall, 15 m. thick
Taxodium, almost

dense understory of these
about 3-5 m. tall, many
Ligustrum and ace and
shrubbery from banks. Upon Rhizophila.
102  Maryland

Large area of shrub swamp, with Alnus, Myrica, Carya, and Salix, (Alnus most abundant)

Quite a few Taxodium at about 25 m. tall, 3dm. thick, with enlarged plates, on the abundant twigs around edge of this.

Considerable open water, with sedge, Ludwigia

Adjacent is a rather more wooded swamp, with Acer rubrum, red maple to 25-30 m., 15 m. thick

Taxodium, almost

103  Worcester C.

No undergrowth, broad flat swamps, with dry grass and purple, occasional small, smaller thicket, from here to here.

Flattened, leaving thin dense root platform standing on edge.

Water flows through broad shallow pools and small shallow channels between hummocks and root platform. Channels have a braided appearance, with steep sides and abundant algae on some of these channels.

Channels marked by black wet leaves against tannin dead leaves and gray of hummocks.

Campfire here is almost complete but perhaps thin, trace of 3 to 5 m. Yet there occasional in this swamp bed, only tiny saplings, 0.5 m. tall or less.

On surrounding slightly higher ground there is a dense understory of Taxodium about 3-5 m. tall among Liquidambar and Acer, and scattered Pinus banksia.
1902 Maryland

Toward the fields (p. 104) this becomes less
and less hummocky, the wet ground covered
by thin grass.

A broad flat level, perhaps an old walled
cut, straight across this, turned near one
on slope and on. There was much tangled
undergrowth. Level interrupted by a deep black
swamp, 8-10 acres, connecting the swamps on both sides.

55 or 60 acres for sale,
belonging to William K. Denton,
Box 104 At #2, New Hill, Md.
(Ph. Hennard 734-102)

A few acres of it are in cultivation,
A few acres are fairly good
loblolly pine, part of the rest.
On the higher part, is lobby
over, the larger trees removed.
The larger part is swamp
which has no very large
trees, but shows no signs
of recent logging. The swamp
probably yields at least
half the average, it went
$1000 for everything but the house.

Most of the land
that is above the water, tells
has considerable small
ostendipoallas in the under
growth. The Live Oak
is dominant understory
tree.
Dec. 9 - east of Snow Hill, just outside Holimont State Forest. Equisetum obliquum common very locally in Pinus taeda forest on low sandy soil.

spreading by underground rhizomes.
1962 Virginia

Dec. 15 - about 7 mile north of Culpeper on Rt.
and between this and Culpeper are excellent
examples of fence rows
of Parthenium virgínianum
in all stages of development
from a free tiny seedling
to dense rows 20 ft. tall.
Parthenium shows no

1963 Virginia - Fairfax Co. 109

tendency to invade fields
where they are not culti-

vated, e.g., where they
are dominated by Andropogon.
Hence they are found in
pastures and not in
cultivated fields. This

prominence in fence rows
may be due to a combination
of the fact that seeds are
dropped here by birds
settling on the fence and
the fact that they are
not eliminated so effectively
from fence rows by cultivation.

Jan. 4 Sleepy Hollow.

7, 8 of Falls Church
fruit (empty head) of
Liquidambar have fallen
in some quantity on the
snow. Considerable wind
last night. Many still
on trees.

Jan. 6 Sleepy Hollow.

Many Liquidambar
fruit, still on trees.
(3 photos.)
Ivy Neck
Mrs. Nancy Manly
died. Will leaves life interest to Adelaide Callahan and a remainder to
Smithsonian Institution
for a wildlife sanctuary
at her death. Can't tell equitable trust.
Journey 300-400 acres
was left to Smithsonian
without strings.
Property not made needful

Journey has an area of
really fine old forest
such as along the road
and on the Point at
end of road.
Other patches in various
stages of succession.
Jan. 20 - Terre de Fontainebleau in open scrub forest of Betula alba with Calluna vulgaris dominant in shrub layer.

433-99 Calluna vulgaris dominant in shrub layer

400 Erica cinerea occasional

401 Hyaecrithrus lanuginosus common in scrubs

482 Betula alba var. dominant

462 Betula alba var. dominant

A considerable area on the sandstone terrace normally covered by lime, sophisteria, has a pure stand of Betula in the tree layer, 4-6 m tall, 1-3 m. apart, so young that no trace of black roughness at base has appeared at base; a shrub layer 0.5-1 m. tall of Calluna, with much bare rock, with more large rocks and small pools are found.

In places Petriodendron replaces the Calluna.

Shrub 0.7 m. tall.

Dwarf shrub 0.2-0.5 m. tall.

Small tree 5 m. tall with white bark, dark scanes.

Small tree 6 m. tall with white bark, dark scanes.

In the pine forest around this is much broken larger Betula, here mostly slow black gummos at base.

In the deciduous forest zone is pure Fagus, some Tago and Quercus home areas have a conspicuous tall shrub layer of Illex aquifolius.

A large highway is cutting a terrible swale through this forest. The forestry dept. is said to have made a deal giving this up and buying food in west of Far.
Jan. 15 - Road from Fontainebleau to Bay are almost the whole distance. The trees are white with snow on their branches, very solid and thick, and ground has thin snow they now, but no ice on highway. The ice is not thick enough to break branches from trees.

Only to London at fog. Foggy, i.e., thick enough to cover top of treetops, including a great many of small shrubs, making a very thick screen. Over England with scattered trees. Little snow on branches, protruding from foggy fog.

Open, patches showing snow. Countryside, escarpment, etc.

London almost same appearance at foot of trees. Examined closely in a vertical fan of dendrites, branches, frost crystals, each series forming a cylinder 3–8 mm. long, 1–2 mm. thick, very closely and intricately branched, perhaps resembling paperdust, to wings and branching perpendicular.
Theodore Parkley
U. of Kansas - int. in Millen Vlg.

Dimitri Lucas Benjamin
B. Jard, Rie.
Rubiaea

Find out of Warming
Raga Lanta has ever
been translated into English
written.

Maria de Tijucas

Raven's Hollow

Warrenton, Virginia
PROVIDING an opportunity to return to our outdoor heritage is the purpose of Raven’s Hollow near Warrenton, Virginia. Raven’s Hollow, one hour from Washington, is a place where a man and his son can rediscover the pleasures of the outdoors.

Raven’s Hollow is dedicated to conservation, physical fitness, wildlife and to the relationship between father and son.

It is a place for those who are dedicated to maintaining a refuge for thought and participation in the pleasures of the outdoors can gather.

Raven’s Hollow was formed by persons who are vitally interested in the exchange of ideas and in the conservation of our American Heritage. It is a meeting place for those having these interests and those who have dedicated personal resources to the advancement of the Airlie Foundation.
Facilities

- Hunting in a six hundred acre game preserve
- Skeet
- Golf
- Riding
- Hiking
- Tennis
- Lake swimming, fishing and boating
- Overnight accommodations
- Excellent Food
- A rustic shooting lodge
- Films
- Lectures

Location

Raven's Hollow is located on Airlie Farm, four miles west of Warrenton, Virginia.

Information

For information write Raven's Hollow, Warrenton, Virginia or Call Warrenton 347-1300, area Code 703.
Warrenton Estate Becomes a Think Center

For The Thinking Man

AIRLIE House, the big, graceful think center near Warrenton, Va., has a serene pace that won't appeal to the average convention-goer. Nevertheless, its popularity is increasing, perhaps proving as its founders believe, that shops, bars, theaters and other convention city attractions have a serious competitor in tranquility.
Luxury Of Thought Is Airlie House Necessity

The nation’s capital, with its high concentrations of brain power, now has its own Think House, centered in a mountain-locked island of rural retreat outside Warrenton, Va.

There, isolated in 1200 acres of rolling pastureland, is a conference center designed to provide the atmosphere for clear thinking. It is called Airlie House, itself the brainchild of the Nation’s only dentist-physician-lawyer, Dr. Murdock Head.

Modeled in purpose after New York’s famed Arden House, it is no plush, rococo retreat. The facility is an assembly of Georgian manor houses, lodges and guest accommodations, redesigned to modern comforts, such as air conditioning and wall-to-wall carpeting. It is a working conference center away from the distractions of busy offices or ordinary convention assemblies.

At Airlie House someday, some of the world’s thorniest problems may be challenged for the “best interests of the public”—the founding phrase which sets it above and apart from swank, commercially operated resort hotels.

It has its horse country recreations—riding, hunting, fishing, hiking, tennis and skeet shooting. But primarily it’s chief attractions are solitude, service and serenity for thinking men and women concerned with the public’s problems.

Here big wheels and little cogs can be brought together. Participants talk, and listen to each other, and ponder. They agree and they disagree, and they carry their impressions, their sometimes changed and sometimes reinforced ideas back home with them. It's something like old-time town meetings, or discussions around the pot-bellied stove in the country store, revived and modernized.

Such isolation and total submergence in the subject matter can spell the difference between an effective conference and an ineffective junket.

Airlie House, named for a Scottish Lord, is operated by Airlie Foundation, a nonprofit organization chartered by the Commonwealth of Virginia. Its proximity to Washington makes it readily available to Congress, government agencies, research and educational centers and industry without the problems of excessive expense or travel time loss.

Its rates vary with the type of conference, the number of participants, and the services required. In general, they have ranged from $20 to $25 a day for each participant, a charge comparable to convention headquarters hotels in major metropolitan areas of the United States.

One recent conference at Airlie House attracted more than 100 leaders of industry, education, armed forces and the government. This was the third annual Strategy for Peace Conference, whose previous conferences were at Arden House.

The conferences discussed such things as the interrelationships of military strategy, technology and arms control; disarmament and military stockpile inspections and control; the economic aspects of disarmament; changing emphasis in the United Nations, and the economic and social development of emerging nations. Previously, Airlie House had accommodated sessions of the American Religious Heritage Society.

Conference subjects may be as broad as the world has problems. Any group with a serious problem of public interest to discuss is eligible to stage a gathering at Airlie House.

The organizations which sponsor conferences there pay the costs. Some pass these costs on to the participants, some bear part of the costs out of their treasuries. The founders of Airlie House are seeking funds to sponsor or help sponsor worthy conferences which may never otherwise be held for lack of leadership and funds.

The food is good, and ample, and usually served cafeteria or buffet style. Millionaires may be used to higher luxuries and services than can be made available at present charges, but unless such demands become important, the facility will continue on its present course, says Dr. Head.

Dr. Head is the three-letter man of the professions. He earned a dental degree, and when he found that barred him from certain surgeries, he entered medical school and won his M.D. Then he found that dentists and physicians needed legal help, so he studied law and won a degree in that profession.

Now chairman of the Institute of Forensic Medicine at George Washington University, he is content that his branchchild, Airlie House, is here to stay. The money he and his influential friends raised to set it up and get it going, he said, is a good investment for the Nation.

He’s going to develop other interests, like medical research in the special clinic on the Airlie Farms estate, and television programming and the making of documentary films.

By Nate Haseltine
Staff Reporter

Serenity and Service for Thought

Serena Is Airlie House Necessity

Above, two delegates to a Strategy for Peace Conference at Airlie House meditate during a morning stroll.
Accommodations at Airlie House range from a 65-man dormitory to more luxurious surroundings such as this room being shown to Mrs. John Marvin by John Bordelon, administrator of Airlie House foundation.

Gen. J. Lawton Collins (USA, ret.) and the Rev. E. A. Conway, Director, Creighton University Center for Peace Research, discuss important point.

The possibility of producing a documentary film series at Airlie House is the topic of debate by TV lecturer Albert Burke and Dr. Murdock Head.

Arthur N. Holcombe, Chairman, Commission to Study the Organization of Peace, reads a report.
President Kennedy's official recognition of the need for preserving open spaces in the Washington area could not have come at a more opportune moment in the view of suburban planners in Maryland and Virginia.

It came at a time when county and federal plans for preserving large tracts of farms and woodlands are being presented publicly in the growing suburban counties on both sides of the Potomac.

In a stationery Wednesday, the councilor concerned with developing the National Capital Region, the President declared:

"It shall be the policy of the Federal Reserve Bank in the interest of the National Real for open spaces, including..." park, woods, and scenic resources."

Open spaces are essential to the council development because they would separate the extensive areas of high. Both rural and urban planned to stretch out through the countryside.

The need of keeping these areas open is clear, the councilor pointed out, and to keep them open is the biggest problem for the council itself.

But on both sides of the Potomac, the councilors believe that open spaces are essential to the development of the region.

"Thank heavens he came out with such a statement," said Palm Hays, Master Planner Ross.

"It was just the keynote of our own little statement, but it is certainly timely."

The councilor for open spaces, Wednesday, released his version of a council statement applied to local conditions and next week will release another statement for preserving open spaces.

In Maryland, the President's statement is expected to emphasize the importance of the open space concept.

Its programs include purchasing of parcels, zoning control, and establishing park and recreation policies which encourage the acquisition and maintenance of open spaces.

In Fairfax and on the Maryland-National Capital Park and Planning Commission, are offering similar methods for the open space concept.

When purchasing with enormous areas involved, outright purchase of open spaces is the only small part of the job.

This is particularly true when the traditional source of the nearby acquisition of the National Capital Grant Act, has shirked up.

A two-million-dollar assist from the Urban Renewal Administration is in the works, but Maryland is more likely to look to federal land purchase programs to take large tracts.

It is hoped that 4,000 acres will be acquired under the present program and that more Federal money will be forthcoming next year.

Fairfax County will be asked to buy up 27,000 acres in a long-range program, starting with the remainder of a 4,000-acre section.

Zoning — By limiting development to scattered lots through zoning laws, the counties can hold off new-construction developments simultaneously.

Montgomery County has rejected, for the time being, the most extreme but has made moves toward zoning many urban areas. The Prince Georges minimum is 20,000 acres, but the new zoning categories will be proposed next year.

Fairfax County's two-acre zones were overruled in the courts, but the zones that are indiscriminately applied to the most developed sections of the County. The new open spaces plan will propose two-acre restrictions according to a carefully designed over-all county zoning plan.

Taxes — To help farmers who are planning to submit a sure of raising land values, Maryland's property tax law offers tax assessments on large tracts to encourage new zoning schemes will be proposed in the County. The new zoning categories will be approved to protect speculators and land developers and will give the taxpayers advantages of the tax privilege.

Fairfax County planners will also plan the land with built protection against over-development.

Remumont — The Virginia and Maryland planners will encourage the purchase of land and scenic easements of strategically placed open spaces. The landowner will be paid for its property undeveloped in as long as the easements are in force.

In effect, the public buys a stake in the land for the difference between what the owner wants to sell it for and what it is worth with and without the restrictions.

In all three suburban counties, the planners want to move fast because several housing developments would conflict severely with the council plan.

In Prince Georges, the P&Z is seeking zoning for 25,000 acres for large areas where premium values are the highest.

In Fairfax County, a two-acre zone in the P&Z is being considered for. In Prince Georges, the P&Z has recommended only a 200-acre zone for the county.

In Montgomery County, a three-acre zone is being considered for large areas between the new cities of Gaithersburg and Rockville.

This is the Washington Post

By William Chapman

Mail Source

Sunday, December 2, 1962
Theodore Banks
U. of Kansas - int. in Philoso veg.

Dimitri Lucas Benjamin
B. grad. Div.

Lubricus

Find out of Warning

Sagamanta has ever
been translated into English
forsten

Baron de Trijno