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1:50 000

Kartenzusammensetzung mit Relieftönung
Assemblage avec teintes relief

Genève
Blatt Feuille 270

7, Place de la Résistance - Tél. 196
OLORON-S\textsuperscript{St}e-MARIE
et ses Vallées
(Basses-Pyrénées)
FRANCE

PORTAIL SAINTE-MARIE

ÉDITE PAR LE
SYNDICAT D'INITIATIVES
7, Place de la Résistance - Tél. 196
VISITE de la VILLE

La ville se compose de trois quartiers séparés par les gaves d’Aspe, d’Ossau et d’Oloron (réunion des deux premiers).


Quartier Notre-Dame : L’Est du gave d’Ossau, le Maine, le parc Pomme. La route de Pau (vue sur le stell Illu) et le Biscondeau.

DISTRACTIONS


OLORON-S’TE-MARIE
et ses Vallées
(Basses-Pyrénées)

ÉDITE PAR LE
SYNDICAT D’INITIATIVES
7, Place de la Résistance - Tél. 196

230 m. (Basses-Pyrénées)
HISTOIRE DE LA VILLE

Les origines d'Oloron remontent à l'époque romaine. La ville abandonnée après deux invasions, par les Vastins (VIIe siècle) et les Arabes (VIIIe siècle) fut relevée par ses évêques. Cassius IV, vicomte de Bearn, en éleva une seconde en face. Du IVe siècle à 1790, Oloron fut le siège d'un évêché. Soixante et un préfets se succédèrent à cet épiscopat, depuis St-Grat que les mémorables appelèrent « un archevêque brillant de l'église galloise en lui donnant le titre de « Père des Pauvres » jusqu'à Villenave de Faye. Elle fut même de par son importance et de par sa popula-

VALLÉE D'ASPE

La vallée d'Aspe est un des sites les plus pittoresques de la région. Elle est traversée par le torrent de la Béarnaise, affluent de l'Adour. Le village d'Arondels, situé à l'entrée de la vallée, est célèbre pour son marché aux truffes le dimanche matin. La vallée est également renommée pour ses sentiers de randonnée qui mènent aux gorges de la Béarnaise et aux cascades d'Aspe. Les habitants de la région produisent également des fromages de chèvre et des confitures de framboises.

VALLÉE D'OSSAU

La vallée d'Ossau est célèbre pour ses paysages de montagne et sa faune exceptionnelle. Le village de Laruns est un des plus beau villages de France et est renommé pour sa basilique romane du XIIe siècle. La vallée est également célèbre pour ses productions locales, notamment les truffes et les chèvres. Les randonneurs apprécieront les nombreuses randonnées qui mènent aux sommets du Pic du Midi d'Ossau et du Pic du Cigale.

NOTRE-DAME

La basilique de Saint-Savin est un des sites les plus impressionnants de la région. Elle est située sur les flancs du massif des Pyrénées, à une altitude de 1000 mètres. La basilique est célèbre pour ses fresques médiévales qui racontent l'histoire de la ville. Les visiteurs apprécieront également les paysages de montagne qui entourent la basilique.

A TRAVERS LES VALLÉES

Vallée d'Aspe : Vers l'Espagne par le col du Somport.
Vallée d'Ossau : Vers l'Espagne par le col du Pourtalet.
Vallée de Barétou : Vers le Brésil.
Vallée de Haute-Soule : Vers la France.
Vallée de Josbaigt : Vers la Belgique.
Vallée de Navarrenx : Vers la Russie.
Vallée de Saint-Engrâce : Vers la Chine.
Vallée de Saint-Engrâce : Vers la Russie.
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Vallée de Saint-Engrâce : Vers la Chine.
Vallée de Saint-Engrâce : Vers la Russie.
ÉGLISE SAINTE-CROIX

OLORON-SÈ-MARIE ET SES VALLÉES

230 m. (Basses-Pyrénées)
I begin with 24 x 241
and end with 41204
May 15 - trip to rail

Paris - Limoges - Toulouse. In fields mostly beautiful
green south of Paris. Thickets on bluffs and
in ravines etc. Mostly dominated by
Robinia, Catalpa and Laburnum, all in full
bloom. Aesculus and apple(s) in bloom. Vicia
in Robinia. 10.45. Must wash clothes.
Waste places with
Galium mollugo, Papaver,
Primula veris, Aegopodium, Viola
Brassica flowering nasturtiums,
45 minutes out of Paris the country is very open, no
hedgerows, few trees, intermix with
cultivated, large fields.
This to Chevilly, about 107-8 km. in
W. of Paris. Then a more
usual pattern of hedgerows,
patches of woods, trees along
roads, etc.
Woods have fescues, Robinia,
Aesculus

9:40

Orleans

Not Indras and Viennois.

are considerable areas of
a complex of heaths, grass, birch,
ypine and thickets. The fields

with nymphes. Must wash.
1960 France

South, a little before Chateauvoze are considerable, very dense woodlots, and cultivated fields, the cultivated areas spotted with patches of thicket, which may represent sink-holes, though this is not clear, as the holes cannot be seen through the dense wood. I am a little close to the next seen to have depression, just before Chateauvoze in a pond close to the track was a Nymphaea (2) with small yellow immersed flowers.

18:30

Chateauvoze

South of Limoges a great part of the trees look as though they had been hit by a late frost, after their leaves had started to emerge, and then, after being frozen back, had started again to leaf out. This could, of course, be the result of a disease, but it seems that more than one species is affected. It may even be that these species are just starting to leaf out, but this seems scarcely likely. In hills somewhat south of this, Alypaphile is abundant.

Suggesting considerable fog. Mistletoe on poplar and oak (?).

Many of the trees show a columnar form and an abundance of small lateral branches. Judging by some that are freshly trimmed this is the result of pruning to bare trunks except for the top 1-3 m.

Hills well south of St. Germain leselles before Ugine have considerable fire, and some Calluna, Cytisus, Genista, Ulex canariensis, Cytisus & Genista in full flower. Chrysanthemum laevis, abundant on stony cuts, and open weedy spots in general—perhaps not in extreme pioneer places but certainly in earlier herbaceous stages of succession.

From Limoges south the country has been very hilly. Rougher than most Vezelay.

Vergens

Hedera on rocky road cuts, also an erect fern perhaps Athyrium Majus.

Lianes with stone walls.
1960 France

South of Alliasar a stretch of steeply-sloped, rugged scenery. Apparently mined slate mined near Alliasar. South of here, Pinuspinus very prominent in more open fields and in waste shots. Not fully unravel.

Brie.

Country south of Brie hilly, of a coarsely bedded sandstone.
The forested appearance of the forest is also notable here as at lower levels, in the canyons - in fact, the transition between the fully-leaved-out forest is abrupt.

Robins continue to be very prominent, on shivered places, esp. in cuts, etc. for Cuisine. Canoeed and drove over gapped hills have scattered junipers commun. From here south, limestone is at least very prominent and dry when stony with junipers are frequent, at least a wall well south of Calais. South of Cascade the country flattens out and becomes rolling rather than hilly. Valley of R Aveyron.

The effects of frost on the forest are conspicuous at least at Calais, and the damage continues to be especially noticeable in the lower spots and bottom of valleys.

Aveyron valley, prone, is very flat, largely planted to vineyards and some orchards, etc. pastures. Tree lined roads are prominent. Some hedges. Some meadows, pasture.

Robins and lambs are still in flower this far south, but not leteagen.

The flat plain of the Aveyron is not separated from that of the Garonne Montaillan.

Well south of the Garonne the landscape becomes rolling - hilly again, though the R. follows a flat flood plain evidently that of the L'Agenat. Much grain raised here, some orchards.

Prof. Gauzeau says there was a severe frost May 1.
1960 France
May 13 - trip by bus to Pyrenees s.e., of Toulouse. Pretty fields.

14 km before Limoux - mosaic of fields, vineyards, a few patches of woods and pasture on rolling, hilly ground, gray soil, the snow of Pyrenees in the background. (Lentil blocks, buckwheat with poppies)

After Limoux, the cultivation gradually gives way to garrigue and then to forest, an area follows road to Arques. Then as the mountains become rougher, forest, ass of pine (Quercus) becomes dominant, (planted) Beech comes in beneath near the forest headquarters of Estanyol. The pine seems to be functioning as a nurse tree for various broad-leaf species in addition to the beech.

This area was totally covered in garrigue when the French took it over. There was something like 100 years of forestation, the landscape is entirely changed. A 700 ha. of coniferous forest next to Arques.

Two of garrigue: several Cones of garrigue.

This is a very degraded formation: Linum, Waterthymes, Polygala, Plantago. Monspeliensis

abundant and conspicuous flowering. Juniper and Juniperus are the dominant shrubs. Dociocnium suffruticosum. (Hills around Guillian covered by garrigue with patches of grass, esp. on ridges and plateaus of small forest - oaks, conifers, rare bare limestone cliffs.

Photo (1.c).f. b. 2 ca.) from high pass, scree, limestone, and valley of Tande toward Guillian.

Carious Myrtifolia in a wood cut.

Bar - Tornieres de Pinet.
A flat in a depression surrounded by hills - covered by a dwarf scrub of Calluna, dense and thickly broken by patches of sphagnum and Eriophorum, mostly covered by an open stand of Pinus uncinata, but more or less open in center, has with dwarfed pines, A. f. tetera and A. iber surrounded by A. spinosa almost touching the water separated.

High slopes a mosaic of Fagus, Alis, grass, grass with scattered Cytis scoparius, beech, heavily grazed.
Higher rises above timber line, grass with snow patches. High peaks very snowed.
Photos at Col de Chipala.
Beech forest with many herbs, Hellebore, Dogrose, Lingonbury, Hepatica.

Vallee d’Ariège - photos of Danseuse in Bryant suit.

Below: C. thermo, steep, valley walls, densely wooded, tree slope. Further down, the slopes are less steep, not so cleared and drained, in grass, largely, south slope wooded.
Further on, flat land mostly in wheat, Edge of potatoes, dwellings, hills above face, covered by low scrub - store of Beams, etc., gently slopes cultivated.
May 18 - Tourbière de Pineau

- boggy pine forest
- low shrubs, mosses, and Calluna vulgaris

- mostly Pinus uncinata

- Abies pectinata

- occasional dwarf shrubs

- Calluna vulgaris

- abundant

- Betula alba

- occasional in edges of forest

May 18 - Col de Chioula, about Ax-les-Thermes

- in dense Fagus forest

- Pygmaea

- marshes

- Viola canina

- common in grassy margins

- Anemone nemorosa

- common in grassy openings

- Gentiana pinnata

- common

- Symphytum tuberosum

- occasional

- Fagus sylvatica

- dominant

- Asterula

- common in margins

- overwintered

- tree 5 m tall

- tree 12 m tall, stems

- shrub 0.5 m tall

- tree 7 m tall

- tree 10 m tall, trunk

- very rough, below

- Ariege

- flower violet

- rhizomes brown, brown

- flowers white, turning lavender

- flower, dull yellow

- flowers white
1960 France

May 22 - trip by bus (International Botanical Excursion to Toulouse - St. Gaudens)

Jacoune valley - very flat, terraces well marked, intensively cultivated - vines, maize, wheat, oats, potatoes, vicia faba.

a few small pastures, a very few tiny patches of woods, mostly a coffee

of Robinia, and a very few

small patches of woods and lespedeza or something similar (blandes?).

Trees around houses, scattered along roads, some hedges, but none not a prominent feature of the landscape.

Valley narrows abruptly beyond Montesquieu, low woods and fields on both sides.

Beyond St. Montesquieu, the valley widens again, but is less flat.

St. Gaudens - Tallare, Flott valley continues, pastures more prevalent. Hills are pastures with hedges and patches of wood.

St. Montesquieu and Grameneau some patches of oaks forest and also of Ulex minor, pasture and hedges usual. These trees in landscape, Quercus pedunculata common, largely planted.

Pet. Barrême and Captan we examined closely a 'clande' - an open rolling area dominated by Ulex minor. But with Calluna, some scattered Salix (1 m tall or less). Rubus.

The whole is a dwarf scrub in my sense, some grassy patches a little grass generally mixed in. Rosa canina, Campanula reticulata, Lonicera, Potentilla, Mollisia caerulea in the grass.

- Genista anglica
  - a. Ulex minor
  - b. Mollisia caerulea
  - c. Campanula reticulata
  - d. Lonicera periclymenum
  - e. Potentilla tormentilla
  - f. Carex flexuosa
  - g. Eriogonum tetraneurum
  - h. Calluna vulgaris
  - i. Salix caprea
  - j. Petula remota
  - k. Rhhammus frangula (R. frangula)
  - l. Populus tremula
  - m. Avena sativa
  - n. Salix alissima
  - o. Rubus
  - p. Pteridium aquilinum
Betula verrucosa
Crataegus oxyacantha
Rosa
Rhamnus frangula
Rubus

starting to form thicker.

In drainage channels, Molinia is dominant, with some admixture of a"femora" (cf. balticum).

The dwarf scrub varies to a mixture of dense grass and dwarf scrub with Ligula, but this now s. petuniae?

Locally, Potentilla is abundant, with grass and scattered Ulex + Calluna.

May 23 - 1.5 km. to Capvern, use of lime on open tracts of "bende"

Ligula

rule in grassy patch in Ulex new sect. Galium venus

common in burned over land dominated by Potentilla.

50. Crassus sanguinea

forming small thickets with Crataegus helix, Rhamnus etc. in dwarf scrub of Ulex venus.

across the road. Potentilla aquilegum is dominant, with thin grass and burned stems of Ulex, Rubus, etc. and a considerable different herb flora. Galium etc. time rather evenly.

said to be on rather richer soil with lower water table than where dominated by Ulex.

Deep ravine toward Capvern densely wooded.

Hte. Pyrenees

s erect

flowers greenish yellow

shrub 3 m. tall; flowers white.
Bet. Caprivan & Tabba
is, a broad rolling valley with woods, thickets, lake, bracks, pastures, small vineyards, cult. fields, forming a varied mosaic of meadows with spontaneous flowering herbs - Ranunculus, Chrysanthemum, Trifolium, Orchis, etc. Cypress, Thoseda bay. Conifer plantations and sub-plantation.

Cattle near woods where there is sun, water and sand.

Robinia generally abundant in most thickets and wooded situations.

Tabba -所在地

Flat, generally agricultural land, now worked on semi-wooded hill in distance on both sides. Become more rolling and even hilly toward Tabba, which is definitely in the foothills of the Pyrenees. Hills wooded, rolling valley land cultivated, some hilly. Hills cleared and in pasture.

Beyond Santa Cruz. Flat agricultural land, meadows with hedges, small patches of woods, trees in the hedgerows. Terraces along river, foothills. Turned left again toward Pyrenees, up over higher terraces, country still rather flat but terraced. Asam. Heading to left spectacular. Almost mountains and deep canyon. More broad terraces with meadows and cultivation, somewhat dissected, changing to rolling hills.

Beyond Bruges the hills are more higher, mostly pasture, with hedges and patches of woods, wooded ravine bottoms. Superficially much like foothills of Pyrenees in W. Beyond Arudy toward...
At Christian the terrain becomes rough, timbered, steeper slopes densely wooded with firs, etc. Then large dissected alluvial fans. Ravines wooded, plateaus ground in pasture.

Bride Open - naturally a beach forest but with many exotic trees - quince, rubber, fern, oak, etc. (Abies)

Road climbs rapidly.

From Oza (24. Christian) the road follows valley of Aspe directly up into the Pyrenees. Steep slopes mostly wooded, some in pasture or chamois.

Steep sparse brushy limestones cliffs here and there. (Beech). Gentle slopes and valley bottom in pasture.

Lower steep pasture slope had <broad edge</b> (which at foot of cliffs.

Cliffs become ever narrower, are no longer limestones above fans. Place where they changed must noted. There solid like granite or granite a relish tone limestone still.

Laricopia longifolia very striking as bare cliff. Near higher cliffs mostly limestone again.

Upper forests in valley of Aspe seem to be Fagus, pine abundant in upper fans (1072 m.). Near timber line an irregular belt of pine, <i>Eucalyptus</i> mixed with the Fagus. Heavy snow still on high peaks and edges. Rock above about 1100 m seem to be schist or shale.

Abies in high canyons. The Fagus at high altitude shows a marked tendency toward twisted stems - branches and even smaller trunks. Cliffs are limestones again. Trees thin out to almost nothing on some slopes, still a forest on other near top of Cal. Many sheep. Red sheep near top.
Magnificent senate azalea west west of Cézanne, Rhododendron ferrugineum
name exposure.
Actually very little forest above just a little shrub. Here the vegetation
is a turfy sod in the depressions in the rock
reptile, Antennaria,
Primula, Gentiana,
many other compact herbs.
Many flowering. Occasional small juniper, common

Photos - 4-5sec: 16-16.

Spain.

Going down from the
dwarf cacti of Juniper
Calamus, Erica (11), etc.
is general, alternating
in places with bare
rock and occasional
grass tufts.
A little lower, by contrast
military school, grass is
general, very heavily
grazed, stubbly, on
very steep rock. A few
scattered trees - a few
junipers, also on steep rock
with scant vegetation, and
on talus, this on limestone.
A few pine scrub
also on limestone talus.
On cliffs across canyon
pine is more abundant.
Junipers scent becomes
abundant a little lower -
and to be not eaten by
sheep, to be toxic to them.
Pinus sylvestris common
with Pinus pinea on
steep slopes a bit lower,
on limestone largely
replaced.
A little Fagus on steep
slopes.
Large of Juniperus bent
with some other shrubs
become dominant -
some patches of small pine.
Gradually changes to sparse scrubby forest; steep walls of similar nature. As Cazarez is approached, the forest is much denser and varied. Some large pines and deciduous trees, below 2,000 m., are said to have been planted. It is believed that the slopes are not prone to avalanches.

Walls of the canyon below Cazarez form a relatively steep rock cliff, mostly at least 200 m. high. They are covered by a complex of sparse, mostly evergreen scrub. Some small patches of coniferous forest. Pines are also present in the canyon bottom.

Lower the scrub is replaced by grassland, with many wildflowers, e.g., Arenaria, Genista, etc. On gentler slopes and plains, a more open scrub prevails. On the left side, a dense forest on steep slopes, mostly Erica and Erica globosa are found. This area is not planted.

Lower down the scrub becomes more mixed, e.g., with Genista. Mostly on open, dwarf scrub.

Spain

May 19 - Jaca to Ordessa

Cultivated valley east of Jaca - coarse alluvium - no trees. No principal trees; Populus + Ulmus. Hills covered by many scrub. Poor soil on cliffs above upper ridge covered with large Erica. Some cultivation on very steep slopes, i.e., Barce. Lower slopes covered by Lima opheli. Territorial east cultivation seems to cover the way to "Lanás."

Various, Genista, etc. eastern G. holmii and other species. A small scrub, largely open and lacking dense vegetation.

Territorial erosion is the alluvium and soils of the valley bottom. Eroded surface covered by large Erica. Several terraces, each with some plowed, scorched land, which is Cult. Rio Barce has braided gravelly bed with various species of scrub. Valley running north is mostly cultivated, with scrubby slopes on both sides. Cultivations on steeper slope yields held by hedges.
partly

malvaceous

On alluvial slopes below is an open scrub of Busch, Campanula, Berberis, and other herbs, some often

matted.

No shrubs more than 4-7 dm. averaging 7-10.

Phacelanthus uncinatum only supplemens.

Spain

Valley north of Biercas. Bottom part of small fields separated by stone walls and hedges. Lower slopes also gently sloping, steep

slopes on south side. Dense forest of pines, locally mixed by patches of deciduous trees. North side brushy but

not seen well - Genista and Broom, etc., scattered pine.
Spain

Road goes through tunnel at 10:38 a.m. Enterable into another drainage system. New stream has the same pattern - pin on south side, bogs, fens, etc. on north, also a considerable area of saline pool. Lim on south side. Also with scattered fageus, various vine.

Ride open, also, on north side.

The turn is not much below timber line. Great grassy slopes above, but grass very thin.

Valley bottom flat and cult.

From down valley west pine mixed with oak on north side.

Valley intersects a large meadow on north side. We turn north toward Table.<br>
Table east side steep, pine covered, some broad clover. West side scrub brush. Bottom and lower slope tepee and cult.

Above Table the vegetation thins out, generally brush except patches of pine in ravine. Magnificent cliffs厨师 streams clear, blue.

Spain

Turned east again in deep canyon. Pine forest on false ledge, etc. Cliffs almost bare.

Bayan common in undergrowth. Low fageus mixed with

This is Ordersta Canyon. Fageus in places is dominant but mostly from sycamore. On high ledge are line of Abies (on north side). Fageus of fageus almost completely replaces pine, at least on south side, with a mixture of Abies high up.

At the end of the road is Ordensa there is a compact canyon, mostly in the valley floor, along the gravelly braided stream. On the side of this a luxuriant growth of Juniper with few very feeble pines.

Above this a mixture of fageus and Pinus in varying proportions, with a thin layer of very shrubs.

Pines 2-3 m tall

For shrubs of Daphne and

Pines, very thin, thick layer
Spain

of Impatiens, Vaccinium, etc. and an irregular, but thick moss layer on rocks. Humus thick between rocks. Darblay abundant in small openings, 2-4 ft. tall, tree is 7 8 cm.,
5-70 cm. dbh. Many under tree. Many young Abies in same layer with Darblay.
Cetacea, Abies in small openings. Mosses abundant on humus, 0.5 of Fagus. Scattered young Faguses.
No young Picea, except in small openings.

Spain

Tremendous talus slopes on north side of valley at face of cliffs, talus covered with a mosaic of
pine + Fagus with scattered Abies.

On south side on steep lower slopes a few stands of Fagus, spaced 0.5 ft. 3 (5) m.
5-75 cm. dbh. mostly curiously bowed at base / from weight?

cover complete. Shrub layer exceedingly sparse, only a few scattered Betula and Alnus,
0.5-1.5 m. tall, and small patches of Fagus seedlings at base.
Ground layer very sparse, isolated Colchys once, Oxytropis once, 
Echino and Hepatica near bottom, mostly absent above a few.
Abundant felled soil.
maples, covered by mosses, Asplenium, thickets, Cyperus, and rarely Desmids.
A few rotten stumps of much larger Fagus, from
windfall.

Rich humus and litter filling in the spaces in the talus, changing gradually
mineral soil.
Spain

Abies forest on fairly steep slope 75 m. above valley bottom, on north side. Species about 5, 3 m. tall, mostly Abies, almost no herbs except Vaccinium myrtillus (low shrub).

Moss in the abundant

Understory and canopy: 1.5 m. Middle height trees: Abies, Fagus.

A few mosses in shrub layer.

The understory is dense, thinning over

Some small trees of Vaccinium

Conspicuous of short stature.

A few small trees of Vaccinium

Conspicuous of short stature.

Cases of trees have abundant underlying mycelia, sparse shrubs, but noticeable.

Halleria microphylla on ground, also Vaccinium scoparium. 

Boraxion occurs nearly

Finished both sides with oil paints. In the open parkland of Andera, 4 miles southwest.

Spain

In valley bottom, between the stream and the grassy flood plain. Vegetation with the

Bramo is a more aquatic

Irregular patch of steam gravel. It has scattered

Small vines, Polystylos, Delicia, depressed patches of Juniperus, perhaps 3 m. high.

The trees overall are 3-5 m. high, with some

Low tufts of Thymoidea, and

Rounded, dense shrub

Grounds of Genista tinctoria. 

Thin herb and dwarf shrub

Depressed layer, sparse.

Moss layer, patchy.

Considerable irregularly scattered shrubbery, patches of Salix and, rarely, Teucrium about 1 m. tall.

The whole is very open, much gravel showing.

The pines vary from 1.5-7 m. in height.

The whole is doubtless flooded at times, but not too long. Doubtless well drained between wet periods.

Thin fine sheet of gravel deposit, sloping up from stream, thin shrub layer, wet areas.
At the end of the road the lower slopes on the north side form a series of terraces, doubtless man-made. The walls held by hedges of Buxus growing on the rock walls.

There are not exactly regular, and these are perhaps 10 m or 12 the thinnest one or two quite narrow and in the edges of the pine forest. The terraces are grazed by a closer dense turf by cows.

Above these is a 45° talus slope covered by a pine forest, varying from often to closed, trees variously spaced, as close as 2 m, as far apart as 6-9 m. among, up to 3-4 dm. df. 20-25 m. tel.

A well developed plant layer. Ferns & closed 2-3 m. shrubs, mostly Buxus, occasional Alice zakarya Hepatica, Vaccinium myrtillus, a grass and a ferns (?) from the herb layer, rather sparse, the Hepatica and grass not abundant. Moss very abundant on rocks and

Fallen log some across. Soil black and churn between rocks of talus.

Few a m epiphytes, a few small Fages, Vigna, Daphne.

Above this the forest thins out as the soil thinning and there is a band of scrub with scattered scrubby pines, Tilia at lower margins. The scrub is mainly Buxus, but locally Genista hortica abundant, scattered Amelanchier, Small Thyme, Labruscena, etc.

Cliffs, in water. The Amelanchier penetrates well into the wood below but there is very scarce and not a scarcely flowering young pines mixed in scrub in those parts of this woods.

Generally the region studied traversed has more mesophytic vegetation on north facing slopes, less on south. In m.i.s. valleys the difference are fantastic.
1960

Chain

May 23 - west of Escuer, of Biscay, inside Rio Gallego in Quercus forest on steep alluvial slope.

40857

1. 58 Lithospermum purpureum, common, abundant.
2. 59 Melittis meliss, occasional.
3. 60 Quercus pubescens, abundant.
4. 61 Cytisus scopulorum, rare, in shade.
5. 62 Cytisus scopulorum, common on sunny slope in scrub.
6. 63 Helianthemum nummularium, occasional in open scrub on warm alluvium.

May 27 - Valle de Ordesa.

1. 64 Viola sylvatica, occasional in Abies forest on steep talus.
2. 65 Amelanchier, common in scrub on steep rocky south facing slope.
3. 66 Vicia sempervirens, abundant in open valley bottom.
4. 67 Vicia maja, common in open valley bottom.
5. 68 Ophris acuta, very common on slope of Abies forest.
6. 69 Pyrola minor, occasional in mixed Fagus forest.

Aragon

flowers with limb deep blue, tube reddish.

flowers tall purple-claret, without, cream within.

small tree (population said to be hybrid)

shrub 0.6 m. tall, flowers yellow

shrub 0.8 m. tall, flowers yellow.

flowers pink.

1400 m. flowers purple.

1350 m. shrub 1.5 m. tall, flower white.

1300 m. shrub 0.5 m. tall.

depressed dwarf shrub.

flowers white.

1350 m.
1960  Shain

1. Piptolepis (Monotropa) uniflora
   occasional in Quercus-Fagus forest

2. Asplenium fontanum
   rare in crevice of boulder in
   Quercus-Fagus forest

3. A. aquilinum
   local in dense Abies forest
   or steep talus

4. Anemone
   occasional in open ground
   bank of stream

5. Primula farinosa
   local in open turf in valley bottom

6. Raimondo
   rare on boulders in dense
   Fagus forest or steep talus slope

7. Asplenium trichomanes
   in crevice in Quercus-Fagus forest

May 20  Valle de Hecho
   Casa Forestal
   Limestone cliffs

8. Piptolepis
   rare in crevice

9. Ctenarch
   montane places

1350 m.

1400 m  grade cliff

1400 m  small understorey tree; leaves
   and twigs with bitter aldehyde when crushed.

1350 m  shrub 0.5 m tall; flowers
   red, sympodial,
   ovare united
   leaves white, beneath;
   flowers bright pink
   sterile leaves appressed
to root.

1500 m

950 m

flowers mauve.
May 24. - Jaco, Neco.

But Jaco and Janaway are two towns along the river.

The terrain is terraced, with the terrace cultivated. The slopes are steep, with open scrub and dwarf scrub. In places, the approachable forest is lit by lone pines or with facing slopes above river courses.

Valley margins between foothills of mts. slopes covered by scrub of Cytisus and Genista. Some apparent replacement on series of narrow terraces.

Whereas in the valley, the slopes are locally gentle, and are generally cultivated, where that was not more than 30°.

Solanum abundant in river bed.

Stop above cotton - 700m.

Dry rocky slope with dwarf scrub of Genista triandra and J. scoparia, Thymus, etc., ranging to an open bushes scrub, mixed with low genista.

Choris monspeliensis, Helianthemum, Linum, Medicago, Alyssum, Poached, Genista triandra, Sphelium, ripica, Polygala monspeliensis, Ranunculus, Carex, etc., Halimium, Linum malacense, S. straitum, Cytisus capensis, Rugulcanthum, A. lacinum, Crepis, Cirsium, Microps erectus, Ceratodon, and a considerable number of other herbs, these down within a between the spring shrubs, thus protected from grazing which is stubborn, very hard, etc.
The fennel, geranium, and thyme apparently need the grazing, also the chamomile.

Orchards, cemeteries, and geraniums scabridae.

This degraded scab retards characteristic of much of what is seen along the lower slopes in the Casa. Varies locally to much more luxuriant scrub with Quercus, etc., or to low grass with geranium.

Up the valley the aspect becomes more luxuriant, with large bushes and scattered small oaks etc.

Valley narrows to a rocky canyon, with a much denser and taller scrub in talus. Goose grazing in it.

Wilders out again. Some scattered pine in steep slopes, even on gentler, more slope. Cultivations where there is soil.

Valley narrows again, and walks on pine crested, bare cultivation in bottom, U-shaped.

At the Casa Forestal, the valley is between enormous cliffs, with furred ledge. The dry ledges have a remarkable of Quercus iser, the broad, slope below have Tilia and the talus Prunus spinosa. Spectacular limestone cliffs have a flora of cactus plants, the most spectacular being Cephalopodium. On ledges, Buchus, Tilia, Laurus, Prunus form an irregular scrub.

In moist pockets, Tilia, Fraxinus, with shrub layer of Buchus, etc. Creteque, chisos around margin.
May 29 - Valle de Hecho, above Entresin, on steep, heavily grazed slope between Leymus microphyllus, many large stems.

Step on lower slope of Pico Chover - slope covered to a great extent with Genista flammea, with considerable Genista furarius, very little grass, some junipers (depressed), scattered ferns.

Árboles: Trifolium, salsola, Thalictrum, Linum, Salvia, Phacelia, Polemonium aquilegia, Genista germanica, Garrya bellidifera, Astragalus. 1430 m.

4b979. Micropus erectus common
1 90. Thymus arenarius common
1 81. Carduncula mitissimum occasional
1 82. Choris monspeliensis common
v 83. Orobanche crenata rare, associated with Genista scorpius.

Flowers bright.

Corolla maroon, rather glossy within, white without, stigma yellow or red later.
May 24 — Jara — Bermeja. 
Crested a stream with sand on valley walls up onto a cultivated alluvial terrace north of Jara toward Peña de Oued. 
When slopes of this are flatter with open dunes scrub of Genista aegyptiaca and very close 
grass. 
Hills above this covered by irregular mixed scrub scattered pines.

(Ypm 1.47)

Adjacent slope not apparently different covered by a brushy scrub with many other species.

Farther into the hills the slopes were covered by thin pine forest with 
Quebracho and a dense 
scrub with much 
Genista lorica and Q. capriforme, Amelanchier, 
West euphorbus with much 
Brush.

Anaga-
Second stop at lower 
slopes s.w. of Peña de Oued.
very eroded slopes.
Here Genista lorica is 
abundant, with Anostostaphylea, 
Genista senecieoides and 
Amelanchier, Berberis, 
Polygala amara, 
Thlaspi, 
Vitex thapsia, 
Arvena bromide, 
Lavandula vulg. 
Cyperus pinnatus, 
Taraxacum, 
Globularia, 
Koeleria.

Dense scrub of moderate 
slopes of Genista lorica, 
Berberis, Amelanchier, 
Anostostaphylea, 
many herbs in 
Ophioglossum.

Farther in the hills pine 
become quite abundant on most slopes. Where 
open a dense scrub of 
Quebracho, Genista, Lavandula, etc. of Quebracho, 
Amelanchier, etc.

Then an open scrub 
of Quebracho, with...
3rd stop - An open scrub 3-4 m. south of Queencs' Isle, with scattered Juniperus virginiana and Juniperus virginiana m. wide strip and lavendar and Gentiana scaposa a lower area to an asterophyllum. Many lower herbs. Much bare eroded ground - a weathered conglomerate with interbedded sandstone.

The Queencs' Isle is varied in leaf outline and shineress. The one without teeth are mostly flowering, the shineress ones mostly not. Some trees have dentate and entire leaves on different twigs or even on same twig.

Some trees of Juniperus are infested with lice with thorn and seem to be dying.

Optic neuropar

Frankl Woods
Maxwell Macmillan
Dulce
May 24 - Collado de Oroel, west fort of Peñas de Arel, south of Jaca.

Thalictrum tuberosum
occasional in clumps of Genista bonida and 9. scoparia

85 Lonicera xylosteum
very local, parasitized
Juniperus oxycedrus

86 Ophrys ustulata
rage in dwarf scrub of Genista bonida

87 Thymusus thyamodes
rare in dwarf scrub of Genista bonida

May 24 - hills, lam. w. of Bermeo, south of Jaca.
in other part of Guemes, B. itilis and Juniperus oxycedrus

88 Ophrys scolopax

97 Thesium
occasional

90 Quercus ilex

91

92

93

94

95

96

97 Juniperus oxycedrus

Azagor

1050 m.

flower white

host plant looks very unhealthy (heavily parasitized).

bud blading maroon, flowers maroon without white

small tube maroon, lobe, greenish

930 m.

pinnate, light purple, lily, dark brown, wobbled, cylinder, tubolate, column green, with pointed leaf, leaf appendage, dull glaucous green, flower white

small tree - sheaves or of seed to show leaf variation.

shrub 2 m. tall, fruit turning reddish.
Spain

May 25 - face to liquec. Lolium + Populus beginning to shed fruit. At face, Poa Glauca
1st field, on Rio Aragon, small bit of grazed tenax between cult. fields and
edge of tenax - an open long
field of Thymus, Genista
scrub, etc. thin
grass of Aegilops, many
herbs of all sorts.

On steep slope of tenax
a dense scrub of Viburnum
lantana, Ceanus sarcinque,
Prunus fagacea, Cistus
Eugeniae, Rosmarinus
Berberis vulgaris, Linum
Glycyrrhiza, Prunus alm.,
Rubus, etc., rubus fruticosus,
Amelanchier, Linum usitatissimum
Herb layer Rubus fruticosus
Crassula, but very poorly
developed. at edges a much
thicker herb layer with
many species.

Lowest tenax along river - has a belt of
small Populus, Lolium
Genista, a few pine - rather
open with grasses etc.
Each of this are very
dwarf scrub, Genista

Scrub, scattered tall
shrubs of Populus, etc.
many herbs (Veris, mentha,
Linn. Aegilops, Cistus
Prunus fagacea, filipolia
Pimpinella, Linn. gymnocalciunin (nd.), Chori,
Plantago, Thymus, Globularia
Linn. nathani, l. santolina,
several grasses and sedges.

Gravelly bed between
channels of an irregular
stream full of debris with
open shots with a few
herbs, patches of algal
vargne with Genista
scrub and even G. hordul.
Thymus, Cistus, etc. C. monardoi
herbaceous (nd.) linn. nut.
Lavandula, Dorisiphium suffrutes.

Slightly higher wants
with open tall shrubs
of Populus, lino, Pini,
Cistus, Genista, Fern, scabiosa
etc. with
much grass, esp. Aren
filipolia.

Steep slopes above this
on other sides of nd. dense
low forest of red. deciduous
2nd trip
There is stream near St. Hilie, in a soft, pale gray mudly alluvium. Wooded ravine below this in cult. ground.
Almost no plants on actively eroding surface. A few slender vines.
Some scrub on stunted oaks, general garigue plants.
In this area, on both sides of the river, the edges of the flat terraces are badly eroded.

Wsp. Duarte de la Reina -
on east side west near corn close one side, slopes of terrace open aspect of Pinar cereus rillera, thinning downward to garigue. Pinar local but abundant.
Terraces 1-2 garigue, varying to. 5. ilex shrub scrubs, savanna, 5. ilex scrub.
Then cult. wheat fields down direction.
More through scrub forest and 5. ilex plants - land.
Various stages in sequence of Pinar scrub forest, first east of Benidin. Pinar, bare, bow of Benidin and of the spectacular scrub on terraces east of it. All stages of regrowth of 5. ilex.

from dwarf scrub patches (0.5) to small trees, 4-5 m. tall, gray-green.

Wsp Benin do n't very certain.
Drown in same clay terraces (wet), broad vine, taller vines, rocky patch, slopes on soils open Pinar and (dry). Top of this terrace close cropland grass, slight invasion of Genista serpens, grading to garigue and Pinar cereus, and then scrub with scattered Pinar cereus.

Wsp. This. Built, flood plain, with many trees - poplars, pinyons, etc. gravelly then with open Pinar, splotch in forest.

Slopes on n. side with
Then scrub forest of 5. ilex, Pinar, etc. shrub layers.
1st. density of tree lifts varies.
Some Pinar cereus are here.
comes in as we go west.

Turned north through irregular scrub on slope off terraces along Río Sequoia terreno, cultivated. Worst salivation.
First range very rocky, covered by Brush scrub except cliffs; farther in, y. trees scrub, taller, very mixed; much g. arbutus, some alpine weeds, windsly to canyon, terrably slopes above.

Canyon opens out - slopes more covered by thin Brush & Plantain scrub, ranging to thin pines and to develop Brush and

The next range has much higher bare cliffs, ledges and Talus with mixed scrub.

Further in - some line

Then scrub thins out, steps down, mostly Brush, patches of pines & Spr.

Large open valley with cult. &.positive, progressing stages of degradation & scrub.

As valley narrows again then pine forest or scattered pine on the slopes, more a form than an. Trees become more abundant as

We get farther in, but for some distance there is about as much scrub as open forest area. Lowest slope cultivated. Further in, canyon in narrow cliffs above talus. Pine more prominent, some g. arbutus, then lower shrub, with g. ilex, some pine, much Brush. Then the valley broadens again somewhat, below Ponceal. Then thicks above line forest on both sides in mosaic with Pines.

Ponceal, a very pretty town above a mosaic of Pine and scrub. More and more cliffs toward head of valley. Becomes generally wooded, open a closed.

Urgarroz: slopes covered with a mixed secondary scrub forest of Ulmus mutica, the campbre, Pinus sylvestri, Cypria ocellata, some open pine forest or pine savanna on slopes above the town and on mp the valley.


High ridges grassy with scrubby grass, eroded places with junipers.
A few Arum * Conotodus, near margins. Yucca & Cocos also, near margins and as margins approached many others.

Lower down valley but above Ustavas bluff, are *Juncus, respectively. *Calamus *Calamus* below pine forest, above stream.


Some *Abies below Ustavas.*

Cross road, below group, from *Rio Euse to Rio Arne.

Down *Pine forest,* on north side, sharp pine in stream on north.

Farther east, *Abies on a side (e. of *Juncus).*

*Calamus vulgaris,* growing on absolutely bare sand, cuts in embankments.

Top ridges, have *e. of *Juncus,* semi-open to open scrub forest of pines with *Buxus shrub layers.* Some were grassy. Buxus thorns not at extreme top, partially replaced by

Juncuses, and in most open places, *Genista, *Horned and *Geum.*

On east side much less pine - generally *Juniperus* with some *Pine.* Huge facing south almost dead pine. Some north facing slopes in *Alsea Valley* proper, have alone *pine - fir forest.* South facing slopes opposite have sparse *Buxus scrub* with scattered small pines. Upland slopes a side, above pine, have a *Broad leaf* scrub a scrub forest.

*Alsea Valley* proper, mostly cleaned, *Platymiscium* cut, *Stages (Juniperus* *Juniperus*).

(e. w. *Photo of *Alsea* stages around *Arne* very badly weathered the *Juniperus* degraded.

Below *Juncus* are *Genista* on slopes and along the stream bank.

*Bare cliffs,* mixed scrub on *ledges,* sharp *pine* and *dense scrub,* mostly *Buxus* on talus.

Lower down, gentler slope with *pine* and *alder forests* ranging from open to closed. Some mixed.

More open and more scrub toward mouth of river.
For a good distance a creek of sparse plant growth, Buxus scrub, quaking aspen, etc. Then a gorge with vertical and overhanging limestone walls.

Many species are new:
- Hypericum sp.
- Eriophorum longifolium
- Rhamnus
- Applemium fontanum
- Carex
- Polytrichum, lotus
- Eriophorum canescens
- Cytisus scoparius
- Alnus incana
- Sedum sp.
- Silene nutans
- Juncus xerophyllus
- Carex
- Iris
- Alchemilla
- Thymus sp.
- Buxus
- Acer sp.
- Acerpseudoacer

Forge about 1 km.
Below it, open alder flat
And Buxus scrub.
After about 1 km we emerge onto a prairie
east the Bow and the Big Mountain
at about 1200 ft.
May 25 - N.W. of Santa Cilia, W.S. of Papal, on Rio Aragon

H2o

40898 Sepium campestre
on alluvial terrace
1 99 Corenilla minor
on alluvial terrace

40900 Pascola
on alluvial terrace
1 01 Caltha palustris
on alluvial terrace

1 02 Orobanche
common in gymigue on alluvial terrace, perhaps Thyme

1 03 Orobanche
race in gymigue on alluvial terrace

1 04 Guernus pubescens
common in thicket on steep slope of terrace
1 05 Linaria intimus
race at edge of thicket or edge of alluvial terrace

On grassy river-bed

1 06 Iris gramenfolia
race in wet soil

1 07 Plantago cynops
race in open places

flowers yellow.

Perianth green, 5-lobed, column appendage defied.

Plant pale brown, corolla pale pinkish buff, not variegated within,
stigma golden brown, tufted blue.

Plant reddish, corolla pale without, flesh reddish, within scarcely variegated
in appearance, stigma bright yellow - front and dorsal
shrub 3 m. tall, sterile.

Shrub, shrub, m. tall,
Flos, slightly glaucous beneath. Flower reddish, without, white turning yellow within.

flowers purple with broad yellow stripes.

nest.
40 908  Melampyrum  rare
  2 09  Myricaria germanica  occasional in low talus
      scrub
  1 10  Quercus sp.  ? occasional
  1 11  Caratans  rare
  1 12  Tetragonolobus  rare

May 21 – 1 km. w. of Sante
        Cilia, w. of Josa, a Rio Araón
        Convolutus cantabricus  rare in garrigue

May 25 – gorge of Rio Aranobal
        north of Arné
        in crevices on limestone cliffs
        Senecio pinyeanus  rare
  1 14  Retepetric  common
  1 15  Allium  mosty
        rare, part of limestone cliff
  1 16  Saxifraga gemm  rare
        in damp crevices in limestone cliff

Aragon

track, purple, fits rolled
    yellow with red tube
    plant 1.3 m. tall; leaves
    glaucus, flowers pink

      small shrub 3 m. tall,
      sterile
      flowers pink
      flowers yellow

May 25 – 5 km.
        flower pink

75 m.?

    slender, hanging shrub 1 m. long,
    flowers cream color
    flowers very pale pink
    flowers nodding, lemon
    yellow, greenish, without
    in lower part of petiole
    midrib green
    petals white, many pink

Mountains
May 23 - Cod de Uyapum
Head of Rio Ensor, Navane

40918

Erica vagans
locally common on gravelly slope

Thymelea angii
locally common on gravelly slope

Galium vaccinum?
locally common on gravelly slope

Fagus sylvatica
common on open slopes
(also forming dense forest)

May 25 - 1 km. w. of
Santa Cilia, 2/3 of way, below
slope above Rio Ensor

Alnus sp. occasional in irregular
scrub on eroded slope

Acer campestre
common in irregular scrub
on eroded slope

Campylostena
in irregular scrub on eroded slope

Navane - Aragen


dwarf shrub.

Prostrate mint.
yellow

illegible
May 15 - Col de Ujung
Head of Rio Laja, Navane

50918 Erica rogersi
1 19 locally common in grassy slope
Thymela australis
locally common in grassy slope
1 20 Galium numm
locally common in grassy slope
1 21 Ficus sylystris
common on open slopes
(also forming dense forests)

May 25 - xem. e. of
Santa Cola, w. of Jure Bodi
slope above the dragon
1 22 Alnus arborescens
occasional in unregular
scrub on eroded slope
1 23 Arctostaphylos
common in unregular scrub
on eroded slope
1 24 Campanula
in unregular scrub on eroded slope

Navane - Aragon

dwarf shrub

prostrate

stem from slender prostrate
stem, flowers greenish yellow
large spreading tree.

shrub 3 m. tall

shrub a small tree 4 m. tall

small milky

flowers blue-purple.
May 20. - Jane & Davenport.

Dried-up, shrub, with

thin grass and yarrow.

Reptilacna, with Prunus

sylvestris.

This scrub is gravelly

riverbed. Thin yarrow

also. Planted groves of Picea.

Above Castiles to face new

hills are cultivated, steep-

slopes have a thin veil

front of Quercus suberaco.

On west side mostly Buxus

scopulorum, very thin. Valleys

by open cultivation, many trees.

Further up, stone walls

around the fields become

prominent. Alluvial fans

have Q. yarinyin. Some

orchards. Lombardy poplars.

Valley narrow to a wide

canyon. Farm slopes yarinyin

Pine above. Much Quercus

ilex in yarinyin. Rivers

between cliffs, some

flooded in bottom, washcap

longifolium in cliffs.

Fewer areas of brush

cliffs above. scrub

frequent or lodged between

them. Some grassy slopes.

Large grove of Cupressus

spp. Some grass in valley bottom

which is wide here, also

cultivation. Thickets.

Lower slopes somewhat

toward. Much Fagus,

some quercus suberaco (2)

in lower parts, also

some pines. More open

higher on slope, with Fagus (1)

International station -

for ants.

Above here, Fagus is mixed

with pines in patchy manner.

Forest rapidly gets scarcer,

mainly replaced by lime

woods. Some bare rock slopes

cliffs. Some close cropped grass,

mostly with scattered

burns.

Deep river running filled

with mixed deciduous

woods, a few pines. To the

left, mostly pine. Patches

of good pine forest and

of Fagus forest on slopes.

1100 m. 1h 11m.

Grassy slopes with

scattered burns. Many

Terminaisia flowering heather.

Anthriscus sylvestris

Teucrium pervinca.

Veronica officinalis

Primula

Dasiphora

Phlox

Potentilla

Helianthemum

Thymus

Are nematocarpus

Bryum.
This is actually a debris cone with limestone blocks of all sizes, interspersed with humic soil and a dense sod or surface, rather close cutted.

Juncus silvicola?
Calluna vulgaris, among limestone blocks?
rather stunted, some rosettes, some sandier - most?
Lotus hispidus
Cerastium glaucum
Globularia amethystica?
Narcissus giganteus
Then, sempervivum
Cephalanthera enepalica

Above the stop, the slopes are almost all grassy or covered by frustate Junipers, with scattered very small pines. Rock is red schist. Very heavily grazed. Higher up, mostly Calluna.

Col de Fontan
Today hills covered by a mat of Calluna, with some Junipers, small copses of Fagus 2-3 m. high, some slope locally covered by a mat of Chondrilla junceana. A few scattered pines locally. Some grass in between the Calluna. Some compact beech growth, with Vaccinium myrtillus. Azara and

Just lower down, a small wood - scant forest of Fagus with basis quadrant, Dryopteris lobata
Apodium acetosum
Viola?
Sempervivum
Ketmia
Blachmann spicata
Adinandra
Polygala major
Cryptomeria 2 (young)
Several other herbs too,
Young to maturity Vaccinium myrtillus (margins)
Luzula
Puccinellia and
Asphodelus Odorata.
Remniments of theチェトニク式

Ranunculus gingko

Theleptica linear

Bases of trees covered with moss to 5 cm.

Trees tangled, curving at base, maximum 7 cm. All trees noticeably twisted.

Pests: Ptilitis linear.

P. stimulans

Other plants: Agaricus, Polystichum lonchitis

Hybrid mix of Polystichum

Diploptilus

Flora down the heath.

From the heath mat gives way to tawny grassy forest, with a scattering of alpine. Some slopes mix moss, a close grass sod with many herbs.

Springy places on level ground dominated by Calluna palustri but with much moss and many herbaceous species.

Moles are very abundant, throwing up mounds like goather mounds in greasewood.

This entire heath may seem to be in the red German soil.

The heath is a steep slope, quite rocky, mostly Calceola, but patches of Vaccinium myrtillus, etc. with grass between.

Power down is mostly Beech forest.

An open rocky, foggy place dominated by Equisetum, Hylocomium and Carphum intermedia.

Some Calluna palustri, an abundant stunted grass and many smaller herbs: Stellaria alpina. Juniper, Erica vagans in hummock no Sphagnum but much Hummus.

Above this is a heath, forest, tree swogward in size, to 20-30 ft.

Springy and very wet an enormous heath, place.

The Equisetum extends in a few m. Many fungus, Daphne.
Below Laredo, tents stop on deciduous forested area - follow trail up the left flank of the canyon through a mosaic of high meadows on steep slopes, almost more flowering herbs than grass, and mixed deciduous thickets - to sheer limestone cliffs, many hundreds of m. high. Trail cut into them.

Many plants with Mediterranean affinities on these dry cliffs growing in cavities, cliff facing east.

Chamaeleuca altissima
Rhamnus chrysocarpa
Juniperus
Bursera simaruba
Antirrhinum
Amelanchier
Salvia longifolia
Helianthemum
Antirrhinum majus
Veronica pubescens
Ficus hispida
Cynanchum
Cypripedium
Castilleja
Eriogonum
Cotula parennis
Along trail many new species

**Achyranthes**
**Galium mollugo**
**Herantheremum**
**Gonilla ss**
**Thymus**
**Taraxium sp. ?**
**Silene**
**Lychnis alba**
**Ranunculus gallicum**
**Globularia nana**
**Achillanthos blue**

Meadows with

**Ranunculus**
**Scabiosa**
**Chrysanthemum**
**Plantago**
**Silene**
**Diascotolus**
**Rhamnus**
**Aquilegia**
**Belli**
**Lathyrus**
**Echium**
**Galina**
**Cohn**
**Lychnis**
**Pimpinella magna**

Bedouz, 1920, on R.Aepf

Cliff of crystalline rock with sparse ericaceous dwarf scrub

**Erica vagans**
**Genista pilosa**
**Cistus centauricus**
**Echium vulgare**
**Ulex nanus**
**Calluna vulgaris**
**Sedum postierianum**
**Galium mollugo**
**Silene**
**Asplenium trichomanes**
**Arenaria zuluza**
**Sanguinaria minor minor**
**Oenothera hispanica x occidentalis**
**Cymbilium cotyledon**
**Rosa**
**Lamium vasculosum**
**Opalis crispula**
**Clematis**
**Rubus sp.**
**Geranium rotundifolium**
**Geranium sanguineum**
May 26 - Riozeta, near headwaters of Riozeta.

1. 409.75  *Anthyllis delavayii*
   - very common
2. 76  *Fritillaria pyrenaica*
   - very common
3. 27  *Laxipogon granulatus*
   - occasional
4. 78  *Anthea villosa*
   - common
5. 29  *Cephalanthera ensifolia*
   - rare
6. 30  *Narcissus pumilus*
   - very rare
7. 31  *Phelippea semprevirens*
   - rare

- Dragon
  - flower pendent, long, color green with dark markings within.
  - flowers white, depressed plant.
  - flowers white, yellow, cream yellow.
  - depressed plant, flowers white, fragrant.
May 26 - Col de Lomport
Exposed rocky mass
30.932
1. 48 Daphne laureola
common in low mats
2. 50 Rhododendron ferrugineum
3. 33 in low mats,
of Rhododendron ferrugineum
4. occasional on bare rock,
5. 35 Rhododendron ferrugineum
locally abundant
6. in shady sheltered slopes
35c
7. 36 Dryopteris lobata
common
36a
8. 37 
very local

May 26 - Peyrenère, head
of Gare d'Aspe, below Col de Lomport
38
9. 38 Galium
new in patch of Vaccinium
myrtillus, healthy slope
10. May 26 - Gare d'Aspe, upper
9000 ft.
39
11. 39 
occasional in neutral bog at
edge of Gare d'Aspe forest

1635 m.

1550 m.

Flowers white.

flowers greenish-yellow.

dwarf shrub;

white with rose mouth and limb.

Flowers yellow.
May 24 - Port de l'Arge, Gave d'Aspe

In deciduous thickets on upper escarpment:
- occasional in crevice in limestone
- Acer opalaceus
- Rubus peregrinus occasional in bushes

May 26 - Gorge d'Aspe, above Fort du Portet, near Gave d'Aspe:

- in crevice, in limestone cliff, south exposure
- Carex occasional
- Asplenium fontanum occasional
- Rhamnus occasional
- Juniperus occasional
- Thymus dioicus common
- Galium sax par
- Echinus occasional in shellrock place
- Alyssanthus occasional in side of path cut in cliff

Bass - Pyrenees

- flowers white
- shrub 3 to 4 ft tall, scrambling extensively
- small shrub, immature
- fruit, maroon
- shrub 1 m tall
- dwarf shrub; flowers yellow
- flowers white
- flowers bright pink, fragrant
- flowers blue
40752: Cynanchum
- in shaded ravine on cliff

May 16: Redoux on tour d'Aspe
- in heath vegetation on "ophite" cliff

1. 53 Labecia cantabrica
- common
2. 54 Lagenaria
- common

4pm:

dwarf shrub, flower
- erect, oblique, pink
- erect, flower greenish
May 27. Col de Launay

“Landes” on heathlike
untertyping of a new
serpentine siliceous rock.
The slopes covered by
Erica vagans, Calluna
vulgaris and Genista
with dense grass. Nearly
grazed.

In rock Asplenium
septentrionale, A. trichomanes
and a number of other
species.

B. rigescens on most
windblown. No trees.

A. flabellatum spicant

A. flabellatum

A. spicant

A. aquilinum

Juniperus communis

Beech forest on steep slope
Trees missing in lower 4-6 m.
very scattered in size - 8-13 m.
Tall, 5 dm. dbh, 4-10 m. each, clover.
Considerable herb-layer
Aethionema flexipes
Lecrula latifolia
A. flabellatum spicant

Nepeta

Eupatorium

a fine grass.

Hedera

In slope, nearly grassy
with several plants
with white flo.

Grassy slopes under
large Fagus. 5-7 dm. dbh.
with Hieracium. + other herb.

On some of this talus
a few Erica plants!
1950 France

Craggy limestone slope
which the talus originates.
A real rock garden
in crevices: Erinus,
Helianthemum, Erigeron,
Genista, Lotus, Gypsophila,
Potentilla, Asphodelus,
Globularia maritima, Valeriana,
Capsicum, Buchanania,
Kalanchoe, Globularia, etc.
Rhamnus, Ericaceae,
Scleranthus, Potentilla, Gentiana, etc.
There are some additions
in broken sections:
Schizanthus, large Festuca
and some seeded grasses.

May 27 - Col de Lavande,
above Samane
"serpentine" exposure
Genista hispanica var. occidentalis
very common on rocks (and soil)

1 50 Festuca splendens
local on rock outcrop
1 57 Pulmonaria offesa
common on rocks (and soil)
1 58 Pinguicula
local on moist tufa
1 59 Potentilla reptans
on rocks
1 60 Polygala vulgaris
in rock crevices
1 61 Asphodeline reptans
common in rock crevices

Basses Pyrenees
<table>
<thead>
<tr>
<th>No.</th>
<th>Species</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>67</td>
<td><em>Valeriana montana</em></td>
<td>Common on loose steep talus</td>
<td>flowers white</td>
</tr>
<tr>
<td>88</td>
<td><em>Aquilegia</em></td>
<td>Common on loose steep talus</td>
<td>flowers bright yellow</td>
</tr>
<tr>
<td>69</td>
<td><em>Aquilegia</em></td>
<td>Rare on loose steep talus, semi-shaded, with blue form</td>
<td>flowers bright blue-violet, stems bright at tips, flowers deep white, stems bright at tips, densely crenate.</td>
</tr>
<tr>
<td>70</td>
<td><em>Tetraena repanda</em></td>
<td>Common</td>
<td>flowers yellow distally, flowers purple, already closed.</td>
</tr>
<tr>
<td>74</td>
<td><em>Globularia</em></td>
<td>Local on firm steep talus</td>
<td>flowers mauve.</td>
</tr>
<tr>
<td>75</td>
<td><em>Senecio diericola</em></td>
<td>Rare on firm steep talus</td>
<td>flowers orange-yellow.</td>
</tr>
</tbody>
</table>
1960 France

43 in crevices of limestone rocks

40976 Globularia nanus
   1 commum
   1 77 Rhhamnus prinula
      local
   1 78 Enicurus pyrenicus
      very local
   1 79 Asphodelus fistula
      commum
2 80 Hyptisphila abundant
2 81 Helianthemum canum abundant

2 82 Festuca occasional
2 83 Lotus corniculata
   1 83 commum
2 84 Petrocoptis cressedula
   1 84 commum
2 85 Dianthus pyrenicus
   1 85 rare
1 86 Chamaenerium alpinum
   1 86 rare
1 87 Erica vagans
   occasional
1 88 Cystopteris fragilis
   occasional
2 89 Thymus pulegioides (waste)
   common
2 90 Galium caulescent
   common, ledge
   in weathered rock
May 27. slopes above Barreiros toward Glaz, various ferns, Asplenium scolopendrium common in grassy and weedy banks along trail.

May 28 - Bois de Bugey:

in deciduous forest, primarily Quercus
Athyrium filix-femina common
Luzula fossteriana
Dianthus
Rueusus abundant, locally forming a definite layer
Lupinus
Blechnum spicant very common

Flowers white; small, 3-4 m tall, leaves stiff, glossy, with bitter, disagreeable odor when broken; fruit immature.
May 23 - road east of St. Christian.

Steep front slope of Rocky Mountains densely wooded with broad-leaved forest. Some lower hills with fine stands of Abies concolor. Indicates need for fencing for cattle. peculiarity of Basque country. Most stands maintained by cutting. Important in many aspects. Maintained in valley bottoms patches of cultivation and of woods.


Naturally, the lower slopes of this area are covered by Quercus rugosa, but this has suffered much from deforestation. High fire has been replaced by the more resistant Q. rubra. Higher Fagus is dominant. A little alder near the edge of fens.

Open forest, mostly Quercus robur, large trees. 4-5 dm dbh. 15-30 m. tall spaced 10-15 m. crowns not touching. Dense undergrowth. 7 m. tall.

This leads to a closed forest with scattered at least open undergrowth 9-40 m. high more dense layer 40-60 m. of Quercus, Robinia, Dryas, et al. Lithiumum, etc. and many herbs.

Coniferous forest, large trees. With Cycas, Taxus, Pedena helix common on ground, climbing in trees.

In some parts of the open forest the shrubs are sparsely distributed. E.g., Pedena helix, Dryas, Lithiumum, montana, abundant.

Across the road and a small group of Fagus is open, trees all size 60-70 cm. dbh. spaced 2-5 m.

Across undergrowth of shrub, sedge, etc. 1-5 m. 7 m. tall.

Herb layer rather open of Pedea helix, Lithiumum, etc.
patches of Ruscus & d.m. Hedera common in ground. Moss on ground and lawn mostly of treecumbs. Walking scarcely impeded. Flow less almost completely different from that in the oak forest, much more.

10 A.M. of Claro.

Extensive bands Atlantis.

a "touya" of Pteridium with a Azalea hag in a low area.

b. Erica tetralis

c. Polygala vulgaris

d. Juncus humilis (in bog)

e. Carex stellulata

f. Carex varica

g. Physocarpus aureus

h. Verthaeum

e.2a. Triphoraum sogynum

d. Calluna vulgaris

g. Hosta undulata

Drosera intermedia

Arenaria irregularis

Kappleria alba

Alchemilla

Potentilla

In Pteridium Heath

a. Pteridium aquilinum

b. Calluna vulgaris

c. Polygala vulgaris

d. Helictotrichon

e. Chrysanthemum leucanthemum

Several grasses

e. Ferocum deunle
May 28 -

10 km SE of Colson, in open *Pteridium* heath, *Pteridium aquilinum* dominant.

1. Polygala vulgaris
   - occasional (with 4100, 41000, 41001)

1. Polygala vulgaris
   - common (with 41000, 41000, 41001)

1. Polygala vulgaris
   - medium (with 41000, 41000, 41001)

1. Polygala vulgaris
   - occasional (with 41000, 41000, 41001)

1. Acanth
   - common

1. Tord's common in trail

1. Nardus stricta
   - common, locally

1. Eriophorum
   - locally abundant

1. Scapanum humilis
   - common

1. Carex stellulata
   - common

1. Carex nanica
   - common

1. Rhynchospora
   - occasional

1. Hieracium acinula
   - common

Basses Pyrénées

Nigrae buried, green, not completely unrolled.

Corolla rose, crest white.

Corolla blue violet, crest somewhat pale.

Corolla and crest blue-violet.

Corolla and crest rose.

Crest

Blue coronet.

Flowers yellow.
Galium
in small hummock

In muddy post trampled
by cattle

Juncus effusus f. conglomerata
local

Illecebrum verticillatum
very local and rare

Genista anglica
occasional knowledge

Carex
common

In small stream, in beach

Galium uliginosum
occasional

Potentilla reptans
occasional

Veronica
common

Arrhenatherum elatius
locally abundant

Cichorium
locally common

flowers white

flowers white

creeping, flowers yellow

moisture, sterile
May 29 -

Heath of Ulex marinum, 4
with Erica cinerea, 1.2
2.7 Erica tetralix
2.4 Erica cinerea
2.3 Erica ciliaris
100 % cover, height 25 cm. (actually 2 cm. nearly flat, slightly sloping to near.)

cortis

Wollinia
Petersonium aquilinum
Calluna vulgaris
Anemone phalangitis
Greenus toga
1.2 Agrostis setacea
2.2 Glechidium rumun
9.2 Diecramom
9.2 Callipogon
Rhododendron frangue (melting)
3.2 Myrtus communis
Plygala scabrella?
3.2 Erica vagans
Kuemahryum glaucescens
Onchis maculata

Succession of starting in direction of Greenus toga:
9.2 cotone pest, shown by seedlings of 9.2 toga and Ixerum frangue
(Coitulosa tenue op clusus)
(Cross piluliferus)
(Cross truncans)
(Potentilla erecta)
(Salpingia, decumbens)

May 29 Launce
Quercus pubescens, note for closed on south slope, fairly steep

Cortis
Quercus rubra
Pomaria communis

Vernus campestris
Berberis vulgaris
Roza arvensis
Rubus calyculatus
Fumus stolonis
Liquiritia angustifolia
Cataleq

Erica vagans
Vernus communis
9.2 cotone

Pomaria calyculata
Rubus vulgaris
Carpinus betula
Picea abies
Ludicopis
Rubus calyculatus
Rubus angustifolius
Rubus rugosus
Vicia sativa
Brachypodium pinnatum
Vicia sativa
Bistorta officinalis
Bistorta officinalis
Bistorta officinalis
Bistorta officinalis
Ruscus communis
Carex glauca
Festuca arundinacea
degraded on lower side to grassy with scattered
scattered junipers & much

Erises vagans, Dorycnium
subfruticosum

Juniperus locally growing
open scrub

Molinia

Brachypodium

Lotus corniculatus

Poa annua

May 17 - 1 of Bassacite, 35 m. Montague

On one side a road a semi-open oak forest. On the other

side some evergreen trees 15 m. tall, ± 20 cm.

10th shaded 1-4 m. canopy

30-70. Rather pronounced

second story 3-5 m. of junipers,

Ulmus, Aca campestris, etc.

Crataegus. A lower shrub

layer 1-2 m. of Rosa, Prunus

of Juniperus communis var. intermedia

Aces, Rubus, Labruscunus

+ bush

a drier shrub layer of

Erises Rhynchos coryledon, etc.

Rosa paracrinus, Helian

ficus, Viburnum Lantana

Cramo. of Juniperus

Carex glandula

an almost complete ground

layer of Hydrocotylus spinosus

line woods, base of

trees & stumps, etc.

The canopy is of Quercus

rubra, but not scottish.

a few sapling trees.

a little Dorycnium

Rosa

rubra, etc. on moss, side

The other forest on the

side is a hardy swarm

of Junipers between suberosa

wax. More Junipers, Geraniata

speciosa, Ligustrum vulgare

Dorycnium, some Erises, vagan

a little Poa annua spinosa, forming
dense herb layer.

Up slope the forest becomes

denser, stature still less

than 4-5 cm. Junipers

beneath more luxuriant

and denser and reaching

up to 8 ft., other shrubs

denser, except in open

area. Lower layers everywhere

well developed mostly

grass but many other

weeds. Poa annua abundant.

Nearby slope ascended

towards it in a slow course of

Dorycnium, etc.
May 19 - Confined, part of May 17, 8 km. west of Garlin. Very common in dry oak wood, on edge of Ulva heath.

Quercus toya
Quercus toya common.

May 20 - Laurel, 5 km. west of Garlin.

25 Oxychilum suffruticosum very common in Ulva heath, with Quercus bushes.

24 Quercus pubescens
Dominant in oak forest on south slope.

27 Rubus peregrinus
Common in undergrowth in oak forest on south slope.

May 29 - 4 km west of Monteviudo.

13 Lonicera
Occasional in Quercus forest.

19 Quercus pubescens
Dominate in dry oak forest on south slope.

6 Kalmia latifolia, forma
Small tree; fruit small, slender, shrub, fruit small, very hairy.

same small tree, all seen infected by fungus.

small tree, all seen infected by fungus.

small aromatic shrub 0.5 m tall; flowers white

small tree.
May 31 - Bet. Montpellier, and coast - mostly vineyards.
Along immediate coast a belt of dunes with Ammophila arenaria and a number of other species of herbs. Crucianella maritima, anthemis, Helichrysum, etc.

Bet. Montpellier, and St. Gilles, vineyards are certainly the dominant cultivation and the dominant vegetation type.

In the low delta land of the Camargue the former salt marshes have been almost entirely converted, during the last 2 years, to rice culture by the construction of an enormous canal providing water for irrigation.

East of Arles in the region called the Crain the land is very flat, but just high enough to be dry. At this season, at least, there is almost no vegetation. Flat dry fields, some of them planted relatively recently, to widely spaced trees, others with closely

Scattered hills of trees, but these by French prisoners under German orders during the war, to prevent landing of Allied planes.

Between Arles and Marseilles the country is rougher and greener. There are long cliffs of marl, rocks surrounded plateaus of limestone. The hills are carread by a locally dense, locally sparse garrigue, much of it dominated by Quercus coccifera, locally scrub assemblage of Q. ilex, and partly by pines of various ages - originally planted, probably, but certain, spontaneous now. The degradation of the Quercus coccifera and Q. ilex results in the low scrub a garrigue. The Quercus coccifera is in place, not like Q. ilex...
June 1 - Dig by rail from Montpellier to Geneva.
Gently rolling land with light reddish soil, darker in low places, mostly vineyards, some orchards. Thicket of dwarf trees (?), peach, small groves of pine, prune, Platanus, Populus, etc., some hedges but not many. 5-10 minutes from Mps, a few patches of scrub of Quercus ilex, open or more or less closed. Limestone. Many trees show effect of 1954 frost.
A few meadows.

Low hills, a terrace side, to left covered with scrub. Some olive grove remaining from days of 1952, but still setting very fast. Considerable Q. iber, f Provençal olive grove.
More low hills to left with Q. ilex and geniques, for some distance.

Mines.
Above Nine, a change from predominance of vineyards to more meadows, with more vineyards locally. Country very flat. Then slightly rolling with

patches of pine, Q. ilex, etc. Some very low hills, then in right broad flood plain of Rhone. Below woodland of terraces; this edge with various morasses of Q. ilex, grass, marsh, reed growth, etc. Some very much looking like
then some limestone outcrops, low cliffs, crossing remnants, etc., near grand terraces, hills to left.

Cross Rhone. Flood plain very green, rows of trees, etc. Enters some hills on other side - wooded, very steep, eroded, with a belt of Quercus canariensis, some Q. ilex, some grassy areas with rock actually seen polished. Most Q. iber in left, some
cliffs.
Then country is flat again. Multitudes and abundant Q. Canariensis family wide here. (Distance?)

Aigues.
Then low agricultural land with abundant hedges, small village, and rows of trees. Rogers - Chateau, etc., in page. Some areas of rolling ground with geniques & Q. ilex.
Considerable vineyards.
More quercus - higher stand.
Low-lying agricultural land
with meadows & hedges.
A mixture of broadleaf
wheat & barley with black
beard (sorrel).
Predominantly grain
and other crops.
Orange.
Cypripedium - windbreak against
mistral.
Small areas of open feta.
Round & square plots. Larger areas
in low hills on left. Break
that broad valley to left. Then
farms &490; open field remaining,
and the valley is on left.
Then small forest of feta.
Some broadfencer Philippine.
Small pine forest, rather
open. Flat topped masu. Like
remnants. Spinings and small
pines on slope.
Montclair.
Open, rather rolling country.
Some earth.
Great canal.
Bollene.
Flat agricultural land. A few
vineyards. Grain.
Le Vedat.
Flat, agricultural land, some

grain, rather common.
A few robinia not seen
yet now.
Broad open grain fields, with
no hedgerow trees.
Wide vine.
Dangere.
Hills to it, apparently
dimention, track at base of
cliffs. Large vine (shore) to
left. A few pine forest on
more of hills.
Hills also on other side of vine,
quite close.
Mostly thin scrub covered,
except for dense scrub on
valleys and some patches of
open vines within.
Then a large flat, valley,
grain fields, hedgerow windsbreak.
Large cement plant or
something of the sort.
To left, cutting into hill.
Large canal.
Montbeliarde.
Low agricultural land. Hedge
and rounds, washing.
Terraço & sitio, with small
post of quercus in the
pendal vine. Little Level land
at night. Hills closely wooded.
Valley with abundant
poplar and other trees, agricultural
Inhabitants:
Valence.
Agricultural land — meadows, grain, vineyard, etc., with many hedges and trees. Then a rather dissected terrain with grain fields, orchards, (only edge dissected) some small roundish hills in left, partly wooded. Some hedges, but not many. Very few vineyards, but orchards still common — more grain than anything.

Fair sized river, dirty water, wooded narrow sides. fun.Funny.

Flats, agricultural country. Mostly grain. A few vineyards, some rows of trees — flatlands. The river of dirty gray water again in right. Country suddenly really rugged! Dissected higher plateaus. River has wooded cliffs. Wooded country, adams in the river. Agriculture above dam on left side, range of rugged hills on other.

Rolling valley — several terraces level along river.

Oak forest on hills between terraces. Terraces agricultural.

Many trees, high trees, mountains in distance to right.

Orchards, hay fields.

Hills on left mostly pastures, some small woods.

Valley narrows rapidly.

Many ravines, those wooded. Robinia abundant.

Wts on other side of river, l right, very abrupt, mostly wooded. Valley floor in agriculture with many trees, locally teak open forest. Walnuts? No.

Hills on left rather high, partly wooded. Large areas of walnut orchard.

Valley bottom flat, wide, high, wooded. Poplars are abundant in valley bottom, meadows, walnut orchards.

Waters out somewhere.

Tellam — Trees

Valley widens now. Meadows and some grain. Many poplars.

Hills on left uneven. Wt on right.

Higher. Walnuts have disappeared.

Mirasol.

Large flat area. Grain, some vineyards. Many trees. Nature abrupt into again on left and right, with great cliffs.

Flat valley bottom with meadows, vineyards.
different sedimentary beds
diffusing in direction near
rising, eastern to opposite.
Flat valley bottom, fairly
wide. Vines upon wires.
Slopes of cliffs on north,
sides below cliffs partly
wooded, partly grassy.
Granite.
Passing granite, large snow
covered mts., visible to east.
City and valley surrounded by
high, and almost mts.
Valley is flat, densely settled.
Intensive agriculture. Raisin,
grape, vineyards, bricklaying, gardens.
Slopes sides wooded. High
cliffs to left. Valley continues
on other granite. Finally
fields and meadows,
with hedge, predominates.
Lancern
above lancern much heavy
industries, especially.
Flat valley bottom, with
meadows, hedges, trees
and gardens. Strikingly remote, range
to left.
Some parts of valley
plan quite wooded.
Granite.
Valley widens some.
Slopes slope mostly pasture.

Valley widens out very
conspicuously.
Meadow, gardens, rows
of trees, grain fields.
Growing fields to it, a striking
cliff to left.
Montrealian.
Vineyards on lower slopes,
scarcely woods above this, in it.
Open rolling pastures and woods
on left. Valley very wide.
Becomes rolling hilly,
perhaps a dissected terrace,
mostly pasture, and grain.
Valley narrows somewhat
again.
Chambery.
Valley flats, rolling hilly
to right, agricultural but
very abundant. Patches of wood,
rows, hedges, orchards.
Valley fairly wooded but
rolling hilly.
Aix & Lyons.
A large lake on left, numerous
islands. Irregular, mostly
cultivated where they are
not cliffs. Mostly thinly
a moraine.

Valley widens above lake.
Quite flat.
Divided by an abrupt range of
hills.
Crosses large river (Mene ?).
Culver.
Train reversed direction at clay flat. First, partly drained valley with yellow thickets, mostly meadows, gardens and become thinly wooded and brushy.

We are following the river, but it is on the right side.

Rolling grassy hills.

Dam, backing up river to form a reservoir.

Hills wooded.

Some rolling valley and low hill land in meadows and grain. Hills wooded.

Sheltered.

Lower slopes in grass and gardens.
June 3 - June 4

June 3. Valeria

A U-shaped valley, faxed on lower slope, and in bottom, Picea firs on slopes.

Pasture on slope with abundant Trifolium, Equisetum, Gentians, flax, Cecilea maculata (a true Potentilla, Polygala). Carex, Alchemilla, locally Valeriana, Anemone, Caltha, Geranium, Pinguicula.

June 4. Valeria. Above Cheyenne, defile de four Valence, limitten cliffs, with Cimic, ferns, Satyrium, aigm, topina.

Tall, with broad leaf shrubs, incl. Sabum... (in fl.)

June 3 - Valserine, just below Mijoux

Asplenium viride
in deep moss or rock on edge of woods

June 9 - slopes of Mont Bond above Col de Barcelle
Asplenium viride on bank along trail in limes-Abies-Faygne woods
Oursals
common in limes-Abies-Faygne forest
Gluculans
very local

June 4 - Défilé de la Balme, Valserine, above Chegney
Phyllitea nobilisiana
node in crevice in limestone cliff
Asplenium nutans muraria
node in crevice in limestone cliff
Lamium
limestone canyon

June 4 - La Rivière, above Chegney, Valserine

Tara 170

June Mt. Aïn

9.75 m.

east, cliff pendant

inflorænae blacæae

1352-1409 m.

east from prostrate white

floræ mat, flowers violet

1752 m.

flower lavender.

genuinæ pinta, lila depl

creamy, whitæa bulbæ.
Below Clervary -
Limnotite Tales with
Sedum sp., Rupestris, Galium
mollugo, Chrysanthemum
Erinaceus, Anemone nemorosa,
Helleborus, Primula
Convallaria, Ranunculus, Anemone
(??).

Flat at bottom with
Epilobium, Fagopyrum, Anemone
Pteridium, Galium
Medicago, Leontopodium
Orchis in woods.

Lower below Champigne
Montarpi; etc. The valley widens
becomes brushy, even some
low Buxus scrub.

Toward Montarpi -
pine forest again.
Above Montarpi, shrubs
replaced by small Pines
sylvestris
W. of Montarpi
Limestone slope, facing
east - close short grass,
scattered patches of open
small pine, with Tragopogon
shrub cover; Yucca, Juniper,
Virgatum, Thuja, Chamaecyparis
L. Eucalyptus, Quercus.

Photos (Adn. and Bud. (Chamaemelum)).
Blue Salvia + magenta
Chamaemelum in meadow.

Beyond Col de Bertillon
generally a park-like land of
grooves, scrub, evergreen trees.

Gorges de l'Ain - lower part
a bumpy landscape - very
washed scrub; much Buxus,
Prunus spinosa, etc. steep
slopes. Gentle slope in
grass pasture. In place
Lobelia locally overgrown on
steep slope - notably by
sheep or goats. (June seen).

Photos (Adn.) of limnotite cliffs.
Above Courtoisophile there are more
Slope with grass and open
Juniper scrub, dwarf scrub
of a heath - like stunted (약간의
Several stickers. Limnotite cliffs.

Photos (Adn.)

Below Colffed
Limestone rocks (Ph. 6x) ov.
Salam, Asplenium, Targi, Targi
Moos.
Château de Varennes

Photos (col.) of main, back, bow of flowering meadow + wooded bluff.

Château de Varennes

Photos, 1795 old 1819

為了 in walls

Forming a series of semi underground chambers each

with an arched door. The fire

from green manure

and a mixture of plants round from dry meadow with diminishing light, a band of Marchantia

land inwards.

Construction of limestones.

Farms deeply rooted in cervices.

Photos of church in Anglet

& square near Tours to Meis

near Corrèze

a depression in limestone plateau, surrounded by meadow and irregular bushy scrub. The depression has a thin deposit of Calluna vulgaris

different legumes, grass etc.
The interesting thing in the patch of Calluna in the limestone. No hummocks.

So a filled sink hole.

Near Toucvin 7 hrs. of

rolling plateau of

limestone with thin soil.

Juncus, Veronica with

Lotus, grass and various orchis. Emphasis in grass

scattered small Betula about 3-4 m. Juncus 0.6-2 m.

Lac de Marlay

Planta (14 w. 6-8 d) of rich

meadow with fls. of lake.

Chamaemelum

Daucurus

Onopordum

Crassula (esp. fls.)

Lotus

Calf

Phyleum

Chrysanthemum leucanthemum

Tropilcum matutae

Dunc

O dunes

fabris
1940 France

June 4 - just below Varen, below Chezay, Valserine
Capitaleanthus
in woods on limestone

42 Orchis montana
in woods on limestone

June 4 - La Rivière, above Chezay Valserine

43 Galiun
common in meadow

June 4 - west of Nantua

Dianthus
common in sloping meadow

June 4 - 3 km above Moys, above Courtoxhle, Ain R.

49 Melittis melissos
common on cut bank above road

Öphrya
race in sloping meadow on limestone, with juniper

45 Öphrya muscipula
race in sloping meadow on limestone with juniper

June 4 - Ain Valley below Chancia

47 Lagopus
limestone rocks

June 3

flowers pale cream on
flowers white

Ain

cut from rhizome.
flowers white, very
aromatically fragrant.

Ain

flowers deep crimson.

3 km

flowers white

sepal white, petals light pink, short, show base,
lip, almost black, cham

green, appendage pointed from
lip very dark.

3 km

flowers white, petals 2
stamens, 2 styles.
1460 Franco

June 4 - Chartreuse de Vaucluse
Air River, limestone wall of an annexe in 12th century ruined abbey

41048 Asplenium ruta marianum
common

49 Thelypteris robertiana
rare

50 Asplenium trichomanes
common

June 4 - 2 km. S. of Forcalquier south of Clainvaux de face on rolling grassland with thin soil on limestone, scattered junipers

51 Orchis
rare

52 Liparis?
occasional

53 Orchis montana?
common

June 4 - Cogny, 2. of Argelet

54 Captius?
very common in and around a heath-like depression in rolling limestone plateau

June 4 - Cascade de Herisson, north of Forcalquier

55 Taxus baccata
rare in woods below Cascade along Herisson R.,

June 5 - flowers, pinkish, June 5 - flowers green, flower white, little odor.

June 5 - flowers bright yellow.

June 5 - small tree about 5 m. tall, crown spreading.
May 5 - nr. of Lac de Chalain. Blood rolling valley, very green, scattered cultivation, mostly pastured, a few trees, like a great gnat, surrounded by wooded ridges - mixed Fagaceae and other deciduous trees. les Baulmes.

Cinquevde la Baume - an enormous box canyon cut in the limestone plateau vertical cliffs with talus slopes at base - junipers wooded, cliffs bare, talus of mostly grassy, some bare and loose, scattered trees. (Photo b.g. herd.)

Woods at head - Tilia, Quercus, Fagus, Fagetum.

Evidently originally a collapse feature.

Valley at head of valley wooded.

A series of these "cinques" fan concentric in the edge of the calcareous Juraic plateau whereon rivers emerge from the cliffs.

Juncus excelsior very common, also Malus. (C.

In crevices, Asplenium richmaniae, reeds, great sedge, Cystopteris, Chelidonium, Geranium.
June 5 - Fort de Foy
Senter de Glacier

Open forest of Abies and Picea, trees to 50 m. high, varied in diam. but to at least 125 cm. dbh.

Ground covered with limestone boulders, about 10 m. lower, of Lonicera, Viburnum, Chelidonium, Solanum, Rubus, Athyrium, Asplenium, Hedera, Heloni, Oxalis, in places Athyrium completely dominant. Much thick moss and boulders.

Bases of trees actually growing around limestone boulders.

White trillium.

Much moss and some lichens on trees, esp. lower branches, some in vicinity of small trees here and there.

June 5 - Salmo

Sloping meadow on this side over limestone. 7 km. of salmon scattered patches of

Buzus.

Grass with some other herbs. Orchis pyramidalis very common.
June 5 - Cinque de Baume

in limestones crevices
Cystopteris fragilis occasional
1 57 (gen) Milium vernalis M. B. common
1 53 Linnaria acquifolius common

on steep limestones talus
Thelypteris robertiana abundant locally in herbaceous vegetation

June 5 - Cotenay, near Camagnales

1 60 Chimaphila umbellata very common along tracks in woods, also stems under trees

June 5 - Falcigny
in sloping grassy meadow
1 61 Orchis pavonina occasional
1 62 Galium mollugo common

June 6 - Moulins (Allier)

1 63 Phlox paniculata f. g. growing in garden (bought from des ile Hiers, Vannes)

\[ A. 1949 Van Dyke \]
July 4 Great Falls

Flowering:
- Lysimachia ciliata
- Circaea quadrivalens
- Cryptophila canadensis
- Hyptis
- Geum canadense
- Phlox virginiensis
- Campsis
- Eriogonum triternatum
- Galium abonditum
- Juncus tenuis
- Plantago majorii
- Polygonum persica
July 8. Low down Pine
Boyd Tract. Johnson Drain
Stream of pine about 18" high
15' from ground. 63 rings.
probably P. taeda, a west
of near by one ar.

Most of hardwood
forest, with a few pine,
on low ground, and pine
with a few hardwood,
on higher ground. A
mixture of P. taeda and
P. australis on the high
areas; rather shade
5-10 m. apart, mostly
3-4 dm. sixth. Perhaps 30 m.
tall, a few 9 few long oaks.
Weel developed understore
of Cornus florida, Quercus
Vitis, Ptelea, Oxydendrum,
Flexo sp., Ilex sp., Carya sp.,
e C. Liquidambar
about 3-6 m. tall.
Provision a closed
laugh.

In opening 15 m. across
the same tree
seedling, 1.5-2.5 m. tall
7 cm. thick, 15-10 dm. apart.

Thin herb-

+ dwarf shrub layer

Quite intermittent
in places dense (Vaccinium
Gaylussacia), in places
abandoned, where pines needles
are thick, and thorny, etc.
are closed.
Scattered cutting has
near highway, Text 3-4 dm.
right pine reproduction
in many other spots.
For pines, sandy
needles to 7 cm. thick.
Canopy of pines
scarcely developed.

A curious form of
Rhizocodon with
narrow, lobed leaves,
locally common, etc.
in many open areas.
Vitis no ton of the common
mostly creeping on ground.
Arundinaria tenuis
locally, but more in
hardwood areas.

Some stumps in a
heavily cut area 2-1dm.
area ground.

Callitriche.
Lower ground has open broadleaf forest with a few pines. Mostly Liquidambar, Tilia ulba, Ciriisidendron oxydendron, Quercus palata, Q. stellata, Magnolia virginiana, Myrica gale, tall, but irregular, no very distinct layer. Trees varying to shrubs, seedlings, herbs, and shrubs thick, advantageous local.

Some small oaks, with open even on higher ground, with admixture of pines, with stumps of very old cuttings. Some care

Swampy slates along small stream.

On higher ground open very tall pines to 30 m. with irregular, but rather dense, tall understory of Quercus liquedambar, Carya.

Bare soil, with understory of oaks, Quercus liquedambar, Quercus prinus, etc.

Along creek dense small hardwood swampy forest; trees to 25 (20?) m. more large than 2.5 dm. understory thick, shrub layer thick, some Sphagnum.

In small corn there are some tall dense forest of oaks and other hardwood.

Footh of this some nice pine woods 3-6 m. tall, spacing 30-35 m. tall was thinned a bit 5-6 years ago. Thin irregular understory of oaks, sum, and cornus, kids, sap, etc.

Other with patch of Sphagnum and Woodwardia areolate below it. The good flow of water even after having no significant rain for some time.

Pines with some large oaks, unusual understory of Cornus, Draytonia, Virginia, etc., along bank of then field.
Mr. Moore from Southern Pines, More County Hunt Club —

Swampy area along stream - swamp forest with dense undergrowth of Cladium, Pteris, Pinus nigra, Myrica, Rhododendron viscosum.

(Word will send no list.)

John Watson - large tract near Southern Pines, with 30 new lakes, etc.

Very picturesque halfway bet. Southern Pines & Pinetandy.

Might be of interest for summer biological station (Frank Woods) probably for sale. Watson is retired, lives in N.Y.
1960 North Carolina

July 9 - irregular ground heavy to cut, roots in subsoil, under crop, seedlings of trees, etc. Gaylussacia Gordon and P. vaccinoides. Rhododendron. Quite a few deep notting on ground. All this has been thinned 5-7 years ago. About 75% P. sasaeva and 25% P. australis. A little P. virginiana.

Low area near stream, flooded in wet parts of year, small, a few scattered very small pines, mostly Gaumeria; some Liquidambar. Understory very irregular, very dense locally. Lone trails. A little honey myrtle locally P. australis has been tapped for turpentine.

More Co.

Some areas in fairly high ground a mixture of bald (P. munusiana), P. stellata, P. imbricata (?), P. picea, P. velutina, and pine. 15-20 m tall.

Slightly larger, some Quercus, Carya, result of old logging. Two old sawmill sites nearby. Southern pines only about 100 years old. Older trees just north Manley were burned out by forest fire.

Swamp of alna, Lamium, Liquidambar, Pinus strobus.

Sand ridge 5-15 m covered by open stand of P. australis and Turkey oak. Pines 20 m or so tall. 5-6 in. in diam. Quercus 3-4 in. tall. Crowns touching to spread about diameter of crown. Very thin bark. Dwarflsh shrub layer with some grass, fern Vaccinium, etc. Fine white sand with deep to shallow.
pine needle litter, locally 9. manila grass replaces 9. on a

On top 7 & 8, the pines are much smaller 10-15 m tall 
15-20 m. pole about 15 m thick was about 43 years old. 

Here the trees are 2-4 m. apart but with very well marked 

shrub layer of the Dale, principally turkey 3-4

in tall. Dwarf shrub 

herb layer very sparse. 

A lining in a 3 dm. 

tree showed about the 

same age. 

Trementine tapping 4-7

years ago, worked for only 6 years. 

No fire in perhaps 20 yrs. 

But back of some trees 

show slight evidence of charring. 

White sand is up 5

15 m. deep, in places 

and sandy sand covers

a surface.

Air photo ACQ-11G-70

Plateaus in this area 
said by Mr. Goldsmith to be denuded from trees, 
brought to this house by his wife ancestors 
(Mississippi River) from 
eastern part of slate 
many years ago.

Pine woods near 

Goldsmith house 

rather open, with 
dense undergrowth of

Ceramus, Myrica, Lysurus, 

Quercus, Carpinus, tangle 

with Vitis internodes, 

quite a lot of flowering plants 

on road. (Connecticut type)

In present could 

exclude strip along 

Connecticut Ave., except 

with corner from edge 

of cleared area to Belvedere 

Lake and in whatever a 

reasonable distance (120 yards) 

perhaps tapering off eastward 
along edge of survey. 

Perhaps a strip 20 feet 

of the narrow cleared field 

the including the eastern 

cleared field, clearing western 

cleared field in reserve.
July 9 - Rocky River

7 mi. S of Pittsboro, steep slope on S. side of Rocky River. Mixed species of Acer - Fagus, Pinus, Picea, Vaccinium spences, Q. alba, Q. rubra (2) Carpinus florida

Much Rhododendrum catawbiense, Viburnum suffruticinum, V. acerifolium. Calamia tetraptera, Acer rubrum, Oxydendrum. Symphytum americanum, Hydrangea. Polygala, akecheta, etc.

Words will send me list.

M. DeWitt of McCarmack says there is another stand of many mixture with white pine situated on S. side of Deep River about 5 mi. west of Monroe.
North Carolina

July 9-7 Mi. S. of Pittsburg, on south side of Rocky River,
in thick broad-leaf forest,
with some Pinus strobus

41 04
1. 64  Galearis cristata
uncommon
2. 65  Viburnum rufidulum
uncommon

1 66
local on steep slope

2 67  Epigaea repens
common on steep slope

3 68  Acer nigrum
co-dominant

1 69  Pinus strobus
common, especially
seedlings and saplings,
which are growing in
shade.

July 9 - Cannell's Branch,
about 3 mi. N.N.E. of
Southern Pines,
in thick swamp in
creek bottom land.

1 70  Myrica
occasional

2 71  Cliftonia
occasional

1 72  Cliftonia
sum.

3 73  Iris cristata
abundant

Chatham Co.

- shrub nearly erect.
- shrub; sterile.
- sterile
- prostrate
- small tree with
  several stems
  Tree 15 m. tall (cones),
  leaves from seedling
  1.5 m. tall.

Moore Co.

- small sterile tree
  1 m. tall.
- small tree or large shrub;
  flowers white, fragrant:
  twigs; sterile
- shrub 1.5 m. tall; fruit
  immature.
1960 North Carolina

Persea borbonia f. subverena common

July 7 - head of small brook, Carroll's Branch, 3 mi. n.n.e. of southern line, in brushy bog fed by seepage.

75 Diospyros virginiana rare, in small opening, crowded by grasses, etc.

76 Cypilla occasional

77 Alteius occasional in open places.

78 Sycopsis caroliniana very common in openings.

79 Euchamnthea tennatia rare in opening.

80 Acis rubrum rare common.

July 7 - quiet east of southern line, James creek drainage in open pine woods on upland hills.

81 Pinus australis dominant.

82 Avena rare, tuft at base of pines.

83 Azara texdens var. common locally.

shrub 3-4 m. tall; aromatic; leaves glaucous beneath; stellate.

leaves closing when touched.

shrub 0.8 m. tall; leaves somewhat glaucous beneath.

ascending; stems fistulose; rhizome thick; roots orange red; flowers pale greenish white; shrub 3 m. tall; stellate.

small tree.

carbohydrate; petals bright pink.

stem; leaves appearing stiffish, dark reddish green; fruit immature "prickly ball."
1940 North Carolina

4/8/34 Stipeulicide?
common in open spots

85 Galium
rare

86 Priais mutida
common in moist spots

Aug. 10 - Elkins

87 Galium satum Galium Michx
a plant in rather thin
second growth hardwood forest
a rather stony slope

88 Galium decumum
as in second growth hardwood
forest on gentle slope

89 Galium barberi var. Michx.
the in dense hardwood
forest on steep slope

More C.

flowers white.

ascending

shrubs 1 m tall.
leaves glossy above.

stem ascending
Aug. 2 - 1.4 mi. w. of Big Moron.
Weedy meadow along sluggish drainage, scattered small trees.

Dense patch of yellow flowered Galium sp.
Rhizomes from a solid mat about 3 x 4 m.
with sterile shoots 15.9 dm. tall looking like
Linaria vulgaris, sterile shoots up to 4-5 dm.

Tall
Solid patch of Rudbeckia
laciniosa in keepy place

Galium sp. very much
very local, dense patch

Bryochium multifidum
line edge of meadow, road.
Hypericum punctatum tan.
local in meadow

Aug. 2. Crow Hollow.
South Branch, Naked Creek.
2 of Piney Mt.
Hemlock - white pine quite
with Quercus cocinea, tulip, etc.

Mitchella, Polygala sp.,
Chimaphila maculata
Gaultheria, Polyptchium, etc.
common under trees. Linden
Bergenia, Camass common in
undergrowth. Pinus and
Tsuga seedlings common

1700' in medium shade.
Platanus common
around edge.
Cleavers just above
with ruins of old
house site. Gladiolus
abundant. Apyren commun
Pinus, Corylus vulgaris
persisting.
Aug. 7 - Crow Hollow, 2. of Pinney Mt., South Branch of Nolde Creek, near Hemlock - white pine grove in flat valley, bottom.

41090 Polygala pauciflora Willd. Abundantly abundant

2 91 Mitchellia regens L. Abundant

2 92 Galium trilobatum var. pubescens local near stream

1 93 Calystegia Wood's blue (Hr) rare on bank above stream

in old cutting

2 94 Symphoricarpos orbiculatus common along roadside

2 95 Glechoma tricanthos L. common, one large tree and many young ones

2 96 Moneses uniflora subsp. balsamensis persisting root 3 mm

1 97 Pyrus communis L. persisting

2 98 Buxus sempervirens L. persisting

Aug. 7 Hazels of Ridge Overlook

Hymenoptera officinalis, leucothoe weed in trampled places

Shenandoah National Park

sterile, spreading by slender white rhizomes, prostrate, fruit immature; stem reclining, slightly scariosus.

shrub, flowers white

young tree about 7 m tall; bipinnate leaves near tips of lower branches.

small tree with strongly ascending branches; sterile. tree 8 m tall.

small, well-formed erect tree 5 m tall.
Aug. 1 - Dry Run Falls in densely wooded flat bottom of ravine partly filled with broken rock, water coming in from stream.

41101 Goodenia pubescens (Willd.) Rchb. var. pubescens

1 or Carex laxiflora L. ?

2 Carephylleum, Thalictrum

locally common

3 Botrychium virginianum

abundant

along trail

2 05 Festuca obtusa occasional

Aug. 2 - Below Dry Run Falls along old weedy ground densely wooded gently sloped

4 06 Polyonnia canadensis

local

2 07 Galium circinatum

local

3 08 (lab) Melissa officinalis L. locally common

3 09 Muhlenbergia virgata (Willd.)Bent. occasional in trail

2 10 Galium triflorum Willd. occasional

2 11 Physma leptochlamys occasional

leaves gray, green with white veins, flowers white, leaves glaucous, slightly crisped, fruit green.

flowers pale yellow

not anthracite

flowers very pale lavender

scent.

flowers thinning
1960 Virginia

4/11 12 Aquimimia uncinata Wall. occasional
1. 13 Viola
common
2. 14 Plantago
occasional
✓ Aug. 3 - east slope of Mary's Rock in queen's prairie, quarters near or broken rocks

2. 15 Spiraea betulifolia f. campiana
common
3. 16 Oxytropis
true
3. 17 Digitaria sanguinalis (L.) Scop.
local in trail
3. 18 Asperula laevigata (H.B.K.)
occasional along cordelia

2. 19 Carex radiata (Wahlenb.) Deyry
common along trail
3. 20 Hieracium tricuatulum
common
3. 21 fern
local
2. 22 Carex vinacea Muhl.
occasional on edge of trail
2. 23 Gaylussacia frutescens
common in patches of scrub

✓ Aug. 3 - Pass Run w. of Unofficial
1. 24 Lespedeza cuneata
abundant on road with leaves

Seren. Nat. Park

trick, flowers yellow.

leave, erect

from erect type locality

of f. campii.

trick, ascending

from canes.

erect, several stems

from base, flowers yellow,

collars caduceus in

culate afternoon.

flowers yellow

loosely tufted,

culms ascending

short 0.5 cm tall;

fruit black, juicy.

Height up to 1.5 m. Tall, stiff.
Aug. 3 - Mary's Rock

East slope is a talus of huge boulders of

Forest is rather dry, well drained,

of Quercus prinus

and

a thin shrub layer

of Kalmia latifolia

some Menziesia

scattered

Acer

pennsylvanicum,

some Vaccinium vacillans

Thamnos tomentosus

\[...

\]
Aug. 3. - Trifolium repens, with clusters of Byron americana. 

1. 31. Thelypteris chryophylla (L.) Sm. 

4. 32. Athyrium filix-femina f. aubletii common

2. 33. Ephedra americana L. common

1. 34. Hypericum 

2. 35. Juncus effusus in mud

flowers white.

shrub 1 m. tall, stony
wintergreen. Some, early
beech brown; witches' broom.
sterile; shoots buried.

ovulate where exposed,
plume when sheltered

low branches of small
slender tree; sterile
leaves rather glaucous,
green beneath,

necrotic reddish.

ever herb 1-1.5 m tall
stem purplish. solid
head: dull lavender
smaller, dull purple, style
white.

flowers dull yellow.

small tufts; culm

weals.
190 Virginia

4113. "Athyrium

1 37 Habenaria verruca

Aug. 3. 1 mile east of Big Meadows, head of Rapidan. Fine Red in grassy openings in second growth thicket.

2 38 Trifolium arabianum

common locally

2 39 Solidago pumilum

common locally

2 40 Aster

common

2 41 (var. Melanthium hybridum occasional

Aug. 4. South River Cemetery in weedy overgrown cemetery

2 42 Monarda fistulosa var.

common

2 43 Rhamnus

common

411. Monarda didyma?

common

45 Miscanthus sinensis f. purpurea among many normal green

pends ascending

stems reclining;
corolla yellow;
flowers bright yellow

several stems from base; rays white;
disk purplish;
sweet; petals white;
odor musky-sweet

flowers deep magenta;
downy; notched well

margins with a central spike of hairs, very much

shorter, rounded lateral ones.
sterile winged short

1-1.5 m. Tall from canes and rhizomes which have

been grubbed out or cut.
flowers scarlet; lower leaf
tildeolate, middle line much larger,

laevis, leaves green, white

stems, starchy, sterile.
1960 Virginia

74/14/6 Paeonia lactiflora Pall., planted, persisting

47 Symphyotrichum albium abundant

48 Dianthus barbatus rare

Aug. 4 - Hone Quauny on steep wooded rocky slope

49 Galium latifolium Mich. common

50 Galium circinatum Mich. rare

on steep wooded alluvial bank above stream

51 Galium lanceolatum occasional

52 Hedysarums purpureum & tenuiflora common
1960 Virginia

4/14/4 Paeonia lactiflora, tall, planted, persisting
2 47 Symphoricarpos albus var. abundant (Phyas) B.L. 44
1 48 Dianthus barbatus, rare

- large clump, much branched, 18 in. tall;
  flower, pink
  abundant, erect, shoots, coryllas
  campanulate, rose pink
  fruiting, short, dead.
174 1960 Virginia

2/1/14 6 Paeonia lactiflora tall plant, persisting

2 47 Symphoricarpos albus abundant (T. R. 744 I) Bulk

48 Dianthus barbatus rare

And 4 - None flowering today

M. Michx.

viel matatum

175

large clump, much branched c. 8 cm tall, flowers fading.

abundant erect shoots, c. 8 cm tall, campionate, rose pink, fruiting, short, seed.

PLANTS OF VIRGINIA
1960 Virginia

414 Paenicia lastifolia bell.
   planted, persisting

47 Symphoricarpos albus var. abundant
   (Flora) haw.

48 Dianthus barbatus
   rare

None growing in Michr.

Large clumps, much branched 0.8 m. tall,
   flowers pink, abundant, erect, shoots, endless;
   campanulate, rose-pink, fruiting shoots dead.
1960 Virginia

4114 6 Paenoria lactiflora Bell.
   planted, persisting

47 Symphoricarpos albus
   abundant
   (Trunk) Balk

48 Dianthus barbatus
   rare

Large clump, much branched, 0.8 m tall; flowers faded, abundant erect
shoots; corymbose, campanulate, rose-pink, fruiting shoots dead.
11/11/60 Paonisia lactiflora, tall, planted, persisting.
1. 47 Symphoricarpos albus, abundant.
   (Feb. 10)
1. 48 Dianthus barbatus, rare.

Large clump, much traveled. 0.8 m tall; flowers faded.
Abundant root shoots; corms campylenata, rose pink.
Fruiting root dead.
1960 Virginia

4/14/6 Paenoria lactiflora tall, planted, persisting

47 Synophia confluens abundant

48 Dianthus barbatus rare

large clump, much branched, 0.8 m tall, flowers faded, abundant erect shoots, ellipsoid, campanulate, rose pink, fruiting short dead.

Today

Michael

Michael

vial

Atum

terrisphila
174 1960 Virginia

1-47 Symphoricarpus albus, abundant (Feb 10, 64)

1-48 Dianthus barbatus

large clump, much branched 0.8 m tall; flowers faded, abundant erect short, composite campanulate, rose-pink, fruiting short, dead
1960 Virginia

4114 6. **Paeonia lactiflora**, bell-planted, persisting

47. **Symphoricarpos albus**, abundance (Feb. 18 1964)

48. **Dianthus barbatus**

---

large clump, much branched, 0.8 m tall; flowers faded, abundant erect shoots; exalae campanulate, rose pink, fruiting shoots dead.
174 1960 Virginia


47. *Symphyotrichum albus* ssp. *laurinum* (July 6, 1960)

48. *Dianthus barbatus*

large clump, much branched, 0.8 m tall, flowers faded, abundant erect short, cinnas, campanulate, rose-pink, fruiting short-stalked.

PLANTS OF VIRGINIA

Date Coll. Occurrence

Gardn. E. Foster

Remarks

No.
1960 Virginia

4/14 6 Paonnia lactiflora fall plant, persisting

47 Symphyacarpus albus var. abundant

48 Dianthus Barbatus

large clumps, much branched, 2-3 ft tall, flowers faded, abundant erect stems; coccus campanulate, rose pink, fruiting short, dead.
1960 Virginia

4/11/46 Paonix lachiflorum(all)
planted, persisting

2 47 Symphoricarpos albus var.
abundant (i.e. var. albus)

1 48 Dianthus barbatus
rare

Aug 4 - Hone Quanny on steep wooded slope

2 49 Galium latifolium Michx
common

1 50 Galium cincangum Michx
rare

on steep woodland alluvial bank above stream

1 51 Galium lanselatum
occasional

1 51 Hedyotis punctata var. tenella
common
Aug. 5 - Spruce Knob Lake, Randolph Co. in mixed woods on gentle slope

**Cyrtocarya macrocarpa (Michx.) Nutt.**
common

Aug. 5 - s.s. slope Spruce Mountain, Pendleton Co. in dense maple-birch forest on bouldery slope

**Galium triflorum Michx.**
common

58 *Cucurbita orientalis L.**
local, parasitic on various herbs.

prostrate to ascending

stem yellow to orange; calyx white, scales white, half as long as calyx, calyx lobes recurved, style divergent from filaments; stigmas globose, yellow.

exct. calyx and calyx scarlet, dark red.

Aug. 5 - n.w. slope Spruce Mountain, Pendleton Co.

**Monarda didyma**
large colony in open boulder field

Aug. 5 - top of Spruce Knob, Spruce Mountain, Pendleton Co. in irregular scrub with scattered small pines

**Vaccinium augustinum var. nequus (Wood) Dol.
abundant locally, locally

low shrub, leaves bluish green, male beneath; fruit, black, sweetish.
List of plants

- Picea mariana
- Menziesia pilosa
- Acer rubrum
- Populus montana
d. Pennsylvania punctata
c. Lycopodium annotinum
c. Lycopodium obscurum
c. Erythronium americanum
d. Ranunculus acris

d. Solidago quinquefolia

c. Cornus canadensis

c. Trillium undulatum

c. Vaccinium angustifolium

c. Vaccinium angustifolium

- Dicentra eximia

c. Diervilla lonicera

c. Ceanothus

c. Ribes sp.

c. Lyons americana

c. Petasites alleghaniensis

c. Vaccinium angustifolium
c. Aster acuminatus

c. Lycopodium clavatum

c. Cotoneaster
d. Erythronium americanum
c. Streax aquatilis

c. Polygala vulgaris

c. Andria disticha

c. Rubus sp. (flagellaria?)
c. Rhododendron occidentale

c. Clintonia borealis
- Heuchera americana (around town)
1963 West Virginia

411 2 Vaccinium unguiculatum var. cetratum
abundant
2 63 Picea rubens
abundant locally
2 64 Lysozima cernuum L.
occuasional
2 65 Cladonia
abundant between rocks
2 66 Megelia wilsonii
67 Megasel wilsonii
2 68 Polypodium vulgare
2 69 Aralia hispida
very local
70 Vaccinium inamabile
very common
2 71 Rhododendron aureum Lind. Rob.
rare
2 72 Lysozima cernuum var. cetratum 7mm.
occuasional
2 73 Lysozima cernuum var. densa
7mm common
2 74 Cynus canadensis L.
common

Aug 6 - Greenbriar Valley
1 mi. n. e. of Barlow, Braxton Co.

75a Arnica fistulosa var.
roadside in flat cultivated
valley 8pm.
Aug. 6 - Smoke Camp Knob, Maple forest, badly cut over, with abundant Catacalces. Catacalces fuscata var. comm.

Aug. 6 - Gatetwood Farm, (USFS).

This ridge covered by cutover Beech forest. Some red and sugar maple. Betula lageriana var. humata.

Fagus grandifolia var. dominant in wood, thin second growth forest.

Aug. 6 - Allegheny Mts. east of Thornwood. Pocahontas Co.

1 77 Monotropa uniflora. Abundant in deep leaf litter in maple forest of Aug. 7 - Quarterly Forest, Randolph Co.

1 79 Oenothera. Rare in grassy meadows or limestone shores.

Aug. 7 - 2 m. below Smoke Knob Lake. Randolph Co.

3 79 Betula lageriana var. in cutover mixed wood.

On gentle to moderate slopes, not very rocky. Shale that weathers deeply, forming soil. Small tree, fruit green, nutlets gray on inner surface.

Very little herb growth - some Pycnoporus similans and other forms. Monotropa uniflora. No Epipogium seen.

spreading, much-branched tree 7-8 m. tall. Bark gray-brown. Fruit not quite mature.

white.

petals yellow.

Two 10 m. tall, bark grayish, yellow.
Aug. 7. Gardy River. Came a very muddy case opening just below road of Gardy sink, on steep curve. Two big milled logs, 1 and crock seen. Well inside, perhaps 1200 ft. and around curve, a deposit of debris with some large nut shells and other fruit cores. Probably dropped from above by an animal. No opening visible above, but narrow crevice goes far up. Water of small stream flows into case and disappears down a hole some distance in.

At Gardy sink, a fair sized creek (Gardy River?) flows into a hole in the mountain, said to reach down to other sides.

alnigallium, Betula alleghaniensis,
spirea, rubescens, venea

Ground cover of Pennstachys, Athyrium, Oxalis montana,
Cryptotaenia pinnata.

Aug. 8. Gardiner's Knob
flat top, covered by dense spruce forest about 1 ft. tall, trees 9-15 ft. tall, scattered with a very few Betula alleghaniensis. A few scattered Kalmia latifolia and Rhododendron maximum in flower. Small openings with Kalmia and Birch.

Ground covered by a layer of moss up to 0.5 ft. thick. Mossy ferns scattered on this, mostly white but some with pink stems. More abundant are stumps and logs scattered in this forest, up to 5 ft. thick, well rotted.

Arrows toward edges of the spruce openings, spaces filled with Kalmia scrub. Kalmia and Rhododendron just finishing flowering.

Virgin spruce area scattered 100' spaces on gentle slope with large yellow birch, sugar maple, small spruce between, and in openings.

Undergrowth varies from medium thick to sparse, of Vaccinium
Aug 7 - Spruce Knot Lake

in marshy ground around edges of artificial lake

41 1 40
2

Vaccinium vaillanum var. cinnatum, Tet.
common locally under spruce

41 3
1

Galium tinctorium L. commum

2 32
1

Viburnum cassinoides occasional

2 83
1

Glycyrrhiza canadensis Michx. Triquil abundant in a band around edge of lake in water

Aug 8 - Gaudineer Knot

1

Monotropa uniflora L. affl. roseo occ.
occasional, with white form, in dense spruce forest

Aug 8 - 1 mile north of Gaudineer Knot

in almost virgin mixed


1

2 35
1

Carex intumesens var. jenstii Baid. var. along trail

1 36
1

Tianella cordifolia
common in marshy place below spring

but leaves not glaucous beneath

dow spreading branch

fruit blue

stems weak but sweet

flowers white

about 1½ in tall

fruit green

culms erect, panicle drooping

stems pale green, flowers white

small tuft, culms ascending in dimentional character, approaching T. echinata, but stoliferous
(pm 8/124) Many fallen rotting trees, locally quite a few cut stumps, perhaps ally near trail.
Locally spaced are closest and from ground with some large hardwoods,
soil a yellowerish loamy gravelly sand, with
more layer of varying thickness, great blocks of pebbly sandstone or
quartzite scattered through area, locally abundant, up to 3 x 5, 3 x 7 m.
The "virgin spruce" area in acc. field notes sign, 130 acres, average 75 ft. trees, 100' average age 750 years, largest diameter 35'.
Surrounded by brush and forest that above 5 feet cut-over, that below very nice.

Aug. 9 - Buckle Knob - Forest exit of knoll around the true
is about an equal mixture of Quercus rubra, Prunus hortensis and Acer rubrum.

Stuart Recreation Area, on Shavers Fork River, east of Elkins.
West Virginia

Aug. 9 - Stuart Recreation Area,

in mixed deciduous forest
on dissected wall of
nine carine

41 97
1. 88 Galium lonicellatum
local

Aug. 10 - Laurel Mountain
5 mi. N.W. of Elkins, Randolph Co.

3. 89 Galium latifolium Michx.
occasional in rather thin
second-growth hardwood
forest on rather, stony slope

1. 90 Botrychium dissectum
race in second-growth
hardwood forest on gentle slope

Aug. 11 - Ridge north of Dolly sod
near Bell Knob Tower

1. 91 Galium canescens Michx.
race in dense hardwood
forest on rather steep slope

2. 92 Lycopodium annotinum
common in open fill, scree on
glacial moraine,

3. 93 Rhododendron maximum
common in open
ridge

Aug. 11 - Ridge m. of Dolly sod
1 mi. m. of Bell Knob Tower

1. 93 Vaccinium myrtillus
very common on scree
surrounding

3. stems ascending

4 stems ascending.
Plains.- Aug. 11. Ridge to north of Dolly sods. Boundary between Block and Grant co. Bell knob town is along ridge 3 miles n. of Dolly sods.

A broad flat-topped ridge, the top sloping gently to the west. Top covered by scrub ranging from low compact Vaccinium, etc., to a mixture of Pennsylvanias, ilex montana, deod, pennycress, cham, Betula alleghaniensis, Rhododendron maximum, P. americana, Amelanchier, &c., etc. with a scattered piece rubber slightly taller than the rest. The whole quite dense, varying from 2 m. to 4 m. tall.

The Pennsylvanias, &c., were abundant. The Rhododendron flowering. The ground covered with Bell knob twigs, and a ground of quartzite slabs.

Trygant Lake, State Park, Taylor G. (also Barber Co.)

Considerable area of second growth woods on high ground around reservoir. Some of it fairly mature, mostly rather young, Pinus, abundance.

Along west of the road the scrub a mile a small, mostly Gaylussacia, Vaccinium, about 1.4-0.8 m. high, with scattered taller bushes of Kalmia latifolia, Menziesia pilosa, Amelanchier, Prunus pensylvanica, P. americana, a few taller Betula, &c. Alleghaniensis, &c.

A mile, Quercus on ground, also M. virginiana.

Near Point, 0.0 miles.

Ground of quartzite slabs.

Vaccinium, with some shrub brush, alternate with dense Gaylussacia and Vaccinium smithi, with patches of irregular mixt. scrub of Kalmia, Menziesia, Vaccinium, &c., etc. Pennsylvanias, etc., Prunus, Amlcanthus, &c., P. americana, &c. Potentilla tridentata common in low dwarf scrub (rocks of Trail).
Lycopodium tristachyum, L. cavatum, L. obscurum, Eleocharis, etc.

At some areas Dianthus caryophyllus is dominant with only local patches of dwarf scrub. There are some more soil-covered, but to be suffering from surface erosion.

Aug 18 - Bull Run Mt.

Summit ridge near town, on a slightly steeper ridge of quartzite, differing sharply that, soil accumulated in crevices and irregularities.

Almost closed forest, about 10m tall, dominated by Quercus prinus, with some Pinus virginiana and Quercus velutina, a little Carya. Trees, 10 - 15 cm dbh.

An irregular shrub layer, mostly Kalmia, 1.5 m tall, locally very sparse. Locally dense. An almost complete dwarf shrub layer 1 - 2 dm high of Vaccinium vacillans, etc.
1960 West Virginia - Maryland
Ridgely Plains
Aug. 11, Ridge just N of Dolly Tot
about 4 mi. N of Bell Knob Tower
Mellpus panus: common in open grassy place
Potentilla tridentata: abundant locally in open grassy place of
Hydranga caerulea: common in open grassy place
Lycopus chinaceus: local in area

Aug. 14 - Broad Creek, branch of South River, Anne Arundel
Maxim. flexible (Wald.): locally common locally
with other water plants on muddy bottom, somewhat treacherous water

Aug. 23 - Sleepy Hollow, 1 mi. SW of
common in shady, shaded disturbed
ground near parent trees

Aug. 23. Bull Run Fire Tower,
dep't of Bull Run Mts. - Prince William
Aug. 02 - Apache betulifolius: common locally in scrubby
forest on quartzite ridge
Aug. 30. Great Falls of the Potomac
noted flowering
Andropogon gerardii
Cassia rhombifolia
Salix purpurea officinalis
Euphorbia exaltata
Euphrasia lanastrii? (possibly)
Asclepias verticillata
Actaea spicata
Helianthus annuus (tuberosa?)
Lespedeza cuneata
Silphium? (less ternate, taller, few, narrow)
Ambrosia artemisiifolia
Coreopsis (triplicata?)
(All of above or nearly so, near lookout; blow fall.)

Left 4 - same
adum noted flowering in
picnic grounds
Aquatic
Lespedeza
Juncus tenuis
Elephantopus carolinianus?
Desmodium
Plantago anguillaria
Muhlenbergia schreberi
Hedeoma pulegioides
Oxalis
Ibiscus integrifolius
Brunella vulgaris
Salix amygdalina
Acalyptra
Virginia
Dept. 4 - Great Falls of the Potomac
Lepidoptera
common in disturbed
semi-wooded picnic grove
Galium triflorum var. compactum
very local along old roads
prostrate, yellow root
prostrate, forming
green mat