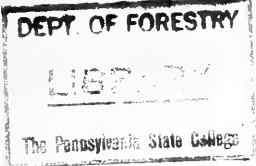


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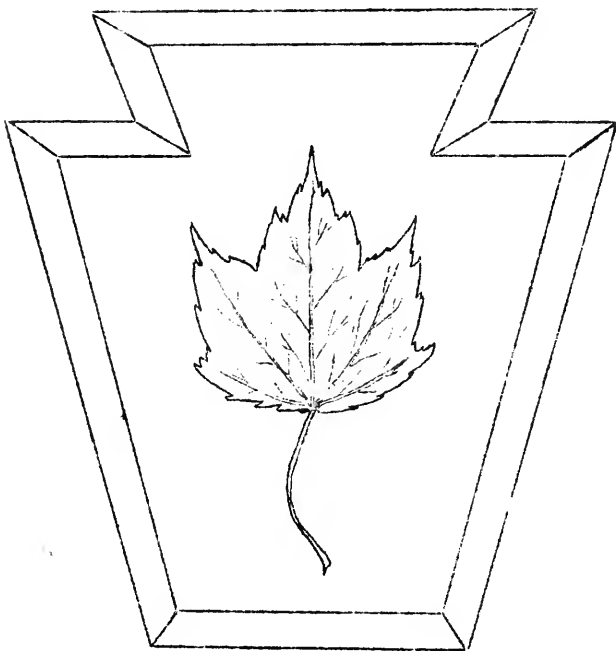
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THE PENNSYLVANIA STATE
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A CATALOG OF WOODY PLANTS
OF THE
MONT ALTO STATE FOREST AND ARBORETUM
NATIVE AND INTRODUCED

By
J.E. Aughanbaugh



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF FORESTS AND WATERS
MONT ALTO, PENNSYLVANIA

1942
(Revised, 1947)

ADDITIONS AND CORRECTIONS

The reader can soon make the following few simple changes on his copy of the catalog, and then this sheet may be deleted.

- Page 3, under *Abies alba* insert specimen number 709.
- Page 7, under *Amorpha fruticosa* insert specimen number 890E.
- Page 18, under *Cydonia oblonga* insert specimen number 831.
- Page 21, under *Fraxinus Ornus* insert specimen number 728.
- Page 24, under *Hovenia dulcis* insert specimen number 488.
under *Hypericum prolificum* for "SHRUBBERY" read "SHRUBBY."
- Page 26, under JUNIPERUS insert:
communis var. *hibernica*, 9: IRISH JUNIPER: 626.
- Page 28, under *Larix Kaempferi* insert specimen number 1407.
under *Leitneria floridana*, for specimen number "1412 A" read "1412-A".
- Page 30, under *Lyonia ligustrina*, for the generic name "Xelisma" read "Xolisma."
- Page 33, under *Phellodendron amurense*, for specimen numbers "727-13" and "729-13"
read "727-B" and "729-B" respectively. Also insert specimen number 728-B.
- Page 34, under PICEA, underscore the specific synonym canadensis.
under *Picea Engelmanni*, underscore specimen number 717C.
under *Picea Koyamai*, the 49 used for species identification should not
be underscored
under *Picea likiangensis*, the 50 used for species identification should
not be underscored.
under *Picea polita*, underscore specimen number 1432.
- Page 36, under PINUS, underscore the specific synonym montana.
under *Pinus mugo* insert specimen number 1056.
under *Pinus parviflora* insert specimen number 730-A.

* * * * *

INTRODUCTION

This publication is a revision of Research Bulletin 3, "Woody Plants of the Mont Alto State Forest, Native and Introduced", by T. Edward Shaw, issued by the Dept. of Forests and Waters in 1930. One of the more important uses made of Shaw's bulletin was to serve as a basis for tagging arboretum specimens about the Pennsylvania State Forest School and Forest Tree Nursery at Mont Alto. Rapid growth of the arboretum, however, made it imperative to change the tree numbers to conform with this revised and much enlarged catalog. For example, there were represented at Mont Alto in 1930 a total of 337 species, 144 of them native to the region and 193 introduced, classified in 80 genera. Now there are 157 genera and 551 species and varieties of woody plants.

The Mont Alto State Forest arboretum has become an interesting and valuable asset, as well as a major showplace of Pennsylvania forestry. It serves, first of all, as a proving ground for exotics, to determine the adaptability of such introduced plants to the climate and soils of Pennsylvania - a type of information needed to guide our selection of foreign trees and shrubs to plant for wood production, game food and cover, and soil erosion control. Another of its major uses is for forestry students and teachers, visitors, and Department personnel to observe, compare and study most easily the dendrological and silvical characteristics of a great many trees and shrubs from all parts of the North Temperate Zone. It supplies, moreover, material for herbariums and twig and seed collections, and for the exchange of stock with interested individuals and organizations. The arboretum thus renders valuable services to the Commonwealth and to other forestry and botanical agencies throughout the world.

This arboretum at Mont Alto began in 1903, coincident with the founding there of the Pennsylvania State Forest Academy and the first forest tree nursery in the State. The collection of woody plants was started through the generosity of individuals, government agencies and institutions which contributed the planting stock. Its extension later was based primarily on exchange of seed with experiment stations, forest schools, and state and federal forest services. Many specimens have been secured through cooperation with the United States Department of Agriculture, Division of Foreign Plant Introduction. Prior to 1930 the work of planning and developing the arboretum was handled by forestry instructors at the School, but thereafter by the Mont Alto office of the Division of Research, Pennsylvania Department of Forests and Waters. Correct identification of doubtful specimens has been obtained by submitting leaf, flower and fruit samples to the Arnold Arboretum, Jamaica Plains, Mass.

The following blocks or subdivisions of the arboretum are now recognized, including their specimen or station numbers:

BLOCK BELOW PERRY'S (Specimens #1 to 373)
 SEPTIC TANK BLOCK (Specimens #374 to 601)
 CINDER DUMP BLOCK (Specimens #602 to 780)
 SCIENCE HALL BLOCK (Specimens #781 to 936)
 WIESTLING HALL BLOCK (Specimens #937 to 1242)
 SAWMILL BLOCK (Specimens #1243 to 1269)
 NURSERY BLOCK (Specimens #1270 to 1396)
 CINDER DUMP EXTENSION BLOCK (Specimens #1397 to 1417)
 SAWMILL ROAD BLOCK (Specimens #1417 to 1485)
 RESEARCH NURSERY BLOCK (Specimens #1 to 103)

Each plant in the arboretum is tagged. The small copper tags bear two stamped numbers for reference; one type, listed here in italics, represents the specimen or station number, whereas the other gives the species identification if looked up in the Check-List. One can also identify a plant from its station number only, by referring to the card index file of specimens. The card index file gives detailed information on each and every specimen, including its exact location in the arboretum area, its source, the date of planting, special growth or injuries recorded, phenological notes and other pertinent facts. In quite a few cases the scientific name itself is stamped on a metal strip attached to the plant; and all such examples are indicated in the catalog with an asterisk following the specific name. Rapid expansion of the arboretum made it a matter of expediency to use letters in conjunction with some station numbers. There are now almost 1500 individual specimens tagged within the scope of territory considered as arboretum.

The technical nomenclature used follows the 1927 edition of Alfred Rehder's "Manual of Cultivated Trees and Shrubs." Accepted common names are, with few exceptions, in accordance with "Standardized Plant Names" published in 1924 by an American joint committee on horticultural nomenclature. Porter's "Flora of Pennsylvania," 1903, was consulted to determine if certain rare eastern shrubs actually occur in this State. Synonyms appear in italics.

In order to get simplicity and quick reference to species, for those not well versed in systematic botany, this catalog is arranged alphabetically by genera instead of following the ordinary phylogenetic classification.

The list of native flora is considered to be almost complete. During the past forty years the Mont Alto State Forest has been canvassed rather thoroughly and, under the circumstances, it is not likely that many species of woody plants have been overlooked. In compiling the present list, the author has drawn freely upon the observations and publications of Joseph S. Illick, George S. Perry, and T. Edward Shaw, as well as the findings of local plant authorities and keen students of dendrology at Mont Alto.

The Department wishes to thank the Pennsylvania State College Department of Forestry, for its work in mimeographing this publication. Members of that department contemplate making extensive use of this catalog for reference in the College course in Dendrology.

A CATALOG OF WOODY PLANTS
OF THE
MONT ALTO STATE FOREST AND ARBORETUM
NATIVE AND INTRODUCED

By J.E. Aughanbaugh, Research Forester

ABIES

- alba, 29: SILVER FIR: 554; 710. Tree of the mountains of central and southern Europe, where it is an important source of timber. Of ornamental value. Does best on heavy loam.
- balsamea, 30: BALSAM FIR: 603; 765; 775; 1124; 1408; 1413. Tree of northeastern U.S., including northern Penna. In several local plantations. Does best in damp situations, but will grow on dry sites. A boreal tree.
- cephalonica, (*): GREEK FIR 663; 1437; 1438. Tree of Mt. Enos, on the island of Cephalonica, Greece. Favored for decorative use. Does best in moist but not swampy soils.
- concolor, 31: WHITE FIR: 655D; 669D; 1090; 1091. Tree of western U.S. and northern Mexico, mostly in the Sierras and Rocky Mountain ranges. Thrives locally, and the most glaucous forms are beautiful.
- firma, (*): MOMI FIR: 647; 659. Tree of Japan. Said to be the largest and most beautiful of the Japanese firs. Withstands a good deal of shade.
- Fraseri, 32: FRASER FIR: 669G; 685E; 701D; 701E; 701F; 701G; 717G. Tree of the southeastern Appalachians. Inhabits swamps, slopes & summits. Looks much like balsam fir.
- grandis, 33: GIANT FIR: 605. Tree of western U.S. Our one specimen has made exceptionally good growth; it is now 10 inches d.b.h. and 50 ft. high. Rather intolerant of shade.
- holophylla, 34: NEEDLE FIR: 469; 911A. Tree of Manchuria and Korea. Does well at Mont Alto.
- homolepis, 35: NIKKO FIR: 655; 669; 684; 700; 1088. Tree of Japan. Hardy.
- lasiocarpa, (*): ALPINE FIR: 1433. Tree of western U.S., Canada and Alaska. Thrives on high mountains and reaches up to timberline. Of slow growth.

ABIES, continued

- nephrolepis, 36: SIBERIAN FIR: 655A; 669A. Tree of eastern Siberia and northern China. Local specimens suffer some from late frosts.
- Nordmanniana, 37: NORDMANN FIR: 1057; 1059; 1061; 1089. Tree of Greece and Asia Minor. Handsome and desirable fir.
- pectinata, 29: Same as *Abies alba*.
- pinsapo, 38: SPANISH FIR: 722. Tree of Spain. A moisture-loving tree. Prefers deep, well-drained soils.
- sibirica, (*): SIBERIAN FIR: 733A-C; 1414K. Tree of northern Russia and Siberia. Forms extensive forests in its home-land.
- sibirica var. nephrolepis, 36: Same as *Abies nephrolepis*.
- Veitchii, 39: VEITCH FIR: 1412J; 1413J. Tree of central Japan. Thrives in rich, moist soil.

ACER

- Buergerianum, 368: TRIDENT MAPLE: 1078; 1079; 1349. Small tree of eastern China and Japan. Thrives locally. Our specimens now 25 yrs. old.
- campestre, 369: HEDGE MAPLE: 848; 850; 852; 874. Small tree of Europe and western Asia. Its dense canopy affords good cover for game. Used for hedges in Europe.
- cissifolium, (*): 277. Small tree of Japan.
- diabolicum var. purpurascens, 371: RED-DEVIL MAPLE: 680. Small tree of Japan, with young leaves, flowers and fruit reddish-purple.
- ginnala, 372: AMUR MAPLE: 147; 522; 523; 524; 525; 526; 664; 678. Shrub or small tree of China, Manchuria and Japan. Short-lived on dry soils.
- griseum, (*): PAPERBARK MAPLE: 261; 262. Small tree of western China, with cinnamon-brown bark separating in thin papery flakes.
- mono, (*): PAINTED MAPLE: 298. Tree of China and Korea.
- Negundo, 373: BOX-ELDER: 571; 719; 720; 1231; 1404. Tree of eastern U.S., including Penna. Extremely rare on the Mont Alto State Forest. Occurs too along Antietam Creek near Quincy, and is common along streams in the Cumberland Valley.

ACER, continued

- nigrum, 374: BLACK MAPLE: 1414J; 1475; 1476. Tree of eastern U.S. Native to Penna., but not to the Mont Alto Forest. Some authors consider it a variety of sugar maple.
- pennsylvanicum, 376: STRIPED MAPLE: 1024; 1163; 1359. Small tree of eastern U.S., including Penna. Rare and local on the Mont Alto State Forest, where it occurs on The Knob and along the Cold Springs road. Prefers cool moist locations.
- pictum var. mono, (*): Same as Acer mono.
- platanoides, 378: NORWAY MAPLE: 414; 788. Tree of Europe and the Caucasus. Commonly planted as a shade tree in eastern U.S.
- platanoides var. palmatifidum, (*): 417; 452. A variety of Norway Maple, with leaves palmately divided nearly to the base.
- platanoides var. Schwedleri: SCHWEDLER MAPLE: Occurs in the village of Mont Alto. A variety of Norway Maple, with leaves bright red when young, changing to dark green.
- pseudoplatanus, 379: SYCAMORE MAPLE: 466; 769; 1143; 1145; 1336. Tree of Europe and western Asia. Makes vigorous growth, even in exposed situations. A common ornamental and shade tree, reaching large size.
- rubrum, 380: RED MAPLE: 950; 951; 1031; 1115; 1191; 1254; 1331. Tree of eastern U.S., including Penna. Very common on the Mont Alto State Forest. Inhabits all kinds of sites, but thrives best on moist soils.
- saccharinum: SILVER MAPLE: Tree of eastern U.S. Native to Penna., but not to the Mont Alto State Forest. Found in the village of Mont Alto, and abundant along streams in the nearby Cumberland Valley. A characteristic bottom-land species.
- saccharum, 381: SUGAR MAPLE: 1252; 1281. Tree of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. It occurs most commonly along Red Run near Beartown, and scattered specimens may be seen in a few other moist coves.
- saccharum var. Schneckii, 382: SCHNECK MAPLE: 551. A variety of Sugar Maple, with leaves densely hairy on the veins beneath.
- spicatum, 383: MOUNTAIN MAPLE: 1435; 1436. Shrub or small tree of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. It occurs on Burn's Knob and in Biesecker's Gap, on cool rocky sites.

ACER, continued

- tataricum, (*): TATARIAN MAPLE: 1463; 1465. Shrub or small tree of S.E. Europe and W. Asia. Needs moist soil.
- triflorum, (*): 1; 2 (Res. Nursery Block). Small tree of Manchuria and Korea, of wide-spreading bushy habit.
- truncatum, (*): 4; 11 (Res. Nursery Block). Small tree of N. China, with foliage purplish when unfolding.

AESCULUS

- glabra, 384: OHIO BUCKEYE: 1227. Small tree of eastern U.S., including Penna. Not native to the Mont Alto State Forest.
- Hippocastanum, 385: HORSE-CHESTNUT: 943; 975; 999; 1196. Tree of the Balkan peninsula in Europe. Included in the arboretum are two descendents of the Washington Horse-chestnut.
- octandra, 386: YELLOW (SWELL) BUCKEYE: 430; 433; 1074; 1331A. Tree of eastern U.S., including W. Penna. Not native to the Mont Alto State Forest, but planted specimens attain to fair tree-size.

AILANTHUS

- altissima, 341: Same as Ailanthus glandulosa.
- glandulosa, 341: AILANTHUS: 616; 1183; 1220; 1237; 1238; 1250. Tree of China. Much used in the temperate regions for ornamental plantings. Occurs locally as a common escape on the better soils. Root-suckers profusely to form thickets.

ALBIZZIA

- julibrissin, 316: SILKTREE: 235; 236; 318. Tree of Persia and central China. An ornamental with graceful, feathery foliage. Fairly frost hardy at Mont Alto.

ALNUS

- glutinosa, 159: EUROPEAN ALDER: 141. Tree of Europe, Siberia and N. Africa. Much used in European silviculture. Needs open sunlight and moist soil. Frost hardy but very sensitive to drought. Broken easily by snow pressure.
- hirsuta var. sibirica, 160: MANCHURIAN ALDER: 144; 145; 146; 567. Tree of N.E. Asia and N. Japan.

ALNUS, continued

japonica, 161: JAPANESE ALDER: 630D; 642E; 878. Tree of Japan and N.E. Asia. Has a tall, pyramidal form and dark green foliage.

rugosa, 162: SMOOTH (BLACK) ALDER: 743; 1243. Shrub or small tree of eastern U.S. including Penna. Common on the forest in moist situations, often forming thickets. It is, however, seldom present on limestone soils.

AMELANCHIER

canadensis, 279: JUNE BERRY: 1161; 1174; 1178. Small tree of eastern U.S., including Penna. Scattered trees are common on the forest, over a variety of soil and moisture conditions.

oblongifolia, 278: THICKET SHAD BLOW: 634; 639. Low shrub of eastern U.S., including Penna. Rare on the Mont Alto State Forest, but occurs near Pond Bank and also Pen Mar. Root-suckers to form rather dense clumps of stems.

AMORPHA

fruticosa, (*): INDIGO BUSH: 870N. Shrub of eastern U.S., including S.E. Penna. Not native to the Mont Alto State Forest. Interesting ornamental shrub of spreading habit, with fine, feathery foliage and purplish flowers. Grows best in a moist soil.

ARALIA

spinosa, 406: HERCULES' CLUB: 843K; 870K. A prickly tree-like shrub of eastern U.S., including Penna. Grows locally at a few places on and near the forest, particularly along the Caledonia road, and also near Rouzerville and Fayetteville.

ARONIA

arbutifolia, 276: RED CHOKEBERRY: 637; 638; 640. Shrub of eastern U.S., including Penna. Common on the Mont Alto State Forest, but limited to moist and swampy sites. This and the following species are valuable for game food, as the attractive fruits hang upon the plants for a long time.

melanocarpa, 277: BLACK CHOKEBERRY: 641. Shrub of eastern U.S., including Penna. Common on the forest, sometimes associated with red chokeberry, but found more often on drier sites such as rocky slopes.

ARUNDINARIA

macrosperma, 100: SOUTHERN CANE: 578. A species of bamboo native to southern U.S. Freezes back repeatedly in this climate.

ASIMINA

triloba, 241: PAPAWE: 575. Small tree of eastern U.S., including Penna. Rare and local on the forest, but occurs near Mont Alto State Forest Park, along Truckee Run, Hay's Run, and in Biesecker Gap. More common along Conococheague Creek in the Cumberland Valley. Prefers rich soil along stream banks. Suckers freely to form thickets.

BENZUIN

aestivale, 244: SPICE BUSH: 739; 1247. Shrub of eastern U.S., including Penna. Common on the Mont Alto State Forest, along streams and in moist places.

BERBERIS

Julianae, (*): WINTERGREEN BARBERRY: 519. An evergreen shrub of central China. A handsome, hardy barberry of rather upright habit.

Thunbergii, 231: JAPANESE BARBERRY: 814; 993; 1013; 1032; 1192; 1245; 1411. A much-branched shrub of Japan. Has numerous cultivated varieties and is universally useful. A common hedge plant.

vulgaris: EUROPEAN BARBERRY: A shrub of Europe, but frequently naturalized in N. America. A few specimens occur locally. Being an alternate host of the wheat rust, it has been destroyed over wide areas.

BETULA

alba, 155: Same as *Betula pendula*.

davurica; 145: 530; 877. Tree of N.E. Asia and Japan. Has peculiar exfoliating bark similar to that of the river birch.

fruticosa, 146: BUSH BIRCH: 411. Shrub of N.E. Asia and N. China.

japonica, 147: JAPANESE WHITE BIRCH: 498; 667. Tree of Japan, N.E. Asia and N. China. Resembles very much the European white birch.

BETULA, continued

- japonica var. mandshurica, 148: MANCHURIAN WHITE BIRCH: 119; 732; 921. Tree of E. Asia. Seed gotten from Korea in 1928.
- japonica var. szechuanica, 149: 724. Tree of W. China. Its foliage remains dark green until late in autumn.
- lenta, 150: SWEET (BLACK) BIRCH: 1166; 1241. Tree of eastern U.S., including Penna. Common on the Mont Alto State Forest, where it frequents all sites from coves to mountain tops.
- lutea, 151: YELLOW BIRCH: Tree of eastern U.S., including Penna. Native to the Mont Alto State Forest, where it prefers moist, cool locations. The most important of the native birches.
- nigra, 153: RIVER BIRCH: 1283; 1343. Tree of eastern U.S., including Penna. Does not occur naturally on the Mont Alto State Forest. Likes moist sandy soil, and one finds it only along the larger streams.
- papyrifera, 154: CANOE (PAPER) BIRCH: 1244; 1249. A distinctly boreal tree, ranging from Alaska, through Canada and N.E. United States. Native to northern Penna., but not to the Mont Alto State Forest. A handsome tree with chalky white bark.
- pendula, 155: EUROPEAN WHITE BIRCH: 480. Tree of Europe and Asia Minor. A common ornamental, having many varieties, usually with long drooping twigs and finely dissected leaves. Accommodates itself to all sorts of soils.
- platyphylla, 156: BROADLEAF BIRCH: 226; 228; 247. Native range unknown. Our Plants are U.S.D.A. specimens, but Rehder's "Manual Of Cultivated Trees and Shrubs" does not recognize this species.
- populifolia, 157: GRAY BIRCH: Tree of Canada and N.E. United States. An outpost on The Knob, Mont Alto State Forest, is considered one of the southern-most points within its natural range. Small, short-lived, and occurs in clumps on dry and sterile and also boggy soils.

BROUSSONETIA

- papyrifera, 228: PAPER MULBERRY: Shrub or small tree of China and Japan. Occasionally naturalized in E. United States. Very rare escapes are found around abandoned home-sites. Occurs too in the village of Mont Alto.

BUXUS

sempervirens, 343: COMMON BOX: A much-branched, dense, evergreen shrub of S. Europe, W. Africa and W. Asia. Much planted for ornamental purposes. It is growing on a farm just outside the arboretum area; also planted in Forest Ranger Harry Staley's yard.

CALLICARPA

dichotoma, (*): CHINESE BEAUTYBERRY: 701B. Shrub of China and Korea. Noted for its dense clusters of lilac-violet berries, produced in the fall but persisting long into the winter. A good game food species.

Giraldiana var. decilogus, 461. CHINESE BEAUTYBERRY: 688; 703. Shrub of China, much like the preceding.

CALYCANTHUS

fertilis, (*): SMOOTH SWEETSHRUB: 1035. Shrub of S.E. United States, including S. Penna. (Porter). Not native to the Mont Alto State Forest. Very similar to the following, but not quite as hardy.

floridus, 240: COMMON SWEETSHRUB: 564; 941. Shrub of S.E. United States, from Va. to Fla. A common ornamental. All parts of the plant exhale an aromatic fragrance. Needs a rich, moist soil and a partially shaded and sheltered situation.

CAMPSIS

radicans, 465: TRUMPET-CREEPER: Climbing shrub of S.E. United States, including S. Penna. (Porter). Not known to be actually native to the Mont Alto State Forest, but rare escapes are found about various home-sites, with one such station close to the arboretum. Prefers moist woods and thickets. Known also as Tecoma radicans.

CARAGANA

arborescens, (*): SIBIRIAN PEA-TREE: 1413ii; 1483; 1484; 1485. Shrub or small tree of Siberia and Manchuria. Has an upright, almost tree-like growth. Does well on sandy soils, but prefers open sunlight. An excellent hedge plant.

pokinensis, 332: CHINESE PEA-TREE: 182. Shrub or small tree of China. Our plant is a U.S.D.A. specimen.

CARPINUS

caroliniana, 163: AMERICAN HORNBEAM (BLUE BEECH): 621.
Small tree of Canada and E. United States, including
Penna. Occurs frequently on the Mont Alto State Forest,
along streams and in other places where moisture is
plentiful. Noted for its twisted, fluted trunk and
smooth bluish-gray bark.

CARYA

alba, 137: MOCKERNUT HICKORY: Tree of S. Canada and
eastern U.S., including Penna. On this forest it grows
at the base of the mountains and on dry lower slopes of
S. or W. exposure. Common at Pond Bank.

caroliniae - septentrionalis, 139: SOUTHERN SHAGBARK
HICKORY: 1414L; 1414M; 1457; 1458. Tree of southern
U.S. Not native to the Mont Alto State Forest.
Resembles *Carya ovata*.

cordiformis, 140: BITTERNUT HICKORY: Tree of S. Canada
and eastern U.S., including Penna. Native to the Mont
Alto State Forest, but extremely rare and local, as it
desires moist, fertile bottomland sites. Though
limited on this forest to Antietam Cove, it occurs more
commonly along streams in the adjoining Cumberland
Valley.

glabra, 141: PIGNUT HICKORY: 1186. Tree of S. Canada
and eastern U.S. Fairly common on the Mont Alto State
Forest, on poor and medium sites.

illinoensis, 144: Same as *Carya pecan*.

laciniosa, 142: BIG SHELLBARK HICKORY: 204; 206; 1334.
Tree of eastern U.S., including Penna. Not native to
the Mont Alto State Forest, but it is found along the
Conococheague and Back Creek in the Cumberland Valley.
Limited to wet alluvial bottoms.

ovata, 143: SHAGBARK HICKORY: Tree of S. Canada and
eastern U.S., including Penna. Native to the forest,
but rare. Prefers moist fertile soils. One tree
stands on the edge of the black walnut plantation at
the State Forest Tree Nursery, and there is an experi-
mental forest plantation at Pond Bank.

pecan, 144: PECAN HICKORY: 390. Native to central U.S.,
but not to Penna. Planted locally for its fruit. A
large tree stands on a farm just outside the arboretum
area. Commercial plantations throughout the South.

CASTANEA

- crenata*, 173: JAPANESE CHESTNUT: 1411K; 1411L; 1411M.
Shrub or small tree of Japan. There is an experimental
plantation in Brandon Hollow.
- dentata*, 174: AMERICAN CHESTNUT: 1165. Tree of eastern
U.S., including Penna. Formerly common on the Mont
Alto State Forest, but the blight killed every tree of
the original stand. There is an experimental planta-
tion inside the arboretum area.
- mollissima*, 175: CHINESE CHESTNUT: 183; 1233; 1344; 1394;
1411N; 1412H; 1412 I. Small tree of China and Korea.
Several plantations on the Mont Alto State Forest.
- pumila*, 176: CHINQUAPIN: Shrub or small tree of S.E.
United States, including Penna. Reaches its northern
limit in Penna. A northwestern outpost occurs on
Corl's Ridge near Caledonia.
- pumila* × *crenata*, 177: HYBRID CHESTNUT: 1410A. A few
specimens are planted in experimental forest plantations.

CATALPA

- bignonioides*, 466: COMMON CATALPA: 1011. Tree of S.E.
United States, not native to the Mont Alto State Forest.
There is an unsuccessful plantation at Pond Bank.
- Kacmpferi, 468: Same as *Catalpa ovata*.
- ovata*, 468: CHINESE CATALPA: 464; 533; 1224. Tree of
China, cultivated in Japan. Leaf-spot and powdery-
mildew fungi have killed a great many catalpas of this
and other species at Mont Alto.
- speciosa*, 467: WESTERN (HARDY) CATALPA: 619A; 699; 725-A;
760; 1411D. A tree native to the Mississippi Valley,
but planted commonly throughout eastern United States.

CEANOTHUS

- americanus*, 391: NEW JERSEY TEA: A low, compact shrub
of Canada and eastern U.S., including Penna. Native to
the Mont Alto State Forest, where it occurs in old
fields and open woods on dry sites. Common about Pond
Bank.

CEDRELA

- sinensis*, 342: CHINESE CEDRELA: 484. Tree of China.
Similar to *ailanthus*.

CEDRUS

- atlantica, 67: ATLAS CEDAR: 180. Tree of the Atlas Mountains in N. Africa, where it is an important source of timber. Appears to be better suited as an ornamental than either the Deodar or the Lebanon Cedar.
- deodara, 69: DEODAR CEDAR: 124. Tree of the Himalaya Mountains in S. Asia, where it is commercially important.
- libanotica, 70: CEDAR OF LEBANON: 201; 202; 203; 205; 207; 208. Tree of Asia Minor and Syria. Mentioned occasionally in the Bible.

CELASTRUS

- scandens, 365: BITTERSWEET: A climbing shrub of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rather rare and local in occurrence. Grows along streams, fence rows and in moist woodlands. Its showy fruits are prized in country homes, especially at Christmas time.

CELTIS

- occidentalis, 224: HACKBERRY: 630C; 1128; 1176; 1198; 1212; 1257. Tree of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. Found infrequently on the better soils along streams. Common in the Cumberland Valley.
- sinensis, 222: CHINESE HACKBERRY: 478; 556; 563. Tree of E. China, Korea and Japan. A hardy, fast-growing tree at Mont Alto.

CEPHALANTHUS

- occidentalis, 469: BUTTONBUSH: Shrub of Canada and U.S., also E. Asia. Rather common on the forest, in swamps. Found at Small's Pond near the arboretum, at Pond Bank and numerous other places.

CERCIS

- canadensis, 317: REDBUD: 375; 376; 389; 399; 400; 953; 1022; 1107. Small tree of S. Canada and eastern U.S., including Penna. Extremely rare on the forest, frequenting only the better soils. Common about Fairfield and at certain places in the Cumberland Valley.
- chinensis, (*): CHINESE REDBUD: 1453; 1455. Tree of China. Much like our native redbud.

CHAMAECYPARIS

- Lawsoniana, 14: LAWSON CYPRESS: 1165A. Tree of the Pacific Coast. It does not do well in a dry climate.
- obtusa, 15: HINOKI CYPRESS: 166; 167; 168; 169; 170; 649; 655C. Tree of Japan, and one of that country's five most important timber trees. Shows considerable promise at Mont Alto.
- obtusa var. aurea, (*): YELLOWTIP HINOKI CYPRESS: 499. An attractive form of *C. obtusa*, with golden yellow leaves.
- pisifera, 16: SAWARA CYPRESS: 482; 485; 486; 487; 843A. Tree of Japan. A hardy species. Its wood is fragrant and white in color.
- thyoides, 18: WHITE CEDAR: 233; 460; 509. Tree of eastern U.S., growing in fresh-water swamps and bogs along the Atlantic Coast. Not native to Penna. There is an experimental forest plantation at Pond Bank.

CHIONANTHUS

- virginica: FRINGE-TREE: Large shrub or small tree of S.E. United States, including S. Penna. (Porter). Not native to the Mont Alto State Forest. This showy ornamental has been planted some in this locality.

CITRUS

- trifoliata, 340: Same as *Poncirus trifoliata*.

CLADRASTIS

- lutea, 324: YELLOW-WOOD: 919. A small tree of S.E. United States. A favorite ornamental with compound leaves and bearing large clusters of white flowers. Hardy in this latitude and as far north as New England.

CLEMATIS

- virginiana, 229: VIRGIN'S BOWER: 35; 991. A climbing woody vine of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest. Often used for home cultivation to cover walls, fences, arbors, trellises, etc.

COLUTEA

orientalis, 331: ORIENTAL BLADDER-SENNA: 279. Shrub of S.E. Europe and the Orient. Thrives better in dry than in wet soils, but cannot endure overhead shade.

COMPTONIA

asplenifolia, 130: SWEET FERN: Shrub of eastern U.S., including Penna. Common on the Mont Alto State Forest. Its presence indicates a sterile soil of highly acid reaction. Found on barrens and recent burns. Has aromatic fern-like leaves.

CORNUS

alba, (*): TATARIAN DOGWOOD: 1414Q; 1464. Shrub of Siberia, Manchuria and N. Korea, with blood-red twigs and white fruits.

alternifolia, 408: ALTERNATE-LEAVED DOGWOOD: Shrub or small tree of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest. It is fairly common on the better soils, in moist situations on lower slopes.

Amomum: SILKY DOGWOOD: Shrub of eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. More common along streams in the Cumberland Valley. Prefers moist or wet soils.

circinnata, 417: Same as *Cornus rugosa*.

femina, 410: 1412C; 1413C; 1414B. Shrub of southern U.S., not native to Penna.

florida, 411: FLOWERING DOGWOOD: 1009; 1259. Shrub or small tree of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest and generally distributed throughout the region.

florida var. *rubra*, 412: RED-FLOWERING DOGWOOD: 1027. A horticultural variety of flowering dogwood, with bracts of the floral involucre red or pink. Our specimen is large and a beautiful sight when in bloom.

mas, 414: CORNELIAN CHERRY: 669B; 701A. Shrub or small tree of Europe and western Asia. Has been in cultivation for centuries. Early flowering, and its flowers are not like those of the other dogwoods.

obliqua, (*): PALE DOGWOOD: 642. Shrub of eastern U.S., including Penna. Not native to the Mont Alto State Forest, but occurs rarely along streams in the nearby Cumberland Valley. Very similar to *Cornus Amomum*.

CORNUS, continued

- officinalis*, 415: JAPANESE CORNELIAN CHERRY: 198; 474; 475; 565. Shrub or small tree of Japan. Bears yellow flowers, red fruits, and has conspicuous patches of rust-colored down on its lower leaf surfaces.
- paniculata*, 416: Same as *Cornus racemosa*.
- racemosa*, 416: GRAY (PANICLED) DOGWOOD: 1029; 1426; 1427. Shrub of eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. Demands rich soil and open situations. Forms thickets along fence-rows and roadsides. Most common near Pond Bank.
- rugosa*, 417: ROUNDLEAF DOGWOOD: Shrub of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. Found in shady, often rocky situations. It occurs on the N.W. slope of Oak Knob; also on The Knob in Adams County.
- sanguinea*, (*): BLOODTWIG DOGWOOD: 1472; 1473. Shrub of Europe, with dark red branches.
- stolonifera*, 418: RED-OSIER DOGWOOD: Shrub of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rather rare. Found in moist soil.
- Walteri*, (*): CHINESE DOGWOOD: 122; 125; 190; 191; 192; 193; 194; 854; 879; 1215. Tree of C. China. Very hardy and makes vigorous growth in our climate.

CORYLUS

- americana*, 165: AMERICAN HAZELNUT: 1410; 1411E; 1411F; 1412A; 1413A; 1414. Shrub of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare and local. Confined to fertile bottomland sites. Grows in clumps and thickets.
- Avellana*, 166: FILBERT (EUROPEAN HAZELNUT): 1414A. Shrub of Europe, long cultivated for its fruit. Requires a porous, fresh soil. Grows rapidly. Suitable for hedges.
- cornuta*, 167: BEAKED HAZELNUT: Shrub of Canada and eastern U.S., including Penna. Generally distributed on the forest as an understory plant on dry sites. Suckers freely.
- heterophylla*, 168: VARIED-LEAVED HAZELNUT: 454; 455. or small tree of N.E. Asia and Japan. A distinctive species, with odd-shaped leaves bearing small lobes.
- rostrata*, 167: Same as *Corylus cornuta*.

COTINUS

coggyria, 344: SMOKE-TREE: 993. Shrub of S. Europe to C. China and the Himalaya Mts. Said to have been cultivated for 2,000 years. Also known as Rhus Cotinus.

COTONEASTER

angustifolia, 265: Same as *Pyracantha angustifolia*.

buxifolia var. *vellaea*, (*): EVERGREEN COTONEASTER: 3; 13 (Res. Nursery Block). A low evergreen shrub of western China, with spirea-like flowers, crowded small leaves and dull red berries.

Harroviana, 264: SILVERLEAF COTONEASTER: 864. Shrub of W. China. Half-evergreen.

Pyracantha, 266: Same as *Pyracantha coccinea*.

CRATAEGUS

crus-galli, 267: COCKSPUR THORN: 625; 689. Large shrub or tree of S. Canada and eastern U.S., including Penna. Found locally on the Mont Alto State Forest, but nowhere abundant. Prefers old fields and moist open woods.

coccinea, 268: SCARLET HAWTHORN: 1379. Small tree of eastern U.S., including Penna. Found locally on the forest, in open places and thickets, at low elevations.

Douglasii, (*): BLACK HAWTHORN: 9; 10 (Res. Nursery Block). Tree of N.W. United States, with broad, thin, doubly serrate leaves and small black-purple fruit.

durobrivensis, (*): CHRISTMAS HAWTHORN: 5; 12 (Res. Nursery Block). Shrub of central United States; not native to Penna.

lauta, (*): FRANKLIN HAWTHORN: 242. This is a U.S.D.A. specimen, and the species is not recognized in the 1927 edition of Rehder's "Manual Of Cultivated Trees And Shrubs".

Lavallei, 269: HYBRID HAWTHORN: 832. An ornamental tree, probably a hybrid between *C. crus-galli* and *C. pubescens*. Not native to the Mont Alto State Forest.

phaenopyrum, 270: WASHINGTON THORN: 1414C. Tree of S.E. United States; naturalized in S. Pennsylvania. It occurs locally on the forest as an escaped ornamental. One of the largest and best hawthorns to plant.

CRATAEGUS, continued

- pinnatifida, 271: CHINESE HAWTHORN: 920. Tree of N.E. Asia, with pinnately lobed leaves.
- punctata, 272: DOTTED HAWTHORN: Tree of S. Canada and eastern U.S., including Penna. Found infrequently in this region on fertile bottom-lands. Occurs near Knepers Station, along the Antietam Creek.

CRYPTOMERIA

- japonica, 26: COMMON CRYPTOMERIA: 483; 521. Tree of Japan and China. Thrives best in a rich, loamy and moist soil and sheltered position. An unusual and beautiful ornamental conifer. Planted for timber in its native country. Sprouts from the stump.
- japonica var. Lobbii, 27: LOBB CRYPTOMERIA: 798. An ornamental variety of the former, with narrow-pyramidal crown and short, densely ramified branches.

CUNNINGHAMIA

- lanceolata, 28: CHINA -FIR: 111; 763. An evergreen tree of southern and western China. A very decorative conifer. Our specimens have sprouted vigorously from the base.

CYDONIA

- japonica: JAPANESE FLOWERING QUINCE: Shrub of China and Japan, bearing large scarlet-red flowers. Planted at a home near Small's Pond, just outside the arboretum area.
- oblonga, 284: COMMON QUINCE: Small tree of C. Asia, long cultivated for its fruit throughout eastern U.S., including Penna. Occurs in the village of Mont Alto. Referred to by some botanists as Cydonia vulgaris.

DEUTZIA

- scabra, 247: FUZZY DEUTZIA: 643. Shrub of Japan and China, commonly planted as an ornamental throughout eastern U.S., including Penna. Bears masses of white flowers, and its foliage is rough and sandpaper-like.
- Wilsonii, (*): WILSON DEUTZIA: 25; 26; 27; 28 (Res. Nursery Block). Shrub of Central China. Considered to be a hybrid between D. discolor and D. mollis.

DIERVILLA

- florida, 482: PINK WEIGELA: 721; 791; 1033; Shrub of northern China and Korea. Long cultivated in eastern U.S. The Weigela rosea of other plant authorities.
- Lonicera, 483: BUSH HONEYSUCKLE: Shrub of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rather uncommon. Found along Rocky Mountain Run, Hayes Run and Truckers Run, also occasionally on dry rocky slopes.

DIOSPYROS

- Lotus, 436: DATE-PLUM: 1459; 1479. Tree of China and Japan. Not entirely frost-hardy at Mont Alto.
- virginiana, 437: PERSIMMON: 255; 395; 398; 676; 849; 872; 1197. Tree of eastern U.S., including Penna. Native to the forest, but very uncommon. Found in a few fertile, protected situations at Pond Bank and Old Forge.

DIRCA

- palustris, 403: LEATHERWOOD: Shrub of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. It has been found along the East Branch of the Little Antietam Creek, also along Hay's Run and Rocky Mountain Run. Prefers moist and shaded situations.

ELAEAGNUS

- angustifolia, 404: RUSSIAN-OLIVE: 949; 977; 14111; 1412G. Small tree of S. Europe and W. and C. China. Has silvery leaves and twigs. Very hardy and drought-resisting.
- argentea, (*): SILVERBERRY: 254; 1460; 1461. Shrub of Canada and northern U.S., but not native to Penna. Withstands intense cold but suffers from heat. One of the most silvery shrubs in cultivation.

EPIGAEA

- repens, 426: TRAILING ARBUTUS: Shrub of Canada and eastern U.S., including Penna. Common at places on the Mont Alto State Forest. Thrives in light, sandy soils and in partially shaded situations. A popular wild flower.

EVODIA

Daniellii, 336: EVODIA: 696; 723-A; 806. Small tree of N. China and Korea, with opposite, compound leaves having a characteristic pleasant odor. Does well at Mont Alto.

EVONYMUS

alata, 360: WINGED EVONYMUS: 476. Shrub of Japan, Korea, Manchuria and China. Its branches have prominent corky wings. Thrives in half-shaded situations.

altaica, (*): 1428. This species is not recognized by Rehder, and the source of our plant is unknown.

atropurpurea, 361: BURNING-BUSH: 457. Shrub or small tree of eastern U.S., including Penna. Native to the Mont Alto State Forest, but believed to occur only along Trucker's Run. Found at various places along Conococheague Creek, in the Cumberland Valley. Demands moist fertile soils.

Hamiltoniana, 362: HAMILTON'S EVONYMUS: 382. Small tree of the Himalaya Mountains in S. Asia.

japonica, 363: EVERGREEN BURNING-BUSH: 465. Shrub of southern Japan. Freezes back severely at Mont Alto.

Maackii, 364: MAACKII'S EVONYMUS: 456; 905. Large shrub or small tree of N. China, Manchuria and Korea.

EXOCHORDA

Giraldii, (*): REDBUD PEARLBUSH: 14; 15 (Res. Nursery Block). Shrub of northwestern China.

Korolkowii, (*): TURKESTAN PEARLBUSH: 30; 31; 34; 35 (Res. Nursery Block). Shrub of Turkestan. Both these species of pearlbush are beautiful when in bloom.

FAGUS

grandifolia, 169: AMERICAN BEECH: 1412B. Tree of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but nowhere abundant. Some large trees occur along Red Run near Beartown, and scattered small specimens may be seen at a few places on Green Ridge.

sylvatica, 170: EUROPEAN BEECH: 427. Tree of C. and S. Europe, where it is an important timber species. Very sensitive to late spring frosts. Thrives on loamy soils.

FAGUS, continued

sylvatica var. tricolor, (*): TRICOLOR BEECH: 1445. A beautiful variety of European Beech, with the leaves nearly white, spotted green, and with pink margins. Slow-growing.

FORSYTHIA

ovata, (*): OVATE-LEAVED FORSYTHIA: 681; 691; 697.
Shrub of Korea.

viridissima, 451: GREENSTEM FORSYTHIA: 606A; 670. Shrub of China. Covered with a mass of golden flowers in April before its leaves unfold. A common ornamental.

viridissima var. koreana, 452: KOREAN FORSYTHIA: 397;
409; 410. Shrub of Korea.

FRAXINUS

americana, 441: WHITE ASH: 28; 39; 45; 50; 53; 56; 59;
435; 1222. Tree of S.E. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, where it is frequently found in moist coves on the better soils. Also occurs in several plantations.

biltmoreana, 442: BILTMORE ASH: 644; 658. Tree of S.E. United States, including S. Penna. (Porter). Not native to the Mont Alto State Forest. Resembles white ash, but has twigs densely soft-pubescent.

chinensis, 443: CHINESE ASH: 1411C. Tree of China.

chinensis var. rhynchophylla, 444: CHINESE ASH: 71;
496; 497; 825; 826; 827; 828; 829; 830; 831; 841. Tree of Manchuria, Korea, Japan and China. Shows considerable promise in this climate.

excelsior, 445: EUROPEAN ASH: 516; 517; 869; 1411A. Tree of Europe and Asia Minor. Commonly planted in this region as a shade and ornamental tree. Very sensitive to late frost and also drought. Requires a deep, porous, moist and fertile soil.

nigra, 447: BLACK ASH: Tree of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rather rare. It occurs in swamps and along streams, and can be found near the South Mountain Sanatorium, at Pond Bank, and also at Cold Springs.

Ornus, 448: FLOWERING ASH: 729; 730. Small tree of S. Europe and W. Asia. Bears attractive, sweet-scented flowers.

FRAXINUS, continued

pennsylvanica, 449: RED ASH: 388. Tree of Canada and eastern U.S., including Penna. Not native to the Mont Alto State Forest.

pennsylvanica var. lanceolata, 450: GREEN ASH: 1267. Tree of Canada and eastern U.S., including Penna. Not native to the Mont Alto State Forest. Represented in a few small forest plantations. An excellent shade tree.

GAULTHERIA

procumbens, 427: TEABERRY (WINTERGREEN): A tiny, evergreen shrub of Canada and eastern U.S., including Penna. Abundant on the forest, on moist as well as dry sites, in acid humus. Leaves and berries aromatic.

GAYLUSSACIA

baccata, 428: BLACK HUCKLEBERRY. Low shrub of Canada and eastern U.S., including Penna. Abundant on the forest, on dry, sterile sites, always on sandy acid soils.

brachycera, 429: BOX HUCKLEBERRY: 843. A creeping evergreen shrub of S.E. United States. Reaches its northern limit in Perry County in central Penna. This attractive, but very rare plant is not native to the Mont Alto State Forest. Makes extremely slow growth.

frondosa, 430: DANGLEBERRY: Low shrub of eastern U.S., including Penna. Native to the Mont Alto State Forest, where it occurs locally in moist wooded situations.

GINKGO

biloba, 1: MAIDENHAIR-TREE: 510; 511; 512; 513; 1095; 1139; 1142. Tree of E. China, cultivated in Japan. Widely planted in Europe and America as an ornamental. Bears fan-shaped leaves and ill-smelling fruit. Perfectly hardy and thrives in a great variety of soils.

GLEDITSIA

aquatica, 318: WATER LOCUST: 913; 914. Tree of S.E. United States, but not native to Penna. A Coastal Plain species which inhabits river swamps. Thrives here on a well-drained, sandy soil.

horrida, 319: JAPANESE HONEY LOCUST: 197; 704; 855. Tree of Japan and China. Closely resembles our common honey locust.

GLEDITSIA, continued

triacanthos, 321: COMMON HONEY LOCUST: 956; 1002; 1195; 1209; 1225; 1246. Tree of eastern U.S., including Penna. Native to the Mont Alto State Forest, where it occurs infrequently on the more fertile soils. A common ornamental and sometimes escaped from cultivation.

GYMNOCLADUS

dioica, 322: KENTUCKY COFFEE-TREE: 1214A; 1228; 1282. Tree of eastern U.S., possibly including Penna. In his "Flora Of Pennsylvania", Dr. Porter lists an outpost for this species along Conococheague Creek in Franklin County, but it has never been found elsewhere in the State. Widely cultivated as an ornamental.

HALESIA

carolina, 440: SILVER BELL-TREE: 940. Large shrub or small tree of S.E. United States, but not native to Penna. Sometimes planted as an ornamental, because of its showy white flowers.

HAZANELIS

virginiana, 256: WITCH HAZEL: Shrub or small tree of Canada and eastern U.S., including Penna. Widely distributed over damp situations on the forest, and where the shade is not excessive.

HEDERA

holix, 407: ENGLISH IVY: 1154. A high-climbing woody vine, native to Europe and Asia. Cultivated for centuries, and many varieties are known. It is growing about homes in the arboretum area. It clings, by aerial rootlets, to stone but will not adhere as tenaciously to wood.

HEMIPTELEA

Davidii, 220: DAVID ZELKOVA: 572. A shrubby tree of N. China, Manchuria and Korea. Used in China as a hedge plant. Some botanists classify it as Zelkova Davidii.

HIBISCUS

syriacus, 402 SHRUB ALTHEA (ROSE OF SHARON): 800; 1034; 1130. Shrub of China and India. One of the commonest of ornamental shrubs, and hardy.

HOVENIA

dulcis, (*) JAPANESE PAISEN-TREE: 429; 490; 494; 495. Small tree of China, with large catalpa-like leaves. Thrives here in sandy loam, and is hardy.

HYDRANGEA

arborescens, 248: SMOOTH (WILD) HYDRANGEA: Low shrub of eastern U.S., including Penna. Native to the Mont Alto State Forest, where it is common along the rocky banks of mountain streams and on moist wooded slopes.

paniculata, 249: PANICLE HYDRANGEA: 996. Shrub or small tree of Japan and China. A snowy and common ornamental. Does best in a moist soil and where there is a little shade.

HYPERICUM

densiflorum, (*): ST. JOHNSWORT: 630A. Small shrub of S.W. United States, but not known to be native to Penna. Grows in acid swamps and marshes. Yields a profusion of yellow flowers.

prolificum: SHRUBBERY ST. JOHNSWORT: Shrub of eastern U.S., including Penna. Native to the Mont Alto State Forest, but nowhere abundant. Prefers rocky and sandy woods and stream-banks; often in calcareous soil.

ILEX

cornuta, 353: CHINESE HOLLY: 1250; 1363A. An ornamental shrub of E. China, with lustrous evergreen leaves of odd shape. Makes very slow growth.

opaca, 355: AMERICAN HOLLY: 945; 1014. Evergreen tree of eastern U.S., including Penna. Native to the Mont Alto State Forest, but very rare. Dr. Illick reported, in 1921, "one specimen near The Pearl of the Park at the base of the east slope of Oak Knob; another near the nursery at the Forest Academy". We also know of a specimen having been found near Beartown, and recently another near Eagle Rocks.

ILEX, continued

- serrata, 356: FIRTOOTH HOLLY: 840. A deciduous shrub of Japan. Resembles winterberry but is smaller in every part.
- verticillata, 357: WINTERBERRY: 648; 797-A; 801. Shrub of Canada and eastern U.S., including Penna. Fairly common on the forest in low, marshy places. It will, if transplanted, succeed on well-drained soils, but not those derived from limestone. The bright red berries cling long into the winter and are eaten by birds.

INDIGOFERA

- Kirilowi, 327: KIRILOW INDIGO: 229; 230; 231; 477. A low shrub of N. China and Korea, with rose-colored pea-like flowers and locust-like leaves. Thrives here on a well-drained, light sandy soil.

JUGLANS

- cinerea, 132: BUTTERNUT: 717H; 738; 745; 1400. Tree of eastern U.S., including Penna. Native to the Mont Alto State Forest, but of infrequent occurrence. Found along streams and on fertile slopes. At Chimney Rocks it occurs even on a mountain top.
- mandshurica, 133: MANCHURIAN WALNUT: 546; 1471; 1477. Tree of Manchuria and Amurland. Bears a nut similar to butternut.
- nigra, 134: BLACK WALNUT: 132; 749; 759; 875; 895; 897; 898; 899; 982; 1043; 1053; 1098; 1111; 1177; 1184; 1326; 1397. Tree of eastern U.S., including Penna. Found on the forest, but not abundant. Prefers moist, fertile soils. Some arboretum specimens are of a cut-leaf variety. Several forest plantations nearby; one of the most successful in the State adjoins the local State Forest Tree Nursery.
- regia, 135: PERSIAN (ENGLISH) WALNUT: 662; 918A; 918B; 918C; 918D; 926D; 926E; 924-A; 926-A; 1355. Tree of S.E. Europe and S. Asia, but extensively planted throughout the N. Temperate Zone. Requires deep fertile soils to do well. Very tender as regards early and late frosts.
- Sieboldiana, 136: JAPANESE WALNUT: 820; 821; 822; 823; 824; 893; 894; 1401. Tree of Japan, which makes fast growth in this locality and is hardy.

JUNIPERUS

- chinensis, 6. CHINESE JUNIPER: 715. Tree of China, Mongolia and Japan. Very variable in habit. Common in cultivation. Prefers a moist soil and one derived from limestone.
- communis, 7: COMMON JUNIPER: 717; 1185. Shrub or small tree with a circumpolar range. Native to Penna., but not to the Mont Alto State Forest. Has many different varieties.
- communis var. depressa, 8: PROSTRATE JUNIPER: 112; 762. A variety of common juniper, having numerous stems ascending from a procumbent base. Commonly employed as an ornamental.
- communis var. suecica, 10: SWEDISH JUNIPER: 716. A columnar form of common juniper, with light bluish green foliage.
- excelsa, (*): GREEK JUNIPER: 19; 20 (Res. Nursery Block). Tree of S.W. Europe and Asia Minor.
- horizontalis var. plumosa, (*): CREEPING JUNIPER: 508. Shrub of Canada and northern U.S., but not native to Penna. Procumbent with nearly horizontally spreading branches.
- rigida, 12: NEEDLE JUNIPER: 1132; 1155; 1347; 1361. Shrub or small tree of Japan, Korea and N. China, with pendulous twigs.
- squamata var. Meyeri, (*): MEYER JUNIPER: 237; 267. Shrub of China, with dense bluish white foliage.
- virginiana, 13: RED CEDAR: 418; 938; 959; 972; 974; 1000; 1084. Tree of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest. It frequents dry, open situations in the foothills. Common on shale hills and limestone outcrops of the Cumberland Valley. Many kinds of birds eat the berries.
- virginiana var. glauca, (*): SILVER RED CEDAR: 238; 256; 258; 627; 628. A bluish white variety of the common red cedar.

KALMIA

- angustifolia, 422: SHEEP LAUREL: Shrub of Canada and eastern U.S., including Penna. The only place it occurs on the Mont Alto State Forest is along Rocky Mtn. Run. It frequents fields, roadsides and open places, particularly in moist soil.

KALMIA, continued

latifolia, 423: MOUNTAIN LAUREL: Shrub of S.E. Canada and eastern U.S., including Penna. Abundant on the forest from coves to mountain tops. One of our most beautiful flowering shrubs. The official State Flower of Pennsylvania.

KERRIA

japonica, 287: GLOBE FLOWER: An ornamental shrub of N. Asia. Planted in the village of Mont Alto, near the arboretum. An old-fashioned favorite of gardeners. Does best in partial shade.

KOELREUTERIA

paniculata, 388: GOLDENRAIN (CHINESE VARNISH) TREE: 481; 492; 880; 1044; 1211. Tree of China, Korea and Japan. An interesting ornamental, with large compound leaves and conspicuous panicles of yellow flowers and bladdery fruits. Requires a rich soil.

LABURNUM

alpinum, (*): SCOTCH LABURNUM: 866; 918E. Shrub or small tree native to the mountains of S. Europe and Scotland. Has clover-like leaves and lemon-colored wistaria-like flowers.

LARIX

dahurica, 60: Same as Larix Gmelini.

decidua, 58: EUROPEAN LARCH: 781; 794; 928; 929; 930; 1004; 1082; 1127; 1167; 1204; 1218; 1280; 1337; 1375; 1389. Tree of N. and C. Europe, where it is an important timber species. Found in numerous plantations on this forest and elsewhere in Penna. Requires a fertile soil and open sunlight.

eurolepis, 59: DUNICHOID LARCH: 531; 798. A hybrid larch, considered by Rehder to be a cross between L. kaempferi and L. decidua. Grows rapidly, probably faster than both parents.

Gmelini, 60: DAHURIAN LARCH: 219; 837; 1017; 1354. Tree of E. Siberia. Formerly considered to be Larix dahurica.

Gmelini var. japonica, 61: KURILE LARCH: 1015; 1349. Tree of Saghalin and the Kurile Islands. Appears to grow more slowly than other species planted locally. Its leaves unfold very early.

LARIX, continued

Gmelini var. Principis Rupprechtii, 62: PRINCE RUPERT LARCH: 561; 562; 795; 1018. Tree of N. China and Korea.

Kaempferi, 63: JAPANESE LARCH: 453; 558; 559; 560; 789; 1104; 1106; 1168; 1357. Tree of Japan. A fast-growing larch, given prominence in the Department's reforestation program. Planted extensively on the Mont Alto State Forest. Demands a moister site than does European larch and makes faster juvenile growth.

leptolepis, 63: Same as Larix Kaempferi.

occidentalis, 65: WESTERN LARCH: 833. Tree of British Columbia and N.W. United States.

sibirica, 66: SIBERIAN LARCH: 792; 1340; 1351. Tree of N. E. Russia and Siberia. This appears to be a most promising larch for reforestation in Penna. It grows fast and its trunk is very straight.

LEITNERIA

floridana, (*): CORKWOOD: 1412A; 1414R. Tree of S. United States. Requires wet soil, and it root-suckers. Has wood lighter than cork.

LIBOCEDRUS

decurrens, 20: INCENSE CEDAR: 907. Tree of the Pacific Coast states, occurring in the west slopes of the Sierras and Cascade Mts. Our specimen is beautiful and appears to be thrifty. Has a columnar outline and dark green foliage.

LIGUSTRUM

acuminatum var. macrocarpum, 457: BIGBERRY PRIVET: 317. Shrub of Japan.

ovalifolium, 458: CALIFORNIA PRIVET: 114: Shrub of Japan. A common hedge plant. Not entirely frost hardy at Mont Alto.

vulgare, 459: EUROPEAN (COMMON) PRIVET: Shrub of Europe and N. Africa. Much used for hedges in this country. Has been planted in the village of Mont Alto and elsewhere nearby.

LIQUIDAMBAR

formosana, 254: FORMOSA SWEET GUM: 912. Tree of China and Formosa. Like our native sweet gum, but the twigs have no corky bark and bear 3-lobed instead of 5-lobed leaves.

LIQUIDAMBAR, continued

Styraciflua, 255: SWEET GUM: 467; 891; 1052. Tree of eastern U.S., including Penna. Not native to the Mont Alto State Forest. Prefers rich, moist, alluvial soils. An interesting ornamental with star-shaped leaves.

LIRIODENDRON

Tulipifera, 239: TULIP-TREE: 12; 747; 756; 1268; 1380. Tree of eastern U.S., including Penna. Common in fertile coves and ravines on the Mont Alto State Forest.

LONICERA

canadensis, 484: AMERICAN FLY HONEYSUCKLE: Shrub of Canada and northern U.S., including Penna. Found at several places on the forest, particularly about the South Mountain Sanatorium. It occurs usually in moist woods.

chrysantha, (*): CORALLINE HONEYSUCKLE: 725. An upright shrub of N.E. Asia and C. Japan, bearing coral-red fruits.

dioica, 485: LIMBER (GLAUCCUS) HONEYSUCKLE: Shrub of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but extremely rare. The only place where it is known to occur is along the headwaters of Rocky Mountain Run.

japonica, 486: JAPANESE HONEYSUCKLE: A half-evergreen, twining shrub, native to E. Asia but much cultivated and naturalized in eastern U.S. Very common on the forest and in the arboretum area. Occasionally forms a complete mat over acres of ground and smothers all low vegetation.

Koehneana, (*): 718-A; 722-B; 724-A; 733A-B; 733B. Shrub of W.China.

tatarica, 487: TATARIAN HONEYSUCKLE: Shrub of S. Russia and Turk-estan. One of the most commonly planted honeysuckles. It occurs here as a rare escape on good soils.

Xylosteum, 488: EUROPEAN FLY HONEYSUCKLE: 423. Shrub of Europe and W. Asia. A common ornamental. Our specimen is a large rounded bush about 15 ft. tall.

LYCIUM

halimifolium, 463: MATRIMONY VINE: A spreading shrub of S.E. Europe and W. Asia. Long cultivated. Found as a rare escape and also around abandoned homesites. Covers walls and fences in thick tangled masses.

pallidum, (*): PALE MATRIMONY VINE: 23 (Res. Nursery Block). Shrub of S.W. United States. Ours is a U.S.D.A. specimen and it came from Nevada.

LYONIA

ligustrina, 424: Same as *Xelisma ligustrina*.

MAACKIA

amurensis, 323: AMUR MAACKIA: 186; 511; 542; 543; 544; 545; 547.
Tree of Manchuria. A hardy ornamental, resembling yellow-wood
(*Cladrastis lutea*).

MACLURA

pomifera, 227: OSAGE ORANGE: 42; 1236. Tree native to S.W. United
States, but widely planted elsewhere for hedges and ornament.
Bears large orange-like fruits. Rare escaped specimens occur
on fertile soils in this region.

MAGNOLIA

acuminata, 233: CUCUMBER-TREE: 1403. Tree of eastern U.S., including
Penna., but not native to the Mont Alto State Forest. Demands
moist fertile soils. It is a characteristic associate of the
beech-birch-maple forest type.

glauca, 238: Same as *Magnolia virginiana*.

obovata, (*): SILVER MAGNOLIA: 693; 704-BB; 1412-AA; 1482. Tree
of Japan. Similar to our native umbrella magnolia. Known also
as *Magnolia hypoleuca*.

Sculangeana: SAUCER MAGNOLIA: Recognized by Rehder as a hybrid
magnolia, *M. denudata* X *M. liliflora*. A very popular ornamental.
Planted in the village of Mont Alto, near the arboretum, and else-
where in this section.

tripetala, 237: UMBRELLA MAGNOLIA: 787; 1087. Tree of eastern U.S.
Native to Penna. (along lower Susquehanna River) but not to the
Mont Alto State Forest. Bears extremely large leaves and
flowers. A rare ornamental.

virginiana, 238: LAUREL MAGNOLIA: 503; 505; 506. A half-evergreen
shrub or small tree of the Atlantic Coastal Plain, including
S.E. Penna. Known to occur at only two places in this region,
(one outpost at Caledonia, on the Michaux State Forest; the other,
more recently discovered, covers a sizeable swamp below Old
Forge, near Antietam Creek, on the Mont Alto State Forest.

MAHONIA

Aquifolium, 230: OREGON HOLLYGRAPE: An evergreen shrub of British Columbia and northwestern U.S., belonging to the Barberry Family. Has foliage resembling American holly. The state flower of Oregon. Planted in Forest Ranger Harry Staley's yard, inside the arboretum area.

MALUS

baccata, 280: SIBERIAN CRAB: 404; 731; 732; 733. Tree of N.E. Asia. Bears exquisite flowers and an abundance of showy fruit. Excellent to plant for game food and cover.

baccata x pumila, (*): 843F. Twigs and fruit from this specimen were submitted to Arnold Arboretum for identification. Rehder also designated it x Malus robusta.

coronaria, 281: WILD SWEET CRAB: 904. Small thorny tree of eastern U.S., including Penna. Found infrequently on the forest on moist soils at lower elevations, particularly at Pond Bank and along Rocky Mountain Run.

pumila, 282: COMMON APPLE: 481A; 832; 1102. Tree native to Europe and W. Asia, but cultivated for centuries. Found sometimes as an escape.

robusta, 283: CHERRY CRAB: 260; 386; 387. A very early hybrid, with white flowers and dull red fruits one inch across. Same as Malus baccata x M. prunifolia.

theifera, (*): TEA CRAB: 222. Tree of China and the Himalaya Mts. Bears an abundance of fragrant white flowers.

MENISPERMUM

canadense, 232: MOONSEED: 1411. A climbing woody vine of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. The large lobed leaves give it the general appearance of a grape-vine. It occurs in open woods along streams.

MITCHELLA

repens, 470: PARTRIDGE-BERRY: A trailing and woody little evergreen of S. Canada and eastern U.S., including Penna. Found on the forest wherever conifers predominate. Its red berries resemble those of the teaberry.

MORUS

alba, 225: WHITE MULBERRY: 176; 968; 1212A; 1256; 1265. Tree of China naturalized throughout the N. Temperate Zone. It occurs locally as an infrequent escape on fertile soils.

MORUS, continued

rubra, 226: RED MULBERRY: 1035A; 1172. Tree of eastern U.S., including Penna. Native to the Mont Alto State Forest, but very rare. Occasional specimens are found on fertile soils at lower elevations. More common along streams in the Cumberland Valley.

MYRICA

aspleniifolia, 130: Same as *Comptonia aspleniifolia*.

NEILLIA

sinensis, (*): TUBE NEILLIA: 723-B; 724-B. Shrub of central China. Hardy at Mont Alto. Prefers moderately moist soils. Its foliage resembles ninebark.

NEMOPANTHUS

mucronata, 359: MOUNTAIN HOLLY: Shrub of S. Canada and eastern U.S., including Penna. Found in a few places on the forest, always in cool moist woods. It occurs at Pond Bank, at Curren's Spring on Snowy Mountain, and at various places along Swift (Tumbling) Run.

NYSSA

sylvatica, 405: TUPELO (BLACK GUM): 776; 1179; 133J. Tree of S. Canada and eastern U.S., including Penna. Very common on the Mont Alto State Forest. Generally found on moist or wet sites, but will endure also dry situations.

OSTRYA

virginiana, 164: HOP HORNEBEAM: 459; 461; 683. Tree of S. Canada and eastern U.S., including Penna. Native to the forest, but rather rare. Found on dry or occasionally moist sites, as a scattered tree of the forest undergrowth.

OXYDENDRON

arboreum, 425: SOURWOOD: 468. Small tree of S.E. U.S., including S.W. Penna. Not native to the Mont Alto State Forest. Prefers well-drained sites. A desirable ornamental except on limy soils.

PARTHENOCISSUS

quinquefolia, 395: VIRGINIA CREEPER: 1117. A high-climbing woody vine of eastern U.S., including Penna. Common on the forest and throughout the region, especially on the better soils at low elevations. Also known as Psedera quinquefolia and Ampelopsis quinquefolia.

PAULOWNIA

tomentosa, 464: ROYAL PAULOWNIA (EMPRESS TREE): 1100; 1199; 1200. Tree of China and Japan. An infrequent ornamental in this region; sometimes escaped. Its foliage resembles that of catalpa.

PHELLODENDRON

amurense, 338: AMUR CORK-TREE: 130; 131; 133; 134; 727-13; 729-13; 803; 819; 853; 1026; 1342; 1366. Tree of N. China and Manchuria. Has light gray corky bark; also compound leaves with a strong odor like turpentine when bruised. Quite hardy and drought-resisting, and has no insect enemies.

chinense, 339: CHINESE CORK-TREE: 165; 1411 B. Tree of China. Like the preceding, but with leaves pubescent instead of glabrous.

PHILADELPHUS

coronarius, 345: SWEET MOCK-ORANGE: 420; 793; 946; 947; 958; 985; 986; 987. Shrub native to s. Europe, but much planted in this country. Seems to grow in any soil. Root-suckers freely.

Delavayi, (*): DELAVAY MOCK-ORANGE: 921A; 921B. Shrub of Yunnan, a province of S.W. China. Bears large, very fragrant flowers.

grandiflorus, 246: BIG SCENTLESS MOCK-ORANGE: 160; 281; 319. Shrub of S.E. United States, but not native to this region.

PHYSOCARPUS

opulifolius, 259: NINEBARK: 1023. Shrub of S. Canada and eastern U.S. including Penna. Native to the Mont Alto State Forest. It occurs infrequently on stream banks and in rocky places, where there is a cool moist soil. Often cultivated.

PICEA

Abies, 44: NORWAY SPRUCE: 4; 15; 21; 26; 33; 37; 51; 55; 57; 62; 64; 68; 69; 70; 614; 726; 741; 758; 784; 811; 1062; 1063; 1076; 1077; 1080; 1126; 1134; 1158; 1171; 1203; 1279; 1325; 1372. Tree of N. and C. Europe. Much used for reforestation and ornamental

plantings in eastern U.S. There are extensive plantations of this species on the Mont Alto State Forest. Grows at first rather slowly, but when 10 to 15 years old its height growth becomes rapid.

Canadensis, 46: Same as *Picea glauca*.

Engelmanni, 45: ENGELMANN SPRUCE: 717C. Tree of S.W. Canada and western U.S. Typically a mountain species of wide altitudinal range.

glauca, 46: WHITE SPRUCE: 532; 809; 816; 957; 1058; 1373; 1402; 1405. A trans-continental tree of Canada, found also in New England and the Lake States. Not native to Penna., but used much for reforestation. Found in various plantations on the Mont Alto State Forest.

glauca var. *coerulea*, (*): SILVER WHITE SPRUCE: 314; 315; 674; This variety has dense foliage and glaucous leaves.

Koyamai, 49: 224; 646; 682; 1411J; 1412F. Tree of Japan and Korea. Makes good growth at Mont Alto.

likiangensis, 50: 842; 888; 889; 908; 910. Tree of W. China, with yellow twigs and pale-colored foliage, much like Colorado spruce.

mariana, 51: BLACK SPRUCE: 666. A trans-continental tree of Canada and N.E. United States. Native to N. Penna., in cold bogs, but not found on the Mont Alto State Forest.

obovata, 52: SIBERIAN SPRUCE: 717A; 717B. Tree of N. Europe, Siberia, and Manchuria. Somewhat like Norway spruce.

orientalis, 53: ORIENTAL SPRUCE: 685D; 701C; 960. Tree of the Caucasus Mts. and Asia Minor. Has compact, dark glossy foliage. Of slow growth.

orientalis, var. *aurea*, 54: GOLDEN ORIENTAL SPRUCE: 707; A variety with bronzy-golden leaves.

polita, 55: TIGERTAIL SPRUCE: 1432. Tree of Japan, with rigid spiny leaves. Grows slowly.

pungens, 56: COLORADO (BLUE) SPRUCE: 101; 713; 757; 785; 815; 817; 981; 1006; 1007; 1086; 1092; 1099; 1123; 1152; 1367. Tree of S.W. United States. A favorite ornamental, particularly the Koster Blue variety.

rubra, 57: RED SPRUCE: 116; 117; 162. Tree of S.E. Canada and E. United States, including Penna. Not native to the Mont Alto State Forest. Generally limited to cool Sphagnum bogs. Closely resembles black spruce. Subjected to red spider attacks when planted on dry soils.

Smithiana, (*): HIMALAYAN SPRUCE: 1468. Tree of the Himalaya Mts. of N. India. Has very pronounced pendulous twigs.

PINUS

- aristata, 71: BRISTLEcone PINE: 220. A tree of the S. Rocky Mountain region, where it occurs at elevations above 8,000 ft. Grows very slowly in this climate.
- Banksiana, 72: JACK PINE: 606. Tree of Canada and N.E. United States. Not native to Penna. It occurs in several plantations on the Mont Alto State Forest. Makes rapid juvenile growth on sandy soils.
- Bungeana, 73: LACEBARK PINE: 218; 241; 723. Tree of N.W. China, where it is cultivated near temples and cemeteries. Should be given deep, loamy soil. Slow-growing.
- Cembra, 74: SWISS ST. NE PINE: 223; 225; 1345. Tree of C. and N.E. Europe and N. Asia. A popular, hardy ornamental, of slow growth and dense habit. Succeeds in light, well-drained soil.
- cembroides var. edulis, 75: NUT PINE: 890. A tree of the S. Rocky Mt. region. A slow-growing species with rounded form and dense foliage. Termed also Pinus edulis.
- contorta var. latifolia, 76: LODGEPOLE PINE: 651; 665. Tree of the N. Rocky Mts., the mountain form of the species. Considered by some authorities to be Pinus murrayana. Hardy but slow-growing in this climate. Not adapted to limestone.
- densiflora, 77: JAPANESE RED PINE: 529; 1330A; 1374; 1381. Tree of Japan. Fast-growing, but worthless for timber because it too often is multiple-stemmed. It has been planted on the Mont Alto State Forest.
- echinata, 78: SHORTLEAF PINE: 89; 446; 669B-A; 742; 777; 1180; 1188; 1205; 1260; 1384. Tree of eastern U.S., including Penna. Native to the forest, but common only at low elevations adjacent to the Cumberland Valley. Frequently hybridizes with pitch pine in this region. Has been planted some locally.
- excelsa, 79: HIMALAYAN PINE: 717F; 733B-B. Tree of the Himalayan Mts. and Afghanistan. Resembles our native white pine, but with needles much longer and drooping. Hardy only in sheltered positions. Requires full light for proper development.
- Jeffreyi, (*): JEFFREY PINE: 519A; 519B. Tree of the Sierra Nevada Mts. of S. Oregon and California. Resembles western yellow pine, and considered by some to be only a variety of it.
- koraiensis, 80: KOREAN PINE: 629; 630; 717D; 717E; 733C; 900; 1067A. Tree of Japan and Korea. A 5-needle pine, resembling somewhat our eastern white pine. Hardy, but of slow growth.
- Lambertiana, (*): SUGAR PINE: 470; 911C. An important timber tree of the Pacific Coast States.
- Massoniana, (*): 589; 590; 911B; 925-A. Tree of China.

PINUS, continued

- maritima, (*): CLUSTER (MARITIME) PINE: 217; 903; 921C. Tree of the coastal regions about the Mediterranean Sea. Much used in S. Europe for fixation of sand dunes. Same as Pinus Pinaster. Not very hardy at Mont Alto.
- montana, 81: Same as Pinus mugo.
- mugo, 81: SWISS MOUNTAIN PINE: 706; 1072. A hardy low shrub or small tree, native to the mountains of C. and S. Europe. Used much for ornamental planting.
- nigra, 84: AUSTRIAN PINE: 76; 78; 115; 172; 173; 273; 843L; 870A; 870B; 870L; 870M; 890A; 890B; 890M; 890N; 911N; 1073. Tree of C. and S. Europe and Asia Minor. Same as Pinus austriaca or P. nigra var. austriaca. Often utilized for windbreaks.
- nigra var. cebennensis, 86: 733A-A; 733B-A. Known also as Pinus pyrenaica. Tree of the Pyrenees Mts. and S. France.
- parviflora, 88: JAPANESE WHITE PINE: 1360; 1439; 1446. Tree of Japan. A 5-needle pine, resembling our eastern white pine. Known also as Pinus pentaphylla.
- peuce, (*): MACEDONIAN PINE: 1413H; 1414D. Tree of the Balkan Mts. in Europe. Of slow growth. Rarely cultivated. Suited to light loam or sandy soil.
- ponderosa, 89: WESTERN YELLOW PINE: 248; 249; 251; 253; 263; 264; 265; 266; 284; 285; 295A; 843B; 843C; 870D; 870E; 870F; 890D; 890H; 890I; 890J; 890K; 890L; 911D; 911E; 911I; 911J; 911K; 911L; 911M; 1068. An important timber tree of British Columbia, and W. United States. Some of our specimens came from the Eddy Tree Breeding Institute, Placerville, California. Does fairly well in Penna. The most satisfactory growth is found on light, deep, moist but well-drained soil.
- pungens, 90: TABLE MOUNTAIN PINE: 1239. Tree of the Appalachian Mts. of S.E. United States, including S. Penna. Native to the Mont Alto State Forest, where it occurs rather commonly on ridge tops and occasionally in lower slopes. Pure stands may be seen on the west slopes of Mont Alto and Quincy Mountain, and also at Monaghan Field.
- resinosa, 91: RED PINE: 428; 613; 736; 1075; 1130; 1133; 1385. Tree of the Lake States and N.E. United States, including N. Penna. Not native to the forest, but it has been planted there extensively.
- rigida, 92: PITCH PINE: 1020; 1055; 1386. Tree of eastern U.S., including Penna. Generally distributed over the Mont Alto State Forest, but most common on the poorest sites. There are also several experimental forest plantations.

PINUS, continued

- rigida* X *echinata*, (*): 619; 620; 622; 623; 624; 660. Grown from seed collected off a large hybrid pine which formerly stood inside the arboretum area. Pitch and shortleaf pines commonly hybridize in this region.
- strobis*, 93: WH ITE PINE: 1; 2; 3; 14; 16; 20; 23; 32; 43; 52; 54; 60; 61; 63; 65; 66; 67; 740; 1012; 1064; 1081; 1151. Tree of S. Canada and E. United States including Penna. Native to the forest, where it is commonly found in coves and ravines. There are extensive plantations in this region.
- sylvestris*, 94: SCOTCH PINE: 171; 282; ²⁸³300; 301; 661; 708; 733C-B; 733D-A; 733D-B; 737; 812; 883; 884; 1066; 1069; 1146; 1208; 1226; 1363. Tree of Europe and Siberia. Much used for reforestation in Penna. There are extensive plantations on the Mont Alto State Forest.
- sylvestris* var. *lapponica*, 95: FINNISH SCOTCH PINE: 1393A. Native to N. Europe. Grows straighter than the type.
- tabulaeformis*, 96: CHINESE PINE: 695; 726-A; ^{728-A}729-A; 731-B; ^{732-A}732-B; 733-A; 733-B; 733-C; 733A; 733B-C; 733C-C; 772; 885. Tree of N. and W. China. Generally of poor form for timber. There is an experimental plantation on the forest. Known also as *Pinus sinensis*.
- taeda*, 97: LOBLOLLY PINE: 338; 1207; 1346. Tree of S.E. United States but not native to Penna. Prefers moist situations. Makes rapid growth;
- Thunbergii*, 98: JAPANESE BLACK PINE: 1071; 1418; 1419. Tree of Japan. It is a component of some mixed plantations on the forest. Thrives well locally, in light, well-drained loam and also in sandy soil.
- virginiana*, 99: SCRUB PINE: 1353. Tree of eastern U. S., including Penna. Found on the forest, particularly at lower elevations. Thrives on dry and barren soil, and is unusually common on shale outcrops.

PLATANUS

- occidentalis*, 257: BUTTWOOD: 735; 746; 1085; 1144; 1201; 1210; 1213; 1329. Tree of E. United States, including Penna. Native to the Mont Alto State Forest, where it occurs along the larger streams and in other moist situations.
- orientalis*, 258: ORIENTAL PLANE-TREE: 227; 892. Tree of S. E. Europe and W. Asia. Planted as a shade tree from time immemorial.

PONCIRUS

trifoliata, 340: HARDY ORANGE: 1413K; 1413L. Shrub or small tree of N. China, with spiny green compressed twigs. Bears golden yellow fruit about the size of a walnut. Sometimes used for hedges. Thrives at Mont Alto. Known also as Citrus trifoliata.

POPULUS

- alba, 105: WHITE POPLAR: Tree of C. and S. Europe, W. Siberia and C. Asia. Commonly planted as a shade tree in this country. Locally escaped cultivation. There are specimens at Pond Bank and at Small's Dam near the State Forest Tree Nursery. Grows rapidly. Root-suckers freely.
- brevifolia, (*): SIMON POPLAR: 1421; 1422. Tree of N. China. Known also as Populus Simonii.
- candicans, 106: BALM OF GILEAD: 673. A tree esteemed for its vigor and hardiness, and the resinous fragrance of its buds and foliage. Origin unknown, but it probably came from N. Asia. Found rarely as an escape in this region. There is a small plantation growing nearby.
- candicans X berolinensis, (*): MAINE POPLAR: 581; 582. A fast-growing hybrid developed by the Oxford Paper Company. Parentage obtained in 1938 from a booklet issued by the New York Botanical Garden.
- deltoides, 107: COTTONWOOD: 804. Tree of E. United States, but of rare, natural occurrence in Pennsylvania, except on Presque Isle, Erie County. Not native to the Mont Alto State Forest. Ornamental specimens occur in the village of Mont Alto, at Pond Bank, and at the South Mountain Sanatorium.
- euphratica, (*): 278. Tree of N. Africa and W. Africa.
- generosa, 108: 656. Recognized by Rehder as being a hybrid, Populus trichocarpa X angulata. Makes vigorous growth.
- grandidentata, 109: LARGE-TOOTHED ASPEN: 1240. Tree of S. Canada and N.E. United States, including Penna. Native to the Mont Alto State Forest. This species is commonly distributed over the region, particularly on burned-over areas and on old charcoal hearths.
- Maximowiczii, 110: JAPANESE POPLAR: 677. Tree of N.E. Asia and Japan. This species has grown faster than any other poplar ever planted at Mont Alto. Its foliage is of striking appearance; unlike that of many poplars, it hangs on until late in the season.
- Maximowiczii X berolinensis, (*): GENEVA POPLAR and also OXFORD POPLAR: 586; 595; 596. Fast-growing hybrids developed by the Oxford Paper Company. Parentage obtained in 1938 from a booklet issued by the New York Botanical Garden.

POPULUS, continued

- Maximowiczii X nigra plantierensis, (*): ROCHESTER POPLAR: 580; 796.
A fast-growing hybrid developed by the Oxford Paper Company.
- Maximowiczii X trichocarpa, (*): ANDROSCOGGIN POPLAR: 598. A fast-growing hybrid developed by the Oxford Paper Company.
- nigra var. betulifolia, 111: BLACK POPLAR: 671; 687. Tree of Europe.
- nigra var. italica, 112: LOMBARDY POPLAR: Tree of Europe. Planted locally for shade and ornamental purposes. Noted for its narrow columnar crown. Will adapt itself to almost any conditions.
- nigra var. italica gigantea, (*): GIANT LOMBARDY POPLAR: 1424; 1425;
Tree of Europe. 1423
- ^{li}
nigra betulifolia X trichocarpa, (*): ANDOVER POPLAR: 584. A fast-growing hybrid developed by the Oxford Paper Company.
- nigra X laurifolia, (*): STRATHGLASS and also RUMFORD POPLAR: 592;
597; 601; 797. Fast-growing hybrids developed by the Oxford Paper Company.
- nigra X trichocarpa, (*): ROXBURY POPLAR: 593; 594. A fast-growing hybrid developed by the Oxford Paper Company. Parentage obtained in 1938 from a booklet issued by the New York Botanical Garden.
- Simonii, 113: SIMON POPLAR: 1138; 1140; 1278; 1390. Tree of N. China. Its form is similar to Lombardy poplar, but it never attains to such large size. Used often for windbreaks.
- Simonii var. fastigiata, 114: NARROW SIMON POPLAR: 619D; 619F. Tree of N. China, with a narrow-pyramidal crown and upright branches.
- suaveolens, 115: MONGOLIAN POPLAR: 617; 618; 657; 672. Tree of Turkestan, W. China and Korea. Makes very fast growth in our climate.
- tremuloides, 116: QUAKING (TREMBLING) ASPEN: A trans-continental tree of Canada and the United States, including Penna. Native to the Mont Alto State Forest. It is found locally throughout the region, particularly at Monaghan Field, Cold Springs and Caledonia.
- trichocarpa, 117: WESTERN BALSAM POPLAR: 619A; 619B; 619C. Tree of Alaska, British Columbia and the Pacific Coast States.

PRUNUS

- americana, 302: AMERICAN (WILD) PLUM: 631. Tree of S. Canada and U.S., including Penna. Found locally on the forest, in low grounds, particularly at Pond Bank. Valued for wildlife.

PRUNUS, continued

- avium, 303: MAZZARD or SWEET CHERRY: 451; 1103. Tree of Europe and W. Asia, but cultivated in America since colonial days. Found on the forest, as a common escape on the better soils.
- Besseyi, (*): BESSEY CHERRY: 1414P. Shrub of Manitoba and the W. Central States. Stems usually prostrate. Produces white flowers and black fruits in great abundance.
- Cerasus, 304: SOUR CHERRY: Tree of W. Asia and S.E. Europe, but long cultivated in America. Planted in Mont Alto and other small communities near the forest. It is a rare escape on the better soils.
- cerasifera var. Pissartii, (*): CHERRY PLUM: 520. Tree of W. Asia and the Caucasus Mts. An early flowering species with purple leaves.
- cuneata: APPALACHIAN CHERRY: Shrub of E. United States, including Penna. Found locally near Small's Mill, just outside the arboretum area. Considered by some authorities to be a variety of sand cherry. Forms thickets.
- domestica, 305: COMMON PLUM: 259; 653. Tree of Europe and W. Asia, but long cultivated in America for its fruit.
- japonica, (*): CHINESE BUSH CHERRY: 6; 7; 8. (Res. Nursery Block). Shrub of C. China and E. Asia. Gives a profusion of attractive bloom in early spring. Hardy.
- Maackii, (*) AMUR CHERRY: 21 (Res. Nursery Block). Tree of Manchuria Korea and C. China. This is a U.S.D.A. specimen, described as "A Manchurian bird cherry 40 feet high."
- maritima, (*) BEACH PLUM: 632. Shrub or small tree native to the Eastern States bordering on the Atlantic Coast, but not in Penna. Withstands the drought on sand dunes, pine barrens, or the caustic salt spray of the beach.
- Padus, 308: EUROPEAN BIRD CHERRY: 1429; 1430; 1431. Tree of Europe, N. Asia, Korea, and Japan. Common in cultivation. Resembles our choke cherry.
- pennsylvanica, 309: PIN or FIRE CHERRY: 504. Small tree of Canada and U.S., including Penna. Native to the Mont Alto State Forest, but rare. Found at Old Forge, Cold Springs, and in Brandon Hollow. Most common in the beech-birch-maple forest type. Short-lived, and generally grows on burned and clear-cut areas.
- Persica, 310: PEACH: 770. Tree of China, but long cultivated in America for its fruit. It occurs as a sporadic escape from cultivation.
- pumila, 311: SAND CHERRY: Shrub of S. Canada and N.E. United States, including Penna. Native to the Mont Alto State Forest, but rare. Occurs at Pond Bank and along Rocky Mt. Run. Always found in low, open clearings or open woods on sandy soils.

PRUNUS, continued

- serotina, 312: WILD BLACK CHERRY: 1109; 1187; 1194; 1364. Tree of Ontario and E. United States., including Penna. Native to the forest and scattered throughout the region, particularly at low elevations.
- spinosa, (*): BLACKTHORN (SLICE): 692. A spiny shrub of Europe, N. Africa and W. Asia. Often planted in America and sometimes escaped from cultivation.
- subhirtella var. ascendens, 313: SHIPO-HIGAN CHERRY: 1382. Tree of Japan. One of the species of Japanese Flowering Cherry. Requires a rich, well-drained soil and full sunlight to give the best effect.
- triflora var. koreana, (*): JAPANESE PLUM: 843E. Small tree of China. Also known as Prunus salicina.
- virginiana, 314: CHOKE CHERRY: 633; 635; 636. Shrub of Canada and E. United States, including Penna. Found at a very few places on the forest. Prefers open woods and fence-rows. Root-suckers to form thickets.
- virginiana var. demissa, (*): WESTERN CHOKE CHERRY: 690. Shrub of W. United States, but not native to Penna. Fruit large and edible. Deemed worthy of improvement as a fruit tree.
- virginiana var. melanocarpa, (*): BLACK WESTERN CHOKE CHERRY: 1451; 1456. Shrub of W. United States, but not native to Penna.
- yedoensis, 315: YOSHINO CHERRY: 209; 210; 211; 212; 213; 1217. Tree of Japan. One of the species of Japanese Flowering Cherry. Thrives in our climate. It is quick-growing and short-lived. This is the principal Japanese tree which has been planted in the streets of Washington, D. C.

PSEDERA

- quinquefolia, 395: Same as Parthenocissus quinquefolia.

PSEUDOTSUGA

- taxifolia, 40: DOUGLAS FIR: 534; 810; 1005; 1235. An important timber tree of British Columbia and W. United States. It is represented in several experimental plantations on the forest. Its growth is exceedingly fast under a variety of site conditions.

PTELEA

- trifoliata, 337: HOP-TREE or WAFER ASH: 857; 901; 902; 1234; 1412D. Shrub or small tree of S. Canada and E. United States, including

Penna. Not native to the Mont Alto State Forest, but it occurs at various places in the adjacent Cumberland Valley. Prefers a moderately moist, well-drained soil, and a partially shaded situation.

PTEROCARYA

fraxinifolia, 131: CAUCASIAN WING-NUT: 276; 296; 727. Tree of the Caucasus Mts. and N. Persia. A close relative of our walnuts and hickories. Thrives best in rich and moist soil. Hardy at Mont Alto.

PYRACANTHA

coccinea, 266: SCARLET FIRETHORN: 129; 159. Shrub of S.E. Europe and W. Asia. Evergreen and thorny, with showy orange-scarlet fruits which persist long into the winter. Not particular as to soil, but it prefers sunny positions.

PYRUS

americana, 274: Same as *Sorbus americana*.

arbutifolia, 276: Same as *Aronia arbutifolia*.

baccata, 280: Same as *Malus baccata*.

cerasifera, 283: Same as *Malus robusta*.

coronaria, 281: Same as *Malus coronaria*.

communis, 285: COMMON PEAR: 1101; 1232; 1356. Tree of Europe and W. Asia. Long cultivated in America for its fruit. It occurs as a rare escape on the better sites.

Malus, 282: Same as *Malus pumila*.

melanocarpa, 277: Same as *Aronia melanocarpa*.

QUERCUS

acutissima, 178: BRISTLETOOTH OAK: 13; 143; 377; 378; 380; 381; 574; 844; 851; 858; 918; 923; 1216; 1368. Tree of Japan, Korea and China. Has chestnut-like foliage. Makes rapid growth on a variety of soils. Known also as *Quercus serrata*.

alba, 179: WHITE OAK: 1046; 1047; 1105; 1110; 1114. Tree of E. United States, including Penna. Common on the forest on the better sites. Attains its best development on soils of limestone origin in the Cumberland Valley.

- aliena, 180: ORIENTAL WHITE OAK: 234. Tree of Japan, Korea and C. China. Resembles our chestnut oak.
- aliena, var. acuteserrata, (*): 274; 275. Tree of Japan and C. China. Much like our yellow oak.
- Bebbiana, (*): BEBB'S OAK: 240. Considered by Rehder to be a hybrid between burr oak and white oak.
- bicolor, 181: SWAMP WHITE OAK: 1223; 1229. Tree of S. Canada and E. United States, including Penna. Native to the Mont Alto State Forest, but rare. It occurs at Monaghan Field. More common along streams in the Cumberland Valley. Demands moist, fertile soils.
- borealis, 182: NORTHERN RED OAK: 392; 394; 552; 937; 961; 962; 1269; 1328; 1370. Tree of S. Canada and E. United States, including Penna. Native to the forest, on moist fertile soils.
- borealis var. maxima; NORTHERN RED OAK: Tree of S. Canada and E. United States, including Penna. Native to the forest, on moist fertile soils. Similar to the type species, except that the acorns are much broader and enclosed only at the base by a flat, saucer-like cup.
- Cerris var. Lucombeana, 208: Same as *Quercus hispanica* var. *Lucombeana*.
- coccinea, 183: SCARLET OAK: Tree of eastern U. S., including Penna. Native to the Mont Alto State Forest. It is universally distributed throughout the region.
- dentata, 185: DAIMYO OAK: 570; 906. Tree of Japan, Korea, N. and W. China. Resembles somewhat our chestnut oak, but with much larger leaves.
- Douglasii, (*): CALIFORNIA BLUE OAK: 1441; 1442. Tree of the mountains of California.
- ellipsoidalis, (*): JACK OAK: 140. Tree of Manitoba, and the N.C. States. Similar to pin oak, but prefers dry upland soils.
- falcata, 202: Same as *Quercus rubra*.
- Gambelii, 186: GAMBEL OAK: 926A; 926B; 926C. Small tree of the mountains and plateaus of S. W. United States.
- heterophylla, (*): VARIABLE OAK: 379; 557. Considered by Rehder to be *Quercus phellos* X *Quercus borealis maxima*^{ja}.
- hispanica var. *Lucombeana*, 208: TURKEY OAK: 835. Tree of S. Europe. Known also as *Quercus Cerris* X *suber*.

QUERCUS, continued

- ilicifolia*, 187: SCRUB OAK: Shrub of eastern U.S., including Penna. Native to the Mont Alto State Forest. It is generally distributed on the burns and barrens, being very common on Kettle Springs Mountain, Snowy Mountain and various places on Green Ridge.
- imbricaria*, 188: SHINGLE OAK: 216; 722-A. Tree of S.E. United States, including C. and N. W. Penna. Not native to the Mont Alto State Forest. Dr. Illick has reported an outpost near the village of Dry Run, in Path Valley, Franklin County.
- laurifolia*, (*): LAUREL OAK: 1440. Tree of S. E. United States, but not native to Penna. Found near streams along the coastal plain. Bears half-evergreen lustrous foliage.
- lobata*, (*): VALLEY WHITE OAK: 1443; 1444. Tree of the low valleys of western California.
- lyrata*, 189: OVERCUP OAK: 1332; 1333. Tree of S. E. United States, but not native to Penna. A coastal plain species, much like burr oak. Prefers wet soils, but thrives here on a relatively dry site.
- lyrata* X *imbricaria*, (*): 719-A; 720-A; 721-A.
- macrocarpa*, 190: MOSSY-CUP or BUR OAK: 5; 6; 7; 8; 374; 384; 385; 648; 652; 1371. Tree of S. Canada and eastern U. S., including Penna. Not native to the Mont Alto State Forest, but it occurs along Conococheague Creek in the neighboring Cumberland Valley. Desires moist, fertile bottom-land sites.
- mongolica* var. *grosseserrata*, 193: SHALLOW-CUP MONGOLIAN OAK: 845. Tree of Japan and Saghal. Makes vigorous growth in our climate.
- montana*, 194: CHESTNUT or ROCK OAK: 783; 1189. Tree of eastern U.S., including Penna. Abundant on the Mont Alto State Forest. Grows well on dry rocky soil. Sometimes referred to as Quercus Prinus, which is now the accepted name for basket oak.
- Muhlenbergii*, 195: YELLOW OAK: 668; 1448; 1449; 1450; 1452. Tree of S. E. United States; including Penna. Native to the forest, but very rare. Found only at Pond Bank. Prefers dry limestone and shale outcrops, such as occur along Conococheague Creek and various other places in the Cumberland Valley.
- Muhlenbergii* X *alba*, 184: DEAM'S OAK: 886; 915; 916; 917. This hybrid is known also as Quercus Deamii.
- myrsinaefolia*, (*): JAPANESE EVERGREEN OAK: 32; 33. (Res Nursery Block). Tree of Japan, with shining leaves to 5 inches long, and acorns nearly an inch long.
- palustris*, 197: PIN OAK: Tree of eastern U.S., including Penna. Native to the forest, where it occurs most commonly around Pond Bank. Limited to wet soils at lower elevations.

QUERCUS, continued

- phellos, 198: WILLOW OAK: 703-C; 719-B; 720-B; 721-E. ^{718-B} Tree of eastern U.S., including S. E. Penna. Not native to the forest. Prefers wet bottom-land sites.
- prinoides, 199: DWARF CHINQUAPIN or SCRUB CHESTNUT OAK: Shrub of eastern U. S., including Penna. Native to the Mont Alto State Forest, but very rare. Found at Pond Bank, Old Forge and on Snowy Mountain. Frequents dry sandy sites and burnt-over areas.
- Prinus, 200: BASKET OAK: 1335. Tree of S. E. United States, but not native to Penna. Prefers moist or wet loamy soils. Known also as Quercus Michauxii.
- Rehderi, 210: REHDER'S OAK: 250; 252; 1413I. This is a hybrid oak, Quercus ilicifolia X velutina. Found on Kettle Springs Mountain, Mont Alto State Forest.
- Robbinsii, 209: ROBBINS' OAK: 1434; 1447; 1454; 1466; 1467. This is a hybrid oak, Quercus ilicifolia X coccinea. Found on Kettle Springs Mountain, Mont Alto State Forest.
- robur, 201: ENGLISH OAK: 805; 837; 838. Tree of Europe, N. Africa and W. Asia. Long cultivated, and many varieties are now recognized.
- rubra, 202: SPANISH or SOUTHERN RED OAK: 654. Tree of S. E. United States, including S. E. Penna. Not native to the Mont Alto State Forest. Known also as Quercus falcata.
- runcinata, (*): 1412E. This is a hybrid oak, Quercus imbricaria X borealis maxima.
- Saulii: SAUL'S OAK: This is a hybrid oak, Quercus montana X alba. Occurs along Rocky Mountain Run and possibly elsewhere on the Mont Alto State Forest.
- Schochiana, (*): 702-AA; 856A; 879A. This is a hybrid oak, Quercus phellos X palustris.
- serrata, 178: Same as Quercus acutissima.
- Shumardii, 204: SHUMARD RED OAK: 178; 179; 698. Tree of S. E. United States, including S. Penna. Although not native to the Mont Alto State Forest, it occurs at various places along the Conococheague and Beck Creeks in the adjoining Cumberland Valley south of Chambersburg. Frequents deep moist soils.
- Shumardii var. Schneckii, (*): SCHNECK'S OAK: 655B; 685C. Tree of S. E. United States, but not considered to be native to Penna. Recent evidence indicates that this variety and the type species both occur in southern Franklin County.

QUERCUS, continued

- stellata, 205: POST OAK: Tree of eastern U.S., including Penna. It occurs on the forest, but is rare and local at low elevations. Found at Small's Pond, Old Forge, Pond Bank and a few other places in this region. Frequents dry sandy soils.
- variabilis, 206: ORIENTAL OAK: 239; 280. Tree of N. China and Korea and Japan. Has chestnut-like foliage. Hardy.
- velutina, 207: BLACK OAK: 778; 964; 966; 971; 973; 990; 997; 1041; 1051; 1112; 1116; 1119. Tree of eastern U.S., including Penna. Common on the forest, particularly on lower slopes of S. and W. exposures. There are some giant trees within the arboretum area.

RHAMNUS

- Caroliniana, 339: CAROLINA BUCKTHORN: 329; 393; 566; 559. Shrub of eastern U.S., probably including Penna. Not native to the Mont Alto State Forest. Inhabits wet places, but thrives here on a dry, sandy site.
- crenata, (*): JAPANESE BUCKTHORN: 670-CC. Shrub of Japan, Korea, and C. China.
- infectoria, (*): AVIGNON BERRY: 670-BB. Shrub of S. Europe. Evergreen.
- lanceolata, 390: LANCE-LEAVED BUCKTHORN: Shrub of eastern U.S., including Penna., (S.). Not native to the forest, but it occurs in the adjoining Cumberland Valley, particularly along Conocheague Creek south of Chambersburg. Reaches its northern limit in our state.

RHODODENDRON

- maximum, 419: ROSEBAY or GREAT LAUREL: 1028. Large shrub of S. Canada and eastern U.S., including Penna. Native to the forest, where it is common in wet situations. Evergreen. Often cultivated.
- nudiflorum, 420: PURPLE AZALEA: Shrub of eastern U.S., including Penna. Common on the forest, in dry to moist situations in the mountains. Known also as Azalea nudiflora.
- viscosum, 421: WHITE SWAMP AZALEA: Shrub of eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. It occurs in swamps, particularly at Pond Bank. Known also as Azalea viscosa.

RHODOTYPUS

- scandens, (*): JETBEAD: 703-Lu. Shrub of Japan and C. China. Resembles globe-flower (*Kerria japonica*). Its black fruits hang all winter. Thrives in adverse places.

RHUS

- canadensis: FRAGRANT SUMAC: An aromatic, usually prostrate shrub of Ontario and eastern U.S., including Penna. Not known to be native to the forest, but it grows at various places in the nearby Cumberland Valley. Found on dry open ground, and in thickets. Its foliage superficially resembles poison ivy.
- copallina, 345: DWARF or SHINING SUMAC: Shrub of Ontario and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. Borders along the edge of woods and thickets, usually in dry and rocky places. Common at Caledonia State Forest Park.
- Cotinus, 344: Same as *Cotinus coggygia*.
- glabra, 346: SMOOTH SUMAC: Shrub of Canada and U.S., including Penna. Native to the forest and common on open sites throughout the region. It occurs inside the arboretum area.
- javanica, 347: JAVA SUMAC: 537; 548 A. Large shrub or small tree of China, Japan and the Sandwich Islands. Displays an abundance of large creamy-white flower clusters in the fall. Known also as Rhus semialata.
- Toxicodendron, 351: POISON IVY: 1118. Shrub of S. Canada and eastern U.S., including Penna. Very common on the forest and throughout the region. Sub-erect, trailing or climbing.
- typhina, 348: STAGHORN SUMAC: 585. Shrub of S. Canada and eastern U.S., including Penna. Found frequently on the forest in openings and old fields.
- typhina var. laciniata, 349: SHREDDED SUMAC: 297. A cutleaf variety of great beauty.
- verniciflua, 352: LACQUER-TREE or VARNISH-TREE: 184; 185; 187; 188; 189; 501. Ornamental tree of Japan, China and the Himalaya Mountains. Poisonous. Yields the famous varnish or lacquer of Japan.
- vernix, 350: POISON SUMAC: Shrub of Ontario and eastern U.S., including Penna. Native to the Mont Alto State Forest. It is frequently found in swamps.

RIBES

- aureum, 250: GOLDEN CURRANT: Shrub of western U.S., but long cultivated in the Eastern States. Found occasionally around abandoned homesites.
- cynosbati, 251: PRICKLY GOOSEBERRY: Shrub of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but extremely rare. Prefers a moist rich soil, but grows too on rocky, wooded slopes.

- rotundifolium, 252: ROUND-LEAF GOOSEBERRY: Shrub of eastern U.S., including Penna. Native to the forest and commonly distributed throughout the region. Being alternate hosts of the white pine blister rust, this and other species of Ribes have been eradicated around the nursery and white pine plantations.
- rubrum, 253: RED CURRANT: Shrub of C. and N. Europe and N. Asia. It occurs locally as an infrequent escape from cultivation. Known also as Ribes vulgare.

ROBINIA

- pseudacacia, 329: BLACK LOCUST: 426; 431; 434; 437; 439; 442; 444; 604; 939; 955; 976; 1003; 1037; 1038; 1042; 1048; 1050; 1054; 1083 Tree of eastern U.S., including Penna. Common on the forest and throughout the region. Does best on fertile soil.
- viscosa, 330: CLAMMY LOCUST: Small tree of the southern Appalachians. A beautiful ornamental. Planted at the South Mountain Sanatorium, and a few other local places.

ROSA

- blanda, 295: SMOOTH MEADOW ROSE: Shrub of S. Canada and eastern U.S., including Penna. Native to the forest, particularly at Pond Bank. Root-suckers to form thickets in abandoned fields.
- eglanteria, 298: SWEETBRIER: Shrub of Europe, often cultivated in America. It is a rare escape around abandoned homesites. Known also as Rosa rubiginosa.
- humilis, 296: PASTURE ROSE: 1164. Shrub of eastern U.S., including Penna. Native to the Mont Alto State Forest. It occurs infrequently on dry open sites.
- multiflora, 300: JAPANESE ROSE: 401; 847. Shrub of Japan and Korea. A parent of the Rambler Roses.
- palustris, 301: SWAMP ROSE: Shrub of S. Canada and eastern U.S., including Penna. It occurs occasionally on the forest, on the borders of swamps. Known also as Rosa carolina.

RUBUS

- allegheniensis, 288: WILD BLACKBERRY: 1264. Shrub of S. Canada and eastern U.S., including Penna. Native to the forest and commonly distributed throughout the region.
- hispidus, 290: SWAMP DEWBERRY: Shrub of S. Canada and eastern U.S., including Penna. It occurs frequently on the forest in moist open areas.

- idaeus var. aculeatissimus, 291: WILD RED RASPBERRY: Shrub of western U.S., also in E. Asia. Much cultivated. It occurs as a rare escape on the better soils of the Mont Alto State Forest.
- occidentalis, 292: BLACK RASPBERRY: 1263. Shrub of S. Canada and eastern U.S., including Penna. Common on the forest, in open areas on the better soils.
- odoratus, 293: PURPLE-FLOWERING RASPBERRY: Shrub of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest. It is rare and confined to rocky and shaded slopes and cool ravines. Found in Biesecker Gap and common near Pen-Mar.
- phoenicolasius, 294: WINEBERRY: Shrub of Korea, Japan and N. China. An interesting ornamental plant, and also cultivated for the fruit. It occurs in this region as a rare escape on fertile soils.
- villosus, 289: DEWBERRY: A low-running shrub or vine of eastern U.S., including Penna. Found occasionally on the forest, in openings and old fields on dry sites. Known also as Rubus flagellaris and Rubus procumbens.

SALIX

- alba, 118: WHITE WILLOW: Tree of Europe, N. Africa and W. Asia. Planted locally. Sparingly escaped from cultivation. Found in moist soil.
- amygdalina, 119: ALMOND-LEAVED WILLOW: Shrub or small tree of Europe, W. Asia and Siberia. Sometimes cultivated in America for basket-making. Specimens are found only at Monaghan Field.
- babylonica, 120: WEEPING WILLOW: Tree of China. Widely introduced. Cultivated as an ornamental in the village of Mont Alto and elsewhere near the forest.
- babylonica var. crispa, (*): CURLY-LEAVED WEEPING WILLOW: 550; 834. Its leaves are folded and spirally curved.
- discolor, 121: PUSSY WILLOW: 576; 948. Shrub or small tree of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. It is usually found along streams.
- fragilis, 122: CRACK WILLOW: 299; 748; 944; 1030. Tree of Europe and W. Asia. Widely planted in eastern U.S. It occurs in this region as a frequent escape along the larger streams. Grows rapidly.
- humilis, 123: PRAIRIE WILLOW: Shrub of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, where it occurs occasionally on dry open sites.

SALIX, continued

- Matsudana var. *tartiac*, (*): HANKOW WILLOW VARIETY: 702. The type species is a tree native to N. China, Manchuria and Korea. Our plant is a U.S.D.A. specimen, but this variety is not at present recognized by Rehder in his "Manual of Cultivated Trees and Shrubs."
- Matsudana var. *tortorosa*, (*): HANKOW WILLOW VARIETY: 1399. The type species is a tree native to N. China, Manchuria and Korea. Our plant is believed to be a U.S.D.A. specimen, but this variety is not at present recognized by Rehder in his "Manual of Cultivated Trees and Shrubs." Has curled leaves.
- Matsudana var. *umbraculifera*, 135: HANKOW WILLOW VARIETY: 694; 705. Tree of N. China, Manchuria and Korea. A form with a broad umbrella-shaped crown.
- nigra*, 126: BLACK WILLOW: Tree of S. Canada and U.S., including Penna. Native to the forest, where it occurs infrequently along streams and in other moist situations. There are several specimens in the Mont Alto State Forest Park.
- purpurea*, 127: PURPLE OSIER WILLOW: Shrub of Europe, N. Africa, C. Asia and Japan, where it is grown for basket making. On the Mont Alto State Forest it occurs only at Monaghan Field.
- sericea*, 128: SILKY WILLOW: Shrub of eastern U.S., including Penna. Native to the forest, where it is occasionally found along streams. Common at places along Rocky Mountain Run.
- tristis*, 129: SAGE or DWARF GRAY WILLOW: Shrub of eastern U.S., including Penna. Native to the forest, but rare. Found on dry open sites, particularly near Pond Bank.

SAMBUCUS

- canadensis*, 471: COMMON ELDER: 642F; 767; 1175; 1251; 1266. Shrub of S. Canada and eastern U.S., including Penna. Common on the forest, in open places on the more fertile soils. Often forms thickets.
- pubens*, 472: RED-BERRIED ELDER: Shrub of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. It occurs on rocky, shaded slopes, particularly in The Narrows and about Pen-Mar. Many botanists list it as *Sambucus racemosa*.

SASSAFRAS

- officinale*, 243: SASSAFRAS: 1025; 1190. Tree of Ontario and eastern U.S., including Penna. Very common on the forest and throughout the region. Short-lived, and generally grows on burned and clear-cut areas. Often regarded as a "weed" tree. Known also as *Sassafras variifolium*.

SECURINEGA

ramiflora, (*): 669C; 685A; 685B. Shrub of Mongolia, Amurland and N. China. An attractive plant with bright green foliage. Fairly hardy.

SEQUOIA

gigantea, 25: GIANT SEQUOIA or BIG-TREE; 500. Tree of the west slopes of the Sierra Nevada Mountains in California. Same as Sequoia Washingtoniana.

SMILAX

glauca, 102: SAW BRIER: A woody vine of eastern U.S. Native to Penna. and to the Mont Alto State Forest. It is generally distributed on rather dry sites.

hispida, 103: BRISTLY GREEN BRIER: A woody vine of eastern U.S., including Penna. Native to the forest, but rare. Usually found in moist thickets.

rotundifolia, 104: COMMON GREEN BRIER: A woody vine of S. Canada and eastern U.S., including Penna. Common on the forest in low, damp ground.

SOLANUM

Dulcamara, 462: BITTER NIGHTSHADE: A woody vine of Europe, N. Africa and E. Asia. Often naturalized in eastern U.S. In this locality it occurs occasionally in moist ground, most often near dwellings. Its red berries are poisonous.

SORBARIA

sorbifolia, 263: URAL FALSE-SPIREA: Shrub of N. Asia and Japan. Sometimes escaped from cultivation. Forms thickets by means of root-suckers. Its foliage resembles that of our mountain ash. Prefers rich, moist soil. A large clump occurs along the highway between the Mont Alto State Forest Park and the State Forest Tree Nursery.

sorbifolia var. stellipila, (*): STARRY FALSE-SPIREA: 16; 17; 18; 29. (Res. Nursery Block). Shrub of E. Asia; puts forth its foliage very early in spring. Excellent for planting steep banks and rough broken areas.

SORBUS

americana, 274: AMERICAN MOUNTAIN ASH: 200; 871; 1341; 1358. Small tree of S. Canada and eastern U.S. Native to Penna., but not to the Mont Alto State Forest. Makes a beautiful ornamental, with handsome foliage and showy fruits. Prefers a cool, moist site. Same as Pyrus americana.

SORBUS, continued

Aucuparia, 275: EUROPEAN MOUNTAIN ASH: 244; 1469; 1470. Tree of Europe, W. Asia and Siberia. Often cultivated in America. Same as Pyrus Aucuparia.

SPIRAEA

japonica, (*): JAPANESE SPIREA: 711; 712. Shrub of Japan. Bears large clusters of pink flowers.

latifolia, 261: MEADOW-SWEET: Shrub of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest. Found occasionally on wet sites, particularly near Pond Bank. Often designated Spiraea salicifolia which is an Asiatic species.

prunifolia, 260: BRIDAL-WREATH or PLUM-LEAF SPIREA: Shrub of Korea, China and Formosa. Planted locally, and this species has long been a favorite with gardeners. There are both single and double-flowered varieties in cultivation.

STAPHYLEA

trifolia, 366: BLADDERNUT: 808; 856; 1414F. Shrub of S. Canada and eastern U.S., including Penna. Not native to the Mont Alto State Forest. It does, however, occur at numerous places in the Cumberland Valley, the nearest being along the Little Antietam Creek in the vicinity of Quincy. Prefers rich, moist soil on the banks of streams and full sunlight.

STYRAX

japonica, 438: JAPANESE SNOWBELL: 405; 675. Shrub or small tree of China and Japan. It bears in June an abundance of fragrant, white, pendant blossoms. Thrives in a moist soil and under partial shade. Sometimes the twig tips winterkill.

SYMPHORICARPUS

albus, 480: COMMON SNOWBERRY: 383; 642A; 1211A; 1411G. Shrub of Canada and United States. Native to Penna., but not to the Mont Alto State Forest. Found locally as a rare escape from cultivation. Known also as Symphoricarpus racemosus. Suckers freely.

orbiculatus, 481: CORALBERRY: 9; 679; 1413B; 1413D. Shrub of eastern U.S., including Penna. (Porter). Not known to be actually native to the forest, but it has escaped from cultivation at various places in this region. A popular shrub for planting on steep banks to hold the soil. Root-suckers freely.

oreophilus (*): MOUNTAIN SNOWBERRY: 642B. Shrub of western United States. Resembles our eastern snowberry.

racemosus, 480: Same as Symphoricarpus albus.

SYRINGA

- amurensis*, 453: MANCHURIAN LILAC: 138; 139. Shrub of Manchuria and N. China. Bears an abundance of yellowish-white flowers.
- oblata* var. *dilatata*, 454: KOREAN LILAC: 120; 123; 161; 867; 870. Shrub of Korea. Noted for its broad leaves.
- vulgaris*, 456: COMMON LILAC: 965; 967; 969; 994; 995; 1010; 1021. Shrub of S.E. Europe. Extensively cultivated in America, where it has been a favorite since colonial days.

TAPISCIA

- sinensis*, 367: TAPISCIA: 588. Tree of central China, with large odd-pinnate leaves, belonging to the Bladdernut (Staph. Peaceae) Family. Hardy.

TAXODIUM

- distichum*, 24: BALD CYPRESS: 142; 528. Tree of S.E. United States, but not native to Penna. Grows in swamps and on the banks of streams, but will thrive if planted on dryer sites. There is a specimen growing at Knepper Station and also one at Fayetteville.

TAXUS

- baccata*, (*): ENGLISH YEW: 1412K; 1414I. Tree of Europe, N. Africa and W. Asia. Many varieties have originated in cultivation. Useful for clipped garden hedges and topiary work.
- canadensis*, 3: AMERICAN YEW or GROUND HEMLOCK: A low shrub of S. Canada and N.E. United States, including Penna. Native to the Mont Alto State Forest, but rare. It occurs along Hay's Run and Swift Run, and also at Price's Church near the Nunnery. Prefers moist, shaded rocky places, especially under old growth white pine and hemlock.
- cuspidata*, 4: JAPANESE YEW: 113; 764; 1149; 1383. Tree of Japan, Manchuria and Korea. Has dense dark green foliage.
- cuspidata* var. *nana*, 5: DWARF JAPANESE YEW: 199. A low shrub of Japan, Manchuria and Korea. A beautiful ornamental.

TECOMA

- radicans*, 465: Same as *Campsis radicans*.

THUJA

- occidentalis*, 21: AMERICAN ARBOR-VITAE: 34; 36; 813; 983; 989; 1093; 1094; 1125; 1148. Tree of Canada and eastern U.S., but not

known to occur naturally in Penna. Much planted as an ornamental. Can be grown for hedges, and stands cutting well.

orientalis, 22: ORIENTAL ARBOR-VITAE: 102; 752; 761; 768; 774; 818; 979; 988; 1391. Tree of China and Korea. Much planted as an ornamental, in parks, gardens and cemeteries. Quite hardy in Penna.

plicata, 23: GIANT ARBOR-VITAE (WESTERN RED CEDAR): 870C; 890C; 909; 911; 922. Tree of Alaska, W. Canada and the Pacific Coast States. It is represented in several small plantations on the Mont Alto State Forest. Succeeds on good loams and withstands considerable cold.

THUJOPSIS

dolobrata, 19: FALSE ARBOR-VITAE: 733H. Tree of Japan; makes slow growth in our climate.

TILIA

americana, 397: Same as Tilia glabra.

amurensis, 396: AMUR LINDEN: 154; 155; 156; 157; 158. Tree of Manchuria and Korea. It closely resembles the European small-leaved linden. An excellent shade tree.

glabra, 397: AMERICAN LINDEN (BASSWOOD): 1255; 1377. Tree of Canada and eastern U.S., including Penna. Native to the forest, but rare. It occurs along Red Run near Beartown, near Cold Springs, and also in a swamp near the Sanatorium. Prefers deep moist soil. A common associate of the beech-birch-maple type.

heterophylla, 398: WHITE BASSWOOD or BEEETREE LINDEN: 1275. Tree of S. E. United States, including Penna. Not native to the Mont Alto State Forest, but Dr. J.S. Illick found it on the mountain slopes bordering Path Valley, Franklin County. Occurs on deep fertile soils. Typically a southern species.

japonica, 399: JAPANESE LINDEN: 1414N; 1414O. Tree of Japan, with small leaves similar to Tilia parvifolia.

Maximowicziana, (*): 730-B; 731-A. Tree of Japan.

parvifolia: SMALL-LEAVED LINDEN: Tree of Europe. Planted locally as a shade tree. Same as Tilia cordata.

TSUGA

canadensis, 41: COMMON HEMLOCK: 609; 610; 611; 771; 1153; 1219. Tree of S. Canada and eastern U.S., including Penna. Native to the forest, in coves and ravines, and in swamps at the higher elevations. It has been designated the official State tree of Pennsylvania.

TSUGA, continued

- diversifolia*, 43: JAPANESE HEMLOCK: 839; 865. Tree of Japan. Hardy in our climate.
- Sieboldii*, (*): SIEBOLD HEMLOCK: 419; 870 C. Tree of Japan, very similar to the preceding. Slow-growing, but a beautiful ornamental.

ULMUS

- americana*, 211: AMERICAN ELM: 802; 1067; 1070; 1181; 1248; 1327. Tree of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest. It is rather rare and found only on the better soils.
- fulva*, 213: SLIPPERY ELM: 659; 1173; 1182; 1230; 1253. Tree of S. Canada and eastern U.S., including Penna. Native to the forest, but rare and usually limited to fertile bottomlands.
- glabra*, 214: SCOTCH or WYCH ELM: 725-B; 873. Tree of N. and C. Europe and W. Asia. A variable species with many varieties. Known also as ULMUS scabra. Bark on the trunk remains smooth.
- japonica*, 215: JAPANESE ELM: 121; 135; 1392. Tree of Japan and N.E. Asia.
- parvifolia*, 216: CHINESE ELM: 704-AA; 1221. Small tree of N. and C. China, Korea and Japan. Half-evergreen, with small leaves.
- pumila*, 217: DWARF ASIATIC ELM: 1141; 1150; 1352; 1362; 1369. Small tree of E. Siberia, N. China and Turkestan. Has small leaves and pendulous twigs. Makes fast growth in youth and is drought resistant. It is being widely planted in America, for windbreak, shade and ornamental purposes, but is quite susceptible to wind-break.
- racemosa*, 218: ROCK (CORK) ELM: Tree of S. Canada and eastern U.S., but not native to Penna. It has been planted at Old Forge and occurs also on the Corwin Elden Farm adjoining the Mont Alto State Forest Tree Nursery.
- serotina*, 219: SEPTEMBER (RED) ELM: 577. Tree of S.E. United States, but not native to Pennsylvania. Its twigs have corky wings. Flowers in autumn.

VACCINIUM

- atrococcum*, 431: BLACK HIGH BLUEBERRY: Shrub of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. It occurs in shady swamps and thickets, particularly at Pond Bank. Some botanists regard it as only a variety of *Vaccinium corymbosum*.

- corymbosum, 432: HIGHEUSH BLUEBERRY: Shrub of S. Canada and eastern U.S., including Penna. Native to the forest, in swampy and moist soil. Cultivated profitably in some states, notably in the pine barrens of New Jersey.
- pennsylvanicum, 433: LOWBUSH BLUEBERRY: Shrub of Canada and eastern U.S., including Penna. Native to the forest, but rather rare. Grows in dense patches on dry sites. The lowest and earliest of the blueberries.
- stamineum, 434 DEERBERRY: Shrub of eastern U.S., including Penna. Native to the forest, and generally distributed throughout the region. Local in dry to moist woods. Fruit green or tinted with yellow, inedible.
- vacillans, 435: LATE LOW BLUEBERRY: Shrub of eastern U.S., including Penna. Native to the forest, and generally distributed throughout the region. Frequents dry sandy and rocky places. Fruit very sweet. The most common blueberry in this section.

VIBURNUM

- acerifolium, 473: MAPLE-LEAF VIBURNUM: 1258. Shrub of S. Canada and eastern U.S., including Penna. Native to the forest, and generally distributed throughout the region. Inhabits either dry or moist shaded situations.
- cassinoides, 474: WITHE-ROD: Shrub of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest. It is a swamp species occurring at higher elevations. Resembles sweet viburnum.
- dentatum, 475: ARROW-WOOD: 1162. Shrub of S. Canada and eastern U.S., including Penna. Rather common on the forest, in swamps and moist woods.
- Lantana, (*): WAYFARING-TREE: 733C-A; 1411H. Shrub of Europe and W. Asia. Its twigs and foliage are scurfy-pubescent. Much cultivated as an ornamental.
- Lentago, 476: SWEET VIBURNUM: Shrub of Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest. It occurs frequently in moist woods, swamps, and in the banks of streams.
- Opulus, 477: EUROPEAN CRANBERRY-BUSH: 1019. Shrub of Europe, N. Africa and N. Asia. Much cultivated as an ornamental. It has been planted at the South Mountain Sanatorium.
- Opulus var. roseum: COMMON SNOWBALL: A common ornamental with large globose flower-heads. Planted locally. Same as Viburnum Opulus var. sterile.

VIBURNUM, continued

prunifolium, 478: BLACK HAW: 1170; 1193; 1202. Large shrub of eastern U.S., including Penna. Native to the forest, and generally distributed at lower elevations on well-drained soils.

Sargentii, 479: SARGENT CRANBERRY-BUSH: 163; 164; 569; 507A; 1420. Shrub of N.E. Asia. Known also as Viburnum pubinerve.

VINCA

minor, 460: PERIWINKLE or TRAILING MYRTLE: 997A. A hardy evergreen, trailing sub-shrub of Europe and W. Asia. Often escaped from cultivation. Spreads freely by creeping sterile stems which root at every joint.

VITIS

aestivalis, 392: SUMMER (PIGEON) GRAPE: A woody, climbing vine of eastern U.S., including Penna. Native to the Mont Alto State Forest. It is rather common in rich woods, thickets and waste places.

cordifolia, 393: FROST (CHICKEN) GRAPE: A woody, climbing vine of eastern U.S., including Penna. Found on the forest, in ravines and on lower slopes.

labrusca, 394: FOX GRAPE: A high-climbing woody vine of eastern U.S., including Penna. Rather common on the forest, on moist fertile soils. Often hangs like cables from the limbs of tall forest trees.

WEIGELA

rosea, 482: Same as Diervilla florida.

WISTARIA

frutescens, 328: AMERICAN WISTARIA: 980; 992. A woody vine of S.E. United States, but not native to Penna. Often planted as an ornamental for its clusters of lilac-purple flowers.

XOLISMA

ligustrina, 424: MALE-BERRY: Shrub of Canada and eastern U.S., including Penna. Found on the forest, in swamps and wet soil. Probably known more often as Lyonia ligustrina.

YUCCA

filamentosa, 101: COMMON YUCCA or ADAMS NEEDLE: 942; 970; 1036. A woody plant of S.E. United States, but not native to Penna. It has crowded clusters of long sword-shaped leaves. A common ornamental.

ZANTHOXYLUM

- americanus, 334: NORTHERN PRICKLY ASH: Shrub or small tree of S. Canada and eastern U.S., including Penna. Native to the Mont Alto State Forest, but rare. It occurs locally at Staley's Knob and Glen Forney, also along the Newman Road. Common at places in the Cumberland Valley. Frequents stream-banks and open rocky woods. Root-suckers to form dense thickets.
- schinifolium, 335: JAPANESE PRICKLY ASH: 149; 150; 151; 152; 153.
Shrub or small tree of Japan or Korea.

ZELKOVA

- Davidii, 220: Same as Hemiptelea Davidii.
- Schneideriana, (*): SCHNEIDER'S ZELKOVA: 1120. Small tree of China. Sample leaves, twigs and flowers from our specimen were submitted in 1939 to the Arnold Arboretum for identification. Alfred Rehder's reply was as follows: "Your No. 1120 is Zelkova Schneideriana introduced from China in 1908. It has been distributed by the Arnold Arboretum to a few gardens but is still rare in cultivation."
- serrata, 221: SAWLEAF ZELKOVA: 75; 195; 196; 214; 538; 539; 540; 555; 1214. Tree of Japan. Much resembles an elm in foliage, but has drupe-like fruits. Hardy and not very particular as to soil or moisture conditions.

INDEX OF SPECIMEN NUMBERS

The reader will note that two different classes of numbers appear in the catalog under each species entry. The numbers following immediately after the scientific name, and preceding the colon, give the identification in accordance with an unpublished Check List. They should not be confused with the specimen or station numbers, because the latter are underscored. The same arrangement is used on the metal tags attached to the trees and shrubs in the arboretum; in other words, two different numbers appear on every tag, with the one underscored and the other not.

Anybody who uses the arboretum will have need for the following index of specimen numbers. Simply note the underscored number on the tag attached to the tree, and then find here the page on which it is listed in the catalog. An arboretum card index file (in the library) is also arranged consecutively by specimen numbers, and persons interested can get from it the recorded details about each planted tree and shrub.

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- * Specimens which died, were moved, cut down or destroyed. Space now blank and often unsuitable for replanting.
- ** Specimens planted after the catalog was prepared (1942); also some few which were correctly identified later.
- *** Specimens on which the identification is still questionable or unknown. Asterisks following the page number means that the status of the specimen has changed after the catalog was prepared.

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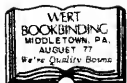
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