# THE WIND RIVER ARBORETUM FROM 1932 TO 1937

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(A Supplement to the Report of August 1932)

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## Introduction

Five years ago an account of the Wind River Arboretum from its inception to 1932 was prepared and mimeographed under the title "The Wind River Arboretum from 1912 to 1932". The present report is a supplement to this initial paper; it recites in condensed form the significant developments in this project during the pentad and gives the status of this tree collection in early September 1937. The present report will not repeat subjects fully covered in the 1932 report, such as the history of the Arboretum to that date, its geographic and topographic location, climate, soil, the procedure in making tests; nor does it attempt critical comment on all the species tried to date, which will be deferred until another pentad has passed.

## Improvements and Treatment of the Area

There has been no expansion in the area since 1932, and it is as then 8.7 acres. In 1935 a network of graveled paths was built by CCC workers, thus facilitating visitation of all the plantations. In 1934, also with CCC labor, a large amount of additional water pipe with frequent hydrants was laid, thus giving added fire protection and making convenient the watering of any plot. The herbaceous growth has become heavier, which probably is building up the soil that was so depleted by logging, fire, and clearing operations. This rank growth of bracken, lupine, etc. has been cut each year along the paths and sometimes around small plants that were in danger of being smothered. The volunteer tree and shrub growth has been pulled up or cut down periodically. Since the new water system was put in the recent plantations and some of the

older plantations have been systematically sprinkled in dry weather, thus departing from the initial policy of giving the trees almost no watering or cultural care after they were set out.

A cross section of the largest Douglas fir on record (15.4 ft. in diameter at breast height) was acquired in 1936 and mounted at the entrance to the Arboretum under a rustic shelter with seats, which makes an appropriate place for the start or ending of a tour of the grounds.

## Injurious Factors During the Pentad

The report of 1932 gives a very full analysis of the Wind River climate based on complete records for 20 years. No summary or normals have been compiled since then but the following significant weather factors are cited for each of the last five seasons:

TABLE 1.--WIND RIVER CLIMATIC DATA 1933-37

| | Average 1911-30 | 1933 | 1934 | 1935 | 1936 | 1937 to Oct. 1 |
|---|---|---|---|---|---|---|
| Annual precipitation, inches | 83.7 | 135.9 | 99.1 | 59.1 | 98.4 | 62.0 |
| April-Sept., (incl), rainfall inches | 16.8 | 25.4 | 9.9 | 8.3 | 14.7 | 33.5 |
| Longest period without measurable rain, days | 65 | 23 | 36 | 25 | 44 | 29 |
| Maximum temperature degrees F | 103 | 101 | 98 | 107 | 93 | 94 |
| Minimum temperature " " | -13 | -8 | 22 | 3 | -1 | -6 |
| Last day in spring with temperature of 32° or below | May 16 | June 10 | May 18 | June 2 | May 17 | May 30 |
| First day in fall with temperature of 32° or below | Oct. 5 | Sept. 25 | Sept. 25 | Aug. 16 | Sept. 15 | Sept. 22 |

Probably the most abnormal weather of the pentad was an extraordinary cold spell in late October 1935 when the temperature dropped to 15° on October 30 and on the four succeeding nights to 20°, 19°, 18°, and 22°. This early freeze is known to have severely injured agricultural crops, nursery stock, and some forest trees. It was damaging to some of the arboretum trees, as noted in a report a month later, but there is no proof of the extent of the

losses that can be laid definitely to this extraordinarily early cold spell.

During many winters, wet snow freezing on the trees does considerable breaking and bending of the trees, sometimes snapping off the leader and pulling out the side limbs. During the winter of 1936-37, the injury was especially severe, and a check during May 1937 disclosed that damage had been widespread in thirty-eight of the coniferous groups. The damage was most severe in the 2- and 3-needled pines, some of which were bent to the ground. Many of the spruces likewise had broken leaders, and individual trees of most all the species were injured in one way or another. First aid in the form of splints and stakes was administered, and the majority of the trees have recovered during the 1937 growing season, although many of the pines will be permanently misshapen.

In spite of cooperative efforts of the Office of Blister Rust Control in 1928 to 1931 to rid the environs of the Arboretum of the hosts of white pine blister rust the disease has made its appearance on the western white pine, sugar pine, and eastern white pine, and possibly on other species.

Acquisition of Seed or Stock During Pentad

During the period 1933 to 1937 seed or stock of a number of conifers was acquired. Some of this was of species already tried in the Arboretum, the tests of which required repetition or enlargement. There are still several species of conifers not yet represented here which are likely to survive, and efforts are being continued to acquire seed or stock of these rare species, so that the Arboretum may be as complete a collection as will endure in this climate. No attempt is made to collect horticultural varieties.

| Lot No. | Species | Year received | Seed or Stock Presented By - |
|---|---|---|---|
| 466 | Pinus aristata | 1933 | Oregon State Forest Nursery |
| 486 | " aristata | 1934 | Intermountain Forest Expt. Station |

| Lot No. | Species | Year received | Seed or Stock Presented By - |
|---|---|---|---|
| 460 | Pinus densiflora | 1933 | Forest Expt. Sta., Keijo, Chosen, Japan |
| 465 | " edulis | 1933 | Oregon State Forest Nursery |
| 476 | " montana | 1933 | N. Y. State College of Forestry, Syracuse, N. Y. |
| 483 | " virginiana | 1936 | Appalachian Forest Expt. Station |
| 475 | " rigida | 1933 | N. Y. State College of Forestry, Syracuse, N. Y. |
| 459 | Larix dahurica, Koreana | 1933 | Forest Expt. Sta., Keijo, Chosen, Japan |
| 496 | " lyallii | 1936 | Wenatchee National Forest |
| 477 | " laricina | 1934 | Lake States Forest Expt. Station |
| 469 | Picea breweriana | 1933 | Oregon State Forest Nursery |
| 478 | " excelsa | 1936 | Portland Park Bureau |
| 495 | " glauca, var: albertiana | 1936 | Colville National Forest |
| 470 | " jezoensis | 1933 | Hokkaide Forest, Tokio, Japan |
| 457 | " mariana | 1933 | Lake States Forest Expt. Station |
| 467 | " mariana | 1933 | Oregon State Forest Nursery |
| 474 | " omorika | 1933 | N. Y. State College of Forestry, Syracuse, N. Y. |
| 468 | " rubra | 1933 | Oregon State Forest Nursery |
| 484 | Abies amabilis | 1935 | U.S.F.S. Region 6 |
| 491 | " cephalonica | 1937 | Oregon State Forest Nursery |
| 473 | " concolor | 1933 | California Forest Expt. Station |
| 485 | " lasiocarpa | 1935 | U.S.F.S. Region 6 |
| 464 | " mariesii | 1933 | Oregon State Forest Nursery |
| 482 | " nobilis | 1935 | Portland City Park Bureau |
| 492 | " pinsapo | 1937 | Oregon State Forest Nursery |
| 462 | " veitchii | 1933 | Oregon State Forest Nursery |
| 463 | " sibirica | 1933 | " " " " |
| 479 | Sequoia washingtoniana | 1934 | Portland City Park Bureau |
| 497 | Thuja plicata | 1935 | Wild stock dug near Arboretum |
| 494 | " koraiensis | 1937 | Forest Expt. Sta., Keijo, Chosen, Japan |
| 489 | Cypressus arizonica | 1937 | Portland University |
| 493 | " macrocarpa | 1937 | Oregon State Forest Nursery |
| 471 | " macnabiana | 1933 | " " " " |
| 480 | Chamaecyparis thyoides | 1934 | Allegheny Forest Expt. Station |
| 458 | Juniperus chinensis | 1933 | Forest Expt. Sta., Keijo, Chosen, Japan |
| 472 | " " | 1933 | Oregon State Forest Nursery |
| 481 | " virginiana | 1935 | Portland Park Bureau |
| 490 | Cephalotaxus drupacea | 1937 | Portland University |

## Outplanting in the Arboretum from 1933 to 1937

In 1933 and 1936 no new lots were moved from the Nursery rows to the Arboretum, but in the other three years the following 41 lots were outplanted. Some of these were repetitions of former tests, some were enlargements of existing small lots, and some were initial tests of a species. This list does not include replacements in the same lot of trees that had not survived the previous years outplanting.

In 1934:

| Lot No. | Species |
|---|---|
| 409 | Pinus apacheca |
| 389 | " echinata X rigida |
| 387 | " jeffreyi |
| 398 | " laricio calabrica |
| 339 | " leucodermis |
| 392 | " massoniana |
| 338 | " massoniana |
| 476 | " montana |
| 352 | " montana mughus |
| 351 | " peuke |
| 475 | " rigida |
| 408 | " strobiformis |
| 361 | " sylvestris mongolica |
| 247 | Picea bicolor |
| 474 | " omorika |
| 478 | " polita |
| 312 | " rubra |
| 258 | " glehni |
| 294 | Abies arizonica |
| 286 | " fraseri |
| 272 | " holophylla |
| 124 | " holophylla |
| 347 | " nordmanniana |
| 288 | " pectinata |
| 262 | " veitchii |
| 479 | Sequoia washingtoniana |

In 1935:

| Lot No. | Species |
|---|---|
| 422 | Larix eurolepis |
| 436 | " lyallii |
| 467 | Picea mariana |
| 468 | " rubra |

| Lot No. | Species |
|---|---|
| 482 | Abies nobilis |
| 497 | Thuja plicata |
| 472 | Juniperus chinensis |

In 1937:

| Lot No. | Species |
|---|---|
| 451 | Larix polonica |
| 473 | Abies concolor |
| 425 | " holophylla |
| 464 | " mariesii |
| 461 | Sequoia washingtoniana |
| 489 | Cupressus arizonica |
| 480 | Chamaecyparis thyoides |
| 432 | Taxus baccata |

## A Summary of the Results of Tests Under Way from 1932-37

In the following tabulations by genera, the results of the tests are epitomized. Data are given for all lots of conifers that have been outplanted in the Arboretum, given a fair trial, and were not reported as failures and closed out in the 1932 report; for some species there are two or more lots of separate origin of seed or year of planting. Of the lots which have not yet been outplanted but are still held in the nursery, only those species are included which are not in the Arboretum proper and where success or failure to date can be attributed to their suitability to this soil and climate.

The following explanations are given of the column headings in the tabulations which follow:

Species - For the conifers Dallimore and Jackson's "Handbook of Coniferae" has been followed, except for the species of this country where Sudworth's "Check List of the Forest Trees of the United States" has been used.

Lot No. - Serial number given each acquisition of seed or stock.

Origin of Seed - Locality of collection wherever known. Where stock

was grown elsewhere, but origin of seed not known, the grower is indicated. The file records contain more detailed data in most cases.

Year Sown - or "year germinated", for in the case of the few lots which were fall sown, they are dated the following spring to enable a correct computation of age.

Planted in Arboretum - Year trees were first planted in arboretum from nursery, which was usually in spring. Some trees have been moved in arboretum since that date.

Height in 1937 - in feet and tenths, average of the living trees, omitting specimens known to have suffered breakage or mechanical injuries, or from moving when they were too large. Measurements were made in September 1937 when the season's height growth had been made.

No. Planted and 1937 Survival - The number of trees planted in the arboretum (not counting first year replacements, where loss was clearly due to failure to become established after transplanting) and the number of trees alive in 1937. The ratio between these two numbers is not always an indication of the trees' suitability to this environment, because of losses from moving some trees when too large, from mishandling in transplanting, and from subsequent accidents.

Results - A resume of the condition of the trees as of 1937, disregarding those that have had accidents. The group is classified on the basis of its apparent response to its environment as excellent, good, fair, poor or very poor.

## New Species in the Arboretum Nursery September 1937

The following species not now growing in the arboretum proper are in the nursery beds and will be ready for outplanting in a year or more. This list does not include some stock being held for replacements in lots already

outplanted or some stock that duplicates that already in the Arboretum.

| Lot No. | Scientific Name | Common Name |
|---|---|---|
| 459 | Larix dahurica | Dahurian larch |
| 495 | Picea glauca, var: albertiana | Western white spruce |
| 419 | " jezoensis | Yezo spruce |
| 448 | " morinda | West Himalayan spruce |
| 414 | Tsuga sieboldi | Japanese hemlock |
| 491 | Abies cephalonica | Grecian fir |
| 412 | " koreana | Corean fir |
| 411 | " nephrolepis | Manchurian fir |
| 422 | " pinsapo | Spanish fir |
| 463 | " sibirica | Siberian fir |
| 494 | Thuja koraiensis | Arbor-vitae |
| 495 | Cupressus macrocarpa | Monterey cypress |
| 315 | Juniperus monosperma | One seed juniper |
| 433 | " excelsa | Grecian juniper |
| 490 | Cephalotaxus drupacea | Cow's-tail pine |

Conifers Tested and Found to be Unsuited to the Wind River Site

In the tests conducted over the past 25 years several species of conifers have shown themselves unsuited to the Wind River site, either because of the climate or because of the soil. Some of these could perhaps be made to succeed here, if given special cultural care and helped through the winters or the dry summers. The following list includes those species which have not become satisfactorily established and which are not thought worth further trial here. Some of these are still alive in the Arboretum, but have no prospect of making normal development. Species are not included whose failure might be due to misfortune that might be prevented, like frost-heaving in the nursery. Also seed from especially frost-hardy strains might have given results where the seed that was used produced non-hardy stock.

In addition to the species in this list there are several unpromising lots in the Arboretum of which it is too soon to tell the ultimate results, and of course there are many additional conifers whose unsuitability for this location was so obvious that they were not even tried.

| Species | Explanation of Failure |
|---|---|
| Pinus armandi | Frosted back |
| " canariensis | Winter killed in nursery |
| " caribaea | Winter killed in nursery |
| " halepensis | Died out both in arboretum and nursery |
| " khasya | Winter killed in nursery |
| " leiophylla | Winter killed in nursery |
| " longifolia | Winter killed in nursery |
| " montezumae | Winter killed in nursery |
| " montezumae hartwegii | Winter killed in nursery |
| " patula | Killed in nursery |
| " palustris | Winter killed in nursery |
| " radiata | Winter killed in few years |
| " sondereggeri | Winter killed in nursery |
| " torreyana | Winter killed in nursery |
| Larix lyallii | Gradually dying in nursery and arboretum after 6 years. |
| Pseudotsuga macrocarpa | Gradually dying in arboretum, 10 years from seed. |
| Sequoia sempervirens | Repeatedly frozen back and sprouting. |
| Taxodium distichum | Died after a year or two in arboretum. |
| Cryptomeria japonica | Gradually dying in arboretum since 1929. |
| Sciadopitys verticillata | Failed to develop after 8 years in nursery. |
| Araucaria imbricata | Killed annually to snow line after 24 years. |
| Cupressus lusitanica | California grown stock died in nursery in 2 years. |
| " macrocarpa | Winter killed in nursery. |
| " sempervirens | Killed second winter in arboretum. |
| " torulosa | Died in nursery from freezing. |
| Libocedrus chilensis | Not hardy in nursery. |
| Ginkgo biloba | Repeatedly killed back, 7 years in nursery. |

## A Word About the Hardwoods

As stated above the testing of hardwoods has been discontinued and no new lots were planted in the pentad. Most of the hardwoods that were alive and reported upon in 1932 are alive now, but in much the same condition as then. None of the exotic species tested has reached the form and size it should in the period; red oak is the most successful. Yellow poplar, basswood, black cherry still send up shoots from the root collar and the main stem ceases to grow or dies. Other species have remained almost stationary. Quoting the 1932 report it may again be stated that "none of the broadleaf trees have made a showing to commend them for forest planting in this climate and on such a soil".

TABLE 2

| SPECIES | | LOT NO. | ORIGIN OF SEED | YEAR SOWN | YEAR PLANTED IN ARB. | HT. IN 1937 | FIVE YR. GROWTH 1932-37 | TALLEST 1937 | NUMBER PLANTED AND 1937 SURVIVAL | CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PINUS - THE PINES | | | | | | |
| P.--ALBICAULIS, ENG. | WHITEBARK PINE | 1 | DESCHUTES N. F., OREGON | 1917 | 1920 | 8.9 | 4.2 | 11.6 | 10-6 | GOOD |
| --APACHECA, LEMM. | APACHE PINE | 16 | CORONADO N. F., ARIZONA | 1912 | 1915 | 22.2 | 9.4 | 27.0 | 11-3 | TALLEST TREE GOOD; OTHERS RECOV. FROM SNOWBR. |
| -- " " | " " | 409 | SOUTHERN ARIZONA | 1930 | 1934 | 1.3 | | 2.4 | 30-20 | EXCELLENT |
| --ARISTATA, ENG. | BRISTLECONE PINE | 2 | ARIZONA | 1913 | 1915 | 8.5 | 2.4 | 8.8 | 12-2 | FAIR |
| --ARMANDI, FRANCH. | ARMAND'S PINE | 232 | CHINA | 1924? | 1927 | 3.3 | .1 | 3.7 | 14-2 | FAIR. WINTER INJURY AND KILLING |
| --ATTENUATA, LEM. | KNOBCONE PINE | 3 | CALIFORNIA | 1912 | 1914 | 35.0 | 6.6 | 41.5 | 16-12 | EXCELLENT |
| --BANKSIANA, LAMB. | JACK PINE | 8 | MINNESOTA | 1914 | 1916 | 25.7 | 3.7 | 30.0 | 11-3 | EXCELLENT. SNOWBR. IN 1937 ON ONE TREE |
| -- " | " " | 179 | STOCK GROWN IN PENN. | 1923? | 1926 | 11.9 | 7.1 | 15.2 | 18-15 | EXCELLENT. SNOW BENDING BUT NO BREAKAGE |
| --BUNGEANA, ZUCC. | LACEBARK PINE | 209 | | | | 1.6 | .2 | 2.0 | 9-4 | POOR |
| -- " | " " | 296 | STOCK GROWN IN GLENDALE, MD. | 1924? | 1927 | 1.8 | .8 | 2.0 | 2-2 | POOR |
| --CONTORTA, LOUD. | LODGEPOLE PINE | 6 | MONTANA | 1913 | 1915 | 38.0 | 8.6 | 43.0 | 11-11 | EXCELLENT |
| --COULTERI, D. DON | COULTER PINE | 7 | SANTA BARBARA N. F., CALIF. | 1916 | 1918 | 15.3 | 6.1 | 22.5 | 20-7 | GOOD. CONSIDERABLE RANGE IN VIGOR |
| --DENSIFLORA, S AND Z | JAPANESE RED PINE | 130 | FUKUOKA, JAPAN | 1925 | 1928 | 5.7 | 3.0 | 7.7 | 8-5 | FAIR. SUSC. TO SNOWBREAKAGE. CONES IN 1936 |
| -- " | " " " | 173 | JAPAN | 1925 | 1928 | 5.2 | 3.1 | 6.2 | 7-2 | FAIR. WEAK STEMS |
| -- " | " " " | 175 | STOCK GROWN IN PENN. | 1923? | 1926 | 6.6 | 3.6 | 11.4 | 21-10 | FAIR. SOME SNOWBREAKAGE. CONES SINCE 1936 |
| --ECHINATA, MILL. | SHORTLEAF PINE | 178 | STOCK GROWN IN PENN. | 1923 | 1927 | 7.3 | 4.8 | 8.0 | 18-3 | POOR. ONE TYPE FROZEN TO GROUND |
| -- " | " " | 270 | NORTH CAROLINA | WS | 1928 | 5.1 | 3.3 | 8.5 | 13-7 | FAIR. CROOKED |
| --ECHINATA X RIGIDA | | 389 | PENNSYLVANIA | 1929 | 1934 | 3.9 | 2.9 | 4.7 | 9-9 | FAIR |
| --EDULIS, ENG. | PINON | 9 | CIBOLA N. F., NEW MEXICO | 1912 | 1915 | 4.2 | 1.6 | 5.9 | 7-6 | GOOD |
| --EXCELSA, WALL. | BHOTAN PINE | 10 | | 1913 | 1919 | 4.3 | | 5.0 | 5-3 | FAIR. HEAVY SNOWBREAK--KILLED ABOVE SNOWLINE |
| -- " | " " | 298 | | 1925 | 1929 | 4.6 | 2.9 | 6.5 | 16-15 | GOOD. WEAK STEMS |
| --FLEXILIS, JAMES | LIMBER PINE | 11 | MONTANA | 1913 | 1915 | 9.6 | 3.9 | 12.2 | 14-3 | FAIR. SLOW GROWING. CROOKED |
| -- " | " " | 299 | | 1925 | 1930 | 6.7 | 4.2 | 8.9 | 9-9 | EXCELLENT. BRANCHY |
| -- " | " " | 407 | | 1927 | 1931 | 6.0 | 4.6 | 6.9 | 10-10 | EXCELLENT |
| --FUNEBRIS, KOMAROV | CHINESE PINE | 264 | MOZAN, KOREA | 1926 | 1930 | 7.1 | 4.5 | 11.4 | 19-18 | GOOD. HEAVY SNOWBREAK |
| --GERARDIANA, WALL. | GERARD'S PINE | 12 | INDIA | 1912 | 1914 | 2.1 | 1.4 | 2.1 | 6-1 | GOOD. BUSHY |
| --JEFFREYI, ORE. COM. | JEFFREY PINE | 13 | CALIFORNIA | 1912 | 1914 | 19.7 | 7.4 | 24.0 | 11-10 | GOOD |
| -- " " " | " " | 387 | ORMSBY CO., NEVADA | 1929 | 1934 | 1.7 | | 2.0 | 6-5 | GOOD |
| --KORAIENSIS, S AND Z | KOREAN PINE | 131 | FUKUOKA, JAPAN | 1925 | 1930 | 4.0 | 2.5 | 5.2 | 23-20 | GOOD. WEAK STEMS |
| --LAMBERTIANA, DOUG. | SUGAR PINE | 14 | CALIFORNIA | 1911 | 1913 | 25.0 | 7.8 | 26.7 | 10-2 | GOOD |
| -- " | " " | 230 | CRATER N. F., OREGON | 1924 | 1926 | 10.7 | 6.5 | 15.2 | 10-9 | GOOD. BLISTER RUST NOTED ON 3 TREES |
| --LARICIO NIGRICANS, PARL. | AUSTRIAN PINE | 4 | RUSSIA | 1912 | 1914 | 22.3 | 6.4 | 26.5 | 7-7 | EXCELLENT. DAMAGED BY SAPSUCKERS |
| -- " " | " " | 4A | RUSSIA | 1914 | 1916 | 23.7 | 6.2 | 26.8 | 5-4 | EXCELLENT |
| --LARICIO, POIR. | CORSICAN PINE | 15 | RUSSIA | 1912 | 1914 | 10.6 | 5.7 | 14.2 | 12-3 | GOOD |
| --LARICIO CALABRICA, LOUD. | CORSICAN PINE | 398 | JUGOSLAVIA | 1929 | 1934 | 2.9 | 2.5 | 3.8 | 21-20 | EXCELLENT |
| --LARICIO PALLASIANA, P. | CRIMEAN PINE | 180 | STOCK GROWN IN PENN. | 1923? | 1927 | 11.4 | 6.9 | 13.5 | 15-11 | EXCELLENT |
| --LEUCODERMIS, ANT. | BOSNIAN PINE | 339 | JUGOSLAVIA | 1928 | 1934 | .7 | .3 | 1.1 | 18-18 | GOOD |
| --MASSONIANA, LAMB. | MASSON'S PINE | 392 | CHINA | 1929 | 1934 | 2.5 | 2.1 | 3.6 | 22-22 | GOOD |
| --MONTANA, MILL. | MOUNTAIN PINE | 476 | STOCK FROM SYRACUSE, N. Y. | 1929 | 1934 | 2.0 | | 2.7 | 20-20 | EXCELLENT |
| --MONTANA MUGHUS, WILL. | MUGO PINE | 352 | FRANCE | 1928 | 1934 | 1.6 | | 2.5 | 21-21 | EXCELLENT |

TABLE 2 (CONT.)

| SPECIES | | LOT NO. | ORIGIN OF SEED | YEAR SOWN | YEAR PLANTED IN ARB. | HT. IN 1937 | FIVE YR. GROWTH 1932-37 | TALLEST 1937 | NUMBER PLANTED AND 1937 SURVIVAL | CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PINUS - THE PINES (CONT.) | | | | | | |
| P.--MONTANA MUGHUS, WILL. | MUGO PINE | 282 | | 1925? | 1930 | 3.6 | 2.5 | 4.0 | 3-3 | EXCELLENT |
| --MONTANA UNCINATA, WILL. | | 341 | DENMARK | 1929 | 1932 | 2.9 | 2.1 | 4.4 | 20-20 | EXCELLENT |
| --MONTICOLA, D. DON. | WESTERN WHITE PINE | 17 | | 1912? | 1914? | 22.6 | 11.0 | 29.4 | 22-21 | EXCELLENT. SOME BLISTER RUST ON BRANCHES |
| --MURICATA, D. DON. | BISHOP PINE | 314 | MONTEREY CO., CALIF. | 1928 | 1931 | 3.6 | 1.8 | 3.6 | 20-2 | FAIR. BUSHY |
| --PARVIFLORA, S AND Z | JAPANESE WHITE PINE | 252 | KISO, JAPAN | 1926 | 1932 | 3.1 | 2.2 | 4.6 | 22-22 | GOOD |
| --PEUKE, GRISE | BALKAN PINE | 351 | | 1928 | 1934 | 1.5 | 1.2 | 1.9 | 3-3 | EXCELLENT |
| --PINASTER, SOL. | MARITIME PINE | 321 | HOLLAND | 1928 | 1932 | 3.7 | 2.2 | 6.3 | 20-14 | FAIR. BUSHY. MANY ORIGINAL LEADERS DEAD |
| --PONDEROSA, DOUG. | PONDEROSA PINE | 18 | COLUMBIA N. F., WASH. | 1912 | 1914 | 29.2 | 8.2 | 43.8 | 18-15 | EXCELLENT |
| --PONDEROSA ACOPULORUM, ENG. | PONDEROSA PINE | 330 | FLAGSTAFF, ARIZONA | 1928 | 1932 | 3.7 | 2.5 | 5.8 | 29-16 | GOOD |
| --PUNGENS, LAMB. | MOUNTAIN PINE | 177 | STOCK GROWN IN PENN. | 1923? | 1927 | 8.5 | 4.3 | 11.2 | 18-12 | FAIR. WEAK STEMS, HEAVY SNOWBREAK |
| --RESINOSA, SOL. | RED PINE | 19 | MINNESOTA | 1914 | 1916 | 28.5 | 7.5 | 30.0 | 8-3 | EXCELLENT |
| -- " | " " | 111 | " | 1924 | 1929 | 6.2 | 3.7 | 7.7 | 20-20 | EXCELLENT |
| --RIGIDA, MILL. | PITCH PINE | 20 | GEORGIA | 1914 | 1919 | 10.4 | 3.2 | 15.3 | 15-14 | FAIR. CROOKED STEMS |
| -- " | " " | 475 | NEW JERSEY | 1929 | 1934 | 3.0 | | 4.2 | 15-15 | FAIR |
| --SABINIANA, DOUG. | DIGGER PINE | 274 | CALIFORNIA | 1926 | 1931 | 4.5 | 3.0 | 6.5 | 18-18 | GOOD. TOP KILLED BACK SOME YEARS |
| --SINENSIS, LAMB. | CHINESE PINE | 253 | GARHEI, KOREA | 1926 | 1930 | 5.1 | 2.7 | 8.5 | 18-17 | GOOD. HEAVY SNOWBR. AND WIND. CONES IN 1937 |
| --STROBUS, L. | NORTHERN WHITE PINE | 21 | MINNESOTA | 1912 | 1914 | 22.3 | 9.5 | 25.5 | 8-8 | EXCELLENT |
| --STROBIFORMIS, ENG. | MEXICAN WHITE PINE | 408 | GILA N. F., NEW MEXICO | 1930 | 1934 | 2.7 | 2.4 | 4.6 | 42-40 | EXCELLENT. SOME FROST INJURY |
| --SYLVESTRIS, L. | SCOTS PINE | 22 | RUSSIA | 1912 | 1914 | 16.8 | 3.1 | 23.1 | 14-7 | GOOD. ONE TREE DAMAGED BY SAPSUCKERS |
| --SYLVESTRIS MONGOLICA, KOM. | " " | 361 | MANCHURIA, CHINA | 1929 | 1934 | 2.5 | 1.8 | 3.4 | 20-20 | GOOD |
| --TAEDA, L. | LOBLOLLY PINE | 23 | STOCK GROWN IN IDAHO | 1912 | 1914 | 9.3 | 2.5 | 17.8 | 5-3 | FAIR. TWO TREES BEND OVER BADLY |
| --THUNBERGII, PARL. | BLACK PINE | 132 | FUKUOKA, JAPAN | 1925 | 1929 | 4.9 | 2.6 | 7.8 | 18-13 | POOR. WEAK STEMS, TEND. TO BECOME BUSHY |
| --VIRGINIANA, MILL. | VIRGINIA PINE | 176 | STOCK GROWN IN PENNSYLVANIA | 1923? | 1926 | 7.7 | 5.1 | 8.3 | 16-3 | FAIR. WEAK STEMS |
| | | | | LARIX - THE LARCHES | | | | | | |
| L.--EUROLEPIS, A. HENRY | DUNKELD LARCH | 422 | DEAN FOREST, ENGLAND | 1931 | 1935 | 4.2 | | 5.6 | 19-19 | EXCELLENT |
| --EUROPAEA, D. C. | EUROPEAN LARCH | 183 | STOCK GROWN IN PENNSYLVANIA | 1923? | 1925 | 16.2 | 12.5 | 17.0 | 3-2 | EXCELLENT |
| -- " | " " | 302 | STOCK GROWN IN IDAHO | 1925? | 1928 | 20.3 | 12.0 | 23.2 | 6-6 | EXCELLENT |
| -- " | " " | 308 | STOCK GROWN IN MICHIGAN | 1925? | 1930 | 10.8 | 8.4 | 14.1 | 10-10 | EXCELLENT |
| --KURILENSIS, MAYR | KURILE LARCH | 112 | KOVIA STA., FINLAND | 1924 | 1929 | 10.0 | 6.7 | 17.4 | 19-16 | EXCELLENT |
| -- " | " " | 265 | KURIL ISLAND, JAPAN | 1926 | 1930 | 11.2 | 7.7 | 11.2 | 1-1 | |
| --LARICINA, KOCH | TAMARACK | 184 | STOCK GROWN IN PENNSYLVANIA | 1923? | 1925 | 15.0 | 9.4 | 15.0 | 1-1 | GOOD |
| --LEPTOLEPIS, MURR. | JAPANESE LARCH | 30 | JAPAN | 1913 | 1915 | 22.6 | 9.2 | 30.0 | 10-10 | EXCELLENT |
| --LYALLII, PARL. | ALPINE LARCH | 436 | WASHINGTON | ? | | 1.4 | .6 | 1.4 | 12-1 | DYING |
| --OCCIDENTALIS, NUTT. | WESTERN LARCH | 192 | WENATCHEE N. F., WASHINGTON | 1922 | 1926 | 7.9 | 3.6 | 11.6 | 10-6 | DYING |
| -- " | " " | 229 | WALLOWA N. F., OREGON | WS | 1926 | 8.6 | 4.2 | 13.0 | 11-8 | POOR. NEEDLE BLIGHTED |
| --POLONICA, SZAFER | POLISH LARCH | 450 | SKARZYOKO STATE FOREST | 1933 | 1937 | 3.1 | | 4.0 | 22-22 | EXCELLENT |
| --PRINCIPIS RUPPRECHTII, R & W | PRINCE RUPPRECHT L. | 241 | SUN-HAM-GJONE-DO, JAPAN | 1926 | 1931 | 4.8 | 3.1 | 6.7 | 14-5 | EXCELLENT |
| -- " " | " " | 128 | FUKUOKA, JAPAN | 1925 | 1929 | 6.8 | 5.1 | 9.8 | 6-3 | EXCELLENT |
| --SIBIRICA, LEDEB. | SIBERIAN LARCH | 32 | SIBERIA | 1913 | 1915 | 33.5 | 12.5 | 38.5 | 12-8 | EXCELLENT |

TABLE 2 (CONT.)

| SPECIES | | LOT No. | ORIGIN OF SEED | YEAR SOWN | YEAR PLANTED IN ARB. | HT. IN 1937 | FIVE YR. GROWTH 1932-37 | TALLEST 1937 | NUMBER PLANTED AND 1937 SURVIVAL | CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | PICEA - THE SPRUCES | | | | | |
| P.--BICOLOR, MAYR | ALCOCK'S SPRUCE | 247 | SIEWA NUGAUO, JAPAN | 1926 | 1934 | 1.7 | 1.0 | 2.4 | 11-10 | GOOD |
| --BREWERIANA, S. WAT. | WEEPING SPRUCE | 360 | SISKIYOU N. F., OREGON | 1925? | 1932 | 1.5 | .4 | 2.0 | 8-6 | FAIR. BUSHY |
| --ENGELMANNI, ENG. | ENGELMANN SPRUCE | 25 | NORTHERN IDAHO | 1913 | 1915 | 8.9 | 3.7 | 11.8 | 13-11 | FAIR. INSECT GALLS |
| -- " | " " | 405 | COLUMBIA N. F., WASHINGTON | 1927 | 1932 | 2.3 | 1.6 | 2.8 | 7-5 | EXCELLENT. SOME GALLS |
| --EXCELSA, LINK. | NORWAY SPRUCE | 26 | PRUSSIA, GERMANY | 1912 | 1914 | 32.1 | 10.1 | 35.0 | 10-7 | EXCELLENT |
| --GLAUCA, VOSS | WHITE SPRUCE | 24 | NORTH MINNESOTA | 1914 | 1919 | 8.4 | 4.0 | 12.6 | -17 | EXCELLENT. SNOW BENDING |
| --GLEHNI, MAST. | GLEHN'S SPRUCE | 258 | HOKKAIDO, JAPAN | 1926 | 1934 | | | | 1-0 | DID NOT SURVIVE TWO YEARS |
| --KOYAMAI, SHIR. | KOYOMA'S SPRUCE | 249 | SIEWA NAGAUO, JAPAN | 1926 | 1932 | 2.3 | 1.5 | 3.9 | 20-20 | EXCELLENT |
| P.--LIKIANGENSIS, PRITZ. | CHINESE SPRUCE | 403 | CHINA | 1925? | 1931 | 2.7 | 1.0 | 3.7 | 20-12 | FAIR. BUSHY |
| --MARIANA, B. S. AND P. | BLACK SPRUCE | 27 | NORTHERN MINNESOTA | 1913 | 1919 | 8.8 | 3.3 | 10.2 | 4-2 | |
| -- " | " " | 467 | FROM OREGON STATE NURSERY | 1931 | 1935 | 1.7 | | 2.6 | -20 | EXCELLENT |
| --OMORICA, BOLLE | SERVIAN SPRUCE | 474 | FROM SYRACUSE, NEW YORK | 1929 | 1934 | 1.8 | | 2.4 | 20-20 | EXCELLENT |
| --ORIENTALIS, CARR. | ORIENTAL SPRUCE | 266 | GROWN IN MONTANA | 1919 | 1930 | 4.1 | 2.8 | 6.5 | 21-21 | EXCELLENT |
| --POLITA, CARR. | TIGER-TAIL SPRUCE | 473 | JAPAN | 1928? | 1934 | 1.3 | | 2.5 | 18-18 | FAIR |
| --PUNGENS, ENG. | BLUE SPRUCE | 20 | WASATCH N. F., UTAH | 1915 | 1918 | 6.3 | .8 | 17.0 | 14-8 | POOR TO EXCELLENT--VAR. IN VIGOR AND COLOR |
| -- " | " " | 243 | GROWN BY UNIVERSITY OF WASH. | 1920? | 1926 | 3.9 | 1.3 | 5.5 | 12-7 | " " " " " " " " |
| --RUBRA, LINK. | RED SPRUCE | 312 | MT. MITCHELL, N. C. | 1928 | 1934 | 1.7 | 1.1 | 2.0 | 5-5 | EXCELLENT |
| -- " | " " | 466 | FROM OREGON STATE NURSERY | 1931 | 1935 | 1.4 | | 2.1 | 19-18 | EXCELLENT |
| --SITCHENSIS, CARR. | SITKA SPRUCE | 29 | NORTHERN WASHINGTON | 1913 | 1915 | 17.7 | 3.5 | 18.2 | 10-5 | FAIR. GALLS BUG. |
| -- " | " " | 358 | STOCK GROWN IN OREGON | 1927 | 1930 | 5.2 | 2.9 | 8.9 | 18-14 | FAIR TO GOOD. INSECT GALLS MOST SEVERE |
| --SP. B.P.I. #58740 | | 364 | | 1926 | 1931 | 2.6 | 1.4 | 3.4 | 22-3 | GOOD. BUSHY |
| | | | | | TSUGA - THE HEMLOCKS | | | | | |
| T.--CANADENSIS, CARR. | EASTERN HEMLOCK | 181 | STOCK GROWN IN PENN. | 1923? | 1926 | 3.9 | 2.4 | 6.3 | 18-13 | GOOD |
| --HETEROPHYLLA, SARG. | WESTERN HEMLOCK | 275 | COLUMBIA N. F., WASHINGTON | WS | 1926 | 10.8 | 7.1 | 12.6 | 17-2 | EXCELLENT |
| -- " | " " | 353 | " " " | WS | 1929 | 6.4 | 4.6 | 10.4 | 16-10 | EXCELLENT |
| --MERTENSIANA, SARG. | MOUNTAIN HEMLOCK | 278 | " " " | WS | 1929 | 5.1 | 3.2 | 7.9 | 16-12 | GOOD |
| -- " | " " | 354 | " " " | WS | 1931 | 2.9 | 1.7 | 4.5 | 3-3 | GOOD |
| | | | | | PSEUDOTSUGA | | | | | |
| P.--MACROCARPA, MAYR | BIG CONE SPRUCE | 285 | SANTA BARBARA N. F., CALIF. | 1927 | 1931 | 1.1 | .2 | 1.6 | 24-6 | DYING. BUSHY |
| --TAXIFOLIA, BRIT. | R.M. FORM DOUG. FIR | 33 | SAN JUAN N. F., COLO. | 1914 | 1918 | 14.6 | 6.6 | 25.5 | 20-17 | FAIR. FOLIAGE THIN |
| | | | | | ABIES - THE BALSAM FIRS | | | | | |
| A.--AMABILIS, FORB. | SILVER FIR | 190 | COLUMBIA N. F., WASHINGTON | 1922 | 1929 | 2.2 | 1.2 | 3.5 | 19-16 | EXCELLENT |
| --ARIZONICA, MERR. | CORKBARK FIR | 294 | SAN FRANCISCO MTS., ARIZONA | 1927 | 1934 | 1.5 | | 2.2 | 21-21 | EXCELLENT |
| --BALSAMEA, MILL. | BALSAM FIR | 295 | STOCK GROWN IN MASS. | 1924 | 1929 | 4.4 | 2.5 | 6.4 | 11-11 | GOOD |
| -- " " | " " | 300 | STOCK GROWN IN IDAHO | 1925? | 1929 | 6.7 | 4.1 | 9.2 | 7-7 | GOOD. SOME DOUBLE LEADERS |
| --BRACHYPHYLLA, MAXIM | NIKKO FIR | 359 | JAPAN | 1926 | 1931 | 2.1 | 2.8 | 1.0 | 20-2 | POOR |

TABLE 2 (CONT.)

| SPECIES | | LOT No. | ORIGIN OF SEED | YEAR SOWN | YEAR PLANTED IN ARB. | HT. IN 1937 | FIVE YR. GROWTH 1932-37 | TALLEST 1937 | NUMBER PLANTED AND 1937 SURVIVAL | CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ABIES - THE BALSAM FIRS (CONT.) | | | | | | | |
| A.--CONCOLOR, L. AND G. | WHITE FIR | 236 | CRATER N. F., OREGON | 1926 | 1931 | 2.5 | 1.0 | 3.7 | 20-12 | GOOD |
| --GRANDIS, LIND. | LOWLAND WHITE FIR | 473 | | | | 1.2 | | 1.4 | 8-8 | EXCELLENT |
| --FIRMA, SIEB. | JAPANESE FIR | 123 | FUKUOKA, JAPAN | 1925 | 1932 | 1.4 | .3 | 1.4 | 13-1 | POOR. DYING |
| --FRASERI, POIR | SOUTHERN BALSAM FIR | 286 | MT. MITCHELL, N. C. | 1927 | 1934 | 2.4 | 1.5 | 3.2 | 21-19 | EXCELLENT |
| --GRANDIS, LIND. | LOWLAND WHITE FIR | 356 | COLUMBIA N. F., WASHINGTON | WS | 1930 | 5.8 | 3.0 | 6.5 | 5-5 | GOOD |
| -- " " | " " " | 280 | " " " | WS | 1926 | 1.8 | -.1 | 2.9 | 20-4 | GOOD |
| -- " " | " " " | 300 | " " " | WS | 1927 | | | | 5-0 | LAST ONE DIED BETWEEN 1932 AND 1936 |
| --HOLOPHYLLA, MAXIM. | MANCHURIAN FIR | 272 | | | | 1.5 | | 2.0 | 2-2 | FAIR |
| -- " " | " " | 425 | | | | 1.0 | | 1.2 | 20-20 | GOOD |
| -- " " | " " | 124 | FUKUOKA, JAPAN | 1925 | | 1.9 | | 2.2 | 4-4 | GOOD |
| --KOREANA, WILS. | COREAN FIR | 412 | CHIE-ZAN, JAPAN | 1931 | | | | | | |
| --LASIOCARPA, NUTT. | ALPINE FIR | 276 | COLUMBIA N. F., WASHINGTON | WS | 1929 | 3.0 | 2.1 | 4.5 | 10-10 | EXCELLENT |
| --MAGNIFICA, MUR. | CALIFORNIA RED FIR | 291 | ALPINE CO., CALIFORNIA | 1927 | 1932 | 2.3 | 1.6 | 3.7 | 20-20 | EXCELLENT |
| --MAGNIFICA SHASTENSIS, LEM. | SHASTA RED FIR | 406 | UMPQUA N. F., OREGON | 1927 | 1932 | 1.8 | 1.1 | 3.0 | 20-20 | GOOD |
| -- " " " | " " " | 277 | " " " | WS | 1929 | 4.2 | 2.7 | 5.2 | 6-6 | GOOD |
| --MARIESII, MASTERS | MARIE'S FIR | 464 | STOCK GROWN ORE. STATE NUR. | 1931 | 1937 | 1.2 | | 1.5 | 20-20 | FAIR |
| --NOBILIS, LIND. | NOBLE FIR | 34 | COLUMBIA N. F., WASHINGTON | 1914 | 1919 | 6.0 | 3.1 | 10.4 | 15-11 | EXCELLENT |
| -- " " | " " | 189 | " " " | 1922 | 1927 | 4.7 | 2.9 | 5.7 | 8-8 | EXCELLENT |
| --NORDMANNIANA, SPACH. | CAUCASIAN FIR | 347 | FRANCE | 1928 | 1934 | | | | 1-0 | DIED BETWEEN 1934 AND 1936 |
| --PECTINATA, D. C. | EUROPEAN SILVER FIR | 288 | SWITZERLAND | 1927 | 1934 | 1.5 | | 2.4 | 20-20 | GOOD |
| --SACHALINENSIS, MAST. | SACHALINEN FIR | 125 | FUKUOKA, JAPAN | 1925 | 1931 | 2.1 | 1.3 | 3.9 | 20-9 | FAIR |
| --BEISSNERIANA, R. AND W. | CHINESE FIR | 362 | STOCK GROWN IN CALIF. | ? | 1932 | | | | 7-0 | ALL DIED BETWEEN 1932 AND 1936 |
| --DELAVAYI, FRAN. | CHINESE FIR | 365 | " " " " | ? | 1932 | 1.1 | .5 | 1.3 | 7-2 | FAIR. BUSHY |
| --VEITCHII, LIND. | VEITCH SILVER FIR | 262 | SHINANO, JAPAN | 1926 | 1934 | .8 | -.1 | .9 | 2-2 | POOR |
| | | | CEDRUS | | | | | | | |
| C.--ATLANTICA, MAN. | ATLAS CEDAR | 47 | | 1913 | 1918 | 12.7 | 7.0 | 20.2 | 8-5 | EXCELLENT |
| --DEODARA, LOUD. | THE DEODAR | 244 | CALIFORNIA | 1926 | 1927 | 3.6 | 1.1 | 7.6 | 13-10 | POOR EXCEPT 3 TREES. FAIR |
| --LIBANI, BARR | CEDAR OF LEBANON | 48 | | 1913 | 1918 | 10.2 | 5.7 | 13.0 | 19-7 | EXCELLENT |
| | | | ARAUCARIA | | | | | | | |
| A.--IMBRICATA, PAV. | CHILE PINE | 102 | BUENOS AIRES, ARGENTINA | 1913 | 1918 | 1.0 | | 1.1 | 2-2 | PLANTED ON LAWN |
| | | | SCIADOPITYS | | | | | | | |
| S.--VERTICILLATA, S AND V | UMBRELLA PINE | 134 | FUKUOKA, JAPAN | 1925 | | | | | | THE LAST PLANT DIED IN 1933 IN NURSER |
| | | | CRYPTOMERIA | | | | | | | |
| C.--JAPONICA, DON | JAPANESE CEDAR | 109 | CALIFORNIA | 1925 | 1929 | 3.2 | 1.3 | 3.5 | 19-2 | POOR |

TABLE 2 (CONT.)

| SPECIES | | LOT NO. | ORIGIN OF SEED | YEAR SOWN | YEAR PLANTED IN ARB. | HT. IN 1937 | FIVE YR. GROWTH 1932-37 | TALLEST 1937 | NUMBER PLANTED AND 1937 SURVIVAL | CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **SEQUOIA** | | | | | | | |
| S.--SEMPERVIRENS, END. | REDWOOD | 233 | CONTRA COSTA CO., CALIF. | 1926 | 1928 | 2.1 | .4 | 4.1 | 21-10 | POOR. KILLED BACK |
| --WASHINGTONIANA, SUD. | BIG TREE | 35 | CALIFORNIA | 1912 | 1914 | 30.9 | 10.4 | 37.0 | 14-10 | EXCELLENT |
| -- " " | " " | 479 | STOCK GROWN BY PORT. PARK BUR. | 1928? | 1934 | 3.9 | | 4.6 | 16-16 | |
| | | | **TAXODIUM** | | | | | | | |
| T.--DISTICHUM, RICH. | SOUTHERN CYPRESS | 292 | LOUISIANA | 1927 | 1930 | | | | 30-0 | ALL DEAD BY 1937 |
| | | | **LIBOCEDRUS** | | | | | | | |
| L.--CHILENSIS, ENDL. | CHILEAN CEDAR | 437 | ISLE VICTORIA, ARGENTINA | 1932 | | | | | | |
| --DECURRENS, TORR. | INCENSE CEDAR | 36 | CALIFORNIA | 1912 | 1914 | 20.2 | 6.5 | 26.7 | 13-6 | EXCELLENT |
| -- " | " " | 318 | GROWN IN OREGON | 1926 | 1930 | 2.4 | 1.3 | 4.5 | 24-24 | EXCELLENT |
| | | | **THUJA - THE ARBORVITAES** | | | | | | | |
| T.--DOLABRATA, L. | HIBA | 256 | AOMORI, JAPAN | 1926 | 1934 | 1.7 | 1.1 | 2.0 | 5-4 | PLANTED IN LAWN |
| --JAPONICA, MAXIM. | JAPANESE ARBORVITAE | 255 | KISO, JAPAN | 1926 | 1932 | .7 | -.2 | .7 | 5-1 | POOR |
| --OCCIDENTALIS, L. | NORTHERN WHITE CEDAR | 182 | STOCK GROWN IN PENN. | 1923? | 1927 | 3.6 | 1.4 | 4.5 | 20-8 | GOOD |
| --ORIENTALIS, L. | CHINESE ARBORVITAE | 135 | FUKUOKA, JAPAN | 1925 | 1929 | 3.6 | 1.2 | 5.9 | 21-17 | FAIR |
| --PLICATA, D. DON | WESTERN RED CEDAR | 37 | COLUMBIA N. F., WASHINGTON | 1912 | 1915 | 20.6 | 5.6 | 35.5 | 10-10 | EXCELLENT |
| -- " | " " " | 497 | WILD STOCK, LOCAL | | 1935 | 1.6 | | 2.2 | 17-17 | EXCELLENT |
| | | | **CUPRESSUS - THE CYPRESSES** | | | | | | | |
| C.--ARIZONICA | ARIZONA CYPRESS | 489 | GIFT OF PORTLAND UNIVERSITY | | 1937 | 1.9 | | 2.7 | 25-25 | FAIR |
| --MACNABIANA, MURR. | MACNAB CYPRESS | 117 | CRATER N. F., OREGON | 1925 | 1929 | 5.3 | 3.2 | 7.5 | 18-17 | EXCELLENT |
| -- " | " " | 242 | " " " | 1926 | 1931 | 5.3 | 3.3 | 5.8 | 3-2 | EXCELLENT |
| --SEMPERVIRENS HORIZONTALIS, GORD. | MEDITERRANEAN CYPRESS | 423 | PALESTINE, GROWN IN CALIF. | 1928 | 1931 | | | | | ALL DEAD BEFORE 1936 |
| --SEMPERVIRENS STRICTA, AITON | " " | 424 | " " " " | 1928 | 1931 | | | | | ALL DEAD BEFORE 1936 |
| | | | **CHAMAECYPARIS** | | | | | | | |
| C.--LAWSONIANA, PARL. | PORT ORFORD CEDAR | 39 | STOCK GROWN IN IDAHO | 1912 | 1914 | 25.4 | 4.8 | 28.5 | 13-5 | EXCELLENT |
| -- " | " " " | 440 | COOS CO., OREGON | 1929 | 1932 | 4.7 | 1.7 | 5.8 | 20-16 | EXCELLENT |
| --NOOTKATENSIS, SUD. | ALASKA CEDAR | 404 | WENATCHEE N. F., WASHINGTON | 1927 | 1932 | 2.2 | 1.2 | 4.3 | 23-21 | EXCELLENT |
| --OBTUSA, S AND Z | HINOKI CYPRESS | 126 | FUKUOKA, JAPAN | 1925 | 1929 | 2.4 | .8 | 3.6 | 18-5 | POOR |
| --PISIFERA S AND Z | SAWARA CYPRESS | 305 | STOCK GROWN IN MONTANA | 1925? | 1931 | 1.6 | .6 | 2.3 | 21-14 | FAIR |
| --THYOIDES | SOUTHERN WH. CEDAR | 480 | WILD STOCK, NEW JERSEY | 1931? | 1937 | 2.2 | | 3.2 | 25-25 | FAIR |
| | | | **JUNIPERUS - THE JUNIPERS** | | | | | | | |
| J.--CHINENSIS, L. | CHINESE JUNIPER | 472 | STOCK GROWN IN ORE. STATE NUR. | 1931 | 1935 | 1.5 | | 2.2 | 20-20 | GOOD |
| --MONOSPERMA, SARG. | ONE-SEED JUNIPER | 43 | GILA N. F., NEW MEXICO | 1913 | 1915 | | | | 11-0 | THE LAST 7 DIED BETWEEN 1932-36 |
| -- " | " " | 315 | FLAGSTAFF, ARIZONA | 1928 | 1932 | | | | 1-0 | DIED BETWEEN 1932-36 |

TABLE 2 (CONT.)

| SPECIES | | LOT NO. | ORIGIN OF SEED | YEAR SOWN | YEAR PLANTED IN ARB. | HT. IN 1937 | FIVE YR. GROWTH 1932-37 | TALLEST 1937 | NUMBER PLANTED AND 1937 SURVIVAL | CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | JUNIPERUS - THE JUNIPERS (CONT.) | | | | | | | |
| J.--OCCIDENTALIS, HOOKER | WESTERN JUNIPER | 269 | WHITMAN N. F., OREGON | WS | 1928 | 2.3 | 1.2 | 2.7 | 6-6 | FAIR |
| -- " | " " | 279 | " " " | WS | 1929 | 1.8 | .9 | 2.8 | 12-12 | FAIR |
| --PACHYPHLOEA, TOR. | ALLIGATOR JUNIPER | 46 | ARIZONA | 1911 | 1925 | 1.5 | 0 | 1.5 | 12-1 | POOR. IMMATURE LEAVES, ORIGINAL TOP DEAD |
| --SCOPULORUM, SARG. | ROCKY MTN. RED CED. | 228 | WALLOWA CO., OREGON | WS | 1927 | 6.0 | 3.1 | 8.0 | 14-14 | EXCELLENT |
| --SEMIGLOBOSA, REGL. | | 268 | RUSSIA | 1926 | 1932 | 2.6 | 1.0 | 3.1 | 3-3 | EXCELLENT |
| --VIRGINIANA, L. | EASTERN RED CEDAR | 40 | STOCK GROWN IN KANSAS | 1912 | 1914 | 5.5 | 2.8 | 7.0 | 13-4 | FAIR |
| -- " | " " " | 301 | STOCK GROWN IN IDAHO | 1925? | 1929 | 4.3 | 2.3 | 5.1 | 8-7 | GOOD |
| -- " | " " " | 317 | " " " " | 1926? | 1929 | 3.0 | 1.5 | 3.4 | 3-2 | GOOD |
| -- " | " " " | 481 | " " PORT. PARK BUR. | | 1935 | 4.3 | | 5.2 | 6-6 | EXCELLENT |
| | | | TAXUS - THE YEWS | | | | | | | |
| T.--BREVIFOLIA, NUTT. | PACIFIC YEW | 357 | COLUMBIA N. F., WASHINGTON | WS | 1932 | 1.1 | .1 | 1.7 | 10-7 | FAIR |
| --BACCATA, L. | COMMON YEW | 421-432 | | 1931 | 1937 | 1.0 | | 1.3 | 10-6 | FAIR |