



MORTON ARBORETUM

JOY MORTON · FOUNDER

BULLETIN OF

POPULAR INFORMATION

LISLE, ILLINOIS

GROWTH RATES OF CONIFEROUS TREES

Continuing last year's report pertaining to the comparative growth rates of the various trees being tested in the forest plots of the Morton Arboretum, we present at this time a record of the most important Coniferous species on trial. The measurements of six* "average" trees selected at random from each plot furnish the basis for the data given.

The following explanations refer to the column headings accompanying the tabulation:

Average Growth, 1937 and 1938: computed by averaging the growths of six "typical" trees over a period of two years. Generally favorable growing condition have prevailed during the current year with temperatures normal and precipitation abundant at all times. Killing frosts occurring on May 12 and 13 seriously injured the new growth of many conifers, however, and greatly retarded their development. During 1937 climatic conditions were also conducive to good growth, notwithstanding the moisture deficiency of late summer and early fall.

Average Growth, 1935 and 1936: growing conditions in 1935 were likewise favorable, but it will be remembered that 1936 was characterized by intense heat and unprecedented drouth.

Average Height: determined by averaging the heights of the six selected trees. Based on measurements made in November, 1938.

Average Caliper: determined by averaging the combined calipers (diameters) at three feet above the ground line, of the six marked trees. Recorded in November, 1938.

Additional data includes the date of establishment of the plot, together with the size of the plants used.

Average Growth 1937 and 1938	Average Growth 1935 and 1936	Average Height 1938	Average Caliper 1938
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CYPRESS

Sawara, *Chamaecyparis pisifera* (For. Plot Rd. Plot), Pltd. S. 1927—Ht. 6-12 in.

3.3 ft.	2.4 ft.	13.7 ft.	2.88 in.
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DOUGLAS FIR

Douglas Fir, *Pseudotsuga taxifolia* (Mix. Con. Plot—Oak. Dr.), Pltd. S. 1931—Ht. 1-2 ft.

1.0 ft.	1.9 ft.	6.9 ft.	1.87 in.
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*In small plots three trees furnish the basis for measurement.

Abbreviations used: Pltd. = planted; S = spring; F = fall; Ht. = height; ft. = feet; in. = inches.

Average Growth 1937 and 1938	Average Growth 1935 and 1936	Average Height 1938	Average Caliper 1938
Douglas Fir, <i>Pseudotsuga taxifolia</i> (Ridge Rd. Plot), Pltd. S. 1923—Ht. 1½-3 ft.			
2.1 ft.	2.4 ft.	22.4 ft.	5.03 in.

FIR

Balsam, <i>Abies balsamea</i> (Mix. Con. Plot—Oak. Dr.), Pltd. S. 1931—Ht. 1-1½ ft.			
2.0 ft.	2.1 ft.	7.9 ft.	1.50 in.

Balsam, *Abies balsamea* (Mix. D. & C. Plot), Pltd. S. 1929—Ht. 1-1½ ft.

A. HIGH GROUND			
1.5 ft.	2.3 ft.	12.6 ft.	2.55 in.
B. LOW GROUND			
2.0 ft.	2.6 ft.	14.6 ft.	2.95 in.

Balsam, <i>Abies balsamea</i> (Spruce Hill Plot), Pltd. S. 1922—Ht. 1-1½ ft.			
2.0 ft.	2.1 ft.	16.1 ft.	3.00 in.

Colorado, <i>Abies concolor</i> (Oak. Dr. Plot), Pltd. S. 1929-S. 1931—Ht. 10-12 in.			
1.5 ft.	1.4 ft.	7.2 ft.	

Colorado, <i>Abies concolor</i> (Ridge Rd. Plot), Pltd. —Ht. 4-5 ft.			
2.4 ft.	1.9 ft.	16.6 ft.	3.97 in.

HEMLOCK

Canadian, *Tsuga canadensis* (Lake Rd. Pltg.), Pltd. S. 1922—Ht. 1½-4 ft.

A. LAKE			
2.0 ft.	2.2 ft.	22.4 ft.	3.81 in.
B. HILLSIDE			
2.9 ft.	2.2 ft.	21.1 ft.	3.93 in.

Canadian, <i>Tsuga canadensis</i> (Mix. D. & C. Plot), Pltd. S. 1926—Ht. 1-1½ ft.			
2.5 ft.	2.3 ft.	13.5 ft.	2.79 in.

LARCH

American or Tamarack, <i>Larix laricina</i> (Valley Rd. Plot), Pltd. S. 1927—Ht. 1-1½ ft.			
2.5 ft.	3.0 ft.	15.8 ft.	3.00 in.

European, <i>Larix decidua</i> (Main Drive Pltg.), Pltd. S. 1917—Ht. 2-3 ft.			
2.9 ft.	3.2 ft.	38.1 ft.	7.60 in.

Japanese, <i>Larix Kaempferi</i> (Valley Rd. Plot), Pltd. S. 1927—Ht. 1-1½ ft.			
3.7 ft.	4.1 ft.	19.5 ft.	3.58 in.

Average Growth 1937 and 1938	Average Growth 1935 and 1936	Average Height 1938	Average Caliper 1938
PINE			
Austrian, <i>Pinus nigra</i> (Oak. Dr. Plot), Pltd. S. 1931—Ht. 1-1½ ft. 1.3 ft.	2.2 ft.	7.1 ft.	2.71 in.
Corsican, <i>Pinus nigra calabrica</i> (Mix. Con. Plot—Oak. Dr.), Pltd. S. 1931—Ht. 1-1½ ft. 1.8 ft.	2.3 ft.	8.5 ft.	2.23 in.
Japanese Red, <i>Pinus densiflora</i> (North Pasture Plot), Pltd. S. 1927—Ht. 4 yr. transplants 1.1 ft.	1.2 ft.	12.1 ft.	3.67 in.
Japanese White, <i>Pinus parviflora</i> (Pine Hill Plot), Pltd. S. 1925—Ht. 2½-3 ft. 2.1 ft.	1.1 ft.	14.1 ft.	2.70 in.
Jeffrey's, <i>Pinus jeffreyi</i> (North Pasture Plot), Pltd. S. 1927—Ht. 8-12 in. 1.7 ft.	2.0 ft.	9.0 ft.	3.22 in.
Limber, <i>Pinus flexilis</i> (Pine Hill Plot), Pltd. S. 1922—Ht. 1-1½ ft. 1.9 ft.	2.7 ft.	18.9 ft.	4.30 in.
Pitch, <i>Pinus rigida</i> (Pine Hill Plot), Pltd. S. 1922—Ht. 1-2 ft. 1.5 ft.	2.2 ft.	19.6 ft.	4.85 in.
Red or Norway, <i>Pinus resinosa</i> (Cactus Pit Plot), Pltd. S. 1928—Ht. 6-18 in. 1.5 ft.	2.6 ft.	12.2 ft.	3.53 in.
Red or Norway, <i>Pinus resinosa</i> (Pine Hill Plot), Pltd. S. 1922—Ht. 1-1½ ft. 1.7 ft.	2.4 ft.	23.2 ft.	4.30 in.
Riga, <i>Pinus sylvestris rigensis</i> (Mix. Con. Plot—Oak. Dr.), Pltd. S. 1931—Ht. 1-2 ft. 2.4 ft.	3.8 ft.	11.3 ft.	3.47 in.
Riga, <i>Pinus sylvestris rigensis</i> (Oak. Dr. Plot), Pltd. S. 1931—Ht. 6-15 in. 2.1 ft.	3.5 ft.	11.5 ft.	3.30 in.
Scotch, <i>Pinus sylvestris</i> (Pine Hill Plot), Pltd. S. 1922—Ht. 2-3 ft. 1.9 ft.	2.5 ft.	24.6 ft.	5.43 in.
Western Yellow, <i>Pinus ponderosa</i> (For. Plot Rd. Plot), Pltd. S. 1928—Ht. 6-8 in. 2.6 ft.	3.1 ft.	12.5 ft.	3.26 in.
Western Yellow, <i>Pinus ponderosa</i> (Pine Hill Plot), Pltd. S. 1922—Ht. 6-8 in. 2.2 ft.	2.4 ft.	19.5 ft.	4.50 in.
White, <i>Pinus strobus</i> (Cactus Pit Plot), Pltd. S. 1928—Ht. 6-18 in. 2.4 ft.	3.0 ft.	15.2 ft.	3.80 in.
White, <i>Pinus strobus</i> (Hilltop Plot), Pltd. S. 1922—Ht. 2-3 ft. 1.6 ft.	2.1 ft.	18.5 ft.	3.60 in.

Average Growth 1937 and 1938	Average Growth 1935 and 1936	Average Height 1938	Average Caliper 1938
White, <i>Pinus strobus</i> (Hollow Plot), Pltd. F. 1923—Ht. 3-6 ft. 1.9 ft.	3.8 ft.	30.5 ft.	7.06 in.
White, <i>Pinus strobus</i> (Mix. D. & C. Plot), Pltd. S. 1929—Ht. 10-12 in. 3.3 ft.	3.5 ft.	15.7 ft.	4.20 in.
White, <i>Pinus strobus</i> (North Pasture Plot), Pltd. S. 1929—Ht. 10-12 in. 2.3 ft.	2.0 ft.	13.4 ft.	4.00 in.

SPRUCE

Black Hills, <i>Picea glauca albertiana</i> (Mix. Con. Plot—Oak. Dr.), Pltd. S. 1931—Ht. 8-12 in. 2.0 ft.	2.5 ft.	8.7 ft.	2.00 in.
Black Hills, <i>Picea glauca albertiana</i> (Oak. Dr. Plot), Pltd. S. 1931—Ht. 8-12 in. 2.3 ft.	2.7 ft.	9.3 ft.	1.95 in.
Colorado, <i>Picea pungens</i> (Mix. Spruce Plot), Pltd. S. 1923-F. 1923—Ht. 1½-2½ ft. 1.9 ft.	1.8 ft.	16.0 ft.	4.06 in.
Colo. Blue, <i>Picea pungens glauca</i> (Mix. Spruce Plot), Pltd. S. 1923-F. 1923—Ht. 1½-2½ ft. 2.1 ft.	2.4 ft.	16.3 ft.	3.46 in.
Koyamai, <i>Picea Koyamai</i> (For. Plot Rd. Plot), Pltd. S. 1927—Ht. 1-1½ ft. 1.7 ft.	2.8 ft.	14.4 ft.	2.90 in.
Norway, <i>Picea Abies</i> (Mixed Spruce Plot), Pltd. S. 1923-F. 1923—Ht. 1½-2½ ft. 1.4 ft.	2.4 ft.	24.4 ft.	4.33 in.
Norway, <i>Picea Abies</i> (Ridge Road Plot), Pltd. F. 1923-S. 1924—Ht. 3-4 ft. 2.6 ft.	3.3 ft.	26.6 ft.	5.70 in.
Norway, <i>Picea Abies</i> (Valley Road Plot), Pltd. S. 1929—Ht. 6-15 in. 2.6 ft.	3.7 ft.	12.3 ft.	2.37 in.
White, <i>Picea glauca</i> (P. alba) (Mixed Spruce Plot), Pltd. S. 1923-F. 1923—Ht. 1½-2½ ft. 1.1 ft.	2.1 ft.	19.0 ft.	3.73 in.
White, <i>Picea glauca</i> (Ridge Road Plot), Pltd. F. 1923-S. 1924—Ht. 3-4 ft. 2.2 ft.	3.2 ft.	22.6 ft.	5.02 in.

E. L. KAMMERER.

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