



# RED PINE

# BIBLIOGRAPHY

by  
**J.M. Shoup**  
**R.M. Waldron**

FOREST RESEARCH LABORATORY  
WINNIPEG MANITOBA  
LIAISON AND SERVICES NOTE : MS-L-1

FORESTRY BRANCH  
FEBRUARY 1968

O.D.C. (048.1)

## RED PINE BIBLIOGRAPHY

by

J.M. Shoup and R.M. Waldron<sup>1</sup>

### INTRODUCTION

This is the first in a series of bibliographies to be prepared for the more common tree species in the Manitoba-Saskatchewan Region. The purpose of the bibliographies is to provide ready access to literature relating to various aspects of forestry, in particular to the ecology, silviculture, growth, entomology and pathology of the tree species. The bibliographies should prove useful to the practicing forester as well as to the research forester.

The bibliography on red pine (Pinus resinosa Ait.) is presented in two sections. The first is a subject listing by the Oxford System of Decimal Classification for Forestry, and the second an alphabetical listing. Publications received by the Forestry Branch, Department of Forestry and Rural Development library in Winnipeg, Manitoba, up to 1962 were classified into one or more subject categories by the research staff. Those received since 1963 have been indexed by the Centralized Title Service of the Commonwealth Forestry Bureau, Oxford, England.

Revised bibliographies will be prepared frequently to ensure their usefulness. No doubt all past publications on red pine are not contained in this bibliography, and the authors would appreciate hearing of any omissions so that they may be included in the first revision.

---

<sup>1</sup>Forest Technician (Research) and Head, Liaison and Services Section, Canada Department of Forestry and Rural Development, Forestry Branch, Manitoba-Saskatchewan Region, Winnipeg, Manitoba.

## SUBJECT LISTING

1. FACTORS OF THE ENVIRONMENT. BIOLOGY111 THE ATMOSPHERE. METEOROLOGY. CLIMATE AND MICROCLIMATE.

Ardenne 1950, Cook 1941, Ewan 1958, Voigt 1960, Weitzman & Bay 1959.

114 SOIL. SOIL SCIENCE

Alway & Zon 1930, Ardenne 1950, Bay 1963, Bay & Boelter 1963, Brown 1966, DeVries & Wilde 1962, Dieterich 1963, Fraser & Farrar 1957, Iyer & Wilde 1966, Jurgensen & Leaf 1965, Leaf & Keller 1956, Leaf & Wilde 1957, Madgwick 1964 b, Martin 1964 a,c, Mogren 1954, Patton & Ricker 1954, Spurr 1955, Stone et al 1954, White & Wood 1958, Wilde 1961, Wilde et al 1949, Zasada et al 1954.

116 HYDROLOGY

Dils & Arend 1956, Mergen & Malcolm 1955, Voigt & Zwolinski 1964.

14 SYSTEMATIC ZOOLOGY

Doane 1965, Eaton 1955, Ewan 1957, Kulman 1966, MacAloney & Drooz 1956, MacDonald 1965, Martin 1964 a, b, c, 1965, 1966, Munro & Kirby 1963, Rabkin & Lejeune 1954, Stevens 1965, U.S. Dept. Agriculture 1957, Wilson 1965 a, Wilson & Schmiege 1965.

15 ANIMAL ECOLOGY. GAME & FISH MANAGEMENT: HUNTING, SHOOTING & FISHING

Ewan 1958, Kulman 1966, Martin 1964 a, b, c, 1965, 1966, Pointing 1961.

16 GENERAL BOTANY

Bannan 1962, Day 1941, Duff & Nolan 1958, Farrar 1953, Forward & Nolan 1961 a, 1961 b, 1964, Giertych & Forward 1966, Jurgensen & Leaf 1965, Kozlowski 1962, Kozlowski & Clausen 1965, 1966, Kuijt 1955, Larson 1962, 1963, 1964, Madgwick 1964 a, b, Mirov 1956, Mirov & Stanley 1959, Sasaki & Kozlowski 1965, 1966.

165 PHYLOGENY, EVOLUTION. HEREDITY, GENETICS & BREEDING VARIATION

Fowler 1964, 1965 a, b, c, Heimburger 1958, Lester & Barr 1965, Lester & Rehfeldt 1966, Libby 1965, Libby et al 1956, Namkoong 1965, Northeastern Forest Tree Improvement Conference (Fifth) 1958, Rudolf 1956, Wright et al 1963, Wright & Bull 1963.

17 SYSTEMATIC BOTANY

Ahlgren & Ahlgren 1957, Fensom 1963, Madgwick 1964 b, Nicholls et al 1965, Punter 1964.



Twig, Needles and Cone

181      MODE OF LIFE, AUTECOLOGY. SILVICULTURAL CHARACTERS OF TREES

Canada, Dept. Interior 1924, Cook et al 1952, Critchfield & Little 1966, Fowells 1965, Gates 1926, Horton & Bedell 1960, Norton & Brown 1960, Rudolf 1957 b, 1965, Rudolf & Andresen 1965, Rudolf & Schaenike 1963, U.S. Dept. Agriculture 1907, Woolsey & Chapman 1914.

181.2      ATMOSPHERIC RELATIONS

Baker 1949, Bates 1925, Cook 1941, Fraser & Farrar 1957, Glerum et al 1966, Kienholz 1934, Logan 1966, Shirley 1932, Vaartaja 1957.

181.3 WATER, SOIL AND ROOT RELATIONS

Armson & Driessche 1959, Armson & Williams 1960, Brown & Lacate 1961, Della-Bianca & Dils 1960, Cayford & Haig 1964, Clements 1965, Clifford & Massello 1966, Coile 1952, Graham & Bormann 1966, Haig 1929, Haig & Cayford 1960, Heibert et al 1959, Hoyle & Mader 1964, Iyer & Wilde 1966, Johnson 1966, Jurgensen & Leaf 1965, Krause & Wilde 1960, Kienholz 1934, Leaf & Wilde 1957, Limstrom 1960, Mader & Owen 1961, Marshall 1931, Martin 1964 a, Mergen & Malcolm 1955, Rennie 1966, Schantz - Hansen 1945 a, Scott & Duncan 1958, Stout 1961, U.S. Dept. Agriculture 1931 b, 1935 a, Urié 1959, Voigt 1960, Wambach & Lundgren 1965, Wilde 1966, Wilde & Rosendall 1945.

181.4 REACTION TO BIOTIC INFLUENCES AND FIRE

Cook & Robeson 1945, Fraser 1953, Haig & Cayford 1960, Kilburn 1960, Martin 1965.

181.5 REPRODUCTION BEHAVIOUR

Carmichael 1958, Cayford 1964, Duff & Nolan 1958, Fowler 1965 a, Fraser 1959, Fraser & Farrar 1955 b, Gatherum et al 1963, Giertych & Forward 1966, Hard 1964 b, Kozlowski 1963, Lester 1963 b, Lyons 1956 a, b, McConkey 1964, Mirov 1956, Rudolf 1954 a, b, Rudolf & Clausen 1962, Schantz - Hansen 1946, Scott 1966.



Natural 3 year-old seedling

181.6 LIFE FORM, HABIT. POST-SEEDING DEVELOPMENT & FORM

Ahlgren & Hansen 1957, Armson & Williams 1960, Berry 1962, 1965, Bickerstaff 1946, Brown 1965, Buckman & Buckman 1962, Cook 1941, Day & Rudolph 1966, Della-Bianca & Dils 1960, Duff & Nolan 1953, 1957, Farnsworth 1955, Forward & Nolan 1961 a, 1961 b, 1964, Gagnon 1965, Gevorkiantz et al 1943, Glerum et al 1966, Hall 1965, Hall 1966, Iyer & Wilde 1965, Jurgensen & Leaf 1965, Kienholz 1934, Kozlowski & Ward 1957, Kulman 1965, Littlefield 1956, Logan 1966, Lohrey 1961, Miller 1965, Newnham 1966, Rehfeldt & Lester 1966, Rennie 1966, Scott & Duncan 1958, Stiell 1962, Stoeckeler 1949, Talerico et al 1963, Vaartaja 1957, Woolsey & Chapman 1914.

181.7 DURATION, LONGEVITY; STATURE; RECORDS OF EXCEPTIONAL AGE OR SIZE

Collins & Davis 1959, Woolsey & Chapman 1914.

181.8 PHENOLOGY

Ahlgren 1957, Glerum 1966.

182 SYNECOLOGY. PLANT SOCIOLOGY (GENERAL, PRINCIPLES & METHODS)

Cheo 1946, Gysel 1966, Hopkins 1950, Kulman 1966, Martin 1964 a, c, 1966, Mueller-Dombois 1964, Potzger 1953, Russell 1955, Spurr & Allison 1956, Stallard 1929.

187 VEGETATION TYPES

Connell 1913, Mueller-Dombois 1964, Ritchie 1961.

2. SILVICULTURE221 HIGH FOREST SYSTEMS

Chapman 1946, Eyre & Zehngraff 1948, Fraser & Farrar 1955 a, Gould 1965, James 1953, McCormack 1959, Ralston 1950, Robertson 1945, 1946.

226 CHANGES OF SILVICULTURAL SYSTEM. CONVERSION (BY SYSTEM OR SPECIES)

Cayford 1959, 1963, Fraser & Farrar 1955 a, Kittredge 1929, Robertson 1945, Shirley 1941, Trenk 1955 a, U.S. Dept. of Agriculture 1931 c.

228 CONSTITUTION & COMPOSITION OF STANDS; FORMS OF STAND

Ardenne 1950, Leaf & Keller 1956, Lundgren & Wambach 1963.

231.1 NATURAL REGENERATION OBTAINED FROM ADVANCED GROWTH

Cayford 1963, Conover 1953, Eyre & Zehngraff 1948, Day & Duffy 1963.

231.31 MANIPULATION OF CANOPY

Cayford 1963, Fraser 1959, Fraser & Farrar 1955 a, Logan 1950, Ralston 1950.

231.32 MANIPULATION OF UNDERGROWTH AND GROUND VEGETATION

Arend & Roe 1961, Buckman 1962 c, Wagner 1963, Zehngraff & Bargen 1949.

231.33 MANIPULATION OF SOIL

Cayford 1959, Eyre & Zehngraff 1948, Shirley 1933, U.S. Dept. Agriculture 1931 i.

231.9 MISCELLANEOUS (GENERAL ON NATURAL REGENERATION)

Bay et al 1954, Conover 1953, Kittredge 1929, McCormack 1959, Shirley 1941, 1945.

232.1 CHOICE AND TRIAL OF SPECIES, RACES, ETC.

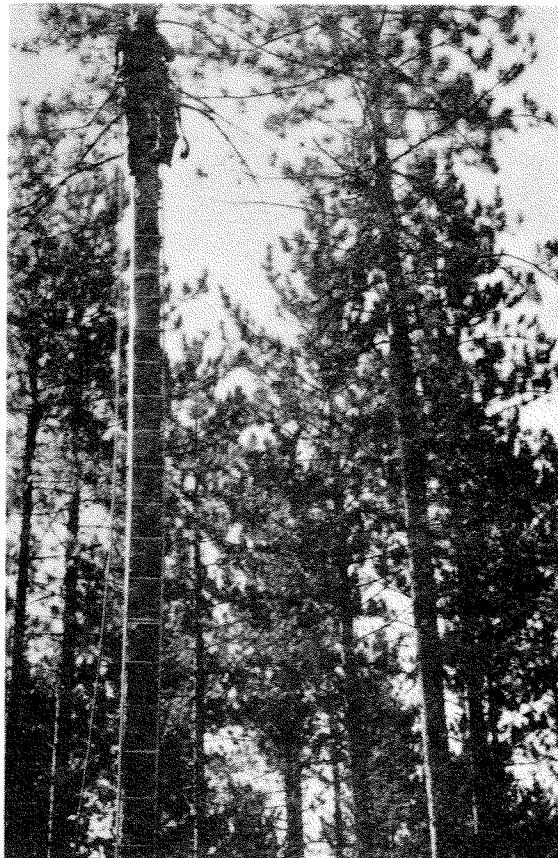
Ahlgren 1962, Bates 1930 a, Bissell 1951, Buckman & Buckman 1962, Chittenden 1927, Godman 1962, Holst 1962, Hough 1957, Lester 1963 a, Lester & Barr 1965, 1966, Northeastern Tree Improvement Conference (Fifth) 1958, Rehfeldt and Lester 1966, Roe 1953, Rudolf 1948, 1959 b, 1966, U.S. Dept. Agriculture 1928 c, 1929 b, 1930 a, 1931 a, Wright et al 1963.

232.2 PREPARATORY WORK, AUXILIARY MEASURES

Baldwin 1938 b, Cayford & Haig 1964, Dieterich 1964, Krygier 1958, McNamara & Reigner 1955, Scott 1966, Stiell 1959 a, Stoeckeler 1963, U.S. Dept. Agriculture 1944, Weetman 1958, Wilde & Iyer 1962, Wilde & Voigt 1966.

232.31 SEED

Bates 1930 b, 1931, Cayford 1964, Cayford & Waldron 1966, Clausen & Rudolf 1958, Dunlap & McDonnell 1939, Eliason & Heit 1940, Fraser 1951, Giertych & Forward 1966, Hitt 1954, Johnson 1946, Jones 1962, Kozlowski 1960, Lester 1963 b, Libby 1965, Lyons 1956 b, Namkoong 1965, Rathbun-Gravatt 1931, Richardson 1925, 1928, Rietz & Kimball 1940, Robbins 1955, Roe 1945, 1948, 1960, 1964, Rudolf 1950, 1951, 1952, 1953, 1957 a, 1959 a, c, 1960, 1961, 1962 a, b, 1963, Rudolf & Clausen 1962, Stiell 1959 a,



Collecting cones

Toumey & Stevens 1928, U.S. Dept. Agriculture 1928 a, c, 1929 a, 1930 b, 1932, 1940 b, 1941 a, b, Weetman 1958, Wright & Bull 1963, Youngberg 1952, Zehngraff 1945.

**232.32 PLANT REARING. NURSERY PRACTICE**

Benzie 1965, Chittenden 1927, Clifford 1965, Clifford & Massello 1966, Cockerill 1961, Derr 1955, Engstrom 1955, Flink & Brigham 1959 a, b, Fowler 1959, Franzmeier & Arneman 1959, Garren et al 1955, Hansen 1923 a, Hill 1955, Holst 1956, Holst et al 1956, Hosner 1955, Iyer & Wilde 1965, Jeckalejs 1956, Kahler 1955, Kopitke 1941, Kozlowski 1962, Kuntz et al 1963, Lease & Duncan 1959, Lester & Rehfeldt 1966, McLeod 1953, Michigan State Univ. 1956, Morris 1955, Mullin 1964 b, Rathbun-Gravatt 1931, Schaffner & McIntyre 1944, Stiell 1959 a, Stoeckeler 1949, 1951, U.S. Dept. Agriculture 1939 a, Wiant 1929, Wilde & Rosendahl 1945, Wilde et al 1940, Winget et al 1961.

**232.33 FORMATION OF STANDS BY DIRECT SOWING**

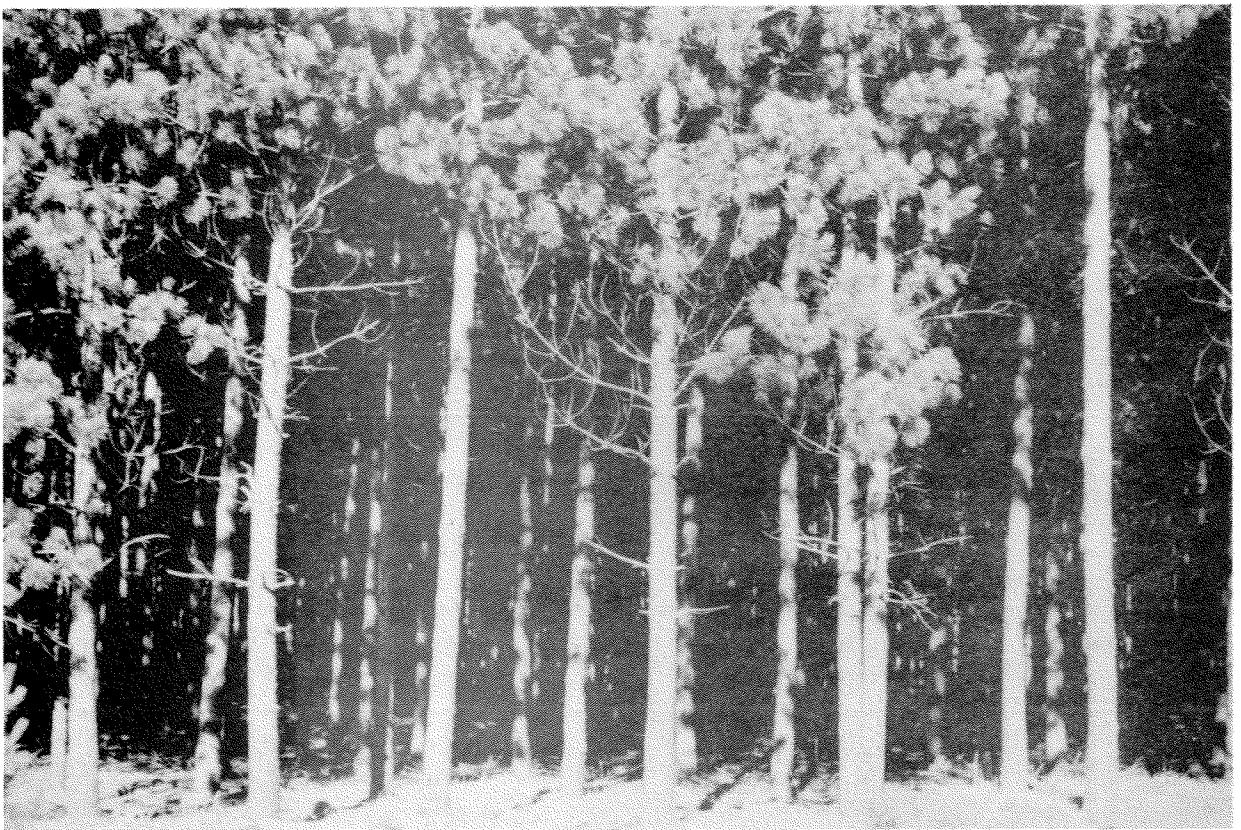
Baldwin & Murphy 1956, Bayly 1933, Fraser 1952, Fraser & Bickerstaff 1963, Holt 1955, Horton & McCormack 1961, Horton and Flowers 1965, Leslie 1953, McConkey 1964, Petheram 1927, Plass 1952, Roe 1963, Scott 1966, Shirley 1937, Stiell 1959 a, Strothman & Conover 1960, U.S. Dept. Agriculture 1930 c, 1933 a, Univ. Massachusetts 1965, Weetman 1958.

**232.4 FORMATION OF STANDS BY PLANTING**

Allison 1923, 1931, 1954, Allison & Cole 1956, Arend 1955 b, Baldwin 1938 a, 1956, 1958, Baldwin & Troop 1948, Boggess & Gilmore 1960, Bramble et al 1949, Canada Dept. Mines and Resources 1941 a, Collins et al 1954, Cook & Schierbaum 1948, Connecticut Agric. Exp. Sta. 1924, Cunningham 1953, Day & Rudolph 1966, Gagnon 1965, Guise 1918, Gysel 1966, Haig & Cayford 1959, 1960, Hansen & McComb 1955, 1958, Hawley 1924, Heiberg et al 1959, Hickock 1942, Horton & McCormack 1961, Krygier 1958, Lease & Duncan 1959, Lemmien & Rudolph 1959, MacArthur 1958, 1959, Martin 1966, Mullin & Leech 1959, Pfankuch & Duncan 1956, Roe 1953, Rudolf 1948, Rudolf & McCullough 1961, Stiell 1955, 1958, Stoeckeler 1963, Stone et al 1954, Trenk 1955 a, U.S. Dept. Agriculture 1938 b, 1940 a, 1944, White & Wood 1958, Wilde 1966, Wilde et al 1957, Wilde & Iyer 1962, Wilde & Voigt 1966, Young 1957, Zasada & Buckman 1957.



Transplants set out on abandoned farm land using the Lowther tree planter



A thirty-three-year-old plantation

232.411 KIND OF STOCK

Clifford 1965, Curtis 1955, Dickson et al 1960, Mullin & Leech 1959, Rudolf & Gevorkiantz 1935, Schreck 1928, U.S. Dept. Agriculture 1933 c, e, 1935 f, 1936 a, 1940 a.

232.412 HANDLING AND TREATMENT OF STOCK

Baldwin & Pleasonton 1952, Mullin 1966, Munro & Kirby 1963, Roe 1949, Shenefelt 1956, Stiell 1959 a, Stoeckeler 1950, 1966, U.S. Dept. Agriculture 1935 c, 1939 c, 1942, Weetman 1958.

232.42 METHODS OF PLANTING. FERTILIZERS ETC.

Baldwin 1938 b, Bissell 1951, Boggess & Gilmore 1960, Cayford & Jarvis 1963, Cayford & Haig 1964, Champagne 1954, Gagnon 1965, LeBarron et al 1938, McLean 1959, Merz 1951, Mullin 1964, Nanne 1966, Pawluk & Arneman 1957, Schantz-Hansen 1945 a, Shenefelt et al 1961, Stiell 1959, U.S. Dept. Agriculture 1907, 1944, Weetman 1958, Wilde & Albert 1942, Wilde et al 1957, Wilde & Voigt 1966.

232.43 SPACING AND ARRANGEMENT IN PLANTATIONS

Arend 1955 b, Baldwin & Troop 1948, Bissell 1951, Bramble et al 1949, Byrnes & Bramble 1955, Dils & Arend 1956, Eyre & Zehngraff 1947, Godman & Smith 1963, Jayne 1958, Lemmien & Rudolf 1959, Stevenson & Bartoo 1939, Stiell 1964, 1965, 1966.

232.44 SEASON AND TIME OF PLANTING

Cayford & Haig 1964, Haig & Cayford 1960, Pomerleau & Ray 1957, Stiell 1965, U.S. Dept. Agriculture 1937 b.

232.49 MISCELLANEOUS (GENERAL ON ARTIFICIAL REGENERATION)

Benzie 1958, Cheyney 1946, Finn 1958, Hosie 1953, Limstrom 1960, McQuilkin 1946, Minckler 1945, Soc. Amer. For. 1956, Ontario Dept. Lands & Forests 1947, Rudolf 1939, Russell 1955, Shirley 1941, Stiell 1959 a, Trenk & Brener 1954, Tryon et al 1960, U.S. Dept. Agriculture 1958 a, Wilde 1966.

233 AFFORESTATION

Hart & Byrnes 1960.

235 UNDERPLANTING, ADVANCE PLANTING ETC. NURSES & FORMATION OF MIXTURES

Anderson 1959 a, Fraser 1952, Geerinck et al 1954, Hughes 1956, Maissurow 1939.

- 236 CARE OF REGENERATION OR PLANTATIONS IN THE INITIAL STAGES OF ESTABLISHMENT  
 Bissell 1951, U.S. Dept. Agriculture 1939 b, Weetman 1958.
- 237 AMELIORATION OF FOREST SITES  
 Gagnon 1965, Jurgensen & Leaf 1965, Merz 1951, U.S. Dept. Agriculture 1928 b, West 1958, White 1956, Wilde et al 1942.
- 241 CLEANINGS  
 Arend & Stephenson 1952, Eyre 1933 a, b, Spurr 1956, U.S. Dept. Agriculture 1933 b, Young & Eyre 1936.
- 242 THINNINGS  
 Althen & Stiell 1965, Baldwin 1959, Bay & Boelter 1963, Berry 1965, Bickerstaff 1946, Buckman 1962 a, Canada Dept. Mines & Resources 1941 b, Cheo 1946, Day & Rudolf 1962, 1966, Engle & Smith 1951, Eyre & Zehngraff 1948, Graham & Bormann 1966, Haberland & Wilde 1961, Kittredge 1927, Lemmien & Rudolph 1964, Logan 1950, Lundgren 1965, 1966, Luther & Cook 1948, Mulloy 1943, 1946, Paul 1957, Ralston 1954, Schantz-Hansen 1933, 1939, 1945 c, 1952, 1956, Sisam 1939, Smithers 1954, Stiell 1953, 1957 a, 1959 b, 1960 b, Trenk 1955 b, U.S. Dept. Agriculture 1933 d, 1938 a, Wales 1946, Wilson 1951, 1955.
- 243 OPENING OF THE CANOPY (INCREMENT FELLINGS, OVERHEAD RELEASE AND IMPROVEMENT FELLINGS)  
 Arend 1955 a, Arend & Roe 1961, Arend & Stephenson 1952, Brown & Carvell 1961, Graham & Bormann 1966, Gysel 1957, Hansen et al 1960, Kuntz & Riker 1952, Logan 1953, Lundgren 1963, Myles & Jarvis 1957, Ralston 1953 c, Robertson 1945, Roe 1951, Stiell 1959 b, Stout 1961, Trenk 1955 a, U.S. Dept. Agriculture 1930 c.
- 245 TENDING OF TREES  
 Althen & Stiell 1965, Berry 1964, Bickerstaff 1942, 1945, 1946, 1952, Burkman & Roe 1958, Canada Dept. Mines & Resources 1941 b, Curtis 1946, Fox 1957, George 1954, Hall 1966, Hawley & Clapp 1935, Hicock 1931, Lohrey 1963, McCabe & Labisky 1959, Paul 1946, Ralston 1953 a, b, Ralston & Lemmien 1956, Sisam 1939, Slabaugh 1957 a, b, Stiell 1959 b, 1962, Trenk 1955 b, Trenk & Albert 1955, Trenk & Katovich 1960.
- 28 HUSBANDRY (GROWING & COLLECTION) OF FOREST PRODUCTS OTHER THAN WOOD  
 Bailey 1948, Duncan et al 1960, Lester & Rehfeldt 1966, Rudolph 1963, Sowder 1961, Stiell 1957 b, Trenk 1959.

29

MISCELLANEOUS (GENERAL ON SILVICULTURE)

Buckman 1963, Eyre & Zehngraff 1948, Guilkey 1958, Horton & Bedell 1960, James 1953, Kittredge 1929, Lungren 1966, Soc. Amer. For. 1959, U.S. Dept. Agriculture 1958, Wilde et al 1949, Woolsey & Chapman 1914.

3. WORK SCIENCE (WORK STUDIES). HARVESTING OF WOOD: LOGGING AND TRANSPORT. FOREST ENGINEERING

30

WORK SCIENCE (WORK STUDIES): GENERAL

Cook & Welch 1957, Graham 1922.

4. FOREST INJURIES AND PROTECTION

41

GENERAL TECHNIQUE OF FOREST PROTECTION. TYPES OF INJURY

Anderson 1959 b, Brown & Young 1955, Butcher et al 1966, Ciesla 1966, Cockerill 1961, Doane 1965, Ewan 1961, Finnegan 1956, Finnegan & Stewart 1962, Flink & Brigham 1959 a, b, Freeman 1962, Hard 1963, 1964 a, Iyer & Wilde 1965, Kearby & Benjamin 1963, 1964, Kerby & McPhee 1963, Kozlowski 1963, Kozlowski & Clausen 1965, 1966, Kuijt 1955, Kulman 1965, 1966, Kuntz et al 1963, Miller & Keen 1960, Munro & Kirby 1963, Nicholls et al 1965, Punter 1964, Rathbun-Gravatt 1931, Sasaki & Kozlowski 1963, 1965, 1966, Shenefelt et al 1961, Talerico et al 1963.

42

INJURIES FROM INORGANIC AGENCIES (EXCLUDING FIRE)

Baldwin 1939, Basham 1953, Belyea & MacAloney 1926, Benjamin 1957, Cayford & Haig 1961 a, Davis et al 1939, Fraser 1953, Fraser & Farrar 1957, Glerum et al 1966, Hansen 1937, Hard 1963, Kienholz 1933, Kulman 1966, Patton & Ricker 1952, Pomerleau & Ray 1957, Stoeckeler 1965, Stoeckeler & Rudolf 1949, Stone & Baird 1956, U.S. Dept. Agriculture 1930 a, 1935 d, e, 1937 a, 1939 d, Wilde et al 1957.



Snow damage to planted red pine (foreground)

43

#### FOREST FIRES

Basham 1957, 1958, Brown 1965, 1966, Buckman 1962 c, Dieterich 1963, 1964, Gardiner 1957, LaMois 1956, 1958, Spurr 1953, U.S. Dept. Agriculture 1931 c, 1934, Wagner 1963, 1965, Winkworth 1961.

442

#### PARASITIC (HIGHER) PLANTS. CLIMBERS AND EPIPHYTES

Iyer & Wilde 1965, Kuijt 1955, Kuntz et al 1963.

443

#### FUNGI AND BACTERIA

Anderson & Schmiege 1959, 1960, Basham 1956, 1957, 1958, Beckwith & Anderson 1956, Benzie 1958, Cafley 1956, Christensen & Hodson 1954, Clark 1957, Gladman 1965, Nord & Hildebrand 1956, Horton & Bedell 1960, Huntly et al 1961, Jorgensen 1956 a, b, Leach et al 1934, Miller 1959, 1960, Mook & Eno 1960, Mott et al 1957, Mounce 1929, Nicholls et al 1965, Ohman 1966, Ovellette 1966, Punter 1964, Rathbun-Gravatt 1931, Schmiege & Anderson 1958, 1960, Skilling 1965, U.S. Dept. Agriculture 1959, Vaartaja & Cram 1956, Waters & Waterman 1957, Whitney 1959, 1965, Wiant 1929.

451

MAMMALS

Aldous 1947, Aldous & Aldous 1944, Canada Dept. Northern Affairs & National Resources 1956, Cayford & Haig 1961 b, Cheyney 1929, Littlefield et al 1946, Marshall et al 1955, Miles et al 1961, Roe 1948, Rudolf 1949, Schantz-Hansen 1945 b, Stiell & Farrar 1953, Stoeckeler & Krefting 1954, U.S. Dept. Agriculture 1936 b,c.

453

INSECTS

Anderson & Schmiege 1959, 1960, Baldwin 1948, 1953, Barker et al 1949, Bean 1956, Beckwith 1957, Beckwith & Anderson 1956, Bradley 1959, Brown & Young 1955, Butcher et al 1966, Canada Dept. Agriculture 1950, 1957 a, 1957 b, Dixon et al 1957, Doane 1965, Eaton 1955, Ewan 1958, 1961, Finnegan 1956, Finnegan & Stewart 1962, Flink & Brigham 1959 a, b, Friend 1931, Gardiner 1957, Graham 1922, Graham & Baumhofer 1930, Graham & Satterlund 1956, Hard 1964 a, Heikkenen 1960, Heikkenen & Miller 1960, Horton & Bedell 1960, Kearby & Benjamin 1964, Kulman 1965, 1966, Kulman & Hodson 1961, Leach et al 1934, Lyons 1951, 1956 a, MacAloney & Drooz 1956, MacAloney & Secrest 1944, Martin 1961 a, b, 1962, 1964 a, b, c, 1965, 1966, Miller et al 1961, Miller & Arend 1960, Miller & Heikkenen 1959, Miller & Keen 1960, Mott et al 1957, Munro & Kirby 1963, Patton & Riker 1954, Pointing 1961, Prentice 1955, Reeks 1954, Rennels 1960, 1961, 1962, Rudolph 1963, Schaffner & McIntyre 1944, Schallar & Miller 1966, Schmiege & Anderson 1958, 1960, Shenefelt 1956, Simsone & Engelken 1959, Stevens 1965, Talerico & Heikkenen 1962, Talerico et al 1963, U.S. Dept. Agriculture 1957, 1959, Waters 1955, 1956, Waters & McIntyre 1954, Waters & Waterman 1957, Wilson 1965 a,b, Wilson & Schmiege 1965.

49

MISCELLANEOUS

Christensen & Hodsen 1954, Cook & Welch 1957, Patton & Krebill 1960.

5. FOREST MENSURATION. INCREMENT; DEVELOPMENT AND STRUCTURE OF STANDS. SURVEYING AND MAPPING

52

MEASUREMENTS OF THE STEM DIMENSIONS AND VOLUME OF TREES, STANDS, FORESTS AND TIMBER

Bickerstaff 1946, Bonnar 1964, Buckman 1961, Canada Dept. of Resources & Development 1953, Collins & Davis 1959, Gevorkiantz & Olsen 1951, Hansen 1922, Hard 1964 b, McCormack 1956, Stiell 1957 c, 1960 a, b, Trenk & Katovich 1960, U.S. Dept. Agriculture 1931 d, e, f, g, h, 1935 b.

53

SPECIAL MEASUREMENTS OF TREES AND STANDS (CROWN DIMENSIONS, STAND DENSITY ETC.)

Ardenne 1950, Brown 1963, Buckman 1962 a, Buckman & Hubbard 1962, Canada Dept. Mines & Resources 1941 a, DeVries & Wilde 1962, Hall 1965, Lohrey 1961, Miller 1965, Mulloy 1943, Stiell 1962.

54

ASSESSMENT OF SITE QUALITY

Ardenne 1950, Bull 1931, Coile 1952, Day et al 1960, Ferree et al 1958, Gevorkiantz 1957, Haig 1929, Lease & Bensie 1964, Lundgren & Wambach 1963, Mogren 1954, Mueller-Dombois 1964, Richards et al 1962, Schallar & Miller 1966, Spurr 1955, U.S. Dept. Agriculture 1928 b, Wambach & Lundgren 1965, White & Wood 1958.

561

INCREMENT IN HEIGHT, DIAMETER, BASAL AREA, FORM AND QUALITY

Althen & Stiell 1965, Ardenne 1950, Bay 1963, Berry 1962, Bickerstaff 1945, Buckman 1962 a, b, Duff & Nolan 1953, Fox 1957, Godman & Smith 1963, Hall 1965, Heikkenen & Miller 1960, MacArthur 1959, McCormack 1956, Mulloy 1946, Newnham 1966, Pawluk & Arneman 1957, Richards et al 1962, Robertson 1945, Ross 1913, Smithers 1954, Spurr & Allison 1956, Stiell 1965, Stiell & Bickerstaff 1959, Vezina 1965, Wilson 1951, Woolsey & Chapman 1914, Zasada & Buckman 1957.

562

VOLUME INCREMENT

Allison 1958, Buckman 1960, 1962 a, b, Buckman & Hubbard 1962, Canada Dept. Interior 1927, Hansen 1923 b, Mader & Owen 1961, McCormack 1956, Mulloy 1946, Richards et al 1962, Ross 1913, Smithers 1954, Spurr & Allison 1952, 1956, Stone 1961, Wilson 1951, Zasada & Buckman 1957, Zehngraff 1949, Zehngraff & Gevorkiantz 1948.

564

FORECASTING INCREMENT

Ardenne 1950.

566

YIELD TABLES AND THEIR CONSTRUCTION

Buckman 1962 b, Vezina 1965, Woolsey & Chapman 1914.

567

STAND TABLES

Robertson 1945.

568

OTHER MENSURATIONAL STUDIES OF STAND CONSTITUTION AND CHANGES THEREIN.  
DISTRIBUTION OF GROWTH BY TREE CLASSES ETC.

Lundgren & Wambach 1963, Schantz-Hansen 1931, Sisam 1939.

6. FOREST MANAGEMENT, BUSINESS ECONOMICS OF FORESTRY. ADMINISTRATION AND ORGANIZATION OF FOREST ENTERPRISES

Behre 1945, Guilkey 1958, Lundgren 1966, Manthy et al 1964, Wambach & Lundgren 1965, Zehngraff & Zasada 1949.

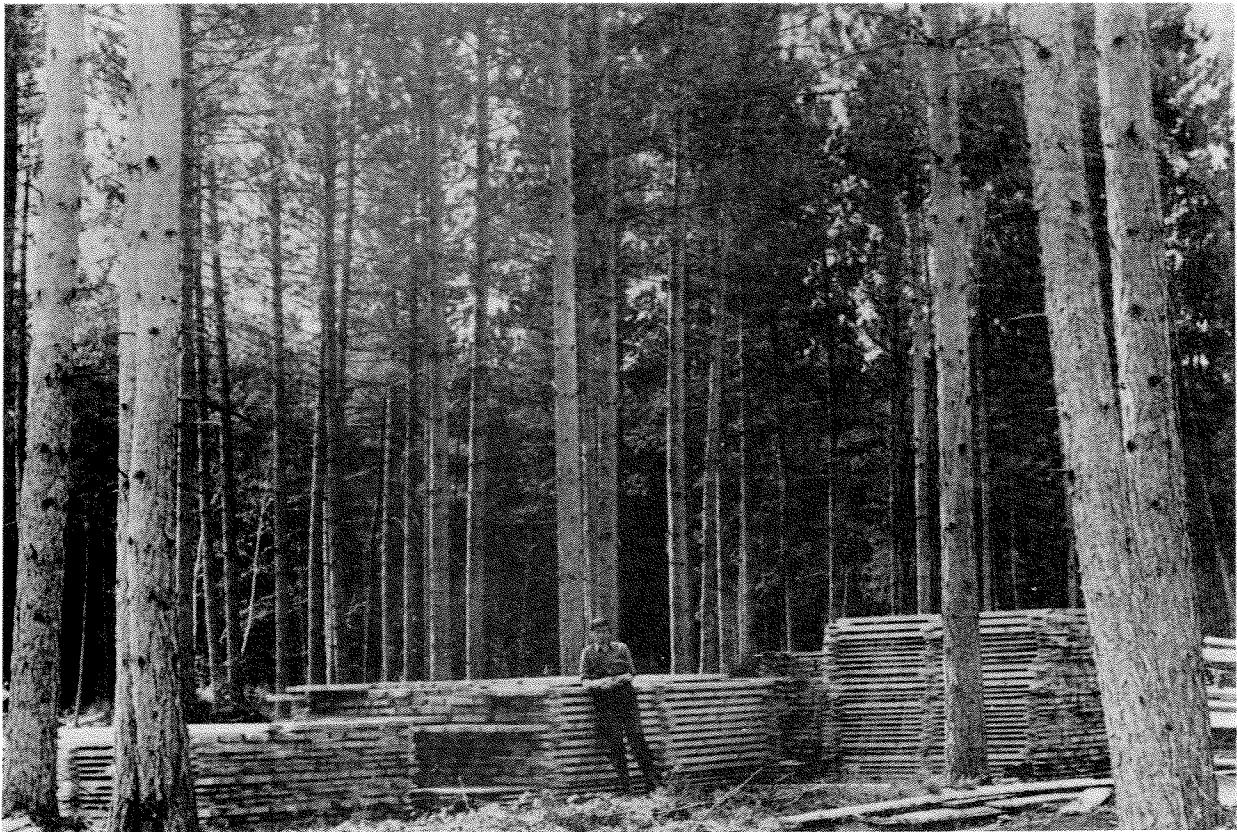
8. FOREST PRODUCTS AND THEIR UTILIZATION

81 WOOD AND BARK: STRUCTURE AND PROPERTIES

Behre et al 1965, Bickerstaff 1946, Chang 1954, Duff & Nolan 1953, Hall 1965, Jayne 1958, Katz & Miller 1963 a, b, Kraemer 1950, Lawson 1966, Noskawiak 1963, Perem 1960, Rochester 1931, Whitmore & Zahner 1966.

83 TIMBER MANUFACTURING INDUSTRIES & PRODUCTS. USES OF WOOD AS SUCH

Behre et al 1965, Canadian Standards Association 1960, Feihl & Godin 1965, Guilkey 1958, Rochester 1931.



Lumber produced from a 65-year-old stand

84 PRESERVATION AND OTHER TREATMENTS TO IMPROVE THE PROPERTIES OF WOOD. DAMAGE BY BIOLOGICAL AGENCIES AND ITS CONTROL. SEASONING. TIMBERRYARD PRACTICE (HANDLING AND STORAGE)

Canadian Standards Association 1940, Katz & Miller 1963 a, b.

86 PULP INDUSTRIES. COMPOSITE MATERIALS MADE WHOLLY OR PARTLY OF WOODY MATTER. CHEMICAL UTILIZATION OF WOOD

Besley 1960.

89 OTHER ("MINOR") FOREST PRODUCTS

Bailey 1948, Levitin 1965, Rudolph 1963, Stiell 1957 b.

9. FORESTS AND FORESTRY FROM THE NATIONAL POINT OF VIEW. SOCIAL ECONOMICS OF FORESTRY

Manitoba Dept. Mines and Natural Resources 1956, Northeastern Tree Improvement Conference (Fifth) 1958, Rudolf 1965, Rudolf & Schaenike 1963, Rudolf & Anderson 1965, Tilt 1914, Zasada et al 1954.

- Ahlgren, C. E. 1957. Phenological observations of nineteen native tree species in northeastern Minnesota. *Ecol.* 38:622-628.
- \_\_\_\_\_. 1962. Some factors influencing survival, growth, and flowering of intraspecific and interspecific pine grafts. *J. For.* 60:785-789.
- Ahlgren, I. and C. E. Ahlgren. 1957. Key to the native coniferous tree seedlings of the Quetico-Superior area. Quetico-Superior Wilderness Research Center, Tech. Note No. 3, 2 p.
- Ahlgren, C. E. and H. L. Hansen. 1957. Some effects of temporary flooding on coniferous trees. *J. For.* 55:647-650.
- Aldous, S. E. 1947. Some forest-wildlife problems in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 6, 11 p.
- Aldous, C. M. and S. E. Aldous. 1944. The snowshoe hare - a serious enemy of forest plantations. *J. For.* 42:88-94.
- Allison, J. H. 1923. Twenty years' growth of planted norway, jack, scotch, and white pine in north central Minnesota. *J. For.* 21:796-801.
- \_\_\_\_\_. 1931. The growth of jack, norway and scotch pine plantations on Hinckley loamy fine sand. *J. For.* 29:381-383.
- \_\_\_\_\_. 1954. Growth of planted norway (red) pine in northern Minnesota. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 34, 2 p.
- \_\_\_\_\_. 1958. Periodic annual growth of the upland types on the Cloquet Forest. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 68, 2 p.
- Allison, J. H. and C. L. Cole. 1956. Growth of 60-year-old norway (red) pine plantation trees in northern Minnesota. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 49, 2 p.
- Althen, F. W. Von and W. M. Steill. 1965. Twenty-three years of management in the rockland red pine plantation. Canada Dept. Forestry, Publ. No. 1123, 20 p.
- Alway, F. G. and R. Zon. 1930. Quantity and nutrient contents of pine leaf litter. *J. For.* 28:715-727.
- Anderson, H. W. 1959a. An underplanting and release experiment 1954-1958. Ontario Dept. Lands and Forests, Div. Res., Res. Rep. No. 40, 29 p.
- Anderson, G. W. and D. C. Schmieg. 1959. The forest insect and disease situation, lake states 1958. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 70, 18 p.

- Anderson, G. W. and D. C. Schmieg. 1960. The forest insect and disease situation. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 88, 18 p.
- Anderson, N. A. 1959b. Needle drop of red pine. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 549, 2 p.
- Ardenne, M. 1950. Growth of second growth red and white pine in southeastern Ontario. Ontario Dept. Lands and Forests, Res. Div., Res. Rep. No. 18, 34 p.
- Arend, J. L. 1955a. Tolerance of conifers to foliage sprays of 2, 4-D and 2,4,5-T in lower Michigan. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 437, 2 p.
- \_\_\_\_\_ 1955b. Development of closely spaced red pine, white pine, and norway spruce after 40 years. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note 439, 1 p.
- Arend, J. L. and J. R. Stephenson. 1952. Some costs and effects of chemical release of pine in northern Michigan. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 367, 1 p.
- Arend, J. L. and E. I. Roe, 1961. Releasing conifers in the lake states with chemicals. United States Dept. Agriculture, For. Serv., Agric. Handb. No. 185, 22 p.
- Armson, K. A. and R. Van Den Driessche. 1959. Natural root grafts in red pine (Pinus resinosa). For. Chron. 35:232-241.
- Armson, K. A. and J. R. M. Williams. 1960. The root development of red pine (Pinus resinosa Ait.). Seedlings in relation to various soil conditions. For. Chron. 36:14-17.
- Bailey, L. F. 1948. Leaf oils from Tennessee Valley conifers. J. For. 46:882-889.
- Baker, F. S. 1949. A revised tolerance table. J. For. 47:179-181
- Baldwin, H. I. 1938a. Planting experiments in the northeast. J. For. 36:758-760.
- \_\_\_\_\_ 1938b. Comparison of planting in ploughed furrows and unbroken sod. New Hampshire For. Rec. Comm., Fox. For. Notes, No. 5, 1 p.
- \_\_\_\_\_ 1939. Hurricane damage to the Fox Forest. New Hampshire For. Rec. Comm., Fox. For. Notes, No. 12, 1 p.
- \_\_\_\_\_ 1948. Pales weevil damage after fire and logging. New Hampshire For. Rec. Comm., Fox. For. Notes, No. 37, 1 p.

- Baldwin, H. I. 1953. Prevention of bark beetle attack in conifers. New Hampshire For. Rec. Comm., Fox. For. Notes No. 51, 2 p.
1956. Scotch pine surpasses red pine in early height growth. New Hampshire For. Rec. Comm., Fox. For. Notes, No. 63, 1 p.
1958. Growth of red pine at different spacings. New Hampshire For. Rec. Comm., Fox. For. Notes, No. 70, 2 p.
1959. Thinning red pine planted at different spacings. New Hampshire For. Rec. Comm., Fox. For. Notes, No. 71, 2 p.
- Baldwin H. I. and B. S. Troop. 1948. Effect of spacing on growth of a norway pine plantations. New Hampshire For. Rec. Comm., Fox. For. Notes, No. 35, 2 p.
- Baldwin, H. I. and A. Pleasonton. 1952. Cold storage of nursery stock. New Hampshire For. Rec. Comm., Fox. For. Notes, No. 48, 2 p.
- Baldwin, H. I. and D. Murphy. 1956. Direct seeding white and red pine on cutover land. New Hampshire For. Rec. Comm., Fox. For. Notes, No. 66, 1 p.
- Bannan, M. W. 1962. Cambial behavior with reference to cell length and ring width in Pinus strobus L. Canad. J. Bot. 40:1057-1062.
- Barker, R., V. Hildahl and A. Knight. 1949. Plantation survey. (Prairie Provinces). Canada Dept. Agriculture, Sci. Serv., Div. Ent., Bi-monthly Prog. Rep. 5(1):2-3.
- Basham, J. T. 1953. Extensive tree mortality caused by hail in Quetico Provincial Park. Canada Dept. Agriculture, Sci. Serv., For. Biol. Div., Bi-monthly Prog. Rep. 9(5):2.
1956. The deterioration of fire-killed pine stands. Canada Dept. Agriculture, Sci. Serv., For. Biol. Div., Bi-monthly Prog. Rep. 12(1):2.
1957. The deterioration by fungi of jack, red, and white pine killed by fire in Ontario. Canad. J. Bot. 35:155-172.
1958. The pathological deterioration of fire-killed pine in the Mississagi Region of Ontario. Canada Dept. Agriculture For. Biol. Div., Publ. 1022, 35 p.
- Bates, C. G. 1925. The relative light requirements of some coniferous seedlings. J. For. 23:869-879.
- 1930a. The frost hardiness of geographic strains of norway pine. J. For. 28:327-333.

Bates, C. G. 1930b. Why nurserymen prefer southern seeds. J. For. 28:232-233.

1931. A new principle in seed collecting for norway pine. J. For. 29:661-678.

Bay, R. R. 1963. Soil moisture and radical increment in two density levels of red pine. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-30, 4 p.

Bay, R. R., C. E. Olson, Jr. and A. E. Schneider. 1954. The character and extent of reproduction in certain upland cutover spruce-balsam-hardwood stands in north-central Minnesota. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 30, 2 p.

Bay, R. R. and D. H. Boelter. 1963. Soil moisture trends in thinned red pine stands in northern Minnesota. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-29, 3 p.

Bayly, G. 1933. Direct seeding in Ontario. For. Chron. 9:66-78.

Bean, J. L. 1956. Red pine scale. United States Dept. Agriculture, For. Serv., For. Pest Leafl. 10, 4 p.

Beckwith, L. C. 1957. Weather station records not an accurate guide to temperature lethal to the shoot moth. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 508, 2 p.

Beckwith, L. C. and R. L. Anderson. 1956. The forest insect and disease situation. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. 42, 26 p.

Behre, C. E. 1945. Growing stock, cutting age, and sustained yield. J. For. 43:477-485.

Behre, C. E., B. M. Radcliffe and K. O. Wilkins. 1965. Strength of plantation growth and second growth red pine poles. Michigan State Univ., Agric. Exp. Sta., Quart. Bull. 48:296-319.

Belyea, H. C. and H. S. MacAloney. 1926. Weather injury to terminal buds of scotch pine and other conifers. J. For. 24:685-690.

Benjamin, D. M. 1957. Hail damage to five-year-old red pine in northern Wisconsin. For. Sci. 3:249-252.

Benzie, J. W. 1958. A red pine plantation problem in upper Michigan. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 524, 2 p.

1965. A test of seeding depth for jack pine and red pine. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-64, 4 p.

- Berry, A. B. 1962. Twenty years growth of debudded red pine. For. Chron. 38:345-355.
1964. A time study in pruning plantation white spruce and red pine. For. Chron. 40:122-128.
1965. Effect of heavy thinning on the stem form of plantation-grown red pine. Canada Dept. Forestry, Publ. No. 1126, 16 p.
- Besley, L. 1960. Relationship between wood fibre properties and paper quality. Pulp and Pap. Mag. Canada, Woodl. Rev., July: 4-16.
- Bickerstaff, A. 1942. The size of tree in pruning. Canada Dept. Mines and Resources, Lands, Parks For. Br., Dom. For. Serv., Silvi. Leafl. No. 9, 2 p.
1945. Knot-free red pine by debudding. Canada Dept. Mines and Resources, Lands, Parks For. Br., Dom. For. Serv., Silvi. Res. Note No. 76, 4 p.
1946. Effect of thinning and pruning upon the form of red pine. Canada Dept. Mines and Resources, Lands, Parks For. Br., Dom. For. Serv., Silvi. Res. Note No. 81, 32 p.
1952. Debudding red pine ten-year results. Canada Dept. Resources and Development, For. Br., Div. For. Res. Silvi. Leafl. No. 73, 4 p.
- Bissell, L. P. 1951. Planting forest trees in Maine. Univ. Maine, Coll. Agric., Maine Ext. Bull. 410, 16 p.
- Boggess, W. R. and A. R. Gilmore. 1960. The effect of residual fertility on the survival and growth of planted pine in southern Illinois. Univ. Illinois, Dept. For., Agric. Exp. Sta., For. Note No. 91, 7 p.
- Bonnar, G. M. 1964. A tree volume table for red pine by crown width and height. For. Chron. 40:339-346.
- Bradley, G. A. 1959. Feeding sites of aphids of the genus Cinara Curtis (Homoptera: Aphididae) in northwestern Ontario. Canad. Ent. 91:670-672.
- Bramble, W. C., H. N. Cope and H. H. Chisman. 1949. Influence of spacing on growth of red pine in plantations. J. For. 47: 726-732.
- Brown, J. K. 1963. Crown weights in red pine plantations. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-19, 4 p.
1965. Estimating crown fuel weights of red pine and jack pine. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Pap. LS-20, 12 p.

- Brown, J. H. and K. L. Carvell. 1961. Radapon for effective control of grass around planted seedlings. Down to Earth 16(4): 13-15.
- Brown, J. K. 1966. Forest floor fuels in red and jack pine stands. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note NC-9, 3 p.
- Brown, W. G. E. and D. S. Lacate. 1961. Rooting habits of white and red pine. Canada Dept. Forestry, For. Res. Br., Tech. Note No. 108, 16 p.
- Brown, R. T. and E. P. Young. 1955. Insect attacks on native and plantation pines in central Wisconsin. Ecol. 36:522-523.
- Buckman, R. E. 1960. High growth rate maintained by 140-year-old red pine. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 587, 2 p.
1961. Development and use of three stand volume equation for Minnesota. J. For. 59:573-575.
- 1962a. Three growing-stock density experiments in Minnesota red pine. A progress report. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 99, 10 p.
- 1962b. Growth and yield of red pine in Minnesota. United States Dept. Agriculture, For. Serv., Tech. Bull. No. 1272 50 p.
- 1962c. Two prescribed summer fires reduce abundance and vigor of hazel brush regrowth. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta. Tech. Note No. 620, 2 p.
1963. Red pine management in the lake states. Univ. Illinois, Sch. For. Railsplitter, p. 25-26.
- Buckman, R. E. and E. I. Roe. 1958. Effects of pruning on the form growth of a red pine plantation. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note 533, 2 p.
- Buckman, R. E. and R. G. Buckman. 1962. Red pine plantation with 48 sources of seed shows little variation in total height at 27 years of age. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 616, 2 p.
- Buckman, R. E. and J. Hubbard. 1962. A 5-year progress report in a growing stock density experiment in 60-year-old red pine. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 629. 2 p.
- Bull, H. 1931. The use of polymorphic curves in determining site quality in young red pine plantations. J. Agric. Res. 43:1-28.

- Butcher, J. W., R. B. Carlson, J. McKinid and S. Ilnitzky. 1966. Some effects of insecticide combinations and insecticide volume on European pine shoot moth control. Michigan State Univ., Agric. Exp. Sta., Quart. Bull. 49:103-110.
- Byrnes, W. R. and W. C. Bramble. 1955. Growth and yield of plantation-grown red pine at various spacings. J. For. 53:562-565.
- Cafley, J. 1956. Damping-off in fall and spring-sown seedbeds in Ontario. Canada Dept. Agriculture, Sci. Serv., For. Biol. Div., Bi-monthly Prog. Rep. 12(5):2-3.
- Canada Dept. Agriculture. 1950. Matsucoccus sp. in New York State. Sci. Serv., Div. Ent., Bi-monthly Prog. Rep. 6(6):4.
- 1957a. The European pine shoot moth in Ontario. For. Biol. Div., Chem. Control Sec., Publ. 1000, 2 p.
- 1957b. The red-headed pine sawfly in Ontario. For. Biol. Div., Chem. Control Sec., Publ. 1002, 2 p.
- Canada Dept. Interior. 1924. Red pine. For. Br., Tree Pamphl. No. 6, 3 p.
1927. Growth of coniferous species on Miramichi drainage area - New Brunswick. Dom. For. Serv., Res. Note No. 21, 20 p.
- Canada Dept. Mines and Resources. 1941a. Crown development in red pine plantations. Lands, Parks and For. Br., Dom. For. Serv., Silvi. Leafl. No. 6, 1 p.
- 1941b. Cost of thinning and pruning red pine plantations. Lands, Parks and For. Br., Dom. For. Serv., Silvi. Leafl. No. 4, 1 p.
- Canada Dept. Resources and Development. 1953. Provisional form-class volume tables for Ontario log rule, For. Br., For. Res. Div., S & M 53-1, 27 p.
- Canada Dept. Northern Affairs and National Resources. 1956. Notes on browsing damage. For. Br., For. Res. Div., S & M 56-7, 10 p.
- Canadian Standards Association. 1940. Standard specification for creosote preservative treatment of red, jack and lodgepole pine poles and reinforcing stubs by pressure process.
1960. Specification for the physical properties of red, jack and lodgepole pine poles and reinforcing stubs. (Third Ed.).
- Carmichael, A. J. 1958. Determination of the maximum air temperature tolerated by red pine, jack pine, white spruce and black spruce seeds at low relative humidities. For. Chron. 34:387-392.

- Cayford, J. H. 1959. Germination and survival of jack pine and red pine after scarification in southeastern Manitoba. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 78, 14 p.
1963. Reproduction and residual stand development following cutting in red pine and jack pine stands in Manitoba. Canada Dept. Forestry, For. Res. Br., Publ. No. 1010, 19 p.
1964. Red pine seedfall in southeastern Manitoba. For. Chron. 40:78-85.
- Cayford, J. H. and R. A. Haig. 1961a. Glaze damage in red and scots pine plantations in southeastern Manitoba. For. Chron. 37:16-21.
- 1961b. Mouse damage to forest plantations in southeastern Manitoba. J. For. 59:124-125.
1964. Survival and growth of 1949-1962 red pine plantations in southeastern Manitoba. Canada Dept. Forestry, For. Res. Br., Publ. No. 1093, 16 p.
- Cayford, J. H. and J. M. Jarvis. 1963. Furrowing and sheltering to improve early survival of planted red pine on dry sites, southeastern Manitoba. United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 59:21-24.
- Cayford, J. H. and R. M. Waldron. 1966. Storage of white spruce, jack pine and red pine seed treated with arasan, endrin and aluminum flakes. United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 77:12-16.
- Champagne, E. G. 1954. Wood chip mulch improves red pine survival. United States Dept. Agriculture, For. Serv., Central States For. Exp. Sta., Sta. Note No. 86, 2 p.
- Chang, Y. 1954. Bark structure of north american conifers. United States Dept. Agriculture, For. Serv., Tech. Bull. No. 1095, 86 p.
- Chapman, H. H. 1946. Origin and results of the seed-tree experiment with norway pine on the Chippewa National Forest. J. For. 44:178-183.
- Cheo, K. 1946. Ecological changes due to thinning red pine. J. For. 44:369-371.
- Cheyney, E. G. 1929. Damage to norway and jack pine by red squirrels. J. For. 27:382-383.
1946. Forest plantations in northern Minnesota. J. For. 44:39-40.
- Chittenden, A. K. 1927. Forest planting in Michigan. Michigan State College, Agric. Exp. Sta., For. Sec., Special Bull. 163, 24 p.

- Christensen, C. M. and A. C. Hodson. 1954. Artificially induced senescence of forest trees. *J. For.* 52:126-129.
- Ciesla, W. M. 1966. Southern pine beetle attacks red pine in North Carolina. *J. For.* 64:397.
- Clark, J. W. 1957. Comparative decay resistance of some common pines, hemlock, spruce, and true fir. *For. Sci.* 3:314-320.
- Clausen, K. E. and P. O. Rudolf. 1958. Germination of 29-year-old red pine seed. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 72, 2 p.
- Clements, J. R. 1965. Growth response of red pine seedlings to fall and spring water supply. *Forestry Abstracts* 26(3):377.
- Clifford, E. D. 1965. Does seedling dominance in nursery seedbeds continue in the plantation? United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 72:2-4.
- Clifford, E. D. and Massello, J. W. 1966. Effect of soil fumigants on seedling development. United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 76:9-12.
- Cockerill, J. 1961. The effect of chlordane and thiram on damping-off and seedling growth. *For. Chron.* 37:211-216.
- Coile, T. S. 1952. Soil and the growth of forests. *Advances in Agronomy* 4:329-398.
- Collins, P. E., H. L. Hansen and D. P. Duncan. 1954. Species survival and height-growth in some Minnesota windbreaks. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 32, 2 p.
- Collins, R. A. and K. P. Davis. 1959. Remnant old-growth red pine stands in Lower Michigan. Univ. Michigan, Dept. For., Mich. For. Notes, No. 22, 4 p.
- Conover, D. F. 1953. Effects of competition of red pine and white pine reproduction. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 392, 2 p.
- Connecticut Agricultural Experiment Station. 1924. The Rainbow Forest plantations. Guide to experimental plots and report of progress. *For. Publ.* No. 15, Bull. 262, 135 p.
- Connell, A. B. 1913. Ecological studies on a northern Ontario sand plain. *For. Quart.* 11:149-159.
- Cook, D. B. 1941. Five seasons growth in conifers. *Ecol.* 22:285-296.
- Cook, D. B. and S. B. Robeson. 1945. Varying hare and forest succession. *Ecol.* 26:406-410.
- Cook, D. B. and D. L. Schierbaum. 1948. Planting an adverse site in New York. *J. For.*, 46:377.

- Cook, D. B., R. H. Smith, and E. L. Stone. 1952. The natural distribution of red pine in New York. *Ecol.* 33:500-512.
- Cook, D. B. and Welch, D. S. 1957. Backflash damage to residual stands incident to chemi-peeling. *J. For.* 55:265-267.
- Critchfield, W. B. and E. L. Little. 1966. Geographic distribution of the pines of the world. United States Dept. Agriculture, For. Serv., Misc. Publ. 991, 97 p.
- Cunningham, G. C. 1953. Growth and development of coniferous plantations. Canada Dept. Resources and Development, For. Br., For. Res. Div., Silvi. Res. Note No. 103, 28 p.
- Curtis, J. D. 1946. Pruning forest trees by the finger-budding method. *J. For.* 44:502-504.
- Curtis, K. O. 1955. Use of graded nursery stock for red pine plantations. *J. For.* 53: 171-173.
- Davis, W. C., G. Y. Young, and L. W. Orr. 1939. Needle drop of pine. *J. For.* 37:884-887.
- Day, M. W. 1941. The root system of red pine saplings. *J. For.* 39: 468-472.
- Day, M. W., C. F. Bey and V. J. Rudolph. 1960. Site index for planted red pine by the 5-year growth intercept method. *J. For.* 58:198-202.
- Day, M. W. and V. J. Rudolph. 1962. Thinning planted red pine by the per cent of height method. Michigan State Univ., Agric. Exp. Sta., Quart. Bull. 45:17-23.
- Day, M. W. and V. J. Rudolph. 1966. Early growth results of thinning plantation red pine by three methods. Michigan State University, Agric. Exp. Sta., Quart. Bull. 49:183-188.
- Day, R. J. and P. J. B. Duffy. 1963. Regeneration after logging in the Crowsnest Forest. Canada Dept. Forestry, For. Res. Br., Publ. No. 1007, 32 p.
- Della-Bianca, L. and R. E. Dils. 1960. Some effects of stand density in a red pine plantation on soil moisture, soil temperature, and radial growth. *J. For.* 58:373-377.
- Derr, K. R. 1955. Control of damping-off at Boscobel State Nursery in Wisconsin. United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 21, 7-8.
- DeVries, M. L. and Wilde, J. A. 1962. Effect of the density of red pine stands on moisture supply in sandy soils. Neth. J. Agric. Sci. 10:235-239.
- Dickson, A., A. L. Leaf, and J. F. Hosner. 1960. Seedling quality-soil fertility relationships of white spruce, and red and white pine in nurseries. *For. Chron.* 36:237-241.

- Dieterich, J. H. 1963. Litter fuels in red pine plantations. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-14, 3 p.
- 
1964. Use of fire in planting site preparation. In Sixth Lake States Forest Tree Improvement Conference p. 22-29. Pub. by United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta.
- Dils, R. E. and J. L. Arend. 1956. Snow accumulation under red pine of different stand densities in lower Michigan. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 460, 2 p.
- Dixon, J. C., D. W. Renlund, D. M. Benjamin, and R. D. Shenefelt. 1957. The current status of the jack pine budworm in Wisconsin. Univ. Wisconsin, For. Res. Note No. 42, 4 p.
- Doane, C. C. 1965. The red pine scale. Connecticut, Agri. Exp. Sta., Circ. 207, 7 p.
- Duff, G. H. and N. J. Nolan. 1953. Growth and morphogenesis in the canadian forest species. (I. The controls of cambial and apical activity in Pinus resinosa Ait.) Canad. J. Bot. 31: 471-513.
- 
1957. Growth and morphogenesis in the canadian forest species. (II. Specific increments and their relation to the quantity and activity of growth in Pinus resinosa Ait.) Canad. J. Bot. 35:527-572.
- 
1958. Growth and morphogenesis in the canadian forest species. (III. The time scale of morphogenesis at the stem apex of Pinus resinosa Ait.). Canad. J. Bot. 36:687-710.
- Duncan, D. P., E. T. Sullivan, C. J. Shiue. 1960. Effect of time of shearing red pine christmas trees on bud formation and leader growth. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 96, 2 p.
- Dunlap, A. A. and A. D. McDonnell. 1939. Testing germination in sand. J. For. 37:330-332.
- Eaton, C. B. 1955. The saratoga spittlebug. United States Dept. Agriculture, For. Serv., For. Pest Leafl. No. 3, 4 p.
- Eliason, E. J. and C. E. Heit. 1940. The results of laboratory tests as applied to large scale extraction of red pine seed. J. For. 38:426-429.
- Engle, L. G. and N. F. Smith. 1951. Height growth of thinned red pine. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 351, 1 p.

- Engstrom, A. 1955. Polyethylene film for seedbed mulch. United States Dept. Agriculture, For. Serv., Tree Plant. Notes 21:26-27.
- Ewan, H. G. 1957. Jack-pine sawfly. United States Dept. Agriculture, For. Serv., For. Pest Leafl. No. 17, 4 p.
- \_\_\_\_\_ 1958. Some effects of temperature extremes on Saratoga spittlebug populations. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 519 2 p.
- \_\_\_\_\_ 1961. The Saratoga spittlebug. A destructive pest in red pine plantations. United States Dept. Agriculture, For. Serv., Tech. Bull. No. 1250, 52 p.
- Eyre, F. H. 1933a. Aspen competition in norway pine plantations. J. For. 31:318-321.
- \_\_\_\_\_ 1933b. Possibilities of release cuttings in Minnesota forests. J. For. 31:436-440.
- Eyre, F. H. and P. J. Zehngraff. 1947. Spacing of young red pine. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 8, 6 p.
- \_\_\_\_\_ 1948. Red pine management in Minnesota. United States Dept. Agriculture, For. Serv., Circ. No. 778, 70 p.
- Farnsworth, C. E. 1955. Observations of stem elongation in certain trees in the western Adirondacks. Ecol. 36:285-292.
- Farrar, J. L. 1953. Distribution of radiophosphorus in red pine seedlings. Canada Dept. Resources and Development, For. Br., Div. For. Res., Silvi. Leafl. No. 78, 4 p.
- Fensom, D. S. 1963. The bioelectric potentials of plants and their functional significance. (V. Some daily and seasonal changes in the electric potential and resistance of living trees.) Canad. J. Bot. 41:831-851.
- Ferree, M. J., T. D. Shearer and E. L. Stone, Jr. 1958. A method of evaluating site quality in young red pine plantations. J. For. 56:328-332.
- Feihl, O. and V. Godin. 1965. Plantation-grown red pine for veneer and plywood. Canadian Wood Products Industries. Jan: 5 p.
- Finn, R. F. 1958. Ten years of strip-mine forestation research in Ohio. United States Dept. Agriculture, For. Serv., Central States For. Exp. Sta., Tech. Pap. 153, 38 p.
- Finnegan, R. J. 1956. Weevils attacking pines in southern Ontario. Canada Dept. Agriculture, Sci. Serv., For. Biol. Div., Bi-monthly Prog. Rep. 12(2):3.
- Finnegan, R. J. and K. E. Stewart. 1962. Control of the pine root collar weevil, *Hylobius radicis*. J. Econ. Ent. 55:483-486.

- Flink, P. R. and P. Brigham. 1959a. Red pine nursery stock fumigation in Michigan conservation department nurseries. United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 37: 17-21.
- \_\_\_\_\_ 1959b. Preliminary report on red pine nursery stock fumigation. J. For. 57:662-663.
- Forward, D. F. and N. J. Nolan. 1961a. Growth and morphogenesis in the canadian forest species (IV. Radial growth in branches and main axis of Pinus resinosa Ait. under conditions of open growth, suppression, and release). Canad. J. Bot. 39:385-409.
- \_\_\_\_\_ 1961b. Growth and morphogenesis in the canadian forest species. (V. Further studies of wood growth in branches and main axis of Pinus resinosa Ait. under conditions of open growth, suppression, and release). Canad. J. Bot. 39: 411-436.
- \_\_\_\_\_ 1964. Growth and morphogenesis in the canadian forest species. (VII. Progress and control of longitudinal growth of branches in Pinus resinosa Ait.). Canad. J. Bot. 42: 923-950.
- Fowler, D. P. 1959. A summer field grafting technique for pine. For. Chron. 35:30-35.
- \_\_\_\_\_ 1964. Effects of inbreeding in red pine. Silvae Genetica 13:170-177.
- \_\_\_\_\_ 1965a. Effects of inbreeding in red pine. Pollination studies. Silvae Genetica 14:12-23.
- \_\_\_\_\_ 1965b. Effects of inbreeding in red pine. Factors affecting natural selfing. Silvae Genetica 14:37-46.
- \_\_\_\_\_ 1965c. Effects of inbreeding in red pine. Comparison with other northeastern pine species. Silvae Genetica 14:76-81.
- Fowells, N. A. 1965. Silvics of forest trees of the United States. United States Dept. Agriculture, Agric. Handb. No. 271, 1, 762 p.
- Fox, H. W. 1957. Bud-pruning red pine and eastern white pine in northern Illinois. J. For. 55:359-363.
- Frazmeier, D. P. and H. F. Arneman. 1959. The effect of fertilizers on the available nitrogen content of a nursery soil and on the nitrogen concentration in red pine seedlings. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 77, 2 p.
- Fraser, J. W. 1951. Seed fall under a red pine stand. Canada Dept. Resources and Development, For. Br., For. Res. Div., Silvi. Leafl. No. 51, 2 p.

- Fraser, J. W. 1952. Seed spotting of conifers under a mixed hardwood stand. Canada Dept. Resources and Development, For. Br., For. Res. Div., Silvi. Leafl. No. 67, 3 p.
1953. Preliminary observations on the mortality of pine seedlings in frost pockets. Canada Dept. Resources and Development, For. Br., For. Res. Div., Silvi. Leafl. No. 87, 4 p.
1959. The effect of sunlight on the germination and early growth of jack pine and red pine. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 71, 6 p.
- Fraser, J. W. and J. L. Farrar. 1955a. Strip-cutting in a mixed pine stand. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 1, 17 p.
- 1955b. Effect of watering, shading, seedbed medium, and depth of sowing on red pine germination. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 15, 3 p.
1957. Frost hardiness of white spruce and red pine seedlings in relation to soil moisture. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 59, 4 p.
- Fraser, J. W. and A. Bickerstaff. 1963. Algin mulch for seedbeds. For. Chron. 39:224.
- Freeman, T. N. 1962. A new baspeyresia species on red pine. Canad. Ent. 94:1272-1273.
- Friend, R. B. 1931. The European pine shoot moth in red pine plantations. J. For. 29:551-556.
- Gagon, J. D. 1965. Effect of magnesium and potassium fertilization on a 20-year-old red pine plantation. For. Chron. 41: 290-294.
- Gardiner, L. M. 1957. Deterioration of fire-killed pine in Ontario and the causal wood-boring beetles. Canad. Ent. 89:241-263.
- Garren, K. H., J. T. May and C. S. Walsh. 1955. Micro-organisms in nursery seedbed soils. United States Dept. Agriculture, For. Serv., Tree Plant. Notes No. 21:21-23.
- Gates, F. C. 1926. Pines in the prairie. Ecol. 7:96-98.
- Gatherum, G. E., A. L. McComb, and W. E. Loomis. 1963. Effects of light and soil moisture on forest tree seedling establishment. Iowa State Univ. of Sci. and Tech., Agri. and Home Econ., Exp. Sta. Res., Bull. 513:775-792.

- Geerinck, P. A., W. A. Getchell and G. L. Chapman. 1954. Response to release of underplanted white and red pine. Univ. Maine, For. Dept., Tech. Note No. 29, 2 p.
- George, E. J. 1954. 31-year results in growing shelterbelts on the Northern Great Plains. United States Dept. Agriculture, For. Serv., Circ. No. 924, 55 p.
- Gevorkiantz, S. R. 1957. Site index curves for red pine in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 484, 2 p.
- Gevorkiantz, S. R., P. O. Rudolf, and P. J. Zehngraff. 1943. A tree classification for aspen, jack pine, and second-growth red pine. J. For. 41:268-274.
- Gevorkiantz, S. R. and L. P. Olsen. 1951. Bark per cent in lake states trees. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 362, 1 p.
- Giertych, M. M. and D. F. Forward. 1966. Growth regulation changes in relation to growth and development of Pinus resinosa Ait. Canad. J. Bot. 44:717-738.
- Gladman, R. J. 1965. Principal butt rots of conifers. Great Britain, For. Comm. Bookl. No. 13, 8 p.
- Glerum, C., J. L. Farrar and R. L. McClure. 1966. A frost hardiness study of six coniferous species. For. Chron. 42:69-75.
- Godman, R. M. 1962. Red pine cone production stimulated by heavy thinning. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Notes, No. 628, 2 p.
- Godman, R. M. and N. F. Smith. 1963. Influence of regular spacing on growth of the red pine plantation. United States Dept. Agriculture. For. Serv., Lake States For. Exp. Sta., Res. Note LS-17, 3 p.
- Gould, M. L. 1965. Shelterwood harvest methods and results for coniferous species 1930 to 1964 - a bibliography. United States Dept. Agriculture, For. Serv., Pacific Northwest For. and Range Exp. Sta., 8 p.
- Graham, B. F. Jr., and F. H. Bormann. 1966. Natural root grafts. Bot. Rev. 32:255-292.
- Graham, S. A. 1922. Some entomological aspects of the slash disposal problem. J. For. 20:437-447.
- Graham, S. A. and L. G. Baumhofer. 1930. Susceptibility of young pines to tip-moth injury. J. For. 28:54-65.
- Graham, S. A. and D. R. Satterlund. 1956. White pine weevil attacking red pine. J. For. 54:133-134.

- Guilkey, P. C. 1958. Managing red pine for poles in lower Michigan. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 57, 21 p.
- Guise, C. H. 1918. First season's growth and mortality of white pine and red pine plantations. J. For. 16:308-318.
- Gysel, L. W. 1957. Effects of different methods of releasing pine on wildlife food and cover. Down to Earth 13(2):2-3.
- \_\_\_\_\_ 1966. Ecology of a red pine (Pinus resinosa) plantation in Michigan. Ecol. 47:465-472.
- Haberland, F. P. and S. A. Wilde. 1961. Influence of thinning of red pine plantation on soil. Ecol. 42:584-586.
- Haig, I. T. 1929. Colloidal content and related soil factors as indicators of site quality. Yale Univ., Sch. For., Bull. No. 24, 33 p.
- Haig, R. A. and J. H. Cayford, 1959. The Sandilands Plantations, Manitoba, 1926-1948. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Mimeo. 59-7, 17 p.
- \_\_\_\_\_ 1960. Factors affecting survival and growth of red pine plantations in southeastern Manitoba. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 93, 17 p.
- Hall, B. J. 1965. Wood increment and crown distribution relationships in red pine. For. Sci. 11:438-448.
- Hall, G. S. 1966. Age distribution of needles in red pine crowns. For. Sci. 12:369-371.
- Hansen, T. S. 1922. Frustum form factor volume tables for white, norway, and jack pines in Minnesota. J. For. 20:714-728.
- \_\_\_\_\_ 1923a. Use of fertilizers in a coniferous nursery. J. For. 21:732-735.
- \_\_\_\_\_ 1923b. Current growth in norway pine. J. For. 21:802-806.
- \_\_\_\_\_ 1937. Storm damage on the Cloquet forest. J. For. 35: 463-465.
- Hansen, H. L., W. R. Miles, M. E. Smith and I. Anderson. 1960. Quack grass control by herbicides in red pine plantations. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 87, 2 p.
- Hansen, N. J. and A. L. McComb. 1955. Growth, form and survival of plantation-grown broadleaf and coniferous trees in southeastern Iowa. Proc. Iowa Acad. Sci., 62:109-124.

- Hansen, N. J. and A. L. McComb. 1958. Growth of planted green ash, black walnut, and other species in relation to observable soil-site characteristics in southeastern Iowa. *J. For.* 56:473-480.
- Hard, J. S. 1963. Frost damage to red pine conelets. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-5, 2 p.
- 1964a. Identification of primary red pine cone insects. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Pap. LS-12, 10 p.
- 1964b. Vertical distribution of cones in red pine. United States Dept. Agriculture, For. Serv., Lake States, For. Exp. Sta., Res. Note LS-51, 2 p.
- Hart, G. and W. R. Byrnes. 1960. Trees for strip-mined lands. United States Dept. Agriculture, For. Serv., Northeastern For. Exp. Sta., Sta. Pap. No. 136, 36 p.
- Hawley, R. C. 1924. Early development of white and red pine plantations. *J. For.* 22:275-281.
- Hawley, R. C. and R. T. Clapp. 1935. Artificial pruning in coniferous plantations. Yale University, Sch. For., Bull. No. 39, 36 p.
- Heiberg, S. O., L. Leyton, and H. Loewenstein. 1959. Influence of potassium fertilizer level on red pine planted at various spacings on a potassium-deficient site. *For. Sci.* 5:142-153.
- Heikkenen, H. S. 1960. The identification and dating of past attacks of the European pine shoot moth on red pine. *J. For.* 58: 380-384.
- Heikkenen, H. J. and W. E. Miller. 1960. European pine shoot moth damage as related to red pine growth. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 83, 12 p.
- Heimburger, C. 1958. Forest tree breeding and genetics in Canada. *Proc. Genetics Soc. Canada* 3:41-49.
- Hicock, H. W. 1931. Pruning in young plantations. *J. For.* 29:541-543.
1942. The Rainbow Forest plantations. Report of progress, Connecticut, Agric. Exp. Sta., Bull. 464, 702 p.
- Hill, J. A. 1955. Methyl bromide gas controls weeds, nematodes and root rots in seedbeds. United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 21:11-14.
- Hitt, R. G. 1954. A progress report on methods for stimulating flowering at an early age of red pine, *Pinus resinosa*. Univ. Wisconsin, For. Res. Note I8, 2 p.

- Holst, M. J. 1956. Scion storage and graft protection in the spring grafting of red pine. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 29, 11 p.
1962. Seed selection and tree breeding in Canada. Canada Dept. Forestry, For. Res. Br., Tech. Note No. 115, 20 p.
- Holst, M. J., J. M. Santon and C. W. Yeatman. 1956. Greenhouse grafting of spruce and hard pine at the Petawawa Forest Experiment Station Chalk River, Ontario. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 33, 24 p.
- Holt, L. 1955. The Brohm hand seeder. Pulp Pap. Res. Inst. Canada, Woodl. Res. Index No. 96, 17 p.
- Hopkins, J. S. 1950. Differential flotation and desposition of coniferous and deciduous tree pollen. Ecol. 31:633-641.
- Hord, H. H. V. and M. J. Hildebrand. 1956. Armillaria mellea in relation to regeneration of red pine, white pine, and white spruce. Canada Dept. Agriculture, Sci. Serv., For. Biol. Div., Bi-monthly Prog. Rep. 12(1):2.
- Horton, K. W. and G. H. D. Bedell. 1960. White and red pine. Ecology, silviculture and management. Canada Dept. Northern Affairs and National Resources, For. Br., Bull. 124, 185 p.
- Horton, K. W. and W. G. E. Brown. 1960. Ecology of white and red pine in the Great Lakes -- St. Lawrence Forest Region. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 88, 22 p.
- Horton, K. W. and J. F. Flowers. 1965. Mechanized forest seeding method promises lower costs. Canad. For. Ind. 85(3):66-69.
- Horton, K. W. and R. J. McCormack. 1961. Economical spot seeding and planting methods for pines on sand plains. Canada Dept. of Forestry, For. Res. Br., Tech. Note No. 100, 19 p.
- Hosie, R. C. 1953. The reasons for planting and the problems involved. Pulp and Pap. Mag. Canada, Woodl. Rev. Jan:11-17.
- Hosner, J. F. 1955. Preliminary tests with surfactants fail to show increase in either growth or survival of scotch pine seedlings. United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 21, 15-16.
- Hough, A. F. 1957. The red pine provenance test on the Kane Experimental Forest. Proc. 4th Northeastern For. Tree Improv. Conf., Johnsonburg, Penn. Aug. 1956, 3-5.
- Hoyle, M. C. and D. L. Mader. 1964. Relationship of foliar nutrients to growth of red pine in western Massachusetts. For. Sci. 10:337-347.

- Hughes, E. L. 1956. Co-operative underplanting and release experiment. Ontario, Dept. Lands and Forests, Div. Res., Sec. Rep. (For.) No. 10, 6 p.
- Huntly, J. H. and J. D. Cafley, and E. Jorgensen. 1961. Armillaria root rot in Ontario. For. Chron., 37:228-236.
- Iyer, J. G. and S. A. Wilde. 1965. Effect of Vapam biocide on the growth of red pine seedlings. J. For. 63:703-704.
- \_\_\_\_\_. 1966. Fertilité des sols forestiers: théorie et résulté. Fondes de Recherches Forestières de l'Université Laval. Bull. No. 8:15-21.
- James, L. M. 1953. Forest cutting practices in Michigan. Michigan State College, Agric. Exp. Sta., Dept. For., Tech. Bull. 238, 32 p.
- Jayne, B. A. 1958. Effect of site and spacing on the specific gravity of plantation grown red pine. Tappi 41(4):162-166.
- Jeckalejs, H. J. 1956. The vegetative propagation of leaf-bundle cuttings of red pine. For. Chron. 32:89-93.
- Johnson, L. V. P. 1946. Effect of chemical treatments on the germination of forest tree seeds. For. Chron. 22:17-24.
- Johnson, V. J. 1966. Seasonal fluctuation in moisture content of pine foliage. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note NC-11, 4 p.
- Jones, L. 1962. Recommendations for successful storage of tree seed. United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 55:9-20.
- Jorgensen, E. 1956a. Fomes annosus (Fr.) Cke. on red pine in Ontario For. Chron. 32:87-88.
- \_\_\_\_\_. 1956b. Note on the distribution of Fomes annosus (Fr.) Cke. in plantations in Ontario. Canada Dept. Agriculture, Sci. Serv., For. Biol. Div., Bi-monthly Prog. Rep. 12(6):2.
- Jurgensen, M. F. and A. L. Leaf. 1965. Soil moisture fertility interactions related to growth and nutrient uptake of red pine. Soil Sci. Soc. Amer. Proc. 29:294-299.
- Kahler, L. H. 1955. Pelleting conifer seeds for control of damping-off. United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 21, 3-6.
- Katz, A. R. and D. G. Miller. 1963a. Effects of some preservatives on the electrical resistance of red pine. Canada Dept. Forestry, For. Prod. Res. Br., Pap. Presented to Amer. Wood. Pres. Assoc., 13 p.

- Katz, A. R. and D. G. Miller. 1963b. Effect of water storage on electrical resistance of wood. *For. Prod. J.* 13(7):255-259.
- Kearby, W. H. and D. M. Benjamin. 1963. A new species of *Thecodiphosis* (*Diptera: Cecidomyiidae*) on red pine in Wisconsin. *Canad. Ent.* 95:414-417.
- \_\_\_\_\_. 1964. The biology and ecology of the red pine needle midge and its role in fall browning of red pine foliage. *Canad. Ent.* 96:1313-1322.
- Kerby, C. S. and H. G. McPhee. 1963. Some field observations on the cicada, *Okanagana rimosa* (Say). *Canada Dept. Forestry, For. Ent. and Path. Br., Bi-monthly Prog. Rep.*, 19(5):1.
- Kienholz, R. 1933. Frost damage to red pine. *J. For.* 31:392-399.
- \_\_\_\_\_. 1934. Leader, needle, cambial and root growth of certain conifers and their interrelations. *Bot. Gaz.* 96:73-92.
- Kilburn, P. D. 1960. Effects of logging and fire on xerophytic forests in northern Michigan. *Torrey Bot. Club., Bull.* 87:402-405.
- Kittredge, J. Jr. 1927. Thinning young red pine. *J. For.* 25:555-559.
- \_\_\_\_\_. 1929. Forest possibilities of aspen lands in the lake states. Univ. Minnesota, in coop. with United States Dept. Agriculture, For. Serv., Tech. Bull 60, 84 p.
- Kopitke, J. C. 1941. The effect of potash salts upon the hardening of coniferous seedlings. *J. For.* 39:555-558.
- Kozlowski, T. T. 1960. Effect of seed pelletting on germination of pine seed. Univ. Wisconsin, For. Res. Notes, No. 60, 3 p.
- \_\_\_\_\_. 1962. Effect of kinetin on root and shoot growth of red pine seedlings. Univ. Wisconsin, For. Res. Notes, No. 85, 3 p.
- \_\_\_\_\_. 1963. Effect of surface application and soil incorporation of herbicides on seed germination and growth of red pine seedlings. Univ. Wisconsin, For. Res. Notes, 101, 4 p.
- Kozlowski, T. T. and R. C. Ward. 1957. Seasonal height growth of conifers. *For. Sci.* 3:61-66.
- Kozlowski, T. T. and J. J. Clausen. 1965. Influence of various herbicides on needle structure of young red pines. Univ. Wisconsin, For. Res. Notes, No. 126, 4 p.
- \_\_\_\_\_. 1966. Anatomical responses of pine needles to herbicides. *Nature*, 209:486-487.
- Kraemer, J. H. 1950. Growth-strength relations of red pine. *J. For.* 48:842-849.

- Krause, H. H. and S. A. Wilde. 1960. Uptake of potassium by red pine seedlings and losses through leaching from fertilizers of various solubility. *Soil Sci. Soc. Amer. Proc.* 24:513-515.
- Krygier, J. T. 1958. Survival and growth of thirteen tree species in coastal Oregon. United States Dept. Agriculture, For. Serv., Pacific Northwest For. and Range Exp. Sta., Res. Pap. No. 26, 20 p.
- Kuijt, J. 1955. Dwarf mistletoes. *Bot. Rev.* 21:569-627.
- Kulman, H. M. 1965. Effects of artificial defoliation of pine on subsequent shoot and needle growth. *For. Sci.* 11:90-98.
- \_\_\_\_\_. 1966. Distribution of the European pine shoot moth, its parasites and associated insects in red pine trees and stands. *Annals Ent. Soc. Amer.* 59:34-39.
- Kulman, H. M. and A. C. Hodson. 1961. The jack-pine budworm as a pest of other conifers with special references to red pine. *J. Econ. Ent.* 54:1221-1224.
- Kuntz, J. E., and A. J. Riker. 1952. Chemical control of weed competition in forest plantations. Univ. Wisconsin, Dept. Plant Path., For. Res. Note 9, 2 p.
- Kuntz, J. E., T. T. Kozlowski, K. E. Wojahn and W. H. Bremer. 1963. Nursery weed control with Dacthol. Univ. Wisconsin, For. Res. Notes, No. 92, 3 p.
- LaMois, L. M. 1956. Pine plantations offer fire protection problems in lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 462, 1 p.
- \_\_\_\_\_. 1958. Fire fuels in red pine plantations. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 68, 19 p.
- Larson, P. R. 1962. The indirect effect of photoperiod on tracheid diameter in Pinus resinosa. *Amer. J. Bot.* 49:132-137.
- \_\_\_\_\_. 1963. The indirect effect of drought on tracheid diameter in red pine. *For. Sci.* 9:52-62.
- \_\_\_\_\_. 1964. Contribution of different aged needles to growth and wood formation of young red pine. *For. Sci.* 10:224-238.
- Lawson, P. R. 1966. Changes in chemical composition of wood cell walls associated with age in Pinus resinosa. *For. Prod. J.* 16(4): 37-45.
- Leach, J. G., L. W. Orr and C. Christensen. 1934. The interrelationships of bark beetles and blue-staining fungi in felled norway pine timber. *J. Agric. Res.* 49:315-341.

- Leaf, A. L. and T. Keller. 1956. Tentative technique for determining the influence of soil on the growth of forest plantations. *Soil Sci. Soc. Amer. Proc.* 20:110-112.
- Leaf, A. L. and S. A. Wilde. 1957. Decomposition products of sloughed root tissues promote release of available nutrients. *Univ. Wisconsin, For. Res. Notes*, No. 40, 2 p.
- Lease, R. E. and D. P. Duncan. 1959. Field survival of red pine seedlings as affected by nursery fertilization. *Univ. Minnesota, Sch. For., Minn. For. Notes*, No. 75, 2 p.
- Lease, R. E. and J. W. Benzie. 1964. A cubic-foot volume table for unpeeled pine poles. *United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-50*, 2 p.
- LeBarron, R. K., G. Fox and R. H. Blythe, Jr. 1938. The effect of season of planting and other factors on early survival of forest plantations. *J. For.* 36:1211-1215.
- Lemmien, W. A. and V. J. Rudolph. 1959. Growth and yield of red pine in three spacings. *Michigan State Univ., Agric. Exp. Sta., Quart. Bull.* 42:421-427.
- \_\_\_\_\_ 1964. Economic and silvicultural aspects of row and basal area thinning of planted red pine (in Michigan). *J. For.* 62:721-723.
- Leslie, A. P. 1953. Direct seeding as a means of reforestation. *Pulp and Pap. Mag. Canada, Woodl. Rev.* April:54-62.
- Lester, D. T. 1963a. Early height growth in a provenance and progeny test of red pine. *Univ. Wisconsin, For. Res. Notes*, No. 99, 4 p.
- \_\_\_\_\_ 1963b. Conelet production and floral initiation in red pine in relation to climate. *Univ. Wisconsin. For. Res. Notes*, No. 100, 8 p.
- Lester, D. T. and G. R. Barr. 1965. Provenance and progeny test in red pine. *For. Sci.* 11:327-340.
- \_\_\_\_\_ 1966. Shoot elongation in provenance and progeny tests of red pine. *Silvae Genetica* 15:1-6.
- Lester, D. T. and G. E. Rehfeldt. 1966. Dwarf shoot proliferation in red pine. *J. For.* 64:125-126.
- Levitin, N. 1965. Ether extractives of red pine and possible means of reducing resin exudation. *For. Prod. J.* 15(5):215.
- Libby, W. J. 1965. Comments on estimated genetic improvements by alternative programmes. *J. For.* 63:470-472.

- Libby, W. J., B. V. Barnes and S. H. Spurr. 1956. Forest genetics in the lake states - an annotated bibliography. Univ. Michigan, Sch. Nat. Res., 74 p.
- Limstrom, G. A. 1960. Forestation of strip-mined land in the central states. United States Dept. Agriculture, Agric. Handb., No. 166, 74 p.
- Littlefield, E. W. 1956. More on late seasonal growth of red pine. J. For. 54:533.
- Littlefield, E. W., W. J. Shoomaker and D. B. Cook. 1946. Field mouse damage to coniferous plantations. J. For. 44:745-749.
- Logan, K. T. 1950. Influence of thinning on reproduction beneath a red and white pine stand. Canada Dept. Resources and Development, For. Br., For. Res. Div., Silvi. Leafl. No. 50, 3 p.
- \_\_\_\_\_ 1953. Reproduction after an improvement cutting in a mixed-wood stand. Canada Dept. Resources and Development, For. Br., For. Res. Div., Silvi. Leafl. No. 81, 3 p.
- \_\_\_\_\_ 1966. Growth of tree seedlings as affected by light intensity. II. Red pine, white pine, jack pine and eastern larch. Canada Dept. Forestry, Publ. No. 1160, 19 p.
- Lohrey, R. E. 1961. Stand density influences stem taper in a thinned red pine plantation. United States, Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 607, 2 p.
- \_\_\_\_\_ 1963. Healing time for pruning wounds in a red pine plantations. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-24, 2 p.
- Lundgren, A. L. 1963. An economic analysis of three pine release experiments in northern Minnesota. For. Sci. 9: 242-256.
- \_\_\_\_\_ 1965. Thinning red pine for high investment returns. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Pap. LS-18, 20 p.
- \_\_\_\_\_ 1966. Estimating investment returns from growing red pine. United States Dept. Agriculture, For. Serv., North Central For. Exp. Sta., Res. Pap. NC-2, 48 p.
- Lundgren, A. L. and R. F. Wambach. 1963. Diameters and numbers of trees in red pine stands are greatly affected by density, age and site. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-20, 4 p.
- Luther, T. F. and D. B. Cook. 1948. Commercial thinning in red pine plantations. J. For. 46:110-114.

- Lyons, L. A. 1951. Insects affecting seed production in red pine. Canada Dept. Agriculture, Sci. Serv., Div. For. Biol., Bi-monthly Prog. Rep. 7(3):1.
- 1956a. Insects affecting seed production in red pine. Canad. Ent. 88:599-608.
- 1956b. The seed production capacity and efficiency of red pine cones (Pinus resinosa Ait.) Canad. J. Bot. 34:27-36.
- MacAloney, H. J. and H. C. Secretst. 1944. The more common insects attacking young coniferous plantations and natural stands on the national forest of the lake states and suggestions for preventing or controlling injury. United States Dept. Agriculture, Bureau Ent. Plant Quarantine, For. Insect Invest. 15 p.
- MacAloney, H. J. and A. T. Drooz. 1956. The jack pine budworm. United States Dept. Agriculture, For. Serv., For. Pest Leaflet., No. 7 4 p.
- MacArthur, J. D. 1958. Growth of jack, red and scots pine and white spruce plantations, 1922 to 1956, at Grand'mere, Quebec. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div. S. & M. 58-4, 6 p.
1959. Growth of jack, red, and scots pine and white spruce plantations, 1922 to 1956 at Grand'mere, Quebec. Pulp and Pap. Mag. Canada, Woodl. Rev., Conv. Issue:14-18.
- MacDonald, J. E. 1965. A bird census in red pine plantations and mixed stands in Kirkwood township, Ontario Can. Field Nat. 79:21-25.
- Mader, D. L. and D. F. Owen. 1961. Relationships between soil properties and red pine growth in Massachusetts. Soil Sci. Soc. Proc. 25:62-65.
- Madgwick, H. A. I. 1964a. Estimation of surface area of pine needles with special reference to Pinus resinosa. J. For. 62:636.
- 1964b. Variations in the chemical composition of red pine, leaves; a comparison of well grown and poorly grown and poorly grown trees. For. 37:87-94.
- Maissurow, D. K. 1939. Mixed group planting on the Nicolet National Forest. J. For. 37:853-855.
- Manitoba, Dept. Mines and Natural Resources. 1956. Forest resources inventory. Report No. 1. Southeastern forest section. For. Serv., 32 p.
- Manthy, R. S., C. D. Rannard and V. S. Rudolph. 1964. The profitability of red pine plantations. Michigan State Univ., Agric. Exp. Sta., Res. Rep. No. 11, 11 p.

- Marshall, R. 1931. An experimental study of the water relations of seedling conifers with special reference to wilting. *Ecol. Monogr.* 1:37-98.
- Marshall, W. H., T. Schantz-Hansen, and K. E. Winsness. 1955. Effects of simulated overbrowsing on small red and white pine trees. *J. For.* 53:420-424.
- Martin, J. L. 1961a. *Pissodes affinis* randall on pine in Ontario. Canada Dept. Forestry, For. Ent. and Path. Br., Bi-monthly Prog. Rep. 17(6):2.
- \_\_\_\_\_ 1961b. *Sparganothis sulfureana* Clemens on *Pinus resinosa* Ait. Canada Dept. Forestry, For. Ent. and Path. Br., Bi-monthly Prog. Rep. 17(6):2.
- \_\_\_\_\_ 1962. *Magdalis perforatus* Horn on *Pinus resinosa* Ait. in Ontario. Canada Dept. Forestry, For. Ent. and Path. Br., Bi-monthly Prog. Rep. 18(4):1.
- \_\_\_\_\_ 1964a. The insect ecology of old-field red pine plantations in central Ontario. I. Description of study area. Proc. Ent. Soc. Ont. 1964. 95p.
- \_\_\_\_\_ 1964b. The insect ecology of red pine plantations in central Ontario. II. Life history and control of Curculionidae. Can. Ent. 96:1408-1417.
- \_\_\_\_\_ 1964c. The insect ecology of red pine plantations in central Ontario. III. Soil surface found as indicators of change. Proc. Ent. Soc. Ont. 95:87-102
- \_\_\_\_\_ 1965. Living stumps aid insect control. Can. For. Ind. 85(7):40-43.
- \_\_\_\_\_ 1966. The insect ecology of red pine plantations in central Ontario. IV. The crown fauna. Can. Ent. 98:10-27.
- McCabe, R. A. and R. F. Labisky. 1959. Leader forking of red and white pines in plantations. *J. For.* 57:94-97.
- McConkey, T. W. 1964. Direct seeding of pine and spruce in southwestern Maine. For. Serv., Northeastern For. Exp. Sta., Res. Pap. No. NE-24, 13 p.
- McCormack, R. J. 1956. Growth and yield of red and white pine. Canada Dept. Northern Affairs and Natural Resources, For. Br., For. Res. Div., S & M 56-5, 31 p.
- \_\_\_\_\_ 1959. Regeneration of red and white pine through harvest cuttings. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Mimeo. 59-4, 8 p.
- McLean, M. M. 1959. Experimental planting of tubed seedlings, 1958. Ontario, Dept. Lands and Forests, Div. Res., Res. Rep. No. 39, 18 p.

- McLeod, J. W. 1953. Covering nursery seed-beds to encourage germination of coniferous seed. Canada Dept. Northern Affairs and Natural Resources, For. Br., For. Res. Div., Silvi. Leafl. No. 98, 5 p.
- McNamara, E. F. and I. E. Reigner. 1955. Root competition slows growth of plantings on unprepared sites in scrub oak. United States Dept. Agriculture, For. Serv., Northeastern For. Exp. Sta., For. Res. Notes, No. 54, 3 p.
- McQuilkin, W. E. 1946. Use of mulch, fertilizer, and large stock in planting clay sites. J. For. 44: 28-29.
- Mergen, F. and R. M. Malcolm. 1955. Effect of hemlock and red pine on physical and chemical properties of two soil types. Ecol. 36:468-473.
- Merz, R. 1951. Comparative survivals and costs of plantations by different methods of ground preparation and planting. United States Dept. Agriculture, For. Serv., Central States For. Exp. Sta., Sta. Note No. 64, 2 p.
- Michigan State University . 1956. Growing conifer trees from seed. Div. Conserv. 5(2):2.
- Miles, W. R., L. W. Krefting, and H. L. Hansen. 1961. Pocket gopher damage in red and scotch pine Christmas tree plantations in central Minnesota. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 110, 2 p.
- Miller, J. M. and F. D. Keen. 1960. Biology and control of the western pine beetle. United States Dept. Agriculture, For. Serv., Misc. Publ. 800. 381 p.
- Miller, O. K. 1959. Red pine mortality from root rot. New Hampshire, For. Rec. Comm., Fox. For. Notes No. 75, 1 p.
1960. The distribution of Fomes annosus (Fries) Karst in New Hampshire red pine plantations and some observations on its biology. New Hampshire For. Rec. Comm., Fox. For. Notes Bull. No. 12, 25 p.
- Miller, W. E. 1965. Number of branchlets on red pine in young plantations. For. Sci. 11:42-49.
- Miller, W. E. and H. J. Heikkenen. 1959. The relative susceptibility of the eight pine species to European pine shoot moth attack in Michigan. J. For. 57:912-914.
- Miller, W. E. and J. L. Arend. 1960. European pine shoot moth damage reduced on sheared Christmas trees. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 592, 2 p.
- Minckler, L. S. 1945. Reforestation in the spruce type in the southern Appalachians. J. For. 43:349-356.

- Mirov, N. T. 1956. Photoperiod and flowering of pines. For. Sci. 2:328-332.
- Mirov, N. T. and R. G. Stanley. 1959. The pine tree. Annual Review of Plant Physiology 10:223-238.
- Mook, P. V. and H. G. Eno. 1961. Fomes annosus: what it is and how to recognize it. United States Dept. Agriculture, For. Serv., Northeastern For. Exp. Sta., Sta. Pap. No. 146, 33 p.
- Mogren, M. W. 1954. Comparison of growth rate of three species of pine on two soil classes on the Lake Vadnais plantation, Minnesota. J. For. 52:359-360.
- Morris, C. L. 1955. Treatment of forest tree seed with chemical protectants. United States Dept. Agriculture, For. Serv., Tree Plant. Notes, No. 21, 9-10.
- Mott, D. G., L. D. Nairn and J. A. Cook. 1957. Radial growth in forest trees and effects of insect defoliation. For. Sci. 3:286-304.
- Mounce, I. 1929. Studies in forest pathology. II. The biology of Fomes pinicola (Sw.) Cooke. Canada Dept. Agriculture, Div. Bot., Dom. Exp. Farms, Bull. No. 111, New Series, 75 p.
- Mueller-Dombois, D. 1964. The forest habitat types of southeastern Manitoba and their application to forest management. Canad. J. Bot. 42:1417-1444.
- Mullin, R. E. 1964a. Influence of planting depth on survival and growth of red pine. For. Chron. 40:384-391.
- \_\_\_\_\_ 1964b. Acidification of a forest tree nursery soil. Soil Sci. Soc. Amer. Proc. 28:441-444.
- Mullin, R. E. and R. H. Leech. 1959. A field test of dunemann stock. Ontario, Dept. Lands and Forests, Res. Br., Res. Rep. No. 41, 25 p.
- Mullin, R. E. 1966. Overwinter storage of baled nursery stock in northern Ontario. Comm. For. Rev. 45:224-230.
- Mulloy, G. A. 1943. A practical measure of stock density in white and red pine stands. For. Chron. 19:108-118.
- \_\_\_\_\_ 1946. Thinning red pine. Rockland, Ontario. Canada Dept. Mines and Resources, Lands, Parks and For. Br., Dom. For. Serv., Silvi. Res. Note No. 79, 29 p.
- Munro, H. A. U. and C. S. Kirby. 1963. Fumigation of nursery stock as a possible means of retarding the spread of the European pine sawfly. Canada Dept. Forestry, For. Ent. and Path. Br., Bi-monthly Prog. Rep. 19(3):2.
- Myles, D. V. and B. E. Jarvis. 1957. Chemical treatment of trees. A report of practical applications. Pulp and Pap. Mag. Canada, Woodl. Rev. May:177-195.

- Namkoong, G. 1965. Comments on a one per cent progeny test and seed orchard for the improvement of red pine. *J. For.* 63:473-474.
- Nanne, G. 1966. Promising tests spur massive tubed seedling plant in 1966. *Canad. For. Ind.* 86(8)34-35.
- Newnham, R. M. 1966. Stand structure and diameter growth of individual trees in a young red pine stand. *Canada Dept. Forestry and Rural Development, For. Br., Bi-monthly Res. Notes*, 22(4)4-5.
- Nicholls, T. H., E. P. Arsedel and R. F. Patton. 1965. Red pine needle rust disease in the lake states. *United States Dept. Agriculture, For. Serv., Lake States, For. Exp. Sta., Res. Note LS-58*, 4 p.
- Northeastern Forest Tree Improvement Conference (Fifth). 1958. Orono, Maine, Aug. 22-23, 1957. 86 p.
- Noskowiak, A. F. 1963. Spiral grain in trees, a review. *For Prod.* J. 13(7).
- Ontario Dept. Lands and Forests. 1947. Forest tree planting. Div. Refor. Bull. No. R 1, 68 p.
- Ohman, J. H. 1966. Scleroderris lagerbergii Gremmen: The cause of dieback and mortality of red and jack pines in Upper Michigan plantations. *United States Dept. Agriculture, Agric. Res. Serv., Crop Res. Div., Plant. Dis. Rep.* 50:402-405.
- Ouellette, G. B. 1966. Coleosporium viburni on jack pine and its relationship with C. asterum. *Canad. J. Bot.* 44:1117-1120.
- Patton, R. F. and A. J. Riker. 1952. Needle droop and needle blight of red pine. *Univ. Wisconsin, For. Res. Note*, No. 3, 2 p.
- \_\_\_\_\_. 1954. Needle droop and needle blight of red pine. *J. For.* 52:412-418.
- Patton, R. F. and R. G. Krebill. 1960. Deterioration of immature jack and red pine plantations in Wisconsin. *Univ. Wisconsin, For. Res. Notes*, No. 64, 3 p.
- Paul, B. H. 1946. Tree pruning by annual removal of lateral buds. *J. For.* 44:499-501.
- \_\_\_\_\_. 1957. Growth and specific gravity responses in a thinned red pine plantation. *J. For.* 55:510-512.
- Pawluk, S. and H. F. Arneman. 1957. The residual effects of lime added for the growth of various conifers in Minnesota. *Soil Sci. Soc. Amer. Proc.* 21:653-655.
- Perem, E. 1960. The effect of compression-wood on the mechanical properties of white spruce and red pine. *Canada Dept. Northern Affairs and National Resources, For. Br., For. Prod. Lab., Tech. Note* No. 13, 22 p.

- Petheram, H. D. 1927. Season for sowing red and white pine seed. J. For. 25:57-61.
- Pfankuch, D. J. and D. P. Duncan. 1956. Growth of C. C. C. forest plantations in southeastern Minnesota. Univ. Minnesota, Sch. For., Minn. For. Note No. 53, 2 p.
- Plass, W. T. 1952. Direct seeding tests on old fields in southeastern Ohio. United States Dept. Agriculture, For. Serv., Central States For. Exp. Sta., Sta. Note No. 71, 2 p.
- Pointing, P. J. 1961. Mortality of the European pine shoot moth associated with the severe winter of 1958-1959. Canada Dept. Forestry, For. Biol. Div., Bi-monthly Prog. Rep. 17(1):2-3.
- Pomerleau, R. and R. G. Ray. 1957. Occurrence and effects of summer frost in a conifer plantation. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 51, 15 p.
- Potzger, J. E. 1953. Nineteen bogs from southern Quebec. Canad. J. Bot. 31:383-401.
- Prentice, R. M. 1955. Pine root-collar weevil in Manitoba. Canada Department Agriculture, Sci. Serv., For. Biol. Div., Bi-monthly Prog. Rep. 11(4):1-2.
- Punter, D. 1964. A northward extension of the recorded range of Fomes annosus in Ontario. Canada Dept. Forestry, For. Ent. and Path. Br., Bi-monthly Prog. Rep. 20(2):1-2.
- Rabkin, F. B. and R. R. Lejeune. 1954. Some aspects of the biology and dispersal of the pine tortoise scale, Toumeyella numismaticum (Pettit and McDaniel). (Homoptera: Coccidae). Canad. Ent. 86:570-575.
- Ralston, R. A. 1950. Red pine seedling survival under different levels of stocking. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Notes, No. 334, 1 p.
- 1953a. Time required to prune red pine to various heights  
United States, Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Notes, No. 391, 1 p.
- 1953b. Effect of pruning on the growth of red pine.  
United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Notes, No. 405, 1 p.
- 1953c. Red pine suppressed for forty years responds to release. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Notes, No. 408, 2 p.
1954. Timing and yields of first commercial thinnings in red pine plantations. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Notes, No. 420, 1 p.
- Ralston, R. A. and W. Lemien. 1956. Pruning pine plantations in Michigan. Michigan State Univ., For. Dept., Agric. Exp. Sta. Co-op. Ext. Serv. Circ. Bull., 221, 27 p.

- Rathbun-Gravatt, A. 1931. Germination loss of coniferous seeds due to parasites. *J. Agric. Res.* 42:71-92.
- Reeks, W. A. 1954. Damage to red pine by a midge. *Canada Dept. Agriculture, Sci. Serv., For. Biol. Div., Bi-monthly Prog. Rep.* 10(3):1-2.
- Rehfeldt, G. E. and D. T. Lester. 1966. Variation in shoot elongation of *Pinus resinosa* Ait. *Canad. J. Bot.* 44:1457-1469.
- Rennels, R. G. 1960. Status of the European pine shoot moth, *Rhyacionia buoliana* (Schiffermuller) in Illinois. *Univ. Illinois, Agric. Exp. Sta., Dept. For., For. No. 89*, 3 p.
- \_\_\_\_\_. 1961. The 1961 forest insect situation in Illinois. *Univ. Illinois, Agric. Exp. Sta., Dept. For., For. No. 96*, 7 p.
- \_\_\_\_\_. 1962. The 1962 forest insect situation in Illinois. *Univ. Illinois, Agric. Exp. Sta., Dept. For., For. Note No. 100*, 6 p.
- Rennie, P. J. 1966. A forest sampling procedure for nutrient uptake studies. *Comm. For. Rev.* 45:119-128.
- Richards, N. A., R. R. Morrow and E. L. Stone. 1962. Influence of soils and site on red pine plantations in New York. I. Stand development and site index curves. *Cornell Univ., Agric. Exp. Sta., New York State College Agric., Bull. 977*, 23 p.
- Richardson, A. H. 1925. Gathering and extracting red pine seed. *J. For.* 23:304-310.
- \_\_\_\_\_. 1928. Gathering pine cones and other tree seeds for the Ontario Forestry Branch. *Ontario Dept. Lands and Forest, For. Br., Circ. No. 13*, 15 p.
- Rietz, R. C. and K. E. Kimball. 1940. Kiln schedule for extracting red pine seed from fresh and stored cones. *J. For.* 38: 430-434.
- Ritchie, J. C. 1961. Soil and minor vegetation of pine forests in southeast Manitoba. *Canada Dept. Forestry, For. Res. Div., Tech. Note No. 96*, 21 p.
- Robbins, P. W. 1955. Harvesting conifer seed. *Michigan State College, For. Dept., Div. Conserv., Conserv. Bull.* 4(8).
- Robertson, W. M. 1945. Succession cutting in pine. *Canada Dept. Mines and Resources, Lands Parks and For. Br., Dom. For. Serv. Silvi., Res. Note No. 74*, 18 p.
- \_\_\_\_\_. 1946. Selection cutting in pine. *Canada Dept. Mines and Resources, Lands Parks and For. Br., Dom. For. Serv., Silvi. Res. Note No. 80*, 17 p.
- Rochester, G. H. 1931. The strength of telephone poles. *Canada Dept. Interior, For. Serv., Circ. No. 31*, 16 p.

- Roe, E. I. 1945. Viable seed produced by 12-year-old red pines. J. For. 43:678-679.
1948. Effect of red squirrels on red pine seed production in off years. J. For. 46:528-529.
1949. Frozen red pine planting stock shows fair survival. J. For. 47:566.
1951. Early release from aspen improves yield of pine plantations. United States Dept. Agriculture, For. Serv., Lake States, For. Exp. Sta., Tech. Note No. 353, 1 p.
1953. Comparative height growth of native conifers in northeastern Minnesota. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 389, 1 p.
1960. August-collected cones yield poor red pine seed. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Notes No. 575, 2 p.
1963. Direct seeding of conifers in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res Pap. LS-3, 16 p.
1964. Heavy crop of red pine cones yields many thousands of good seeds. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-36, 4 p.
- Ross, A. H. E. 1913. The growth of red pine in Ontario. For. Quart. 11:160-171.
- Rudolf, P. O. 1939. Why forest plantations fail. J. For. 37:377-383.
1948. Local red pine seed develops best plantations. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 296, 1 p.
1949. Porcupines' preferences in pine plantations. J. For. 47:207-209.
1950. 1949 a poor tree seed year in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 333, 2 p.
1951. Lake states forest trees produce good seed crop in 1950. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 349, 2 p.
1952. 1951 tree seed crops poor to fair in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 370, 2 p.
1953. 1952 forest tree seed crop fair in lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 393, 2 p.

- Rudolf, P. O. 1954a. Age of seed tree and earliness of shoot growth in young red pine seedlings. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 422, 1 p.
- 1954b. Seed source and earliness of shoot growth in young red pine seedlings. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 423, 1 p.
1956. Guide for selecting superior forest trees and stands in the lake states. United States Dept. Agriculture, For. Serv., Lake States Forest Exp. Sta., Sta. Pap. 40, 32 p.
- 1957a. Forest tree seed crop subnormal in the lake states. United States Dept. Agriculture, For. Serv., Lake States, For. Exp. Sta., Tech. Note No. 501, 2 p.
- 1957b. Silvical characteristics of red pine (*Pinus resinosa*). United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 44, 32 p.
- 1959a. Seed production areas for the lake states. Guidelines for their establishment and management. United States Dept. Agriculture, For. Serv., Lake States For. Exp., Sta. Pap. No. 73, 15 p.
- 1959b. Forest tree improvement research in the lake states. United States, Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. 74, 56 p.
- 1959c. 1958 forest tree seed crop poor in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 565, 2 p.
1960. 1959 forest tree seed crop generally poor in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Notes, No. 574, 2 p.
1961. 1960 forest tree seed crop generally good in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 598, 2 p.
- 1962a. 1961 forest tree seed crop averages poor in the lake states. United States. Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Notes, No. 615, 2 p.
- 1962b. Seed production areas - a step toward better seed. In Second Central States Forest Tree Improvement Conference. p. 21-28. Pub. by Univ. Illinois, Agric. Exp. Sta.
1963. 1962 forest tree seed crop averages fair in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-8, 2 p.
1965. Botanical and commercial range of red pine in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-62, 4 p.

- Rudolf, P. O. 1966. Forest tree improvement research in the lake states, 1965. United States Dept. Agriculture, For. Serv., North Central For. Exp. Sta., St. Paul, Minn., Res. Pap. NC-1, 54 p.
- Rudolf, P. O. and S. R. Gevorkiantz. 1935. Seedlings or transplants? J. For. 33:797-784.
- Rudolf, P. O. and R. L. Schaenike. 1963. Botanical and commercial range of jack pine in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-15, 4 p.
- Rudolf, P. O. and J. W. Andresen. 1965. Botanical and commercial range of red pine in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-62, 4 p.
- Rudolf, P. O. and K. E. Clausen. 1962. Red pine seed germination after 30 years of storage. J. For. 60:128-131.
- Rudolph, V. J. 1963. Shearing scotch and red pine christmas trees for control of the European pine shoot moth. Michigan State Univ., Agric. Exp. Sta., Quart. Bull. 46:186-205.
- Rudolph, V. J. and S. W. McCullough. 1961. Pine and spruce plantings on the Lowitz farm in Cass County, Michigan. Michigan State Univ., Agric. Exp. Sta., Quart. Bull. 43:751-758.
- Russell, N. H. 1955. Natural succession in planted conifer forests in eastern New York. Proc. Iowa Acad. Sci., 62:223-230
- Sasaki, S. and T. T. Kozlowski. 1963. Effect of various herbicides at low concentrations on growth of red pine seedlings. Univ. Wisconsin, For. Res. Notes, No. 105, 5.p.
1965. Effect of herbicides on photosynthesis of red pine seedlings. Univ. Wisconsin, For. Res. Notes, No. 118, 3 p.
1966. Influence of herbicides on respiration of young Pinus seedlings. Nature 210:439-440.
- Schaffner, J. V., Jr., and H. L. McIntyre. 1944. The pine root-collar weevil. J. For., 42:269-275.
- Schallar, C. H. and W. E. Miller. 1966. Intercept site-index equations for red pine damaged by European pine shoot moth. J. For. 64:538-540.
- Schantz-Hansen, T. 1931. Current growth in norway pine. J. For. 29: 48-53.
1933. Observations on the thinning of fifteen-year-old norway pine. J. For. 31:838-841.
1939. Ten-year observations on the thinning of fifteen-year-old red pine. J. For. 37:963-966.

Schantz-Hansen, T. 1945a. The effect of planting methods on root development. J. For. 43:447-448.

1945b. Red squirrel damage to mature red pine. J. For. 43:604-605.

1945c. Some results of thinning fifteen-year-old red pine. J. For. 43:673-674.

1946. Winter dissemination of red pine seed. J. For. 44:593-594.

1952. The Cloquet red pine thinning plots. J. For. 50:480-482.

1956. Twenty-five-year summary of red pine thinning plots: Cloquet Experimental Forest. J. For. 54:512-514.

Schmiege, D. C. and R. L. Anderson. 1958. The forest insect and disease situation, lake states, 1957. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 60, 21 p.

Schmiege, D. C. and G. W. Anderson. 1960. The forest insect and disease situation, lake states, 1959. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 79, 18 p.

Schreck, R. G. 1928. Seedlings versus transplants on the Michigan sand plains. J. For. 26:906-908.

Scott, D. H. and D. P. Duncan. 1958. Height growth of young red pine plantations in southeastern Minnesota as related to certain site factors. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 64, 2 p.

Scott, J. D. 1966. A review of direct seeding projects carried out by the Ontario Department of Lands and Forests from 1956 to 1964. Ontario Dept. Lands and Forests, Timber Br., Silvi. Sec., Silvi. Notes, No. 5, 48 p.

Shenefelt, R. D. 1956. A further note on protecting machine transplanted trees from white grubs. Univ. Wisconsin, For. Res. Notes, No. 25, 3 p.

Shenefelt, R. D., R. C. Dosen, and D. W. Renlund. 1961. What does insecticide treatment for white grub control at time of field transplanting of pine trees mean? J. For. 59:651-655.

Shirley, H. L. 1932. Light intensity in relation to plant growth in a virgin norway pine forest. J. Agric. Res. 44(3):227-244.

1933. Improving seedbed conditions in a norway pine forest. J. For. 31:322-328.

. 1937. Direct seeding in the lake states. J. For. 35:379-387.

- Shirley, H. L. 1941. Restoring conifers to aspen lands in the lake states. United States Dept. Agriculture, For. Serv., Tech. Bull. No. 763, 36 p.
1945. Reproduction of upland conifers in the lake states as affected by root competition and light. Amer. Midl. Nat. 33:537-612.
- Simeone, J. B. and J. H. Engelken. 1959. Injury to coniferous tree seedlings by the oblique-banded leaf roller. J. For. 57: 492-494.
- Sisam, J. W. B. 1939. Thinning and pruning experiment red pine plantation. Canada Dept. Mines and Resources, Lands, Parks and For. Br., Dom. For. Serv., Silvi. Res. Note No. 57, 38 p.
- Skilling, D. 1965. Root rot on conifers in the lake states. United States Dept. Agriculture, For. Serv., Region 9 Nurserymen's Conference, p 4-11.
- Slabaugh, P. E. 1957a. Do pruned red pine trees remain dominant? United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 476, 2 p.
- 1957b. Effects of live crown removal on the growth of red pine. J. For. 55:904-906.
- Smithers, L. A. 1954. Thinning in red and white pine stands at Petawawa Forest Experiment Station. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Silvi. Res. Note No. 105, 52 p.
- Society of American Foresters. 1956. Forest plantations - the course ahead. Papers presented at the winter meeting, New York Section. Albany, New York, Jan. 19-20. 32 p.
1959. Recommended forest cutting practices for lower Michigan. Lower Michigan Chapter, Cutting Practices Committee, 37 p.
- Sowder, A. M. 1961. 1960 Christmas tree data. J. For. 59:829-830.
- Spurr, S. H. 1953. Forest fire history of Itasca State Park. Univ. Minnesota, Sch. For., For. Notes, No. 18, 2 p.
1955. Soils in relation to site-index curves. Proc. Soc. Amer. For. Meet. "Converting the old growth forest", Portland, Oregon, Oct. 1955. p. 80-85.
1956. Plantation success in the Harvard Forest as related to planting site and cleaning, 1907-1947. J. For. 54:577-579.
- Spurr, S. H. and J. H. Allison. 1952. Growth of mature red pine. Univ. Minnesota, Sch. For., Minn. For. Notes, No. 9, 2 p.
1956. The growth of mature red pine in Minnesota. J. For. 54: 446-451.

- Stallard, H. 1929. Secondary succession in the climax forest formations of northern Minnesota. *Ecol.* 10:476-547.
- Stevens, R. E. 1965. Pine reproduction weevil. United States Dept. Agriculture, For. Serv., For. Pest Leafl. 15, 6 p.
- Stevenson, D. D. and R. A. Bartoo. 1939. The effect of spacing on the growth of norway pine plantations - a progress report. *J. For.* 37:313-319.
- Stiell, W. M. 1953. Thinning and growth in a red pine plantation. Canada Dept. Resources and Development, For. Br., For. Res. Div., Silvi. Leafl. No. 75, 5 p.
1955. The Petawawa plantations. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res.. Div., Tech. Note No. 21, 46 p.
- 1957a. The Rockland red pine plantation, 1956. Timber of Canada. 18(4):32, 33, 56.
- 1957b. Christmas tree growing in Canada. Canada Dept. Northern Affairs and National Resources, For. Br., Misc. Publ. No. 7, 21 p.
- 1957c. Rapid estimate of volume in red pine plantations. For. Chron. 33:333-334.
1958. Pulpwood plantations in Ontario and Quebec. Canad. Pulp and Paper Assoc.; Woodl. Sec.; Index No. 1770, 42 p.
- 1959a. Seeding and planting red and white pine. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 80, 18 p.
- 1959b. Intermediate cuttings in red and white pine plantations. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 81, 26 p.
- 1960a. Taper curves and volume tables for plantation red pine. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Tech. Note No. 90, 18 p.
- 1960b. Stem straightness as affected by row-thinning a red pine plantation. For. Chron. 36:234-236.
1962. Crown structure in plantation red pine. Canada Dept. Forestry, For. Res. Br., Tech. Note No. 122, 36 p.
1964. Twenty-year growth of red pine planted at three spacings. Canada Dept. Forestry, For. Res. Br., Publ. 1045, 24 p.
1965. Height sampling in red pine and white spruce plantations. For. Chron. 41:175-181.

- Stiell, W. M. 1966. Red pine crown development in relation to spacing. Canada Dept. Forestry, Publ. No. 1145, 44 p.
- Stiell, W. M. and J. L. Farrar. 1953. Browsing damage by deer in a pine plantation. Canada Dept. Resources and Development, For. Br., For. Res. Div., Silvi. Leafl. No. 83, 4 p.
- Stiell, W. M. and A. Bickerstaff. 1959. Spacing as a factor in the development of red pine plantations. Canada Dept. Northern Affairs and National Resources, For. Br., For. Res. Div., Mimeo 59-2, 7 p.
- Stoeckeler, J. H. 1949. Correction of soil acidity in conifer nurseries. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 319, 1 p.
1950. How long can conifers be held in spring by cold storage? United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 343, 1 p.
1951. Hydrocarbon content and storage period affect toxicity of mineral spirits used as selective herbicides for red pine nursery beds. J. For. 49:647-649.
1963. Ground preparation costs and first-year survival of planted red pine in southwestern Wisconsin. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Res. Note LS-28, 4 p.
1965. Spring frost damage in young forest plantings near La Crosse, Wisconsin. J. For. 63:12-14.
1966. Hexadecanol applied to foliage improves early field survival of pine planting on a droughty site. J. For. 64: 200-201.
- Stoeckeler, J. H. and P. O. Rudolf. 1949. Winter injury and recovery of conifers in the upper midwest. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 18, 20 p.
- Stoeckeler, J. H. and L. W. Krefting. 1954. Effect of simulated snowshoe hare and deer damage on some conifers planted in the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Notes, No. 413, 2 p.
- Stone, R. N. 1961. Current timber growth estimates for the lake states. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 604, 2 p.
- Stone, E. L., R. R. Morrow, and D. S. Welch. 1954. A malady of red pine on poorly drained sites. J. For. 52:104-114.
- Stone, E. L. and G. Baird. 1956. Boron level and boron toxicity in red and white pine. J. For. 54:11-12.

- Stout, B. B. 1961. Season influences the amount of backflash in a red pine plantation. J. For. 59:897-898.
- Strothmann, R. O. and D. F. Conover. 1960. A field test of the baker seed tool in northwestern Minnesota. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note No. 579, 2 p.
- Talerico, R. L. and H. J. Heikkenen. 1962. Stem injury to young red pine by the European pine shoot moth. J. For. 60:403-406.
- Talerico, R. L., H. J. Heikkenen and W. E. Miller. 1963. Growth of red pine trees after chemical suppression of the European pine shoot moth. Canad. Ent. 95:522-524.
- Tilt, L. C. 1914. Timber and soil conditions of southeastern Manitoba. Canada Dept. Interior, For. Br., Bull. No. 45, 36 p.
- Toumey, J. W. and C. L. Stevens. 1928. The testing of coniferous tree seeds. Yale Univ. Sch. For., Bull. No. 21, 46 p.
- Trenk, F. B. 1955a. Factors in an oak-to-pine conversion study. Univ. Wisconsin, For. Res. Note 21, 2 p.
- 1955b. Intermediate thinnings and prunings in pine plantation produce income, improved stand. Univ. Wisconsin, For. Res. Notes, No. 22, 2 p.
1959. Growing and selling christmas trees. Univ. Wisconsin. College Agric., Cir. 425, 8 p.
- Trenk, F. B. and W. H. Brener. 1954. How to succeed with forest plantations. A planting handbook. Univ. Wisconsin, College Agric., Cir. 381, 24 p.
- Trenk, F. B. and A. R. Albert. 1955. Growth and effectiveness of all-conifer and mixed hardwood-conifer shelterbelts on plain field sand. Univ. Wisconsin, For. Res. Notes, No. 23, 2 p.
- Trenk, F. B. and A. Katovich. 1960. Effects of live limb pruning on stem form in an understocked pine plantation. Univ. Wisconsin, For. Res. Notes, No. 65, 2 p.
- Tryon, E. H., K. L. Carvell, and H. P. Berthy. 1960. Planting coniferous forests in West Virginia. West Virginia Univ. Agric. Exp. Sta., Circ. 109, 50 p.
- United States Dept. Agriculture. 1907. Red pine. For. Serv., For. Plant., No. 7, 3 p.
- 1928a. Behavior of white, norway and jack pine seeds. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 1, 1 p.
- 1928b. Abandoned fields are best sites for forest planting. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 2, 1 p.

United States Dept. Agriculture. 1933b. Release cuttings needed in natural second-growth stands. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 61, 1 p.

1933c. Well developed stock necessary for successful planting. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 63, 1 p.

1933d. How to thin young norway pine. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 64, 1 p.

1933e. Grading seedlings. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 65, 1 p.

1934. Estimating fire damage in the lake states. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 75, 1 p.

1935a. Soils as a guide in forest management. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 91, 1 p.

1935b. Woods and mill cull in merchantable hardwoods. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 94, 1 p.

1935c. Prolonged exposure of roots causes death of planting stock. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 96, 1 p.

1935d. What trees withstand drought best? For. Serv., Lake States For. Exp. Sta., Tech. Note No. 97, 1 p.

1935e. What rainfall factor causes drought damage? For. Serv., Lake States For. Exp. Sta., Tech. Note No. 98, 1 p.

1935f. Seedlings or transplants. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 99, 1 p.

1936a. Does stock balance effect survival? For. Serv., Lake States For. Exp. Sta., Tech. Note No. 104, 1 p.

1936b. Woody food preferences of the snowshoe rabbit in the lake states. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 109, 1 p.

1936c. Rabbits cause great losses to plantations in brushy areas. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 116, 1 p.

1937a. Heat more injurious than lack of moisture during drought. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 125, 1 p.

1937b. Is spring or fall the better planting season. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 131, 1 p.

1938a. Earlier returns from thinned red pine. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 138, 1 p.

- 1938b. Water tables and survival. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 139, 2 p.
- 1939a. Thinning of conifer seedlings in the nursery produces bigger but fewer plantable trees. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 143, 1 p.
- 1939b. Beneficial effect of partial shade on field survival. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 144, 1 p.
- 1939c. Top-pruning of conifer stock a doubtful operation. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 145, 1 p.
- 1939d. Comparative resistance of native Wisconsin trees to snow breakage. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 152, 1 p.
- 1940a. Top-root ratio and size of top very important in fall planted stock. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 158, 1 p.
- 1940b. When to pick pine cones. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 170, 1 p.
- 1941a. Storage of red pine seed. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 173, 1 p.
- 1941b. Testing cone ripeness. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 176, 1 p.
1942. Root pruning - a labor saver. For. Serv., Lake States For. Exp. Sta., Tech. Note No. 190, 1 p.
1944. Disking saves the topsoil in forest planting. For. Serv., Lake States For. Exp. Sta., Tech. Note 218, 1 p.
1957. Forest Pest Observer. For. Serv., Central States For. Exp. Sta., For. Pest Obs. 1(1), 23 p.
1958. Timber management guide for the National Forests of the north central states - red pine type. For. Serv., Milwaukee, Wisc., 13 p.
1959. Forest Pest Observer. For. Serv., Central States For. Exp. Sta., For. Pest Obs. 2(1), 5 p.
- Univ. Massachusetts. 1965. Direct seeding in the northeast. A symposium held Aug. 25-27, 1964. Amherst, Mass. Editor H. G. Akkott, 127 p.
- Urie, H. 1959. Pattern of soil moisture depletion varies between red pine and oak stands in Michigan. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Tech. Note. No. 564, 2 p.

- Vaartaja, O. 1957. Photoperiodic responses in seedlings of northern tree species. *Canad. J. Bot.* 35:133-138.
- Vaartaja, O. and W. H. Cram. 1956. Damping-off pathogens of conifers and of caragana in Saskatchewan.
- Vezina, P. E. 1965. Growth and yield of three pulpwood species in Quebec as affected by stocking. *Pulp and Pap. Mag. Canada, Woodl. Rev.* Nov:482-493.
- Voigt, G. K. 1960. Distribution of rainfall under forest stands. *For. Sci.* 6:2-10.
- Voigt, G. K. and M. J. Zwolinski. 1964. Absorption of stemflow by bark of young red and white pines. *For. Sci.* 10:277-282.
- Wagner, C. E. van. 1963. Prescribed burning experiments; red and white pine. *Canada Dept. Forestry, For. Res. Br., Publ. No. 1020:* 27 p.
- \_\_\_\_\_. 1965. Describing forest fires- old ways and new. *For. Chron.* 41:301-305.
- Wales, H. B. 1946. Comments on thinning young red pine stands. *J. For.* 44:1071-1073.
- Wambach, R. F. and A. L. Lundgren. 1965. The importance of site quality in red pine. *Michigan Acad. Sci., Arts and Letters Papers. L*, p. 67-74.
- Waters, W. E. 1955. Forest insect conditions in the northeast - 1954. *United States Dept. Agriculture, For. Serv., Northeastern For. Exp. Sta., Sta. Pap. No. 76*, 22 p.
- \_\_\_\_\_. 1956. Forest insect conditions in the northeast - 1955. *United States Dept. Agriculture, For. Serv., Northeastern For. Exp. Sta., Sta. Pap. No. 79*, 19 p.
- Waters, W. E. and T. McIntyre. 1954. Forest insect conditions in the northeast - 1953. *United States Dept. Agriculture, For. Serv., Northeastern For. Exp. Sta., Sta. Pap. No. 72*, 17 p.
- Waters, W. E. and A. M. Waterman. 1957. Forest insect and disease conditions in the northeast - 1956. *United States Dept. Agriculture, For. Serv., Northeastern For. Exp. Sta., Sta. Pap. No. 94*, 23 p.
- Weetman, G. F. 1958. Forest seeding and planting techniques and equipment. *Pulp and Pap. Res. Inst. Canada. Woodl. Res. Index No. 102*, 133 p.
- Weitzman, S. and R. R. Bay. 1959. Snow behavior in forests of northern Minnesota and its management implications. *United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Sta. Pap. No. 69*, 18 p.
- West, R. F. 1958. Aerial application of fertilizer to a forest stand. *Pulp and Pap. Mag. Canada, Woodl. Rev. June*, 203-204.

- White, D. P. 1956. Aerial application of potash fertilizer to coniferous plantations. J. For. 54:762-768.
- White, D. P. and R. S. Wood. 1958. Growth variations in a red pine plantation influenced by a deep-lying fine soil layer. Soil Sci. Soc. Amer. Proc. 22:174-177.
- Whitney, H. S. 1959. An effect of soil-packing in densely crowded coniferous seedlings. Canada Dept. Agriculture, Res. Br., For. Biol. Div., Bi-monthly Prog. Rep. 15(5):1.
- Whitney, R. D. 1965. Mycorrhiza-infection trials with Polyporus tomentosus and P. tomentosus var. circinatus on white spruce and red pine. For. Sci. 11:265-270.
- Whitmore, F. W. and R. Zahner. 1966. Development of the xylem ring in stems of young red pine trees. For. Sci. 12:198-210.
- Wiant, J. S. 1929. The rhizactonia damping-off of conifers and its control by chemical treatment of the soil. Cornell Univ., Agric. Exp. Sta., Memoir 124, 64 p.
- Wilde, S. A. 1961. The soil-ameliorating effect of jack pine (Pinus banksiana) and red pine (Pinus resinosa) plantations. Univ. Toronto Press, Rep. from Recent Advances Bot.:1631-1635.
1966. Soil standards for planting Wisconsin confiers.  
J. For. 64:389-391.
- Wilde, S. A. and G. K. Voigt. 1966. Influence des méthodes de plantation sur la croissance du pin en solo orgileux. Fonds de Recherches Forestières de l'Université Laval. Bull. No. 8:7-14.
- Wilde, S. A., R. Wittenham, E. L. Stone and H. M. Galloway. 1940. Effect of high rate fertilizer treatments of nursery stock upon its survival and growth in the field. J. For. 38:806-809.
- Wilde, S. A., F. B. Trenk, and A. R. Albert. 1942. Effect of mineral fertilizers, peat and compost on the growth of red pine plantations. J. For. 40:481-484.
- Wilde, S. A. and A. R. Albert. 1942. Effect of planting methods on survival and growth of plantations on well-drained sandy soils of central Wisconsin. J. For. 40:560-562.
- Wilde, S. A. and R. O. Rosendahl. 1945. Value of potassium feldspar as fertilizer in forest nurseries. J. For. 43:366-367.
- Wilde, S. A., F. G. Wilson and D. P. White. 1949. Soils of Wisconsin in relation to silviculture. Wisc. Conserv. Dept., Publ. No. 525-49, 171 p.
- Wilde, S. A., D. W. Cole, and R. Dosen. 1957. Green manures, white grubs, and growth of forest plantations. Univ. Wisconsin, For. Res. Notes No. 34, 3 p.

- Wilde, S. A. and J. B. Iyer. 1962. Growth of red pine on scalped soils. Ecol. 43:771-774.
- Wilson, F. G. 1951. Control of growing stock in even-aged stands of conifers. J. For. 49:692-695.
1955. Evaluation of three thinnings at Star Lake. For. Sci. 1:227-231.
- 1965a. European pine sawfly. United States Dept. Agriculture, For. Serv., For. Pest Leafl. 98, 8 p.
- 1965b. Life history and some habits of the pine gall weevil, Podapion gallicola Riley, in Michigan. Canad. Ent. 97:962-969.
1966. Introduced pine sawfly. United States Dept. Agriculture, For. Serv., For. Pest Leafl. 99, 4 p.
- Wilson, L. F. and D. C. Schmiege. 1965. Pine root collar weevil. United States Dept. Agriculture, For. Serv., For. Pest Leafl. No. 39, 7 p.
- Winget, C. H., T. T. Kozlowski, and J. E. Kuntz. 1961. Effect of herbicides on red pine seedlings and transplants. Univ. Wisconsin, For. Res. Notes, No. 69, 5 p.
- Winkworth, A. V. 1961. Analysis of a fuel-type classification questionnaire. Canada Dept. Forestry, For. Res. Br., Mimeo 61-18, 15 p.
- Woolsey, T. S. Jr., and H. H. Chapman. 1914. Norway pine in the lake states. United States Dept. Agriculture, Bull. No. 139, 42 p.
- Wright, J. W. and W. I. Bull. 1963. A one parent progeny test and seed orchard for the improvement of red pine. J. For. 61:747-750.
- Wright, J. W., W. I. Bull and G. Mitschelen. 1963. Geographic variations in red pine. 3 year results. Univ. Michigan, Agric. Exp. Sta., Quart. Bull. 45:622-630
- Young, H. E. 1957. Coniferous plantation growth in central and southern Maine - a preliminary report. Univ. Maine, For. Dept., Tech. Note No. 46, 3 p.
- Young, L. J. and F. H. Eyre. 1936. Release cuttings in plantations of white and norway pine. Papers Michigan Academy of Science, Arts and Letters 22:301-320.
- Youngberg, C. T. 1952. Effect of soil fertility on the physical and chemical properties of tree seed. J. For. 50:850-852.
- Zasada, Z. A., M. L. Heinzelman, and G. K. Voigt. 1954. Potential productivity of forest lands in Pine, Carlton, Aitkin and southern St. Louis countries Minnesota. United States Dept. Agriculture, For. Serv., Lake States For. Exp. Sta., Misc. Rep. No. 30, 53 p.