

A
Bibliography
of
**Canadian
Soil
Science**



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H. J. Atkinson

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FOREWORD

This bibliography lists titles of studies carried out on the soils of Canada by Canadian and other scientists and on the soils of countries other than Canada by Canadians, published in journals, books, bulletins, and theses. Because of the close relationship between soil fertility and plant nutrition, an appreciable number of titles concern plant nutrition. Entries, arranged chronologically by year and alphabetically by senior author within the year, include papers published through 1969.

The decision to include or omit a few titles of doubtful merit or usefulness was my own. In addition to titles that I purposely omitted, there may be others that I failed to locate in the literature. I should be pleased to know of omissions or errors. This bibliography is intended to be updated every 2 or 3 years.

I extend my sincere thanks to all those who helped in compiling the entries and preparing the book for publication.

H. J. Atkinson

BIBLIOGRAPHY

- 1 Shutt, F. T. A preliminary series of experiments towards the amelioration of certain alkaline soils. *Trans. Roy. Soc. Can. Ser. I*, 11 (Sect.3) : 17-24. 1893.
- 2 Shutt, F. T. Barnyard manure: its nature, functions, composition, fermentation, preservation, and application. *Can. Dep. Agr. Exp. Farms Serv. Bull* 31. 1898.
- 3 Shutt, F. T., and H. W. Charlton. Preliminary experiments with a cyanide compound as a nitrogen fertilizer. *Trans. Roy. Soc. Can. Ser. II*, 11 (Sect.3) :73-78. 1905.
- 4 Shutt, F. T., and A. T. Charron. Recent experiments in the nitrogen enrichment of soils. *Trans. Roy. Soc. Can. Ser. II*, 11(Sect.3):53-64. 1905.
- 5 Gamble, W. P., and A. E. Slater. Character and treatment of swamp or muck soils. *Ont. Dep. Agr. Bull.* 178. 1909.
- 6 Shutt, F. T. Some characteristics of the western prairie soils of Canada. *J. Agr. Sci.* 3:335-357. 1910.
- 7 Shutt, F. T. Western prairie soils: their nature and composition. *Can. Dep. Agr. Exp. Farms Serv. Bull.* 6, Ser. 2. 1910.
- 8 Lynde, C. J. Osmosis in soils: soils act as semipermeable membranes. *J. Phys. Chem.* 16:750. 1912.
- 9 Lynde, C. J. Osmosis in soils: soils act as semipermeable membranes. *J. Amer. Soc. Agron.* 4:102-108. 1912.
- 10 Lynde, C. J., and F. W. Bates. Further studies in the osmosis of soils. *J. Phys. Chem.* 16:766. 1912.
- 11 Lynde, C. J., and F. W. Bates. Further studies in the osmosis of soils. *J. Amer. Soc. Agron.* 4:108-121. 1912.

- 12 Shutt, F. T., and A. T. Charron. Further experimental work towards the nitrogen enrichment of soils. *Trans. Roy. Soc. Can. Ser. III*, 6 (Sect.3) :113-126. 1912.
- 13 Lynde, C. J., and H. A. Dupré. On osmosis in soils: the efficiency of the soil constituents as semipermeable membranes. *J. Amer. Soc. Agron.* 5:102-106. 1913.
- 14 Lynde, C. J., and H. A. Dupré. On a new method of measuring the capillary lift of soils. *J. Amer. Soc. Agron.* 5:107-116. 1913.
- 15 Lynde, C. J., and H. A. Dupré. On osmosis in soils: the efficiency of the soil constituents as semipermeable membranes. *Trans. Roy. Soc. Can. Ser. III*, 7 (Sect.3) :105-118. 1913.
- 16 Lynde, C. J., and H. A. Dupré. On a new method of measuring the capillary lift of soils. *Trans. Roy. Soc. Can. Ser. III*, 7 (Sect.3) :119-130. 1913.
- 17 Lynde, C. J., and J. V. Dupré. On osmosis in soils. *Trans. Roy. Soc. Can. Ser. III*, 8 (Sect.3):133-138. 1914.
- 18 Stuart, A. T. A systematic scheme for experimental work with fertilizers. *Trans. Roy. Soc. Can. Ser. III*, 8 (Sect. 3) :167-176. 1914.
- 19 Shutt, F. T. Lime in agriculture. *Can. Dep. Agr. Exp. Farms Serv. Bull.* 80. 1914.
- 20 Lynde, C. J., and J. V. Dupré. On osmosis in soils. *J. Amer. Soc. Agron.* 7:15-19. 1915.
- 21 Lynde, C. J., and J. V. Dupré. On osmosis in soils. *J. Amer. Soc. Agron.* 7:283-292. 1915.
- 22 Lynde, C. J., and J. V. Dupré. On osmosis in soils. *Trans. Roy. Soc. Can. Ser. III*, 9 (Sect.3) :69-80. 1915.
- 23 Shutt, F. T. Soil fertility: its economic maintenance and increase. *Can. Dep. Agr. Exp. Farms Serv. Bull.* 27, N. S. 1916.
- 24 Emslie, B. L. Seaweed as a fertilizer. *Agr. Gaz. Can.* 4:936-941. 1917.
- 25 Johnston, W. A. Pleistocene and recent deposits in the vicinity of Ottawa with a description of the soils. *Geogr. Soc. Can. Mem.* 101. 1917.

- 26 Shutt, F. T. Fertilizers and their use in Canada. 8th Annu. Rep., Commission of Conservation. 1917.
- 27 Shutt, F. T., and B. L. Emslie. The manuring of market garden crops, with special reference to the use of fertilizers. Can. Dep. Agr. Exp. Farms Serv. Bull. 32, Ser. 2. 1917.
- 28 Vanderleck, J. Bacteria of frozen soils in Quebec. Trans. Roy. Soc. Can. Ser. III, 11 (Sect.4):15-37. 1917.
- 29 Lynde, C. J. On an electrical method of determining the lime requirement of soils. Trans. Roy. Soc. Can. Ser. III, 12 (Sect.3):21-26. 1918.
- 30 Shutt, F. T., and E. A. Smith. The "alkali" content of soils as related to crop growth. Trans. Roy. Soc. Can. Ser. III, 12 (Sect.3):83-97. 1918.
- 31 Vanderleck, J. Bacteria of frozen soils in Quebec II. Trans. Roy. Soc. Can. Ser. III, 12 (Sect.4):1-21. 1918.
- 32 Shutt, F. T., and E. A. Smith. The "alkali" content of soils as related to crop growth. Trans. Roy. Soc. Can. Ser. III, 13 (Sect.3):233-242. 1919.
- 33 Stanfield, J. Problems of the burn-out districts of southern Saskatchewan. Trans. Roy. Soc. Can. Ser. III, 13 (Sect.4) :61-66. 1919.
- 34 Stewart, R., and F. A. Wyatt. The comparative value of various forms of limestone. Soil Sci. 7:273 - 278. 1919.
- 35 Shutt, F. T. Alkali soils: their nature and reclamation. Can. Dep. Agr. Exp. Farms Serv. Bull. 4, Ser. 2. 1920.
- 36 Shutt, F. T., and A. H. Burwash. The "alkali" content of soils as related to crop growth. Trans. Roy. Soc. Can. Ser. III, 14 (Sect. 3) :5770. 1920.
- 37 Hansen, R. Symbiotic nitrogen fixation by leguminous plants with special reference to the bacteria concerned. Sci. Agr. 1:59-62. 1921.
- 38 Nagant, H. M. Inventaire et étude des sols. Sci. Agr. 1:47-49. 1921.
- 39 Nagant, H. M. La solution du problème de l'azote. Sci. Agr. 1:184-185, 230-233, 274-277. 1921.

- 40 Nagant, H. M. La solution du problème de l'azote. *Sci. Agr.* 2:33-35. 1921.
- 41 Shutt, F. T. Lime in agriculture. *Can. Dep. Agr. Exp. Farms. Serv. Bull.* 80. 1921. Revised.
- 42 Shutt, F. T. Fertilizers for flowering plants, vegetables, small fruits and lawns. *Can. Dep. Agr. Exp. Farms Serv. Exhib. Circ.* 104. 1921.
- 43 Shutt, F. T., and A. H. Burwash. The vertical movement of "alkali" under irrigation in heavy clay soils. *Trans. Roy. Soc. Can. Ser. III, 15 (Sect. 3) : 61-65.* 1921.
- 44 Shutt, F. T., and A. H. Burwash. Notes on the nature of burn-outs. *Trans. Roy. Soc. Can. Ser. III, 15 (Sect.3) :65-68.* 1921.
- 45 Wyatt, F. A. Soil sampling. *Univ. Alberta Field Husbandry Circ.* 11. 1921.
- 46 Boving, P. A. Soil microbiology: a résumé and an appeal. *Sci. Agr.* 3:75-78. 1922.
- 47 Newton, W. Soil surveys for British Columbia. *Sci. Agr.* 3:92-96. 1922.
- 48 Shutt, F. T. The manurial value of seaweed. *Can. Dep. Agr. Exp. Farms Serv. Circ.* 19. 1922.
- 49 Shutt, F. T., and A. H. Atack. The vertical movement of alkali under irrigation in heavy clay soils. *Trans. Roy. Soc. Can. Ser. III, 16 (Sect.3):227-232.* 1922.
- 50 Shutt, F. T., and A. H. Atack. The "alkali" content of soils as related to crop growth. *Trans. Roy. Soc. Can. Ser. III, 16 (Sect. 3) :233-240.* 1922.
- 51 Shutt, F. T., and B. L. Emslie. Fertilizers for field crops: their nature, functions and application with results from recent experiments in Canada. *Can. Dep. Agr. Bull.* 8, N.S. 1922.
- 52 Snelson, W. H. Irrigation practice and water requirements for crops in Alberta. *Can. Dep. Interior Irrigation series Bull.* 6. 1922.
- 53 Beaudet, L. Phosphate deficiency in Quebec soils. *M.Sc. Thesis, McGill Univ.* 1923.
- 54 Carleton, E. A. The acidity of the soil from the viewpoint of its concentration of hydrogen ion. *Sci. Agr.* 3:412-414. 1923.

- 55 Carleton, E. A. A comparison of the Jones calcium acetate method for lime requirement with the hydrogen-ion concentration of some Quebec soils. *Soil Sci.* 16:79-90. 1923.
- 56 Carleton, E. A. The litmus method for detecting the soil reaction. *Soil Sci.* 16:91-94. 1923.
- 57 Clevenger, C. B. On soil fertility. *Sci. Agr.* 3:272-275. 1923.
- 58 De Long, W. A. Sulphur and soil acidity. *Sci. Agr.* 3:354-356. 1923.
- 59 Hansen, R., A. H. Joel, and A. M. Wilson. Soil survey of Moose Jaw area: Baildon Municipality No. 131, Hillsborough Municipality No. 132, Moose Jaw Municipality No. 161 and Caron Municipality No. 162. *Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No. 1.* 1923.
- 60 Hansen, R., A. H. Joel, and A. M. Wilson. Soil survey of Swift Current Municipality No. 137, Webb Municipality No. 138, Saskatchewan Landing Municipality No. 167 and Riverside Municipality No. 168. *Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No. 2.* 1923.
- 61 Nagant, H. M. De la nature de l'acidité des sols. *Sci. Agr.* 3:258-261. 1923.
- 62 Newton, J. D. A comparison of the absorption of inorganic elements, and of the buffer systems of legumes and non-legumes, and its bearing upon existing theories. *Soil Sci.* 15:181-204. 1923.
- 63 Shutt, F. T. Alkali soils: their nature and reclamation. *Can. Dep. Agr. Bull.* 21, N. S. 1923.
- 64 Shutt, F. T. Western prairie soils: their nature and composition. *Can. Dep. Agr. Bull.* 22, N. S. 1923.
- 65 Shutt, F. T. Soil fertility: its economic maintenance and increase. *Can. Dep. Agr. Bull.* 23, N. S. 1923.
- 66 Shutt, F. T., and J. M. Macoun. The vertical movement of alkali under irrigation in heavy clay soils. *Trans. Roy. Soc. Can. Ser. III, 17 (Sect. 3) :71-74.* 1923.
- 67 Shutt, F. T., and J. M. Macoun. The "alkali" content of soils as related to crop growth. *Trans. Roy. Soc. Can. Ser. III, 17 (Sect.3):75-78.* 1923.

- 68 Shutt, F. T., and J. M. Macoun. On the nature of burnouts. *Trans. Roy. Soc. Can. Ser. III*, 17 (Sect.3) : 79-82. 1923.
- 69 Duval, L. Calcium deficiency study on Quebec soils. M.Sc. Thesis, McGill Univ. 1924.
- 70 Hopkins, E. S. Soil moisture investigations in Canada. *Sci. Agr.* 5:79-83. 1924.
- 71 Lochhead, A. G. Some trends in soil microbiology. *Sci. Agr.* 4:308-313. 1924.
- 72 Lochhead, A. G. Microbiological studies of frozen soil. *Trans. Roy. Soc. Can. Ser. III*, 18 (Sect. 5) : 75- 96. 1924 .
- 73 Newton, J. D. Measurements of CO₂ evolved from the roots of various crop plants. *Sci. Agr.* 4:268-274. 1924.
- 74 Wyatt, F. A. Soils of the Lethbridge Northern Irrigation District. *Irrigation Rev.* 6(1):14 - 20. 1924.
- 75 Blair, W. S. Fertilizer tests with and without ground limestone. *Sci. Agr.* 5:199-201. 1925.
- 76 Champlin, M., and T. M. Stevenson. Results of experiments in the use of intertilled crops vs. fallow as preparation for wheat production in Saskatchewan and western Manitoba. *J. Amer. Soc. Agron.* 17:807-812. 1925.
- 77 De Long, W. A. Availability of organic nitrogenous fertilizers (a résumé). *Sci. Agr.* 5:205-210. 1925.
- 78 Hansen, R., A. H. Joel, and A. M. Wilson. Soil survey of Local Improvement Districts Nos. 21, 22 and 52 and Reno Municipality No. 51. *Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No. 3.* 1925.
- 79 Harcourt, R., S. Waterman, and G. N. Ruhnke. Soil acidity and liming. *Ont. Dep. Agr. Bull.* 313. 1925.
- 80 Nagant, H. M. Problèmes actuels en matière d'engrais phosphates. *Sci. Agr.* 5:357-360. 1925.
- 81 Nagant, H. M. Calcaires magnésiens versus calcaires purs, comme amendement des sols. *Sci. Agr.* 5:379 - 382. 1925.

- 82 Newton, J. D. The relation of the salt concentration of the culture solution to transpiration and root respiration. *Sci. Agr.* 5:318-320. 1925.
- 83 Pepin, J. A. The role of calcium in Dunkirk and Volusia soils. *Sci. Agr.* 5:139-154. 1925.
- 84 Shutt, F. T. Influence of grain growing on the nitrogen and organic matter content of western prairie soils of Canada. *Can. Dep. Agr. Bull.* 44, N.S. 1925.
- 85 Shutt, F. T. Potash in agriculture. *Can. Dep. Agr. Pam.* 61, N.S. 1925.
- 86 Wyatt, F. A. Factors affecting the productivity of Western Canadian soils. *Sci. Agr.* 6:69-88. 1925.
- 87 Wyatt, F. A., and J. D. Newton. Legume inoculation. *Univ. Alberta Circ.* 4. 1925.
- 88 Wyatt, F. A., and J. D. Newton. Soil survey of MacLeod sheet. *Univ. Alberta Coll. Agr. Bull.* 11. 1925.
- 89 Zoound, A. The influence of green manures upon the growth and physiological efficiency of *Azotobacter chroococcum*. M.S.A. Thesis, Univ. British Columbia. 1925.
- 90 Field Crop Branch, B. C. Dep. Agr. Peat and muck soils. *Field Crop Circ.* 5, 3rd ed. 1926.
- 91 Hansen, R., A. H. Joel, and A. M. Wilson. Soil survey of Weyburn Municipality No. 67, Brokenshell Municipality No. 68, Wellington Municipality No. 97 and Scott Municipality No. 98. *Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No.* 4. 1926.
- 92 Hopkins, E. S., and W. C. Hopper. Crop rotations and soil management for Eastern Canada. *Can. Dep. Agr. Bull.* 72, N. S. 1926.
- 93 Joel, A. H. Changing viewpoints and methods in soil classification. *Sci. Agr.* 6:225-232. 1926.
- 94 Joel, A. H., J. Mitchell, and F. H. Edmunds. Soil survey of the Bienfait-Oxbow area, including the municipalities of Enniskillen No. 3, Coal Fields No. 4, Moose Creek No. 33, and Browning No. 34. *Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No.* 5. 1926.
- 95 Leduc, A. Nos terres manquent-elles de soufre? *Sci. Agr.* 6:218-222. 1926.
- 96 Lochhead, A. G. Experiments with "Soilgro." *Sci. Agr.* 6:210-217. 1926.

- 97 Lochhead, A. G. The bacterial types occurring in frozen soil. *Soil Sci.* 21:225-231. 1926.
- 98 McKibbin, R. R. The effect of sulphur on soils and on crop yields. Ph.D. Thesis, Univ. Maryland. 1926.
- 99 Nagant, H. M. Conceptions récentes en matière de classification des sols. *Sci. Agr.* 7:69-75, 109112. 1926.
- 100 Ruhnke, G. N. The soil survey in southern Ontario. *Sci. Agr.* 7:117-124. 1926.
- 101 Warren, T. E. The dissociation pressures of the orthophosphates. M.Sc. Thesis, McGill Univ. 1926.
- 102 Waterman, S. The carbon-nitrogen ratio in soils and its relation to the decomposition of organic matter and nitrogen changes. *Sci. Agr.* 6:357 - 359. 1926.
- 103 Waterman, S., and G. N. Ruhnke. Soils and fertilizers and the maintenance of soil fertility. *Ont. Dep. Agr. Bull.* 322. 1926.
- 104 Waterman, S., and N. J. Thomas. Lime and phosphate. The effect of lime and phosphate on the yield of fall wheat and clover in Ontario. *Ont. Dep. Agr. Bull.* 321. 1926.
- 105 Wyatt, F. A., and J. D. Newton. Soil survey of Medicine Hat sheet. *Univ. Alberta Coll. Agr. Bull.* 14. 1926.
- 106 Wyatt, F. A., A. S. Ward, and J. D. Newton. Nitrate production under field conditions in soils of central Alberta (1923 and 1924). *Sci. Agr.* 7:124. 1926.
- 107 Joel, A. H. Predominant soil profiles correlated with soil development factors in northern latitudes. *Proc. 1st Int. Congr. Soil Sci. (Washington)* 4:200-223. 1927.
- 108 Joel, A. H., R. Hansen, and A. M. Wilson. Soil survey of the Rosetown area including the municipalities of St. Andrews No. 287, Pleasant Valley No. 288, Marriott No. 317, Mountain View No. 318. *Univ. Saskatchewan Coll. Agr. Soil Surv. Rep.* No. 6. 1927.
- 109 Lochhead, A. G. The advisability of standardizing the methods used for the quantitative determination of soil bacteria, and the changes produced by them. *Proc.*

- 1st Int. Congr. Soil Sci. (Washington) 3:23-29. 1927.
- 110 McKibbin, R. R. Soil acidity and the phosphate ion. Proc. 1st Int. Congr. Soil Sci. (Washington) 2:87-106. 1927.
- 111 McTaggart, A. Soils in relation to geology. Sci. Agr. 7:170-178. 1927.
- 112 Shutt, F. T., and L. E. Wright. Manures and fertilizers: their nature, functions and application. Can. Dep. Agr. Bull. 92, N.S. 1927.
- 113 Wyatt, F. A. Variation in plot yields due to soil heterogeneity. Sci. Agr. 7:248-256. 1927.
- 114 Wyatt, F. A., and J. D. Newton. Alberta soil profiles. Proc. 1st Int. Congr. Soil Sci. (Washington) 4:358-366. 1927.
- 115 Wyatt, F. A., and J. D. Newton. Soil survey of Sounding Creek sheet. Univ. Alberta Coll. Agr. Bull. 16. 1927.
- 116 Wyatt, F. A., A. S. Ward, and J. D. Newton. Nitrate production under field conditions in soils of central Alberta (1925 and 1926). Sci. Agr. 7:377 - 384. 1927.
- 117 Barnes, S. Soil moisture studies under dry-farming conditions. Sci. Agr. 8:570 - 575. 1928.
- 118 Bedford, R. H. Some biological and chemical activities of Alberta soils. M.Sc. Thesis, Univ. Alberta. 1928.
- 119 Ellis, J. H., and W. Shafer. The nitrogen content of Red River Valley soils. Sci. Agr. 9:231-248. 1928.
- 120 Harrington, E. L. Soil temperatures in Saskatchewan. Soil Sci. 25:183-194. 1928.
- 121 Hopkins, E. S., and S. Barnes. Crop rotations and soil management for the Prairie Provinces. Can. Dep. Agr. Bull. 98, N.S. 1928.
- 122 Joel, A. H. Diversity of soil type in the Prairie Provinces and causes of the same. Sci. Agr. 8:651-664. 1928.
- 123 Joel, A. H., F. H. Edmunds, and J. Mitchell. Soil survey of the Birch Hills-Melfort area, including the municipalities of Carrot River No. 429, Invergordon No. 430,

Weldon No. 459, Birch Hills No. 460. Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No. 7. 1928.

- 124 McKibbin, R. R. The effect of sulphur on soils and on crop yields. Maryland Agr. Exp. Sta. Bull. 296. 1928.
- 125 Newton, J. D. The selective absorption of inorganic elements by various crop plants. Soil Sci. 26:85 - 91. 1928.
- 126 Scott, A. La classification des sols dans Québec. Sci. Agr. 8:668-674, 797-807. 1928.
- 127 Shutt, F. T. Lime in agriculture. Can. Dep. Agr. Bull. 86, N.S. 1928.
- 128 Shutt, F. T. The soils of Prince Edward Island. Can. Dep. Agr. Bull. 100, N.S. 1928.
- 129 Sparks, F. P. The nitrifying organisms isolated from British Columbia soils. M.S.A. Thesis, Univ. British Columbia. 1928.
- 130 Wyatt, F. A., and J. L. Doughty. The sulphur content of Alberta soils. Sci. Agr. 8:549-555. 1928.
- 131 Bedford, R. H. A study of nitrate production in virgin soils of Alberta. Sci. Agr. 9:391-399. 1929.
- 132 Bedford, R.H. The decomposition of peat measured by carbon dioxide evolved. Sci. Agr. 9:522-532. 1929.
- 133 Edmunds, F. H. Soil mapping as an aid to geological interpretation. Can. Mining and Metallurgy (Trans. Can. Inst. Mining and Metallurgy). 1929.
- 134 Joel, A. H., F. H. Edmunds, J. Mitchell, and H. W. E. Larson. Soil survey of the Leader - Maple Creek area. Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No. 8. 1929.
- 135 Mather, T. H. The effect of fertilizers upon the forms of phosphorus and the amounts of phosphorus, nitrogen and silica in hays. Sci. Agr. 10:35 - 63. 1929.
- 136 Morwick, F. F. The profile of a common sandy soil type in Norfolk County, Ontario. Sci. Agr. 9:301-312. 1929.
- 137 Palmer, A. E. Use of irrigation water on farm crops. Can. Dep. Agr. Bull. 125, N.S. 1929.

- 138 Wyatt, F. A., and A. S. Ward. Fertilizers for wooded soils. *Sci. Agr.* 9:423-433. 1929.
- 139 Younge, O. R. Sulphur oxidation and reaction effects in Alberta soils. M.Sc. Thesis, Univ. Alberta. 1929.
- 140 Barnes, S., and E. S. Hopkins. Soil moisture and crop production: results of experiments conducted on the Dominion Experimental Station, Swift Current, Sask. Can. Dep. Agr. Bull. 130, N.S. 1930.
- 141 Corminboeuf, F. La restitution biologique de l'azote au sol. *Sci. Agr.* 10:547-548, 621-623. 1930.
- 142 Doughty, J. L. The fixation of phosphate by a peat soil. *Soil Sci.* 29:23-35. 1930.
- 143 Hopkins, E. S., and W. C. Hopper. Crop rotations and soil management for Eastern Canada. Can. Dep. Agr. Bull. 136, N.S. 1930.
- 144 Jones, D. H., and E. H. Garrard. Early versus late ploughing of sweet clover for green manure. *Sci. Agr.* 10:419-422. 1930.
- 145 Laird, D. G. Comparative study of an arid and a humid soil. M.Sc. Thesis, Univ. Wisconsin. 1930.
- 146 Lochhead, A. G. The value of a microbiological analysis of soil. Proc. 2nd Int. Congr. Soil Sci. (Leningrad - Moscow) 220-223. 1930.
- 147 McKibbin, R. R. Forest soils of eastern Canada. *Can. Woodlands Rev.* 1(8, 9):1929-30.
- 148 McKibbin, R. R. The life layer of the world. *J. Chem. Educ.* 7:1993-2029. 1930.
- 149 McKibbin, R. R., and L. I. Pugsley. Soils of the Eastern Townships of Quebec. Macdonald Coll. Tech. Bull. 6. 1930.
- 150 Newton, J. D. Seasonal fluctuations in numbers of microorganisms and nitrate nitrogen in an Alberta soil. *Sci. Agr.* 10:361-368. 1930.
- 151 Ripley, P. O. The effect of soil type on the availability of finely ground rock phosphate. *Sci. Agr.* 10:678-689. 1930.
- 152 Snelson, W. H. Irrigation practice and water requirements for crops in Alberta. Can. Dep. Interior Irrigation series Bull. 6. 1930. Revised.

- 153 Wyatt, F. A., J. D. Newton, and T. H. Mather. Soil survey of St. Ann sheet. Univ. Alberta Coll. Agr. Bull. 20. 1930.
- 154 Wyatt, F. A., and O.R. Younge. Preliminary soil survey adjacent to the Peace River, Alberta, west of Dunvegan. Res. Council Alberta, Soil Surv. Div. Rep. No. 23. 1930.
- 155 Doughty, J. L. Phosphorus studies on Alberta soils. Sci. Agr. 12:43-51. 1931.
- 156 Harcourt, R., H. G. Bell, G. N. Ruhnke, and N. J. Thomas. Manures and fertilizers, their use in Ontario. Ont. Dep. Age. Bull. 364. 1931.
- 157 Henry, A. W. The natural microflora of the soil in relation to the footrot problem of wheat. Can. J. Res. 4:69-77. 1931.
- 158 Henry, A. W. Occurrence and sporulation of the *Helminthosporium sativum* P.K.B. in the soil. Can. J. Res. 5:407-413. 1931.
- 159 Holowaychuk, N. Replaceable bases, hydrogen and base-holding capacity of Alberta soils. M.Sc. Thesis, Univ. Alberta. 1931.
- 160 Jarvis, T. D. The fundamentals of an agricultural research programme. Sci. Agr. 12:92-114. 1931.
- 161 Joel, A. H.; J. Mitchell, F. H. Edmunds, and H. W. Larson. Soil survey of southwestern Saskatchewan. Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No. 9. 1931.
- 162 McKibbin, R. R. Soils and soil treatments in Quebec. Sci. Agr. 11:361-368. 1931.
- 163 Mitchell, J. The origin, nature and importance of soil organic constituents having base exchange properties. Ph.D. Thesis, Univ. Wisconsin. 1931.
- 164 Moss, H. C. Field and laboratory studies of some degraded Saskatchewan soils. M.Sc. Thesis, Univ. Alberta. 1931.
- 165 Newton, J. D. Sulphur oxidation in Alberta soils and related experiments. Sci. Agr. 11:612-622. 1931.
- 166 Pugsley, L. I., and R. R. McKibbin. Calcium relationships of forage crops. Can. J. Res. 4:39 - 51. 1931.

- 167 Shutt, F. T., and L. E. Wright. Manures and fertilizers, their nature, functions and application. Can. Dep. Agr. Bull. 145, N.S. 1931. Revised.
- 168 Valin, R. A. La classification des sols forestiers en fonction de l' économie rurale. Sci. Agr. 11:546-553. 1931.
- 169 Wyatt, F. A. Residual effects of fertilizers. Sci. Agr. 11:387-396. 1931.
- 170 Younge, O. R. Sulphur oxidation and reaction effects in Alberta soils. Sci. Agr. 11:535-541. 1931.
- 171 Bowser, W. E. Decomposition and movement of herbicides in soils, and effects on soil microbiological activity and subsequent crop growth. M.Sc. Thesis, Univ. Alberta. 1932.
- 172 Ellis, J. H. A field classification of soils for use in the soil survey. Sci. Agr. 12:338-345. 1932.
- 173 Holowaychuk, N. Replaceable bases, hydrogen and base holding capacity of Alberta soils. Can. J. Res. 7:64-74. 1932.
- 174 Ignatieff, V. Biological activities in Edmonton soil as influenced by crop sequence. M.Sc. Thesis, Univ. Alberta. 1932.
- 175 Joel, A. H. The preparation of a genetic soil map of Canada. Sci. Agr. 13:114-118. 1932.
- 176 Joel, A. H. Genesis and morphology of cool climate, semi-arid soils in Saskatchewan, Canada. Rep. 12th Annu. Meeting Amer. Soil Surv. Ass. 13:53 - 62. 1932.
- 177 Jones, D. H. The soil plaque azotobacter test for soil deficiency. Sci. Agr. 12:716-726. 1932.
- 178 Kohnke, H. Testing the fertility of Alberta soils by the Neubauer and Lemmermann methods. M.Sc. Thesis, Univ. Alberta. 1932.
- 179 Laird, D. G. Bacteriophage and the root nodule bacteria. Ph.D. Thesis, Univ. Wisconsin. 1932.
- 180 Laird, D. G. Bacteriophage and the root nodule bacteria. Arch. Mikrobiol. 3:159-193. 1932.
- 181 Leahey, A. Mineralogical and chemical studies on some inorganic phosphorus compounds in the soil. Ph.D. Thesis, Univ. Wisconsin. 1932.

- 182 Leahey, A. Leaching of mineral matter in some Alberta soils. *Sci. Agr.* 13:7-15. 1932.
- 183 McKibbin, R. R., and P. H. H. Gray. Chemical and microbiological factors in some Quebec soils. *Can. J. Res.* 7:300-327. 1932.
- 184 McMaster, N. B. The microbiology of air-dried cultivated soils. M.Sc. Thesis, McGill Univ. 1932.
- 185 Mitchell, J. The origin, nature and importance of soil organic constituents having base exchange properties. *J. Amer. Soc. Agron.* 24:256-275. 1932.
- 186 Mitchell, J. A preliminary investigation on determining the "available" phosphorus in Saskatchewan soils. *Sci. Agr.* 12:346-351. 1932.
- 187 Morwick, F. F. Preservation of soil monoliths. *Sci. Agr.* 13:1-6. 1932.
- 188 Peden, E. E. Soil conditions responsible for clover failure in British Columbia. M.S.A. Thesis, Univ. British Columbia. 1932.
- 189 Pickersgill, T. B. The effect of fertilizers on the composition and the rate of intake of nutrients by wheat plants. M.Sc. Thesis, Univ. Manitoba. 1932.
- 190 Summerby, R. Soil management. *Macdonald Coll. Farmers Bull.* 4. 1932.
- 191 Wyatt, F. A., and J. D. Newton. Wooded soils and their management. *Univ. Alberta Coll. Agr. Bull.* 21. 1932.
- 192 Wyatt, F. A., J. M. Smith, R. Newton, and C. C. Gillies. Soil drifting and its control. *Univ. Alberta Coll. Agr. Circ.* 13. 1932.
- 193 Bisby, G. R., N. James, and M. I. Timonin. Fungi isolated from Manitoba soils by plate method. *Can. J. Res.* 8:253-275. 1933.
- 194 Bowser, W. E., and J. D. Newton. Decomposition and movement of herbicides in soils and effects on soil microbiological activity and subsequent crop growth. *Can. J. Res.* 8:73-100. 1933.
- 195 Gray, P. H. H., and N. B. McMaster. A microbiological study of podzol soil profiles. *Can. J. Res.* 8:375-389. 1933.
- 196 Hastings, R. J., J. E. Boshier, and W. Newton. The nematode disease of narcissi and crop sequence. *Can. J. Res.* 8:101-104. 1933.

- 197 Hopkins, E. S., P. O. Ripley, and W. Dickson. Crop rotations and soil management for Eastern Canada. Can. Dep. Agr. Bull. 163, N.S. 1933.
- 198 Joel, A. H. Methods and scope of soil surveys in Western Canada. Empire J. Exp. Agr. 1:33-42. 1933.
- 199 Joel, A. H. The zonal sequence of soil profiles in Saskatchewan, Canada. Soil Sci. 36:173-187. 1933.
- 200 Lohse, H. W., and G. N. Ruhnke. Studies on readily-soluble phosphate in soils: I. Extraction of readily-soluble phosphate from soils by means of dilute acid potassium sulphate (KHSO₄). Soil Sci. 35:437-458. 1933.
- 201 Lohse, H. W., and G. N. Ruhnke. Studies on readily-soluble phosphate in soils: II. The vertical distribution of readily-soluble phosphate in some representative Ontario soils. Soil Sci. 35:459 - 468. 1933.
- 202 Lohse, H. W., and G. N. Ruhnke. Studies on readily-soluble phosphate in soils: III. The effects of phosphate treatment. Soil Sci. 36:303-316. 1933.
- 203 McAllister, R. E. The effect of fertilizer on plant composition. M.Sc. Thesis, Univ. Alberta. 1933.
- 204 McKibbin, R. R. Climate and soil leaching variations in Quebec. Sci. Agr. 13:413-425. 1933.
- 205 McKibbin, R. R. Soil organic matter. J. Amer. Soc. Agron. 25:258-266. 1933.
- 206 McKibbin, R. R. Some characters of southern Quebec Podzols. Proc. World's Grain Exhib. and Conf., Canada 2:313-314. 1933.
- 207 Morwick, F. F. Soils of southern Ontario. Sci. Agr. 13:449-454. 1933.
- 208 Newton, D. E., and F. S. Nowosad. The relation of flora to soil types in three districts of the Eastern Townships. Macdonald Coll. Tech. Bull. 11. 1933.
- 209 Nowosad, F. S. The effect of some commercial fertilizers on the yield and botanical composition of permanent pasture. M.Sc. Thesis, McGill Univ. 1933.
- 210 Nowosad, F. S. The effect of some commercial fertilizers on the botanical composition and yield of permanent pastures. Sci. Agr. 14:57-69. 1933.

- 211 Sanford, G. B. Some soil microbiological aspects of plant pathology. *Sci. Agr.* 13:638-641. 1933.
- 212 Shaw, G. T. The effect of chemical treatments on the colloidal properties of Podzol soils. M.Sc. Thesis, McGill Univ. 1933.
- 213 Shaw, G. T., and R. R. McKibbin. Soluble sesquioxides and organic matter from alkali treatments on soils. *Science* 77:411-412. 1933.
- 214 Shaw, G. T., and R. R. McKibbin. Chemical studies on Appalachian upland Podzol soils: I. Conditions governing base-exchange relations. *Can. J. Res.* 9: 386-395. 1933.
- 215 Shutt, F. T. Peat, muck and mud deposits: their nature, composition and agricultural uses. *Can. Dep. Agr. Bull.* 124, N.S. 1933.
- 216 Wilcox, J. C. Determining the moisture holding capacity of soils. M.S.A. Thesis, Univ. British Columbia. 1933.
- 217 Atkinson, H. J. Organic matter and acidity in Podzol soils. Ph.D. Thesis, McGill Univ. 1934.
- 218 Atkinson, H. J., and R. R. McKibbin. Chemical studies on Appalachian upland Podzol soils: II. Organic matter - acidity relationships. *Can. J. Res.* 11:759-769. 1934.
- 219 Barnes, S. Legumes and the nitrogen problem in the dry farming areas of Western Canada. *Sci. Agr.* 14:459-465. 1934.
- 220 Caldwell, O. G. The occurrence and development of "magnesium solonetz" in the soils of the Red River Valley. M.Sc. Thesis, Univ. Manitoba. 1934.
- 221 Davis, M. B., H. Hill, and F. B. Johnston. Nutritional studies with *Fragaria*: II. A study of the effect of deficient and excess potassium, phosphorus, magnesium, calcium and sulphur. *Sci. Agr.* 14:411-432. 1934.
- 222 Dingwall, A., R. R. McKibbin, and H. T. Beans. Studies on the distribution of molybdenum in biological material: I. A spectrographic study of the occurrence of molybdenum in plants grown in the Province of Quebec. *Can. J. Res.* 11:32-39. 1934.
- 223 Ellis, J. H. Zonation for fertilizer requirements in the northern prairies. *Sci. Agr.* 15:96-109. 1934.

- 224 Kimball, D. A., G. N. Ruhnke, and M. P. Glover. A comparison of temperatures in air and at various depths in a light sandy soil in southern Ontario. *Sci. Agr.* 14:353-359. 1934.
- 225 MacLeod, D. J., and J. L. Howatt. Soil treatment in the control of certain soil-borne diseases of potatoes. *Amer. Potato J.* 11:60-61. 1934.
- 226 Marchant, E. H. J. The estimated number of nemas in the soils of Manitoba. *Can. J. Res.* 11:594 - 601. 1934.
- 227 McAllister, R. E. The effect of fertilizers on the yield and composition of crops from the wooded soils of Alberta. *Sci. Agr.* 14:249-256. 1934.
- 228 McCalla, A. G. The effect of potassium supply on the composition and quality of wheat. *Can. J. Res.* 11:687-700. 1934.
- 229 Newton, D. E., and P. C. Stobbe. The relation of flora to soil types in the counties of Chateauguay, Huntingdon and Argenteuil in Quebec. *Pasture studies: V. Macdonald Coll. Tech. Bull.* 14. 1934.
- 230 Newton, J. D. A study of the composition and utilization of Alberta peats. *Ann. Appl. Biol.* 21:251-266. 1934.
- 231 Odynsky, W. Solubility and distribution of phosphorus in Alberta soils. M.Sc. Thesis, Univ. Alberta. 1934.
- 232 Riecken, F. F. Base exchange studies of some Saskatchewan soils. M.Sc. Thesis, Univ. Saskatchewan. 1934.
- 233 Spilsbury, R. H. A chemical examination of normal and degraded profiles in Glenmore clay. M.S.A. Thesis, Univ. British Columbia. 1934.
- 234 Stobbe, P. C. The effect of some commercial fertilizers on the chemical composition of pasture herbage in the Eastern Townships of Quebec. M.Sc. Thesis, McGill Univ. 1934.
- 235 Thomson, W. A. Soil temperatures at Winnipeg, Manitoba. *Sci. Agr.* 15:209-217. 1934.
- 236 Walker, K. H. Composition of some Alberta peats. M.Sc. Thesis, Univ. Alberta. 1934.
- 237 Wyatt, F. A. The necessity for growing legumes on Gray Wooded soils. *Sci. Agr.* 14:327-335. 1934.

- 238 Bisby, G. R., M. I. Timonin, and N. James. Fungi isolated from soil profiles in Manitoba. *Can. J. Res., C*, 13:47-65. 1935.
- 239 Doughty, J. L. Phosphate fixation in soils, particularly as influenced by organic matter. *Soil Sci.* 40:191-202. 1935.
- 240 Dyck, A. W. J. Soil organic nitrogen compounds. Ph.D. Thesis, McGill Univ. 1935.
- 241 Dyck, A. W. J., and R. R. McKibbin. The non-protein nature of a fraction of soil organic nitrogen. *Can. J. Res., B*, 13:264-268- 1935.
- 242 Ellis, J. H. Soil types occurring in the Red River Valley plain. *Sci. Agr.* 15:276-286. 1935.
- 243 Ellis, J. H. Report on the soil zone map of Canada. *Trans. 3rd Int. Congr. Soil Sci. (Oxford)* 1:266. 1935.
- 244 Ellis, J. H., and O. G. Caldwell. Magnesium clay "solonetz." *Trans. 3rd Int. Congr. Soil Sci. (Oxford)* 1:348-350. 1935.
- 245 Gray, P. H. H. A microbiological study of Podzol soil profiles: III. Bacteria found in separate horizons. *Can. J. Res., C*, 13:256-262. 1935.
- 246 Gray, P. H. H., and H. J. Atkinson. Microbiological studies of Appalachian upland Podzol soils: I. Effects of physical and chemical treatments. *Can. J. Res., C*, 13:115-126. 1935.
- 247 Gray, P. H. H., and H. J. Atkinson. Microbiological studies of Appalachian Podzol soils: II. Seasonal changes in microbial activity. *Can. J. Res., C*, 13:358-366. 1935.
- 248 Gray, P. H. H., and C. B. Taylor. A microbiological study of Podzol soil profiles: II. Laurentian soils. *Can. J. Res., C*, 13:251-255. 1935.
- 249 Harris, G. H., and J. J. Woods. Raspberry nutrition: I. Seasonal variation of plant nutrients in raspberry plantings under different cultural treatments. *Sci. Agr.* 15:525-534. 1935.
- 250 Hopkins, E. S. Soil drifting in Canada. *Trans. 3rd Int. Congr. Soil Sci. (Oxford)* 1:403-405. 1935.
- 251 Hopkins, E. S., S. Barnes, A. E. Palmer, and W. S. Chepil. Soil drifting control in the Prairie Provinces. *Can. Dep. Agr. Bull.* 179, N.S. 1935.

- 252 Jarvis, T. D. Soil studies in relation to land utilization research. *Sci. Agr.* 15:287-296. 1935.
- 253 Johnson, W. A. Origin and characteristics of the Red River Valley and Regina Plain clay soils of Western Canada. *Sci. Agr.* 15:268-275. 1935.
- 254 Laird, D. G., and C. C. Kelley. Soil survey: A basis for land utilization in British Columbia. *Sci. Agr.* 15:257-262. 1935.
- 255 Leahey, A. Mineralogical and chemical studies on some of the inorganic phosphorus compounds in the soil. *Sci. Agr.* 15:704-712. 1935.
- 256 Mann, A. J. The irrigation of tobacco in the southern interior irrigated valleys of British Columbia, 1925 to 1933. *Can. Dep. Agr. Bull.* 165, N.S. 1935.
- 257 Mann, A. J. Soil texture in relation to tobacco growing in British Columbia. *Can. Dep. Agr. Bull.* 175, N.S. 1935.
- 258 McCalla, A. G., and E. K. Woodford. The effect of potassium supply on the composition and quality of wheat II. *Can. J. Res., C*, 13:339-354. 1935.
- 259 McKibbin, R. R., J. F. Snell, and A. W. J. Dyck. The condition of the nitrogen, phosphorus and sulphur of soil organic matter. *Trans. 3rd Int. Congr. Soil Sci. (Oxford)* 1:419-421. 1935.
- 260 Mitchell, J., and D. L. MacFarlane. Remarks on the utilization of the soil survey and some data regarding the soils of Saskatchewan. *Sci. Agr.* 15:263-267. 1935.
- 261 Moss, H. C. Some field and laboratory studies of soil drifting in Saskatchewan. *Sci. Agr.* 15:665 - 679. 1935.
- 262 Newton, J. D., and A. D. Paul. Decomposition and movement of herbicides in soils and effects on soil microbiological activity and subsequent crop growth. Part II. *Can. J. Res., C*, 13:101-114. 1935.
- 263 Ruhnke, G. N. Soils of Ontario. *Can. Chem. and Metallurgy* 19:287-290. 1935.
- 264 Scott, A. L'utilité de la carte agronomique. *Sci. Agr.* 15:298-306. 1935.
- 265 Siemens, G. J. A preliminary survey of the protozoan fauna of Manitoba soils, with a historical review of the subject. *M.Sc. Thesis, Univ. Manitoba.* 1935.

- 266 Timonin, M. I. The microorganisms in profiles of certain virgin soils in Manitoba. *Can. J. Res., C*, 13:32-46. 1935.
- 267 Vanterpool, T. C. Studies on browning root rot of cereals. III. Phosphorus-nitrogen relationships in infested fields. IV. Effects of fertilizer amendments. V. Preliminary plant analysis. *Can. J. Res., C*, 13:220-250. 1935.
- 268 Wrenshall, C. L., and R. R. McKibbin. A comparison of some methods used in extracting soil phosphates, with a proposed new method. *J. Amer. Soc. Agron.* 27:511-518. 1935.
- 269 Wyatt, F. A. Preliminary soil survey of the Peace River - High Prairie - Sturgeon Lake area. *Res. Counc. Alta., Soil Survey Div., Rep. No. 31.* 1935.
- 270 Banks, A. B. Cultivation and management of soils. *Dep. Natur. Resources, Nfld., Agr. Sect., Bull. 5.* 1936.
- 271 Barnes, S. The efficient use of soil moisture as a factor in the control of drought. *Sci. Agr.* 16:275-280. 1936.
- 272 Caldwell, O. G., and J. H. Ellis. A study of factors that augment soil drifting in southwestern Manitoba. *Progr. Rep., Soils Dep., Univ. Manitoba.* 1936.
- 273 Eisenhauer, E. E. Irrigation in Alberta. *Sci. Agr.* 16:270-274. 1936.
- 274 Ellis, J. H., and O. G. Caldwell. Mineral content of Manitoba hays. *Sci. Agr.* 16:531-537. 1936.
- 275 Emslie, B. L. The fate of phosphate in the soil. *Sci. Agr.* 16:261-263. 1936.
- 276 Hardy, E. A. The use of tillage machinery in soil-drifting areas. *Sci. Agr.* 16:281-284. 1936.
- 277 Haslam, R. J., and H. F. Murwin. Response of the tobacco plant to fertilizers in southwestern Ontario. *Sci. Agr.* 17:137-143. 1936.
- 278 Hill, H. Minor elements affecting horticultural crops. *Sci. Agr.* 17:148-153. 1936.
- 279 Hill, H., and M. B. Davis. Physiological disorders of apples. *Sci. Agr.* 17:199-208. 1936.
- 280 Hurst, R. R., and D. J. MacLeod. Turnip brown heart. *Sci. Agr.* 17:209-214. 1936.

- 281 Joel, A. H., J. Mitchell, F. H. Edmunds, and H. C. Moss. Reconnaissance soil survey of Saskatchewan, from the International Boundary on the south to the top of Township 48 on the north. Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No. 10. 1936.
- 282 Lochhead, A. G., and R. H. Thexton. A four-year quantitative study of nitrogen-fixing bacteria in soils of different fertilizer treatment. *Can. J. Res., C*, 14:166-177. 1936.
- 283 Machacek, J. E. Preliminary investigations on the effect of excessive soil salinity on the incidence of cereal root rots. *Sci. Agr.* 17:215-223. 1936.
- 284 McKibbin, R. R. Soil survey work in Quebec. *J. Agr. (Dep. Agr., Prov. Que.)* 39(7):6-7; (8):1415; (9):12-13. 1936.
- 285 McKibbin, R. R., H. J. Atkinson, and C. S. Boone. Some peat bog profiles of the Lower St. Lawrence River and Lake St. John regions in Quebec. *Sci. Agr.* 16:253-260. 1936.
- 286 McKibbin, R. R., and P. C. Stobbe. Organic soils of southwestern Quebec. *Can. Dep. Agr. Publ. 499, Tech. Bull. 5.* 1936.
- 287 Newton, J. D. The fertilizing value of sulphate in natural "alkali" for Gray Wooded soils. *Sci. Agr.* 16:241-244. 1936.
- 288 Newton, J. D. Composition and fertilization of Alberta peats. *Sci. Agr.* 16:245-252. 1936.
- 289 Odynsky, W. Solubility and distribution of phosphorus in Alberta soils. *Sci. Agr.* 16:652-664. 1936.
- 290 Palmer, A. E. Use of irrigation water on farm crops. *Can. Dep. Agr. Publ. 509, Farmers' Bull. 10.* 1936.
- 291 Palmer, A. E. The soil drifting problem in the Prairie Provinces. *Sci. Agr.* 16:264-265. 1936.
- 292 Putnam, D. F., and L. J. Chapman. The physiography of south-central Ontario. *Sci. Agr.* 16:457-477. 1936.
- 293 Spilsbury, R. H. A chemical examination of a degraded Glenmore clay. *Sci. Agr.* 16:233-237. 1936.

- 294 Strong, W. J. Results with fertilizers on the red raspberry. *Sci. Agr.* 16:424-439. 1936.
- 295 Taylor, C. B. Short period fluctuations in the numbers of bacterial cells in soil. *Proc. Roy. Soc., B*, 119:269-295. 1936.
- 296 Walker, K. H. Composition of some Alberta peats. *Sci. Agr.* 16:499-502. 1936.
- 297 Wilcox, J. C. Some factors involved in the colorimetric determination of the pH of soils. *Sci. Agr.* 16:225-232. 1936.
- 298 Woodford, E. K., and A. G. McCalla. The absorption of nutrients by two varieties of wheat grown on the Black and Gray soils of Alberta. *Can. J. Res., C*, 14:245-266. 1936.
- 299 Wrenshall, C. L. The condition of the phosphorus of soils. Ph.D. Thesis, McGill Univ. 1936.
- 300 Wyatt, F. A. Fertilizers for the Black and Gray soils of central Alberta. *Sci. Agr.* 16:238-240. 1936.
- 301 Wyatt, F. A., and A. Leahey. Activated carbon as a fertilizer. *Sci. Agr.* 17:1-10. 1936.
- 302 Blair, W. S. Methods of applying commercial fertilizers. *Sci. Agr.* 17:279-282. 1937.
- 303 Boone, C. S. The nature of the sulphur compounds in a Quebec peat soil. M.Sc. Thesis, McGill Univ. 1937.
- 304 Carlyle, R. E. Peat and commercial fertilizers as amendments for Gray Wooded soils. M.Sc. Thesis, Univ. Alberta. 1937.
- 305 Chapman, L. J., and D. F. Putnam. The soils of south-central Ontario. *Sci. Agr.* 18:161-197. 1937.
- 306 Clarke, G. L., F. F. Riecken, and D. H. Reynolds. X-Ray diffraction studies of clay fractions of soil profiles from Saskatchewan. *Z. Kristallogr., A*, 96:274-286. 1937.
- 307 DeLong, W. A. Calcium and boron contents of the apple fruit as related to the incidence of blotchy cork. *Plant Physiol.* 12:553-556. 1937.
- 308 Dyck, A. W. J., and R. R. McKibbin. A study of the nitrogenous fraction of soils. *Sci. Agr.* 17:318-322. 1937.

- 309 Dyer, W. J. Photoelectric colorimetry in soil extracts. M.Sc. Thesis, McGill Univ. 1937.
- 310 Hammond, H. S. The use of hydrofluoric acid in soil analysis. *Sci. Agr.* 17:323-324. 1937.
- 311 Harlow, L. C. The clay fraction of Annapolis Valley soils. *Sci. Agr.* 17:325-328. 1937.
- 312 Harris, G. H. Raspberry nutrition: III. Are sulphates deficient in B.C. coastal soils. *Sci. Agr.* 17:707-712. 1937.
- 313 Hopkins, E. S. Soil conservation programs in the United States and Canada. *Sci. Agr.* 17:265-269. 1937.
- 314 Hopkins, E. S., A. E. Palmer, and W. S. Chepil. Soil drifting control in the Prairie Provinces. *Can. Dep. Agr. Publ.* 568, *Farmers' Bull.* 32. 1937.
- 315 Ignatieff, V. Method for determining ferrous iron in soil solutions and a study of the effect of light on the reduction of iron by citrate and 2,2'-dipyridyl. *J. Soc. Chem. Ind., Trans.* J6:407410. 1937.
- 316 Katznelson, H. Bacteriophage in relation to plant disease. *Bot. Rev.* 3:499-521. 1937.
- 317 Kohnke, H. Testing the fertility of Alberta soils by the Neubauer and Lemmermann methods. *Sci. Agr.* 17:312-317. 1937.
- 318 Leahey, A. Some comments on soil surveying in Canada. *Sci. Agr.* 18:141-143. 1937.
- 319 McLarty, H. R., J. C. Wilcox, and C. G. Woodbridge. A yellowing of alfalfa due to boron deficiency. *Sci. Agr.* 17:515-517. 1937.
- 320 Mitchell, J. "Alkali" soils in Saskatchewan. *Sci. Agr.* 18:120-125. 1937.
- 321 Mitchell, J., and F. F. Riecken. The chemical nature of some typical soil profiles of Saskatchewan, Canada. *Sci. Agr.* 18:109-119. 1937.
- 322 Moss, H. C. Some observations on soil survey work in Saskatchewan. *Sci. Agr.* 18:126-131. 1937.
- 323 Palmer, A. E. Kind, position and toxicity of alkali salts in central Alberta irrigated soils, and tolerance of crops for these salts. *Sci. Agr.* 18:132-140. 1937.
- 324 Ripley, P. O., and J. M. Armstrong. Soil cultivation and tilth. *Sci. Agr.* 17:270-278. 1937.

- 325 Rowles, W., and H. L. Fletcher. Some physical properties of virgin mineral soils of Quebec. *Sci. Agr.* 17:333. 1937.
- 326 Sallans, H. R., J. M. Snell, H. W. Mackinney, and R. R. McKibbin. Water-soluble acid substances in the raw humus of Podzol soils. *Can. J. Res., B*, 15:315-320. 1937.
- 327 Steeves, A. E. The iodine content of potatoes and potato soils of the Province of Quebec. M.Sc. Thesis, McGill Univ. 1937.
- 328 Stobbe, P. C. Adaptation of apple orchards in Quebec to special soil types. *Sci. Agr.* 17:329 - 332. 1937.
- 329 Stobbe, P. C., and R. R. McKibbin. Orchard soils of the Province of Quebec. *Can. Dep. Agr. Publ.* 590, *Tech. Bull.* 11. 1937.
- 330 Taylor, C. B., and A. G. Lochhead. A study of *Bacterium globiforme* Conn in soils differing in fertility. *Can. J. Res., C*, 15:340-347. 1937.
- 331 Taylor, E. M., and J. L. Howatt. Magnesium in field crop production in New Brunswick. *Sci. Agr.* 17:294-298. 1937.
- 332 West, P. M. The influence of Wilder's bios on nodule bacteria and legumes. M.S.A. Thesis, Univ. British Columbia. 1937.
- 333 Wrenshall, C. L., and R. R. McKibbin. Pasture studies: XII. The nature of the organic phosphorus in soils. *Can. J. Res., B*, 15:475-479. 1937.
- 334 Wright, L. E. The role of elements other than nitrogen, phosphorus and potassium in crop production. *Sci. Agr.* 17:283-293. 1937.
- 335 Wright, L. E., and H. S. Hammond. Manures, fertilizers and soil amendments: their nature, function and use. *Can. Dep. Agr. Publ.* 585. 1937.
- 336 Wyatt, F. A., and J. D. Newton. Wooded soils and their management. *Univ. Alberta Coll. Agr. Bull.* 21 (2nd rev. ed.) . 1937.
- 337 Wyatt, F. A., J. D. Newton, W. E. Bowser, and W. Odynsky. Soil survey of Rainy Hills sheet. *Univ. Alberta Coll. Agr. Bull.* 28. 1937.
- 338 Atkinson, H. J. Soil solution studies. *Sci. Agr.* 19:233-235. 1938.

- 339 Atkinson, H. J., and C. H. Robinson. Soil studies of brown root rot of tobacco: I. Effect of certain crop residues on some forms of nitrogen. *Sci. Agr.* 18:685-694. 1938.
- 340 Barnes, S. Soil moisture and crop production under dry land conditions in Western Canada. *Can. Dep. Agr. Publ.* 595, *Farmers' Bull.* 46. 1938.
- 341 Caldwell, A. C. Effects of cultivation and cropping on the chemical composition of some Western Canada prairie soils. M.Sc. Thesis, Univ. Alberta. 1938.
- 342 Dyer, W. J., and W. D. McFarlane. A study of the iron in a Podzol soil by means of an improved dipyriddy method. *Can. J. Res., B*, 16:91-96. 1938.
- 343 Dyer, W. J., and C. L. Wrenshall. An improved method for the determination of phosphate by photoelectric colorimetry. *Can. J. Res., B*, 16:97-108. 1938.
- 344 Ellis, J. H. The soils of Manitoba. Economic Survey Board, Province of Manitoba. 1938.
- 345 Erdman, R. L. Effects of wind erosion on the composition and fertility of some Alberta soils. M.Sc. Thesis, Univ. Alberta. 1938.
- 346 Garrard, E. H., and A. G. Lochhead. Relationships between soil microorganisms and soil-borne plant pathogens. A review. *Sci. Agr.* 18:719-737. 1938.
- 347 Gray, P. H. H. Microbiological studies of Appalachian Podzol soils: III. Synchronous change of bacterial numbers in two field soils. *Can. J. Res., C*, 16:145-151. 1938.
- 348 Haslam, R. J. Practicability of rapid soil tests in tobacco production. *Sci. Agr.* 19:33-41. 1938.
- 349 Hopkins, E. S., A. E. Palmer, and W. S. Chepil. Soil drifting control in the Prairie Provinces. *Can. Dep. Agr. Publ.* 568, *Farmers' Bull.* 32. 1938.
- 350 Hopkins, J. W. Influence of air temperature and soil moisture subsequent to flowering on the nitrogen content of wheat. *Can. J. Res., C*, 16:135-142. 1938.
- 351 Horton, H. A. Magnesium relations in New Belt tobacco soils. *The Lighter* 8(2): 11-15. 1938.
- 352 Lochhead, A. G., and C. B. Taylor. Qualitative studies of soil microorganisms: I. General introduction. *Can. J. Res., C*, 16:152-161. 1938.

- 353 MacGregor, J. M. Morphological Solonetz soils of Alberta. M.Sc. Thesis, Univ. Alberta. 1938.
- 354 Malowany, S. N. Studies on steam sterilization of soils: I. Some effects on physical, chemical and biological properties. M.Sc. Thesis, Univ. Alberta. 1938.
- 355 Moss, H. C. The morphology and composition of Saskatchewan podzolic soils. Sci. Agr. 18:708718. 1938.
- 356 Motzok, I. Fundamental studies of the Neubauer plant seedling method for the determination of the root-soluble phosphorus in soils. Sci. Agr. 19:221-232. 1938.
- 357 Rivaz, C. P. Application of the Neubauer rye seedling method of soil analysis to fertility studies in Ontario. Sci. Agr. 19:210-220. 1938.
- 358 Rowles, C. A. Effects of fertilizers on alfalfa yields on Wooded soils of Saskatchewan and related investigation on Black, Degraded Black and Gray soils. M.Sc. Thesis, Univ. Saskatchewan. 1938.
- 359 Rowles, W. Physical properties of mineral soils of Quebec: I. Cultivated soils. Can. J. Res., C, 16:277-287. 1938.
- 360 Rowles, W. Physical properties of mineral soils of Quebec: II. Virgin soils. Can. J. Res., C, 16:288-304. 1938.
- 361 Ruhnke, G. N., C. P. Rivaz, and W. T. Ewen. A comparative study of rapid chemical tests and Neubauer analyses on some typical southern Ontario soils. Sci. Agr. 19:199-209. 1938.
- 362 Sackville, E. C. The improvement of burnout lands in southern Saskatchewan. Can. Dep. Agr. Publ. 600, Farmers' Bull. 50. 1938.
- 363 Sanford, A. B. Studies on *Rhizoctonia solani* Kuhn. IV. Effect of soil temperature and moisture on virulence. Can. J. Res., C, 16:203-213. 1938.
- 364 Scott, A. Investigation of Quebec potato soils. Bonne Terre 19:31-53. 1937-38.
- 365 Stalwick, A. Comparative physical and chemical studies on some solonetz and non-solonetz soils of Saskatchewan. M.Sc. Thesis, Univ. Saskatchewan. 1938.
- 366 Sutherland, M. L., and N. James. The accuracy of the plate count of suspensions of pure cultures of bacteria in sterile soil. Can. J. Res., C, 16:305-312. 1938.

- 367 Taylor, C. B. Further studies of *Bacterium globiforme* and the incidence of this type of organism in Canadian soils. *Soil Sci.* 46:307 - 322. 1938.
- 368 Taylor, C. B., and A. G. Lochhead. Qualitative studies of soil microorganisms: II. A survey of the bacterial flora of soils differing in fertility. *Can. J. Res., C*, 16:162-173. 1938.
- 369 Tinline, M. J., and D. A. Brown. The summerfallow in Manitoba. *Can. Dep. Agr. Publ.* 620, *Farmers' Bull.* 62. 1938.
- 370 Vandecaveye, S. C., and H. Katznelson. Microbial activities in soil: IV. Microflora of different zonal soil types developed under similar climatic conditions. *Soil Sci.* 46:57-74. 1938.
- 371 Vandecaveye, S. C., and H. Katznelson. Microbial activities in soil: V. Microbial activity and organic matter transformations in Palouse and Helmer soils. *Soil Sci.* 46:139-168. 1938.
- 372 Wilcox, J. C. Effect of some field plot treatments on drought spot and corky core of the apple. *Sci. Agr*, 18:300-314. 1938.
- 373 Wrenshall, C. L. Applications of the photoelectric colorimeter to soil analysis. *Sci. Agr.* 19:236 - 239. 1938.
- 374 Wrenshall, C. L., and R. R. McKibbin. Pasture studies: XIII. The utilization of native and applied phosphorus by pasture crops. *Sci. Agr.* 18:606-619. 1938.
- 375 Wyatt, F. A., J. D. Newton, W. E. Bowser, and W. Odynsky. Soil survey of Sullivan Lake sheet. *Univ. Alberta Coll. Agr. Bull.* 31. 1938.
- 376 Albright, W. D. The menace of water erosion in the Peace. *Sci. Agr.* 19:241-248. 1939.
- 377 Baril, R. Some of the morphological, physical and chemical characteristics of a virgin and cultivated Lordstown gravelly silt loam. M.Sc. Thesis, Cornell Univ. 1939.
- 378 Blair, W. S., and J. S. Leefe. Influence of lime in crop rotation with a note on the occurrence of boron deficiency in mangels. *Sci. Agr.* 19:330 - 343. 1939.
- 379 Byers, H. G., and H. W. Lakin. Selenium in Canada. *Can. J. Res., B*, 17:364-369. 1939.

- 380 Caldwell, A. C., F. A. Wyatt, and J. D. Newton. Effects of cultivation and cropping on the chemical composition of some Western Canada prairie soils. *Sci. Agr.* 19:258-270. 1939.
- 381 Chepil, W. S., and R. A. Milne. Comparative study of soil drifting in the field and in a wind tunnel. *Sci. Agr.* 19:249-257. 1939.
- 382 DeLong, W. A. Some observations on the work of the Macdonald College soil fertility committee. *Sci. Agr.* 19:315-321. 1939.
- 383 Ellis, J. H., and J. A. Hobbs. Report of the reconnaissance soil survey, municipality of Armstrong, Manitoba. *Man. Soil Surv.* 1939.
- 384 Feustel, I. C., A. Dutilly, and M. S. Anderson. Properties of soils from North American Arctic regions. *Soil Sci.* 48:199. 1939.
- 385 Gray, P. H. H. A cellulose-decomposing vibrio that produces glucose from starch. *Soil Sci. Soc. Amer. Proc.* 4:246-247. 1939.
- 386 Gray, P. H. H. "*Vibrio Amylocella* n. sp.," a soil organism that decomposes cellulose and produces glucose from starch. *Can. J. Res., C*, 17:154 - 169. 1939.
- 387 Gray, P. H. H., and C. B. Taylor. The aerobic decomposition of glucose in Podzol soils. *Can. J. Res., C*, 17:109-124. 1939.
- 388 Gray, P. H. H., and C. B. Taylor. Microbiological studies of Appalachian Podzol soils: IV. The decomposition of glucose in soils previously treated with amendments. *Can. J. Res., C*, 17:147 - 153. 1939.
- 389 Horton, H. A., and F. A. Stinson. Investigations in sampling soils previously fertilized for flue-cured tobacco. *Sci. Agr.* 19:616-621. 1939.
- 390 Ignatieff, V. Ferrous iron in soils. *Nature (London)* 143:562-563. 1939.
- 391 James, N., and M. L. Sutherland. The accuracy of the plating method for estimating the numbers of soil bacteria, actinomycetes and fungi in the dilution plated. *Can. J. Res., C*, 17:72-86. 1939.
- 392 James, N., and M. L. Sutherland. The accuracy of the plating method for estimating the numbers of bacteria and fungi from one dilution and from one aliquot of a laboratory sample of soil. *Can. J. Res., C*, 17:97-108. 1939.
- 393 Katz, M., F. A. Wyatt, and H. J. Atkinson. The hydrogen-ion concentration, base exchange capacity and sulphate content of soils. Effect of sulphur dioxide on

vegetation. (Prepared for the Associate Committee on Trail Smelter Smoke of the National Research Council, Ottawa). Nat. Res. Counc. Can. 815:131-164. 1939.

- 394 Katznelson, H. Bacteriophage and the legume bacteria. Trans. 3rd Comm. Int. Soc. Soil Sci. A:43-48. 1939.
- 395 Katznelson, H. Bacteriophage and the legume bacteria. Soil Sci. Soc. Amer. Proc. 4:226. 1939.
- 396 Kelley, C. C., and R. H. Spilsbury. Soil survey of the Lower Fraser Valley. Can. Dep. Agr. Publ. 650, Tech. Bull. 20. 1939.
- 397 Larson, H. W. E., and J. Mitchell. The nitrate and moisture content of soil under various crops and treatments at Saskatoon, Saskatchewan. Sci. Agr. 19:279-290. 1939.
- 398 Lochhead, A. G. The qualitative nature of the bacterial soil flora with special relation to productivity and the rhizosphere. Soil Sci. Soc. Amer. Proc. 4:241. 1939.
- 399 Marshall, J. B., and A. E. Palmer. Changes in the nature and position of the soluble salts in certain Alberta soils after twenty years of irrigation. Sci. Agr. 19:271-278. 1939.
- 400 McPhee, K. G., N. T. Nelson, and G. N. Ruhnke. Potassium studies in Ontario flue-cured tobacco soils. Sci. Agr. 19:304-314. 1939.
- 401 Morwick, F. F., and T. J. Heeg. The relationship of certain chemical characteristics to the geological origin of some southern Ontario soils. Sci. Agr. 19:291-303. 1939.
- 402 Moss, H. C. Soil surveys of Saskatchewan irrigation projects. Sci. Agr. 20:170-174. 1939.
- 403 Newton, J. D., F. A. Wyatt, V. Ignatieff, and A. S. Ward. Nitrification under and after alfalfa, brome, timothy and western ryegrass: II. Soil microbiological activity. Can. J. Res., C, 17:256 - 293. 1939.
- 404 Newton, R., R. S. Young, and J. G. Malloch. Nitrification under and after alfalfa, brome, timothy and western ryegrass: I. Nitrogen absorption of hay crops and succeeding wheat crops. Can. J. Res., C, 17:212-231. 1939.

- 405 Palmer, A. E. Use of irrigation water on farm crops. Can. Dep. Agr. Publ. 509, Farmers' Bull. 10. 1939.
- 406 Rivaz, C. P., and G. C. McLaren. Standardization of rapid soil-testing technique. Sci. Agr. 20:120- 130. 1939.
- 407 Salisbury, H. F. The organic fraction of some Quebec soils. M.Sc. Thesis, McGill Univ. 1939.
- 408 Smith, G. R. The fractionation of soil phosphorus. Ph.D. Thesis, McGill Univ. 1939.
- 409 Smith, G. R., W. J. Dyer, C. L. Wrenshall, and W. A. DeLong. Further observations on the determination of phosphate by photoelectric colorimetry. Can. J. Res., B, 17:178-191. 1939.
- 410 Timonin, M. I. the interaction of higher plants and soil microorganisms. Ph.D. Thesis, Rutgers Univ. 1939.
- 411 West, P. M. Excretion of thiamin and biotin by the roots of higher plants. Nature (London) 144:1050-1051. 1939.
- 412 Wilcox, J. C. Soil moisture studies: I. Some factors affecting the moisture-holding capacity and its determination. Sci. Agr. 20:140-149. 1939.
- 413 Wrenshall, C. L., and W. J. Dyer. A method for the determination of organic phosphorus in soils and soil extracts. Can. J. Res., B, 17:199-205.1939.
- 414 Wright, L. E., J. C. Woodward, and C. H. Robinson. Mineral composition of soils and forage crops in Eastern Canada: I. Timothy hay and oat straw. Sci. Agr. 19:673-686. 1939.
- 415 Wyatt, F. A., W. E. Bowser, and W. Odynsky. Soil survey of Lethbridge and Pincher Creek sheets. Univ. Alberta Coll. Agr. Bull. 32. 1939.
- 416 Wyatt, F. A., J. D. Newton, and V. Ignatieff. The use of fertilizers in Alberta. Univ. Alberta Coll. Agr. Circ. 23. 1939.
- 417 Bowser, W. E. Soil surveys in relation to land classification in Alberta. Sci. Agr. 20:285-290. 1940.
- 418 Cann, D. B. The acid solubility of the inorganic phosphate of Quebec soils. M.Sc. Thesis, McGill Univ. 1940.

- 419 Chapman, L. J., and D. F. Putnam. The physiography of eastern Ontario. *Sci. Agr.* 20:424-441. 1940.
- 420 DeLong, W. A., A. J. Sutherland, and P. L. Archer. Observations on the easily-soluble phosphorus in a soil of the Appalachian upland podzolized type. *Sci. Agr.* 21:92-102. 1940.
- 421 DeLong, W. A., A. J. Sutherland, and H. F. Salisbury. Seasonal changes in easily-soluble manganese in Appalachian Podzol soil. *Sci. Agr.* 21:89-91. 1940.
- 422 Doughty, J. L., and A. E. Stalwick. The effect of alkali salts on plant growth. *Sci. Agr.* 20:272- 276. 1940.
- 423 Dyer, W. J. Chemical composition and biological behavior of soil organic phosphorus. Ph.D. Thesis, McGill Univ. 1940.
- 424 Dyer, W. J., C. L. Wrenshall, and G. R. Smith. The isolation of phytin from soil. *Science* 91:319-320. 1940.
- 425 Ellis, J. H., and W. H. Shafer. Reconnaissance soil survey, south-western Manitoba. *Man. Soil Surv. Rep. No. 3.* 1940.
- 426 Ferguson, W., and L. E. Wright. Microelement studies with special reference to the element boron. *Sci. Agr.* 20:470-486. 1940.
- 427 Hill, H., and F. B. Johnston. Magnesium deficiency of apple trees in sand culture and in commercial orchards. *Sci. Agr.* 20:516-525. 1940.
- 428 Hobbs, J. A. The organic matter in certain Manitoba soils. M.Sc. Thesis, Univ. Manitoba. 1940.
- 429 Hopkins, J. W. Agricultural meteorology: A statistical study of conservation of precipitation by summerfallowed tanks at Swift Current, Saskatchewan. *Can. J. Res., C*, 18:388-400. 1940.
- 430 James, N., and M. L. Sutherland. Effect of numbers of colonies per plate on the estimate of the bacterial population in soil. *Can. J. Res., C*, 18:347-356. 1940.
- 431 James, N., and M. L. Sutherland. Fluctuations in numbers of bacteria in soil. *Can. J. Res., C*, 18:435-443. 1940.
- 432 Katznelson, H. Survival of azotobacter in soil. *Soil Sci.* 49:21-36. 1940.

- 433 Katznelson, H. Autolysis of a thermophilic actinomyces. *Soil Sci.* 49:83-94. 1940.
- 434 Katznelson, H. Survival of microorganisms inoculated into sterilized soil. *Soil Sci.* 49:211-218. 1940.
- 435 Katznelson, H. Survival of microorganisms introduced into soil. *Soil Sci.* 49:283-294. 1940.
- 436 Kelley, C. C. The nature of soil parent materials in southern British Columbia. *Sci. Agr.* 20:301 - 307. 1940.
- 437 Laird, D. G. Differentiation of forest and agricultural lands. *Sci. Agr.* 20:291-296. 1940.
- 438 Leahey, A. Coordinating soil surveys. *Can. Soc. Tech. Agr. Rev.* 27:17-18. 1940.
- 439 Lochhead, A. G. Qualitative studies of soil microorganisms: III. Influence of plant growth on the character of the bacterial flora. *Can. J. Res., C*, 18:42-53. 1940.
- 440 Lochhead, A. G., M. I. Timonin, and P. M. West. The microflora of the rhizosphere in relation to resistance of plants to soil-borne pathogens. *Sci. Agr.* 20:414-418. 1940.
- 441 Malloch, J. G., and R. S. Young. Nitrification under and after alfalfa, brome, timothy and western ryegrass: IV. Oxidation-reduction potentials and carbon dioxide production. *Can. J. Res., C*, 18:142-150. 1940.
- 442 Marcello, L. S. The availability and fixation of potassium in pasture soils; the availability, penetration and fixation of potassium in the soil and the relationship of potassium to pasture plant species. M.Sc. Thesis, McGill Univ. 1940.
- 443 Matthews, G. D. Snow utilization in prairie agriculture. *Can. Dep. Agr. Publ.* 696, *Farmers' Bull.* 95. 1940.
- 444 Mitchell, J. A method for obtaining a comparative rating of Saskatchewan soils. *Sci. Agr.* 20:281 - 284. 1940.
- 445 Moss, H. C. Use of the Brunton compass in the Saskatchewan soil survey. *Sci. Agr.* 20:277-280. 1940.
- 446 Neatby, K. W. Water erosion of soils in the Prairie Provinces. North-west Line Elevators Ass., Winnipeg, *Dep. Agr. Bull.* 1. 1940.

- 447 Newton, R., and R. S. Young. Nitrification under and after alfalfa, brome, timothy and western ryegrass: V. Biological assays of hay crop residues. *Can. J. Res., C*, 18:374-387. 1940.
- 448 Reid, E. C. Influence of a paper mulch on a clay soil. M.S.A. Thesis, Univ. British Columbia. 1940.
- 449 Richards, G. Microbiological activity and the effect of fertilizers on reaction of wheat to *Ophiobolus graminis* in unsterilized and re-contaminated sterilized soil. M.Sc. Thesis, Univ Alberta. 1940.
- 450 Rost, C. O., and C. A. Rowles. A study of factors affecting the stability of soil aggregates. *Soil Sci. Soc. Amer. Proc.* 5:421-433. 1940.
- 451 Salisbury, H. F., and W. A. DeLong. A comparison of the organic matter of uncultivated and cultivated Appalachian upland Podzol soils. *Sci. Agr.* 21:121-132. 1940.
- 452 Sanford, G. B., and M. W. Cormack. Variability in association effects of other soil fungi on the virulence of *Helminthosporium sativum* on wheat seedlings. *Can. J. Res., C*, 18:562-565. 1940.
- 453 Scott, A., and J. E. Thériault. Les sols de la region de Joliette. Que. Dep. Agr. Publ. 1940.
- 454 Spilsbury, R. H. A method for taking soil monoliths *Sci. Agr.* 20:297-300. 1940.
- 455 Staple, W. J., and J. J. Lehane. The response of the Livingstone atmometer to single meteorological factors. *Sci. Agr.* 20:308-310. 1940.
- 456 Stobbe, P. C. Soil survey of the Fredericton-Gagetown area, New Brunswick. Can. Dep. Agr. Publ. 709, Tech. Bull. 30, N.B. Soil Surv. Rep. 1. 1940.
- 457 Thorvaldson, T., and L. R. Johnson. The selenium content of Saskatchewan wheat. *Can. J. Res., B*, 18:138-150. 1940.
- 458 Timonin, M. I. The interaction of higher plants and soil microorganisms: I. Microbial population of rhizosphere of seedlings of certain cultivated plants. *Can. J. Res., C*, 18:307-317. 1940.
- 459 Timonin, M. I. The interaction of higher plants and soil microorganisms: II. Study of the microbial population of the rhizosphere in relation to resistance of plants to soil-borne diseases. *Can. J. Res., C*, 18:444-456. 1940.

- 460 Tobacco Div., Exp. Farms Serv. Tobacco soils and fertilizers. Can. Dep. Agr. Publ. 703, Circ. 167. 1940.
- 461 Vandecaveye, S. C., W. H. Fuller, and H. Katznelson. Bacteriophage of *Rhizobia* in relation to symbiotic nitrogen fixation by alfalfa. Soil Sci. 50:1528. 1940.
- 462 Vandecaveye, S. C., and H. Katznelson. Microbial activities in soil. VI. Microbial numbers and nature of organic matter in various genetic soil types. Soil Sci. 50:295-312. 1940.
- 463 Vanterpool, T. C. Browning root rot of cereals. VI. The effect's of various soil amendments on the incidence of the disease in wheat. Can. J Res., C, 18:240-257. 1940.
- 464 West, P. M., and A. G. Lochhead. Qualitative studies of soil microorganisms: IV. The rhizosphere in relation to the nutritive requirements of soil bacteria. Can. J. Res., C, 18:129-135. 1940.
- 465 West, P. M., and A. G. Lochhead. The nutritional requirements of soil bacteria: a basis for determining the bacterial equilibrium of soils. Soil Sci. 50:409-420. 1940.
- 466 Wicklund, R. E. Relation between the yield of corn on the Webster series to their content of carbonates. M.Sc. Thesis, Univ. Minnesota. 1940.
- 467 Wilcox, J. C. Soil moisture studies: I. Some factors affecting the moisture-holding capacity and its determination. Sci. Agr. 20:140-149. 1940.
- 468 Woodbridge, C. G. The boron content of some Okanagan soils. Sci. Agr. 20:257-265. 1940.
- 469 Wrenshall, C. L., W. J. Dyer, and G. R. Smith. Recent studies on the nature of soil organic phosphorus. Sci. Agr. 20:266-271. 1940.
- 470 Wright, L. E., H. S. Hammond, P. O. Ripley, M. B. Davis, and N. T. Nelson. Manures, fertilizers and soil amendments -- their nature, function and use. Can. Dep. Agr. Publ. 585. Revised. 1940.
- 471 Atkinson, H. J. Invertase in plants as a measure of available soil nitrogen. Sci. Agr. 21:508 - 514. 1941.
- 472 Bentley, C. F. The fertilization requirements of Alberta peats for barley production. M.Sc. Thesis, Univ. Alberta. 1941.

- 473 Bradt, O. A., and G. H. Dickson. Some factors affecting the nitrate content of an orchard soil. *Sci. Agr.* 22:61-67. 1941.
- 474 Brown, A. L. The chemical composition of western prairie soils as affected by cultivation and cropping. M.Sc. Thesis, Univ. Alberta. 1941.
- 475 Chepil, W. S. Relation of wind erosion to the dry aggregate structure of a soil. *Sci. Agr.* 21:488 - 507. 1941.
- 476 Chepil, W. S., and R. A. Milne. Wind erosion of soils in relation to size and nature of the exposed area. *Sci. Agr.* 21:479-487. 1941.
- 477 Chepil, W. S., and R. A. Milne. Wind erosion of soil in relation to roughness of surface. *Soil Sci.* 52:417-434. 1941.
- 478 Doughty, J. L. The advantages of a soil paste for routine pH determination. *Sci. Agr.* 22:135-138. 1941.
- 479 Doughty, J. L. The rate of decomposition of plant roots. *Sci. Agr.* 21:429-432. 1941.
- 480 Dyer, W. J., and C. L. Wrenshall. Organic phosphorus in soils: I. The extraction and separation of organic phosphorus compounds from soil. *Soil Sci.* 51:159-170. 1941.
- 481 Dyer, W. J., and C. L. Wrenshall. Organic phosphorus in soils: III. The decomposition of some organic phosphorus compounds in soil cultures. *Soil Sci.* 51:323-329. 1941.
- 482 Hicks, W. O. The influence of iron on the metabolism of the actinomycetes. M.S.A. Thesis, Univ. British Columbia. 1941.
- 483 Hildebrand, A. A., and P. M. West. Strawberry root rot in relation to microbiological changes induced in rootrot soil by the incorporation of certain cover crops. *Can. J. Res., C*, 19:183-198. 1941.
- 484 Holtby, R. A. The effects of cultivation, grasses and organic matter on the structure of some Saskatchewan soils. M.Sc. Thesis, Univ. Saskatchewan. 1941.
- 485 Hutcheon, W. L. The relation of clay and organic matter to soil moisture equilibrium points. M.Sc. Thesis, Univ. Saskatchewan. 1941.
- 486 Ignatieff, V. Determination and behaviour of ferrous iron in soils. *Soil Sci.* 51:249-264. 1941.

- 487 Janzen, W. K. A comparative study of the physical and chemical properties of Saskatchewan solonchic and podzolic soils, with particular reference to their clay fractions. M.S.A. Thesis, Univ. Saskatchewan. 1941.
- 488 Katznelson, H., and J. K. Wilson. Occurrence of *Rhizobium meliloti* bacteriophage in soils. Soil Sci. 51:59-64. 1941.
- 489 Leahey, A. The major soil zones in Canada. Trans. Can. Conserv. Ass. 1st Annu. Meet. p. 40-50. 1941.
- 490 Leverin, H. A. Peat moss deposits in Eastern Canada. Bur. Mines, Dep. Mines and Resources, Mem. Ser. 80. 1941.
- 491 Lochhead, A. G. The concept of bacterial equilibrium in soil and its possible application to soil problems. Can. Pub. Health J. 32:80-81. 1941.
- 492 MacIsaac, F. M., and W. G. McGregor. The effect of ammonium phosphate on the yield and quality of linseed flax in northern Saskatchewan and north-eastern Alberta. Sci. Agr. 22:195-200. 1941
- 493 MacLachlan, J. D. Manganese deficiency in soils and crops: I. Control in oats by spraying; studies of the role of soil micro-organisms. Sci. Agr. 22:201-207. 1941.
- 494 Morwick, F. F., and C. P. Rivaz. A soil fertility survey by rapid chemical tests. Sci. Agr. 21:433 - 439. 1941.
- 495 Ripley, P. O. The influence of crops upon those which follow. Sci. Agr. 21:522-583. 1941.
- 496 Sanford, G. B. Studies on *Rhizoctonia solani* Kuhn: V. Virulence in steam sterilized and natural soil. Can. J. Res., C, 19:1-8. 1941.
- 497 Sowden, F. J. The availability of potassium in alkaline calcareous soils. M.S.A. Thesis, Univ. Toronto. 1941.
- 498 Spence, C. C., and E. C. Hope. An economic classification of land (in 46 municipal divisions, south central Saskatchewan). Can. Dep. Agr. Publ. 728, Tech. Bull. 36. 1941.
- 499 Staple, W. J., and J. J. Lehane. The use of the wilting coefficient in soil moisture studies in southwestern Saskatchewan. Sci. Agr. 21:440-447. 1941.

- 500 Stinson, F. A. Decomposition of organic matter in flue-cured tobacco soils. *The Lighter* 11(2):18- 19. 1941.
- 501 Thériault, J. E., L. Choinière, et A. Mailloux. Les sols du Comté de Bellechasse. *Que. Soil Surv. Rep. ca.* 1941.
- 502 Timonin, M. I. The interaction of higher plants and soil microorganisms: III. Effect of by-products of plant growth on activity of fungi and actinomycetes. *Soil Sci.* 52:395-414. 1941.
- 503 Timonin, M. I. Microbiological activity as influenced by root excretions. *Chron. Bot.* 6:440. 1941.
- 504 Walker, O. J., W. E. Harris, and M. Rossi. Selenium in soils, grains and plants in Alberta. *Can. J. Res., B*, 19:173-178. 1941.
- 505 West, P. M., and A. A. Hildebrand. The microbiological balance of strawberry root rot soil as related to the rhizosphere and decomposition effects of certain cover crops. *Can. J. Res., C*, 19:199-210. 1941.
- 506 Wilcox, J. C., and R. H. Spilsbury. Soil moisture studies: II. Some relationships between moisture measurements and mechanical analysis. *Sci. Agr.* 21:459-472. 1941.
- 507 Wilcox, J. C., and R. H. Spilsbury. Soil moisture studies: III. An application of soil moisture measurements to soils classification. *Sci. Agr.* 21:473-478. 1941.
- 508 Wrenshall, C. L., and W. J. Dyer. Organic phosphorus in soils: II. The nature of the organic phosphorus compounds. A. Nucleic acid derivatives. B. Phytin. *Soil Sci.* 51:235-248. 1941.
- 509 Wrenshall, C. L., and L. S. Marcello. Pasture studies: XVIII. The availability, utilization and fixation of potassium applied to permanent pastures. *Sci. Agr.* 21:448-458. 1941.
- 510 Wyatt, F. A., J. D. Newton, W. E. Bowser, and W. Odynsky. Soil survey of Milk River sheet. *Univ. Alberta Coll. Agr. Bull.* 36. 1941.
- 511 Wyatt, F. A., J. D. Newton, and V. Ignatieff. Wooded soils and their management. *Univ. Alberta Coll. Agr. Bull.* 21. 3rd ed. rev. 1941.
- 512 Atkinson, H. J., and L. E. Wright. Studies on some raspberry soils of British Columbia. *Sci. Agr.* 22:287-297. 1942.

- 513 Bowser, W. E. Mechanical composition of some characteristic soil profiles from southern Alberta. *Sci. Agr.* 22:341-346. 1942.
- 514 Brown, A. L., F. A. Wyatt, and J. D. Newton. Effects of cultivation and cropping on the chemical composition of some Western Canada prairie soils: II. *Sci. Agr.* 23:229-232. 1942.
- 515 Cann, D. B., and P. Lajoie. Soil survey of Stanstead, Richmond, Sherbrooke and Compton Counties in the Province of Quebec. *Can. Dep. Agr. Publ. 742, Tech. Bull.* 45. 1942.
- 516 Carlyle, R. E., and J. D. Newton. Peat and commercial fertilizers as amendments for Gray wooded soils. *Can. J. Res., C*, 20:68-84. 1942.
- 517 Chapman, L. J., and D. F. Putnam. The soils of eastern Ontario. *Sci. Agr.* 22:608-636. 1942.
- 518 Chepil, W. S. Measurement of wind erosiveness of soils by dry sieving procedure. *Sci. Agr.* 23:154 - 160. 1942.
- 519 Choinière, L. Détermination du magnésium échangeable dans les sols par la 8-hydroxyquinoléine. M.Sc. Thesis, Laval Univ. 1942.
- 520 Clark, J. A. Prince Edward Island soils and control methods for soil erosion. *Sci. Agr.* 23:223-228. 1942.
- 521 Dickson, W. Some aspects of soil erosion in Eastern Canada. *Sci. Agr.* 23:220-222. 1942.
- 522 Dion, H. G. Free iron oxides of soils: Amounts, nature, removal and influence on base exchange. Ph.D. Thesis, Univ. Wisconsin. 1942.
- 523 Doughty, J. L., and F. G. Warder. The accumulation of nitrates in oat straw. *Sci. Agr.* 23:233-236. 1942.
- 524 Ellis, J. H. Report on the effect of certain cultural and fertility practices on the protein content of wheat. *Sci. Agr.* 23:474-495. 1942.
- 525 Erdman, R. L. Effect of wind erosion on the composition and fertility of some Alberta soils. *Sci. Agr.* 22:533-545. 1942.
- 526 Evans, J. H., J. E. Blakeman, and J. H. Ellis. Fertilizer, manure and management practices. *Manitoba Dep. Agr. and Immig. Publ.* 176. 1942.

- 527 Horton, H. A. The relation of soil organic matter to the production of flue-cured tobacco. *Sci. Agr.* 22:546-551. 1942.
- 528 Hutcheon, W. L. The relation of clay and organic matter to soil moisture equilibrium points. *Sci. Agr.* 23:4-16. 1942.
- 529 James, N., and M. L. Sutherland. Are there living bacteria in permanently frozen subsoil? *Can. J. Res., C*, 20:228-235. 1942.
- 530 James, N., and M. L. Sutherland. Individual plot studies of variation in numbers of bacteria in soil: I. Response to cropping. *Can. J. Res., C*, 20:435-443. 1942.
- 531 James, N., and M. L. Sutherland. Individual plot studies of variation in numbers of bacteria in soil: II. The errors of the procedure. *Can. J. Res., C*, 20:444-456. 1942.
- 532 Jones, T. H., R. Goodwin-Wilson, and J. H. L. Truscott. The value of soil analyses as an aid in truck crop production in Ontario. *Ont. Dep. Agr. Bull.* 421. 1942.
- 533 Lajoie, J. G. P. Acid-oxalate extracts of some podzolic soils. M.Sc. Thesis, McGill Univ. 1942.
- 534 Lochhead, A. G., and F. E. Chase. Bacterial growth factors in soil. *Science* 96:387. 1942.
- 535 Low, F. The composition of some Alberta irrigation waters and their effects on the soils. M.Sc. Thesis, Univ. Alberta. 1942.
- 536 MacLean, A. J. Chemical studies in soil variability. M.Sc. Thesis, McGill Univ. 1942.
- 537 Marshall, J. B. Some observations on the tolerance of salinity by cereal crops in Saskatchewan. *Sci. Agr.* 22:492-502. 1942.
- 538 Mitchell, J., and H. C. Moss. Problems of land settlement in Saskatchewan. *Sci. Agr.* 23:195 - 199. 1942.
- 539 Mitchell, J., H. C. Moss, and F. F. Riecken. Soil survey of Mortlach - Chaplin - Lake Johnstone area. *Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No.* 11. 1942.
- 540 Nowosad, F. S., J. C. Woodward, and L. E. Wright. The effect of fertilizer treatments on the yield and chemical composition of pasture species. *Sci. Agr.* 22:733-745. 1942.

- 541 Pavlychenko, T. K. Root systems of certain forage crops in relation to the management of agricultural soils. Nat. Res. Counc. Can. Publ. 1088. 1942.
- 542 Peters, T. W. The effect of fertilizers on the sulphur content of soil and crop plants. M.Sc. Thesis, Univ. Alberta. 1942.
- 543 Richards, N. R., and F. F. Morwick. Soil erosion and land use survey -- Hope Township Project Area, Durham Co., Ontario. Ont. Agr. Coll. Publ. Processed. 1942.
- 544 Ripley, P. O., J. M. Armstrong, and W. Kalbfleisch. Land clearing. Can. Dep. Agr. Publ. 739, Farmers' Bull. 111. 1942.
- 545 Shuh, J. E. Quebec pasture studies: I. Fertility studies with the Greensboro loam soil. M.Sc. Thesis, McGill Univ. 1942.
- 546 Stewart, A., and W. D. Porter. Land use classification in the special areas of Alberta (Rosenheim and Acadia Valley). Can. Dep. Agr. Publ. 731, Tech. Bull. 39. 1942.
- 547 Warder, F. G. The nature of the clay minerals in some Saskatchewan soils. M.Sc. Thesis, Univ. Saskatchewan. 1942.
- 548 Woods, J. J. The effect of green crops and manurial treatments in raspberries. Sci. Agr. 23:247-250. 1942.
- 549 Wyatt, F. A., J. D. Newton, W. E. Bowser, and W. Odynsky. Soil survey of Blackfoot and Calgary sheets. Univ. Alberta Coll. Agr. Bull. 39. 1942.
- 550 Alarie, A. M. Nitrification and nitrifying organisms in some Quebec soils. M.Sc. Thesis, McGill Univ. 1943.
- 551 Atkinson, H. J. Soil colloids. Sci. Agr. 23:273 - 286. 1943.
- 552 Chapman, L. J., and D. F. Putnam. The physiography of southwestern Ontario. Sci. Agr. 24:101-125. 1943.
- 553 Chepil, W. S. Relation of wind erosion to the water-stable and dry clod structure of soil. Soil Sci. 55:275-287. 1943.
- 554 Chepil, W. S., and F. Bisai. A rotary sieve method for determining the size distribution of soil clods. Soil Sci. 56:95-100. 1943.
- 555 Ellis, J. H., and W. H. Shafer. Report of reconnaissance soil survey of south-central Manitoba. Manitoba Soil Surv. Rep. No. 4. 1943.

- 556 Godbout, G., and A. Scott. L'indicateur Pilote -- a new rapid chemical soil test. *Sci. Agr.* 23:461-473. 1943.
- 557 Harlow, L. C., and G. B. Whiteside. Soil survey of the Annapolis Valley fruit growing area. *Nova Scotia Surv. Rep. No. 1, Can. Dep. Agr. Publ. 752, Tech. Bull. 47.* 1943.
- 558 Harris, G. H. Some effects of micro-elements on growth and storage of carrots and turnips. *Proc. Amer. Soc. Hort. Sci.* 43:219-224. 1943.
- 559 James, N., and M. L. Sutherland. Variation in numbers of bacteria in two plots. *Can. J. Res., C*, 21:119-133. 1943.
- 560 James, N., and M. L. Sutherland. Numbers of bacteria developing on plates in relation to soil environment. *Can. J. Res., C*, 21:191-197. 1943.
- 561 Katznelson, H., and L. T. Richardson. The microflora of the rhizosphere of tomato plants in relation to soil sterilization. *Can. J. Res., C*, 21:249 - 255. 1943.
- 562 Leahey, A. An exploratory survey along the Alaska Highway and Yukon River system. *Exp. Farms Serv. Rep.* 1943.
- 563 Lehane, J. J., and W. J. Staple. The effect of crested wheat grass on some physical and chemical characteristics of the soil. *Sci. Agr.* 23:509 - 517. 1943.
- 564 Leverin, H. A. Peat moss or sphagnum moss. Its use in agriculture, in industry and in the home. *Bur. of Mines, Can. Dep. Mines and Resources, Bull. 809.* 1943.
- 565 Lochhead, A. G., and F. E. Chase. Qualitative studies of soil microorganisms: V. Nutritional requirements of the predominant bacterial flora. *Soil Sci.* 55:185-195. 1943.
- 566 Ludwig, R. A., and A. W. Henry. Studies on the microbiology of re-contaminated sterilized soil in relation to its infestation with *Ophiobolus graminis* Sacc. *Can. J. Res., C*, 21:343-350. 1943.
- 567 MacLachlan, J. D. Manganese deficiency in soils and crops: II. The use of various compounds to control manganese deficiency in oats. *Sci. Agr.* 24:86-94. 1943.
- 568 Richard, A. The nature of podzolization. Ph.D. Thesis, McGill Univ. 1943.
- 569 Richard, J. A., and R. F. Chandler, Jr. Some physical and chemical properties of mature Podzol profiles. *Soil Sci. Soc. Amer. Proc.* 8:379-383. 1943.

- 570 Schroer, F. W. An examination of several methods of determining organic carbon and organic matter in Saskatchewan soils. M.Sc. Thesis, Univ. Saskatchewan. 1943.
- 571 Stobbe, P. C., and A. Leahey. Guide for the selection of agricultural soils. Can. Dep. Agr. Publ. 748, Farmers' Bull. 117. 1943.
- 572 Wright, L. E., A. Leahey, and R. C. Turner. The utilization of phosphatic open-hearth slag: II. The availability of phosphoric acid as measured by yield and phosphorus recovery in barley and clover. J. Soc. Chem. Ind. 62:28-31. 1943.
- 573 Wyatt, F. A., J. D. Newton, W. E. Bowser, and W. Odynsky. Soil survey of Rosebud and Banff sheets. Univ. Alberta Coll. Agr. Bull. 40. 1943.
- 574 Archibald, E. S. Agricultural lands in the Canadian Northwest. Can. Geogr. J. July, 1944.
- 575 Atkinson, H. J., and R. C. Turner. Soil colloids: II. Separation by peptization. Soil Sci. 57:233 -240. 1944.
- 576 Atkinson, H. J., R. C. Turner, and R. F. Bishop. Soil colloids: IV. Distribution and availability of phosphorus. Soil Sci. 58:79-84. 1944.
- 577 Atkinson, H. J., R. C. Turner, and A. Leahey. Soil colloids: III. Relationship to soil fertility. Soil Sci. 57:243-246. 1944.
- 578 Chepil, W. S. Utilization of crop residues for wind erosion control. Sci. Agr. 24:307-319. 1944.
- 579 Dion, H. G. Iron oxide removal from clays and its influence on base-exchange properties and X-ray diffraction patterns of the clays. Soil Sci. 58:411-424. 1944.
- 580 Goodwin-Wilson, R. Analysis of horticultural soils. Sci. Agr. 25:175-178. 1944.
- 581 Harris, G. H. The effect of micro-elements on the red raspberry in coastal British Columbia. Proc. Amer. Soc. Hort. Sci. 45:300-302. 1944.
- 582 Hills, G. A. Pedology -- "The dirt science"; and agricultural settlement in Ontario. Can. Geogr. J. Sept., 1944.
- 583 Hills, G. A., and F. F. Morwick. Reconnaissance soil survey of parts of northwestern Ontario. Ont. Soil Surv. Rep. No. 8. 1944.

- 584 Hills, G. A., N. R. Richards, and F. F. Morwick. Soil survey of Carleton County, Province of Ontario. Ont. Soil Surv. Rep. No. 7. 1944.
- 585 Hopkins, E. S., and A. Leahey. Crop rotations in the Prairie Provinces. Can. Dep. Agr. Publ. 761, Farmers' Bull. 124. 1944.
- 586 Katznelson, H., and F. E. Chase. Qualitative studies of soil microorganisms: VI. Influence of season and treatment on incidence of nutritional groups of bacteria. Soil Sci. 58:473-479. 1944.
- 587 Leahey, A. An exploratory soil survey along the lower Liard River. Exp. Farms. Serv. Rep. 1944.
- 588 McKenzie, R. E. Factors influencing crop production on heavy-textured saline soils under irrigation. M.Sc. Thesis, Univ. Saskatchewan. 1944.
- 589 Mitchell, J. Soils and their productivity. J. Appraisal Inst. Can. No. 6. 1944.
- 590 Mitchell, J., H. C. Moss, and J. S. Clayton. Soil survey of southern Saskatchewan from Township 1 to 48 inclusive. Univ. Saskatchewan Coll. Agr. Soil Surv. Rep. No. 12. 1944.
- 591 Spilsbury, R. H., and E. W. Tisdale. Soil-plant relationships and vertical zonation in the southern interior of British Columbia. Sci. Agr. 24:395-436. 1944.
- 592 Staple, W. J., and J. J. Lehane. Estimation of soil moisture conservation from meteorological data. Soil Sci. 58:177-194. 1944.
- 593 Stobbe, P. C., and H. Aalund. Soil survey of the Woodstock area, New Brunswick. Can. Dep. Agr. Publ. 757, Tech. Bull. 48, N.B. Soil Surv. Rep. No. 2. 1944.
- 594 Upshall, W. H., O. A. Bradt, and J. R. van Haarlem. Soil nitrates under various fertilization and green-manure cropping systems. Sci. Agr. 25:179 - 184. 1944.
- 595 Wilcox, J. C. Some factors limiting McIntosh apple production in the Okanagan Valley in British Columbia. Ph.D. Thesis, Washington State Univ. 1944.
- 596 Wyatt, F. A., J. D. Newton, W. E. Bowser, and W. Odynsky. Soil survey of Wainwright and Vermilion sheets. Univ. Alberta Coll. Agr. Bull. No. 42. 1944.
- 597 Alarie, A. M. A systematic study of amyloytic bacteria that decompose cellulose, isolated from Quebec soils. Ph.D. Thesis, McGill Univ. 1945.

- 598 Atkinson, H. J., P. O. Ripley, and L. M. Patry. Rapid soil tests on some Carleton County soils. *Sci. Agr.* 25:231-252. 1945.
- 599 Bentley, C. F. Some solonetz soil complexes in Saskatchewan. Ph.D. Thesis, Univ. Minnesota. 1945.
- 600 Bishop, R. F. The effect of lime, manure and certain fertilizers on soil colloids. M.Sc. Thesis, McGill Univ. 1945.
- 601 Chepil, W. S. Dynamics of wind erosion: I. Nature of movement of soil by wind. *Soil Sci.* 60:305 -320. 1945.
- 602 Chepil, W. S. Dynamics of wind erosion: II. Initiation of soil movement. *Soil Sci.* 60:397 - 411: 1945.
- 603 Chepil, W. S. Dynamics of wind erosion: III. The transport capacity of the wind. *Soil Sci.* 60:475 - 480. 1945.
- 604 Ehrlich, W. A. The effect of grasses, alfalfa and fertilizers on the protein content of wheat and the intake of nitrogen, phosphate and potash. M.Sc. Thesis, Univ. Manitoba. 1945.
- 605 Gilmour, C. G. The influence of nitrogen and carbon sources on the metabolism of the actinomycetes. M.S.A. Thesis, Univ. British Columbia. 1945.
- 606 Hills, G. A. A decimal system for the classification and mapping of Ontario soils. *Sci. Agr.* 25:253 - 272. 1945.
- 607 Lajoie, P. G., and W. A. DeLong. The acid-oxalate extracts of Podzol and podzolic soils. *Sci. Agr.* 25:215-220. 1945.
- 608 Maas, E. F. Phosphorus fixation in some Saskatchewan soils. M.Sc. Thesis, Univ. Saskatchewan. 1945.
- 609 MacGregor, J. M., and F. A. Wyatt. Studies on solonetz soils of Alberta. *Soil Sci.* 59:419-436. 1945.
- 610 MacLean, A. J., and R. Summerby. A study of the variability of certain chemical properties in soils. *Sci. Agr.* 25:221-230. 1945.
- 611 Newton, J. D., and F. A. Wyatt. Legume inoculation. Univ. Alberta Coll. Agr. Circ. 4. 4th ed. 1945.

- 612 Newton, J. D., F. A. Wyatt, and A. L. Brown. Effects of cultivation and cropping on the chemical composition of some Western Canada prairie province soils: Part III. *Sci. Agr.* 25:718-737. 1945.
- 613 Odynsky, W. Solonetz soils in Alberta. *Sci. Agr.* 25:780-790. 1945.
- 614 Pineau, M. A., et L. Choiniere. Determination du magnesium echangeable dans les sols par la 8-hydroxyquinoleine. *Sci. Agr.* 25:791-793. 1945.
- 615 Richards, N. R. Physical factors affecting land use in a common soil type in Ontario. *Sci. Agr.* 25:273-278. 1945.
- 616 Whiteside, G. E., R. E. Wicklund, and G. R. Smith. Soil survey of Cumberland County, Nova Scotia. N.S. Soil Surv. Rep. No. 2. 1945.
- 617 Wilcox, J. C. Some factors affecting apple yields in the Okanagan Valley: II. Soil depth, moisture holding capacity and pH. *Sci. Agr.* 25:739-759. 1945.
- 618 Wyatt, F. A. Fifteen years experiments on the Gray Wooded soils of Alberta. *Sci. Agr.* 25:626-635. 1945.
- 619 Bentley, C. F. Fertilizers in Saskatchewan. *Bull.* 122. Sask. Dep. Agr. 1946.
- 620 Brown, A. L., and A. C. Caldwell. Clay mineral content of the colloidal material extracted from a solodi soil profile. *Soil Sci. Soc. Amer. Proc.* 11:213-215. 1946.
- 621 Cann, E. D. Fractionation of soil organic matter. Ph.D. Thesis, McGill Univ. 1946.
- 622 Chepil, W. S. Dynamics of wind erosion: IV. The translocating and abrasive action of the wind. *Soil Sci.* 61:167-178. 1946.
- 623 Chepil, W. S. Dynamics of wind erosion: V. Cumulative intensity of soil drifting across eroding fields. *Soil Sci.* 61:257-264. 1946.
- 624 Chepil, W. S. Dynamics of wind erosion: VI. Sorting of soil material by the wind. *Soil Sci.* 61:331 - 340. 1946.
- 625 Cordukes, W. E. Chemical evaluation of the nutrient status of soils with respect to phosphorus and potassium. M.Sc. Thesis, McGill Univ. 1946.
- 626 Dean, A. M. Variations in the sulphur content of some Western Canada prairie province soils. M.Sc. Thesis, Univ. Alberta. 1946.

- 627 Dion, H. G., and P. J. G. Mann. Three-valent manganese in soils. *J. Agr. Sci.* 36:239-245. 1946.
- 628 Gillingham, J. T. The availability of potassium in a Podzol soil. M.Sc. Thesis, McGill Univ. 1946.
- 629 Gross, R. A. The composition and classification of forest floors and related soil profiles in Saskatchewan. M.Sc. Thesis, Univ. Saskatchewan. 1946.
- 630 Gross, R. A. The composition and classification of forest floors and related soil profiles in Saskatchewan. *Sci. Agr.* 26:603-621. 1946.
- 631 Haslam, R. J. Tobacco stalks high in fertilizing value. *The Lighter* 16(4):13. 1946.
- 632 Hopkins, E. S., A. E. Palmer, and W. S. Chepil. Soil drifting control in the Prairie Provinces. *Can. Dep. Agr. Publ.* 568, *Farmers' Bull.* 32. 1946.
- 633 Jacobson, W. L. The need and benefit of irrigation on the Canadian prairies. *Agr. Inst. Rev.* 1(4):221-226. 1946.
- 634 Katznelson, H. The "rhizosphere effect" of mangels on certain groups of soil microorganisms. *Soil Sci.* 62:343-354. 1946.
- 635 Kelley, C. C., and L. Farstad. Soil survey of the Prince George area, British Columbia. *B.C. Soil Surv. Rep. No. 2.* 1946.
- 636 Leahey, A. Agricultural soil resources of Canada. *Agr. Inst. Rev.* 1:285-289. 1946.
- 637 Leverin, H. A. Peat moss deposits in Canada. *Can. Dep. Mines and Resources Publ.* 817. 1946.
- 638 Lochhead, A. G., F. E. Chase, and G. B. Landerkin. Production of claviformin by soil penicillia. *Can. J. Res., E,* 24:1-9. 1946.
- 639 Maas, E. F., and C. F. Bentley. Phosphorus fixation studies with some Saskatchewan soils. *Sci. Agr.* 26:275 - 287. 1946.
- 640 McClelland, J. E. A chemical and mineralogical study of Saskatchewan boulder clay. M.Sc. Thesis, Univ. Saskatchewan. 1946.
- 641 Mitchell, J. The effect of phosphatic fertilizers on summerfallow wheat crops in certain areas of Saskatchewan. *Sci. Agr.* 26:566-577. 1946.

- 642 Oliver, W. F. Physical properties of some mineral and organic soils of the Province of Quebec. *Can. J. Res., A*, 24:79-92. 1946.
- 643 Richards, N. R. Soil differences in relation to land use in Grenville County, Ontario, Canada. M.Sc. Thesis, Michigan State Univ. 1946.
- 644 Ripley, P. O., J. M. Armstrong, and W. Kalbfleisch. Land clearing. *Can. Dep. Agr. Publ. 739, Farmers' Bull. 111. Rev.* 1946.
- 645 Sanford, G. B. Soil-borne diseases in relation to the microflora associated with various crops and soil amendments. *Soil Sci.* 61:9-22. 1946.
- 646 Simpson, F. J. Factors affecting steam sterilization of some Alberta soils. M.Sc. Thesis, Univ. Alberta. 1946.
- 647 Spinks, J. W. T. Tracer applications. *Nat. Res. Counc. Can. Publ. 1682. Atom. Energy Proj. Div. Res.* 1946.
- 648 Spinks, J. W. T., and S. A. Barber. Study of fertilizer uptake using P^{32} . *J. Amer. Chem. Soc.* 68:2748-2749. 1946.
- 649 Timonin, M. I. Microflora of the rhizosphere in relation to the manganese-deficiency disease of oats. *Soil Sci. Soc. Amer. Proc.* 11:284-292. 1946.
- 650 Wallace, R. H. Nutritional requirements of cellulolytic bacteria isolated from Quebec soils. M.Sc. Thesis, McGill Univ. 1946.
- 651 Webber, L. R., F. F. Morwick, and N. R. Richards. Soil survey of Durham County. *Ont. Soil Surv. Rep. No. 9.* 1946.
- 652 Wilcox, J. C. Orchard irrigation in British Columbia. *Can. Dep. Agr. Publ. 779, Farmers' Bull. 134.* 1946.
- 653 Wilcox, J. C., and J. Walker. Some factors affecting apple yields in the Okanagan Valley: IV. Organic matter content of soil. *Sci. Agr.* 26:460-467. 1946.
- 654 Wright, L. E., H. J. Atkinson, G. R. Giles, R. F. Bishop; R. Levick, and L. M. Patry. Chemical methods of soil analysis. *Can. Dep. Agr., Chem. Div. Processed.* 1946.
- 655 Alarie, A. M., and P. H. H. Gray. Aerobic bacteria that decompose cellulose, isolated from Quebec soils: I. Isolation and description of the series. *Can. J. Res., C*, 25:228-241. 1947.

- 656 Baird, W. W. Dykeland improvement in the Maritimes. *Agr. Inst. Rev.* 2(2):101-103. 1947.
- 657 Barber, S. A. The application of radio phosphorus to studies in soils and plant nutrition. M.Sc. Thesis, Univ. Saskatchewan. 1947.
- 658 Barber, S. A., J. Mitchell, and J. W. T. Spinks. Soil studies using radioactive phosphorus. *Can. Chem. and Proc. Ind.* Aug. 1947.
- 659 Bentley, C. F., and C. O. Rost. A study of some solonetzic soil complexes in Saskatchewan. *Sci. Agr.* 27:293-313. 1947.
- 660 Bowser, W. E., R. L. Erdman, F. A. Wyatt, and J. D. Newton. Soil survey of Peace Hills sheet. Univ. Alberta Soil Surv. Rep. No. 14, Bull. No. 48. 1947.
- 661 Bruce, R. R. The effects of cultural practices on some of the physical properties of a clay soil. M.S.A. Thesis, Univ. Toronto. 1947.
- 662 Cann, D. B., P. Lajoie, and P. C. Stobbe. Soil survey of Shefford, Brome and Missisquoi Counties in the Province of Quebec. *Can. Dep. Agr. Publ.* 1947.
- 663 Champlin, M., and Alice Wall. The effect of crop sequence upon the yields and quality of Marquis wheat. *Sci. Agr.* 27:593-599. 1947.
- 664 Cook, F. D. The organic fraction of some British Columbia soils. M.S.A. Thesis, Univ. British Columbia. 1947.
- 665 Dion, H. G., P. J. G. Mann, and S. G. Heintze. The 'easily-reducible' manganese of soils. *J. Agr. Sci.* 37:18-22. 1947.
- 666 Farstad, L. A comparative study of some chemical and physical properties of the Pineview, Vanderhoof and Nulki clay associations. M.S.A. Thesis, Univ. British Columbia. 1947.
- 667 Fennell, E. J. The boron content of British Columbia soils and the boron fertilizer value of tourmaline rock. M.S.A. Thesis, Univ. British Columbia. 1947.
- 668 Ferguson, F. L. Farm drainage in Eastern Canada. *Agr. Inst. Rev.* 2(2):99-100. 1947.
- 669 Gilmore, L. E. The role of calcium, phosphorus, sulphur and superphosphate for tobacco. *Sci. Agr.* 27:21-35. 1947.

- 670 Gray, P. H. H. Microbial activities in Podzol soils in Eastern Canada. *Antonie van Leeuwenhoek* 12:5964. 1947.
- 671 Hedlin, R. A. Factors influencing the growth curves of *Rhizobia* in humus and soil cultures. M.Sc. Thesis, Univ. Alberta. 1947.
- 672 Hill, H., and F. B. Johnston. Magnesium deficiency control in Quebec apple orchards. *Int. Congr. Pure Appl. Chem. H.* 1947.
- 673 Holmes, W. L., and I. Motzok. Studies on the colorimetric determination of phosphorus: Acid tolerance and optimum time for color development. *Sci. Agr.* 27:245-250. 1947.
- 674 Hopkins, E. S. Soil conservation in Canada. *Agr. Inst. Rev.* 2(1):7-11. 1947.
- 675 Hopkins, E. S. A soil conservation program for Canada. *Agr. Inst. Rev.* 2(5):335-343. 1947.
- 676 Kenwood, J. W. Crop composition and yield as affected by fertilizers on Breton Gray Wooded soil. M.Sc. Thesis, Univ. Alberta. 1947.
- 677 Klages, M. G. Determination of the effect of cropping practices on soil organic matter. M.S.A. Thesis, Univ. Toronto. 1947.
- 678 Leahey, A. Characteristics of soils adjacent to the Mackenzie River in the Northwest Territories of Canada. *Soil Sci. Soc. Amer. Proc.* 12:458 - 461. 1947.
- 679 Lochhead, A. G., and R. H. Thexton. Qualitative studies of soil microorganisms: VII. The "rhizosphere effect" in relation to the amino acid nutrition of bacteria. *Can. J. Res., C*, 25:20-26. 1947.
- 680 Malowany, S. N., and J. D. Newton. Studies on steam sterilization of soils: I. Some effects on physical, chemical and biological properties. *Can. J. Res., C*, 25:189-208. 1947.
- 681 McKenzie, R. E., and J. L. Bolton. Crop production on irrigated heavy textured saline soils with particular reference to the Val Marie irrigation project. *Sci. Agr.* 27:193-219. 1947.
- 682 Paul, H. Investigation of the effects of flooding on the phosphorus status of soils. M.Sc. Thesis, McGill Univ. 1947.

- 683 Phillips, R. Q. A survey of the potential orchard soil adjacent to the Niagara escarpment in Nelson Township of Halton County. M.S.A. Thesis, Univ. Toronto. 1947.
- 684 Robertson, W. K. A chemical study of some of the factors affecting the availability of potassium in soils. M.Sc. Thesis, McGill Univ. 1947.
- 685 Robertson, W. K., and W. A. DeLong. The potassium status of Eastern Canadian soils. Soil Sci. Soc. Amer. Proc. 12:163-166. 1947.
- 686 Rouatt, J. W. The effects of adding inorganic fertilizers and glucose on the morphological and physiological groups of bacteria in soil. M.Sc. Thesis, McGill Univ. 1947.
- 687 Sahu, B. Effect of phosphatic fertilizer on the growth and yield of spring wheat. M.S.A. Thesis, Univ. Toronto. 1947.
- 688 Schalin, E. The effect of fertilizers on the yield and composition of alfalfa on the podzolic soils of northeastern Saskatchewan. M.Sc. Thesis, Univ. Saskatchewan. 1947.
- 689 Spinks, J. W. T., and S. A. Barber. Study of fertilizer uptake using radioactive phosphorus. Sci. Agr. 27:145-156. 1947.
- 690 Strong, W. J. Fertilizer and organic matter studies with the Viking red raspberry. Sci. Agr. 27:341 - 353. 1947.
- 691 Swinnerton, A. A., and P.O. Ripley. The agricultural use of peat materials. Can. Dep. Agr. Publ. 803, Farmers' Bull. 147. 1947.
- 692 Thompson, J. L. Progress in soil cultivation. Agr. Inst. Rev. 2(2):109-111. 1947.
- 693 Thomson, L. B., and P.O. Ripley. Soil erosion and conservation. Agr. Inst. Rev. 2(2):90-93. 1947.
- 694 Wilcox, J. C. Soil conservation and land use in southern British Columbia. Agr. Inst. Rev. 2:401 - 403. 1947.
- 695 Wilcox, J. C. Sprinkler irrigation of orchards in British Columbia. Can. Dep. Agr. Publ. 797, Farmers' Bull. 144. 1947.
- 696 Wilcox, J. C. Determination of electrical conductivity of soil solution. Soil Sci. 63:107-118. 1947.

- 697 Wilcox, J. C., B. Hoy, and R. C. Palmer. Orchard fertilizer tests in the Okanagan valley. *Sci. Agr.* 27:116-129. 1947.
- 698 Willis, A. L., R. P. Pennington, and M. L. Jackson. Mineral standards for quantitative X-ray diffraction analysis of soil clays: I. Abridgement of component percentages based on weathering sequence. *Soil Sci. Soc. Amer. Proc.* 12:400-406. 1947.
- 699 Atkinson, H. J., and L. E. Wright. Comparative effect of keeping soil under continuous cultivation and keeping it in continuous grass. *Sci. Agr.* 28:30-33. 1948.
- 700 Barkley, S. G. The production of nitrogen fertilizers in Canada. *Fert. Rev.* 23(5):3-6, 14. 1948.
- 701 Bisal, F. Siphon drainage in the Hyde Park - Benson area, Cache Valley, Utah. M.Sc. Thesis, Utah State Univ. 1948.
- 702 Bishop, R. F., and H. J. Atkinson. Soil colloids: V. Effect of field applications of lime and manure. *Sci. Agr.* 28:577-583. 1948.
- 703 Caldwell, A. G. Profile development in the Perth, Brookston, Caistor and Jeddo series. M.S.A. Thesis, Univ. Toronto. 1948.
- 704 Chase, F. E. A preliminary report on the use of the Lees and Quastel soil perfusion technique in determining the nitrifying capacity of field soils. *Sci. Agr.* 28:315-320. 1948.
- 705 Choinière, L. Sur une mise au point d'une nouvelle méthode pour l'extraction des bases échangeables des sols acides et des sols calcaires. *Sci. Agr.* 28:493-500. 1948.
- 706 Choinière, L., and L. Laplante. Etude des sols du Comté de Nicolet. Province de Quebec, Ministère de l'Agriculture. Bull. tech. No. 1. 1948.
- 707 Coldwell, B. B. The utilization of open-hearth slag as a fertilizer. M.Sc. Thesis, McGill Univ. 1948.
- 708 Davis, M. B., and H. Hill. Orchard soil management and apple nutrition in Eastern Canada. *Can. Dep. Agr. Publ.* 802, *Tech. Bull.* 65. 1948.
- 709 Doughty, J. L. The maintenance of organic matter in the Brown soils. *Sci. Agr.* 28:88-95. 1948.

- 710 French, C. B. Effect of radioactive materials on stimulating plant growth. *Can. Chem. and Proc. Ind.* 33(3):225-226. 1948.
- 711 Hedlin, R. A., and J. D. Newton. Some factors influencing the growth and survival of *Rhizobium* in humus and soil cultures. *Can. J. Res., C*, 26:174-187. 1948.
- 712 Heeg, T. J. The influence of calcium on the availability of phosphorus and potassium in the soil and in sand culture. M.S.A. Thesis, Univ. Toronto. 1948.
- 713 Hill, H., and H. B. Cannon. Nutritional studies by means of tissue tests with potatoes grown on muck soil. *Sci. Agr.* 28:185-199. 1948.
- 714 Katznelson, H., A. G. Lochhead, and M. I. Timonin. Soil microorganisms and the rhizosphere. *Bot. Rev.* 14:543-587. 1948.
- 715 Katznelson, H., and L. T. Richardson. Rhizosphere studies and associated microbiological phenomena in relation to strawberry root rot. *Sci. Agr.* 28:293-308. 1948.
- 716 Landerkin, G. B., and A. G. Lochhead. A comparative study of the activity of fifty antibiotic actinomycetes against a variety of soil bacteria. *Can. J. Res., C*, 26:501-506. 1948.
- 717 Langille, W. M. The availability of major plant nutrients in open-hearth tapping slag and effects of application-on soil properties. M.Sc. Thesis, McGill Univ. 1948.
- 718 Lochhead, A. G. Plant growth in relation to the bacterial equilibrium in soil. *Trans. Roy. Soc. Can. Ser. 3*, 42:73-80. 1948.
- 719 MacEachern, C. R. Phosphorus compounds in fertilized soil. M.Sc. Thesis, McGill Univ. 1948.
- 720 MacLean, A. A. Partition of soil phosphorus as affected by variations of soil properties. M.Sc. Thesis, McGill Univ. 1948.
- 721 Matthews, B. C. Chemical studies of soil formation and development in the Grundy silt loam. M.Sc. Thesis, Univ. Missouri. 1948.
- 722 McEvoy, E. T. The organic matter of tobacco soils. *The Lighter* 18:17-20. 1948.
- 723 Millette, J. F. G. The estimation of soil organic matter in soil profile studies. M.Sc. Thesis, McGill Univ. 1948.

- 724 Mitchell, J., and H. C. Moss. The soils of the Canadian section of the Great Plains. Soil Sci. Soc. Amer. Proc. 13:431-437. 1948.
- 725 New Brunswick Branch of the A.I.C. Soil conservation and land use in New Brunswick. Agr. Inst. Rev. 3(3):213-248. 1948.
- 726 Newton, J. D., A. S. Ward, and C. F. Bentley. Wooded soils and their management. Univ. Alberta Coll. Agr. Bull. 21. 4th Revised ed. 1948.
- 727 O'Grady, L. J. The effect of alfalfa and sugarbeet residues on following crops. Ph.D. Thesis, Michigan State Univ. 1948.
- 728 Pasture Committee, C.E.F. Better pastures in Eastern Canada. Can. Dep. Agr. Publ. 809, Farmers' Bull. 150. 1948.
- 729 Richards, N. R., and F. F. Morwick. Soil survey of Prince Edward County. Ont. Soil Surv. Rep. No. 10. 1948.
- 730 Rowles, W. Physical properties related to structure of Ste. Rosalie clay and their seasonal variation. Sci. Agr. 28:558-573. 1948.
- 731 Rudd, R. B. The relationship of calcium, magnesium and potassium levels in soil to crop response on sandy soils from the new tobacco areas in Simcoe and Durham counties. M.S.A. Thesis, Univ. Toronto. 1948.
- 732 Sanderson, Marie. The climates of Canada according to the new Thornthwaite classification. Sci. Agr. 28:501-517. 1948.
- 733 Sanderson, M. An experiment to measure potential evapotranspiration. Can. J. Res., C, 26:445-454. 1948.
- 734 Spinks, J. W. T., and S. A. Barber. Study of fertilizer uptake using radioactive phosphorus: II. Sci. Agr. 28:79-87. 1948.
- 735 Spinks, J. W. T., E. Cumming, R. L. B. Irwin, and T. J. Arnason. Lethal effect of absorbed radioisotopes on plants. Can. J. Res., C, 26:249 - 262. 1948.
- 736 Spinks, J. W. T., H. G. Dion, M. Reade, and J. E. Dehm. Study of fertilizer uptake using radio phosphorus: III. Sci. Agr. 28:309-314. 1948.
- 737 Sowden, F. J., and H. J. Atkinson. Waste sulphite liquor solids as a soil treatment. Sci. Agr. 28:175-182. 1948.

- 738 Stobbe, P. C. Soil surveys in Canada. *Agr. Inst. Rev.* 3(3):208-212. 1948.
- 739 Talvenheimo, G. The clay fraction of the Ste.-Rosalie soil. M.Sc. Thesis, McGill Univ. 1948.
- 740 Timonin, M. I. Azotobacter preparation (Azotogen) as a fertilizer for cultivated plants. *Soil Sci. Soc. Amer. Proc.* 13:246-250. 1948.
- 741 Timonin, M. I., and A. G. Lochhead. Distribution of microorganisms in the rhizosphere of a root system. *Trans. Roy. Soc. Can. Ser. 3*, 42:175 - 181. 1948.
- 742 Toogood, J. A. The adequacy of major plant nutrients in certain Minnesota soils under a soil management program. Ph.D. Thesis, Univ. Minnesota. 1948.
- 743 Tyner, L. E. Effect of crop debris, plant roots and crop sequence on the microbial flora of the soil in relation to root rot in cereal crops. *Can. J. Res., C*, 26:86-93. 1948.
- 744 Wallace, R. H. Nutritional requirements of soil bacteria as influenced by growth of various crop plants. Ph.D. Thesis, McGill Univ. 1948.
- 745 Wicklund, R. E., and G. R. Smith. Soil survey of Colchester County, Nova Scotia. N.S. Soil Surv. Rep. No. 3. 1948.
- 746 Wilcox, J. C. Soil sampling technique in orchards. *Sci. Agr.* 28:321-332. 1948.
- 747 Advisory Fertilizer Board of Ontario. Soil management and fertilizer use. *Ont. Dep. Agr. Bull.* 463. 1949.
- 748 Bentley, C. F., and W. Odynsky. Minimizing the field time required for preparing permanent soil profiles. *Agron. J.* 41:99-100. 1949.
- 749 Boswall, G. W. The acidity of leachates from kilim decomposing leaves of deciduous trees. M.Sc. Thesis, McGill Univ. 1949.
- 750 Brink, V. C., and L. Farstad. The physiography of the agricultural areas of British Columbia. *Sci. Agr.* 29:273-301. 1949.
- 751 Day, J. H. The measurement of soil moisture by the plaster-of-paris block method. M.S.A. Thesis, Univ. British Columbia. 1949.
- 752 Dion, H. G. Fertilizer investigations with radioactive phosphorus in Canada. *F.A.O. Eur. Bull.* 3:186-187. 1949.

- 753 Dion, H. G., C. F. Bedford, and R. J. St. Arnaud. Plant injury from phosphorus-32. *Nature (London)* 163:906-907. 1949.
- 754 Dion, H. G., J. E. Dehm, and J. W. T. Spinks. Study of fertilizer uptake using radioactive phosphorus: IV. The availability of phosphate carriers in calcareous soils. *Sci. Agr.* 29:512-526. 1949.
- 755 Dion, H. G., J. W. T. Spinks, and J. Mitchell. Experiments with radiophosphorus on the uptake of phosphorus by wheat. *Sci. Agr.* 29:167-172. 1949.
- 756 Doughty, J. L., W. J. Staple, J. J. Lehane, F. G. Warder, and F. Bisai. Soil moisture, wind erosion and fertility of some Canadian prairie soils. *Can. Dep. Agr. Publ.* 819, *Tech. Bull.* 71. 1949.
- 757 Fiskell, J. G. A. The use of radioactive phosphorus in the investigation of fixation and release phenomena in soils. M.Sc. Thesis, McGill Univ. 1949.
- 758 Henderson, R. D. The effect of various soil treatments on the rate of nitrification as shown by the perfusion technique. M.S.A. Thesis, Univ. Toronto. 1949.
- 759 Hill, H. Minor element deficiencies affecting Canadian crop production. *Sci. Agr.* 29:376-384. 1949.
- 760 Hoffman, D. W. The relationship of soil profile to parent geological material and the underlying bedrock. M.S.A. Thesis, Univ. Toronto. 1949.
- 761 Ive, H. S. The effect of lime, phosphorus and nitrogen additions on Oneida clay loam as shown by oats and alfalfa. M.S.A. Thesis, Univ. Toronto. 1949.
- 762 Johnston, F. B. Magnesium in Canadian crop production. *Can. Chem. Proc. Ind.* 33:823-824. 1949.
- 763 Kelleys, C. C., and R. H. Spilsbury. Soil survey of the Okanagan and Similkameen Valleys, British Columbia. *B.C. Soil Surv. Rep. No.* 3. 1949.
- 764 Laird, D. G., and C. A. Rowles. Soil resources and land use in British Columbia. *Proc. Pacific Sci. Congr.* 6:68-73. 1949.
- 765 Leverin, H. A., and J. R. Cameron. Peat and peat mosses in Nova Scotia. *N.S. Dep. Mines Rep.* 1949.
- 766 Lochhead, A. G. The bacterial equilibrium in soil with special reference to plant growth. *Proc. 4th Int. Congr. Microbiol. (Copenhagen 1947)* p. 486-487. 1949.

- 767 Lochhead, A. G., and G. B. Landerkin. Aspects of antagonisms between microorganisms in soil. *Plant Soil* 1:271-276. 1949.
- 768 MacKay, D. C. A review of chemical analyses for classification purposes in Podzol soils. M.Sc. Thesis, Cornell Univ. 1949.
- 769 MacLean, A. J., H. J. Atkinson, R. C. Turner, P. O. Ripley, and L. E. Wright. Fertility studies on soil types: 1. Some observations on Carleton County investigations. *Sci. Agr.* 29:1-12. 1949.
- 770 Paul, H., and W. A. DeLong. Phosphorus studies: I. Effects of flooding on soil phosphorus. *Sci. Agr.* 29:137-147. 1949.
- 771 Richards, N. R., A. G. Caldwell, and F. F. Morwick. Soil survey of Essex County. *Ont. Soil Surv. Rep. No. 11.* 1949.
- 772 Richards, N. R., B. C. Matthews, and F. F. Morwick. Soil survey of Grenville County. *Ont. Soil Surv. Rep. No. 12.* 1949.
- 773 Rideout, E. F. Slash burning and its effect on a British Columbia forest soil. M.S.A. Thesis, Univ. British Columbia. 1949.
- 774 Russell, G. C. The availability to plants of applied phosphorus as influenced by the presence of organic materials and fluoride ions. M.Sc. Thesis, Univ. Massachusetts. 1949.
- 775 Shivas, J. A. The influence of magnesium on the uptake of other nutrients in certain crop plants. M.S.A. Thesis, Univ. Toronto. 1949.
- 776 Simpson, F. J., and J. D. Newton. Studies on steam sterilization of soils: II. Some factors affecting minimum sterilization requirements. *Can. J. Res., C,* 27:1-13. 1949.
- 777 Sowden, F. J., and H. J. Atkinson. The determination of nitrates in coloured soil extracts. *Can. J. Res., B,* 27:76-80. 1949.
- 778 Sowden, F. J., and H. J. Atkinson. Composition of certain soil organic matter fractions. *Soil Sci.* 68:433-440. 1949.
- 779 Spinks, J. W. T., and H. G. Dion. Study of fertilizer uptake using radio-phosphorus. *J. Chem. Soc. (London) Suppl. 2:*S410-S415. 1949.

- 780 van Haerlem, W. A. Chemical and fertility studies on calcareous soils in Saskatchewan. M.Sc. Thesis, Univ. Saskatchewan. 1949.
- 781 Wallace, R. H., and A. G. Lochhead. Qualitative studies of soil microorganisms: VIII. Influence of various crop plants on the nutritional groups of soil bacteria. *Soil Sci.* 67:63-69. 1949.
- 782 Warder, F. G. The nature of clay minerals in some Saskatchewan soils. M.Sc. Thesis, Univ. Saskatchewan. 1949.
- 783 Wilcox, J. C. Some factors affecting apple yields in the Okanagan Valley. V. Available P, K and Ca in the soil. *Sci. Agr.* 29:27-44. 1949.
- 784 Wilcox, J. C. Soil moisture studies: IV. Indirect determination of field capacity for moisture. *Sci. Agr.* 29:563-578. 1949.
- 785 Wright, L. E., H. J. Atkinson, G. R. Giles, R. F. Bishop, R. Levick, and L. M. Patry. Chemical methods of soil analysis. Can. Dep. Agr., Chem. Div., Sci. Serv., Processed. 1949. Revised.
- 786 Wright, L. E., J. R. Pelletier, and P. O. Ripley. Soil fertility studies: I. Manure, fertilizers and lime for field crops at Ste. Anne de la Pocatière, P. Q. *Sci. Agr.* 29:128-136. 1949.
- 787 Wynd, F. L., and G. R. Noggle. Chemical composition of rye grown on different soil types in Ontario, Canada: Parts I, II, III, and IV. *Lloydia (Cincinnati)* 12:30-40, 41-49, 50-55. 1949.
- 788 Aalund, H., and R. E. Wicklund. Soil survey report of southeastern New Brunswick. N.B. Soil Surv. Rep. No. 3. 1950.
- 789 Atkinson, H. J., R. F. Bishop, and A. Leahey. Studies on strongly alkaline soils of the Salt River plains in Northwestern Canada. *Sci. Agr.* 30:30-37. 1950.
- 790 Atkinson, H. J., R. F. Bishop, and R. Levick. The determination of phosphorus in sodium acetate extracts of soil. *Sci. Agr.* 30:61-65. 1950.
- 791 Atkinson, H. J., and H. M. Rice. Soil mineralogy. *Chem. Can.* 2:165-169. 1950.
- 792 Atkinson, H. J., R. C. Turner, and A. J. MacLean. Analysis of plants for potassium in soil fertility studies. *Trans. 4th Int. Congr. Soil Sci. (Amsterdam)* 1:226-229. 1950.

- 793 Baker, J. The distribution of manganese in British Columbia soils. M.S.A. Thesis, Univ. British Columbia. 1950.
- 794 Baril, R., and A. Mailloux. Etude pédologique des sols du Comté de Chateauguay. Province de Québec, Ministère de l'Agriculture, Bull. tech. No. 2. 1950.
- 795 Barr, J. A. Pedological processes in certain Manitoba soils. M.Sc. Thesis, Univ. Manitoba. 1950.
- 796 Bisal, F. Calibration of splash cup for soil erosion studies. Agr. Eng. 31:621-622. 1950.
- 797 Bowser, W. E., and H. C. Moss. A soil rating and classification for irrigation lands in Western Canada. Sci. Agr. 30:165-171. 1950.
- 798 Browne, F. S. Organic soil management for vegetables. Can. Dep. Agr. Publ. 853. 1950.
- 799 Cann, D. B., and R. E. Wicklund. Soil survey of Pictou County, Nova Scotia. N.S. Soil Surv. Rep. No. 4. 1950.
- 800 Clark, J. S. A method for the estimation of copper in soils and its application in British Columbia. M.S.A. Thesis, Univ. British Columbia. 1950.
- 801 Coldwell, B. B., and W. A. DeLong. Studies of the composition of deciduous forest tree leaves before and after partial decomposition. Sci. Agr. 30:456 - 466. 1950.
- 802 Cormack, D. V. The use of radioactive sulphur in a study of fertilizer uptake. M.Sc. Thesis, Univ. Alberta. 1950.
- 803 Corns, W. G. Effects of 2,4-D and soil moisture on the catalase activity, respiration and protein content of bean plants. Can. J. Res., C, 28:393 - 405. 1950.
- 804 Cunningham, J. D. Microfloral changes and developments in soil samples undergoing nitrification and manganese oxidation by means of the Lees and Quastel soil perfusion technique. M.S.A. Thesis, Univ. Toronto. 1950.
- 805 Dehm, J. E. The effects of fertilizer composition on phosphate utilization by cereals, using the radiophosphorus tracer technique. M.Sc. Thesis, Univ. Saskatchewan. 1950.

- 806 Doyle, J. J. Relation of estimates of the availability of phosphorus to soil treatments and to crop yields. M.Sc. Thesis, McGill Univ. 1950.
- 807 Evans, E. J. Mineral content of Lancaster and Hanceville soils indicating different stages of chemical weathering. M.Sc. Thesis, Univ. Wisconsin. 1950.
- 808 Garner, J. A. Soil building projects for crop improvement. Agr. Inst. Rev. 5(4):25-26. 1950.
- 809 Hedlin, R. A. Nitrogen losses in gaseous form from soils. Ph.D. Thesis (Part I), Univ. Wisconsin. 1950.
- 810 Hedlin, R. A. Sewage and sewage effluent disposal through usage for fertilization and irrigation. Ph.D. Thesis (Part II) , Univ. Wisconsin. 1950.
- 811 Hopkins, E. S. Summerfallow in the Prairies. Agr. Inst. Rev. 5:19-23. 1950.
- 812 Hubbard, W. A. The climate, soils, and soil-plant relationships of an area in southwestern Saskatchewan. Sci. Agr. 30:327-342. 1950.
- 813 Ketcheson, J. W. Phosphorus studies with calcareous and non-calcareous soils. M.Sc. Thesis, Univ. Illinois. 1950.
- 814 Korven, H. C. Irrigating the prairie home garden. Can. Dep. Agr. Publ. 851. 1950.
- 815 Lajoie, P., and P. C. Stobbe. Soil survey of Soulanges and Vaudreuil Counties in the Province of Quebec. Can. Dep. Agr. Publ. 1950.
- 816 Landerkin, G. B., J. R. G. Smith, and A. G. Lochhead. A study of the antibiotic activity of actinomycetes from soils of Northern Canada. Can. J. Res., C, 28:690-698. 1950.
- 817 Langmaid, K. K. Organic fractions of three New Brunswick soils. M.Sc. Thesis, Univ. New Brunswick. 1950.
- 818 McNair, J. B. The soil -- key to survival. Agr. Inst. Rev. 5(4):31, 38. 1950.
- 819 Mitchell, J. The soil. The Saskatchewan rural land assessment system. Chap. I-XI. 1950.
- 820 Mitchell, J. Productivity ratings and their importance in the soil survey report. Trans, 4th Int. Congr. Soil Sci. (Amsterdam) 1:356-360. 1950.

- 821 Mitchell, J., H. C. Moss, and J. S. Clayton. Soil survey of Saskatchewan, covering the agriculturally settled areas north of Township 48. Sask. Soil Surv. Rep. No. 13. 1950.
- 822 Odynsky, W., and J. D. Newton. Soil survey of the Rycroft and Watino sheets. Univ. Alberta Bull. 53, Res. Counc. Alberta Rep. No. 56, Alberta Soil Surv. Rep. No. 15. 1950.
- 823 Ouellette, G. J. Iron-manganese interrelationships in soils and plant nutrition. Ph.D. Thesis, Univ. Wisconsin. 1950.
- 824 Ouellette, G. J. Toxicité du manganèse dans les sols fortement acides. Agriculture 7(4). 1950.
- 825 Poyser, E. A. Soil structure in Red River soil associates and modification under culture. M.Sc. Thesis, Univ. Manitoba. 1950.
- 826 Risi, J., C. E. Brunette, D. Spence, et H. Girard. Etude chimique des tourbes du Québec. Province de Que. Ministère des Mines. No. 234. 1950.
- 827 Roberts, J. A. Land drainage. Agr. Inst. Rev. 5(3):21 - 23. 1950.
- 828 Rouatt, J. W., and R. G. Atkinson. The effect of the incorporation of certain cover crops on the microbiological balance of potato scab infested soil. Can. J. Res., C, 28:140-152. 1950.
- 829 Sanderson, Marie. Moisture relationships in southern Ontario. Sci. Agr. 30:235-255. 1950.
- 830 St. Arnaud, R. J. Methods for measuring phosphate availability in Saskatchewan soils. M.Sc. Thesis, Univ. Saskatchewan. 1950.
- 831 Stobbe, P. C. Comparative study of the Gray-Brown Podzolic, Brown Podzolic and Brown Forest soils of southern Ontario and Quebec. Ph.D. Thesis, McGill Univ. 1950.
- 832 Timonin, M. I. Soil microflora and manganese deficiency. Trans, 4th Int. Congr. Soil Sci. (Amsterdam) 3:97-100. 1950.
- 833 Timonin, M. I. Soil microflora in relation to manganese deficiency. Sci. Agr. 30:324-325. 1950.
- 834 Timonin, M. I., and R. H. Thexton. The rhizosphere effect of onion and garlic on soil microflora. Soil Sci. Soc. Amer. Proc. 15:186-189. 1950.

- 835 Toogood, J. A., and J. D. Newton. Water erosion in Alberta. Univ. Alberta Coll. Agr. Bull. 56. 1950.
- 836 Turner, R. C., and A. J. MacLean. A rapid method of estimating soil in run-off suspensions. Sci. Agr. 30:398-401. 1950.
- 837 Wallace, R. H., and A. G. Lochhead. Qualitative studies of soil microorganisms: IX. Amino acid requirements of rhizosphere bacteria. Can. J. Res., C, 28:1-6. 1950.
- 838 Whiteside, G. B. Soil survey of Prince Edward Island. Can. Dep. Agr. and P.E.I. Dep. Agr. 1950.
- 839 Wilcox, J. C. Sprinkler irrigation experience in B.C. orchards. Sci. Agr. 30:418-427. 1950.
- 840 Wright, L. E., D. C. Schurman, and H. J. Atkinson. Soil fertility studies: II. Manure and fertilizers for potatoes at Charlottetown, P.E.I. Sci. Agr. 30:447-455. 1950.
- 841 Wynd, F. L., and G. R. Noggle. Chemical composition of rye grown on different soil types in Ontario, Canada: Parts V, VI, and VII. Lloydia 13:7277, 78-84, 183-195. 1950.
- 842 Wynnyk, A. Base exchange studies of some solonetzic soils of the Peace River district. M.Sc. Thesis, Univ. Alberta. 1950.
- 843 Anderson, C. H. Fertilizer studies with wheat in the Peace River region. M.Sc. Thesis, Univ. Alberta. 1951.
- 844 Atkinson, H. J., J. C. Woodward, P. O. Ripley, M. B. Davis, and N. A. MacRae. Manures, fertilizers and soil amendments -- their nature, function and use. Can. Dep. Agr. Publ. 585. Revised. 1951.
- 845 Ayers, H. D. Soil permeability as a factor in the translocation of salts on irrigated land. Sci. Agr. 31:383-395. 1951.
- 846 Baker, G. A microbiological study of forest soil. M.S.A. Thesis, Univ. Toronto. 1951.
- 847 Bolton, E. F. Effects of certain cropping systems on some physical properties of a Brookston clay soil. M.S.A. Thesis, Univ. Toronto. 1951.
- 848 Bourget, S. J. Organic matter removal from soils with sodium hypobromite for particle-size distribution analysis. M.Sc. Thesis, Univ. Wisconsin. 1951.

- 849 Bowser, W. E., T. W. Peters, and J. D. Newton. Soil survey of Red Deer sheet. Univ. Alberta Bull. 51, Alberta Soil Surv. Rep. No. 16. 1951.
- 850 Burton, M. O., and A. G. Lochhead. Studies on the production of vitamin B12 - active substances by microorganisms. Can. J. Bot. 29:352-359. 1951.
- 851 Carder, A. C., and A. A. Hanson. Sweet clover and the Gray Wooded soils of the Peace River region. Sci. Agr. 31:325-344. 1951.
- 852 Champlin, M. J. A quarter century of crop rotation experiments. Univ. Saskatchewan Agr. Bull. 129. 1951.
- 853 Chase, F. E. Oxidation of organic matter by microorganisms in the soil. Ph.D. Thesis, McGill Univ. 1951.
- 854 Coldwell, B. B. The chemical composition of the leaf-fall from deciduous forest trees before and after partial decomposition. Ph.D. Thesis, McGill Univ. 1951.
- 855 Cordukes, W. E., R. C. Turner, P. O. Ripley, and H. J. Atkinson. Water erosion of soil. Sci. Agr. 31:152-161. 1951.
- 856 Corke, C. T. Antibiotic production by certain species of *Streptomyces*. M.Sc. Thesis, Univ. Western Ontario. 1951.
- 857 Cormack, D. V., C. F. Bentley, and D. B. Scott. Fertilizer studies with radioactive sulphur: I. Sci. Agr. 31:41-51. 1951.
- 858 Davidson, Doreen I., F. J. Sowden, and H. J. Atkinson. Application of paper chromatography to identification and quantitative estimation of amino acids in soil organic matter fractions. Soil Sci. 71:347-352. 1951.
- 859 Elliot, J. M. Effect of soil type and fertilizer treatments on the yield and chemical composition of certain forage crops. M.S.A. Thesis, Univ. Toronto. 1951.
- 860 Fiskell, J. G. A. The relationships between fertilizer phosphate, plants and soils, using neutron-bombarded superphosphate. Ph.D. Thesis, McGill Univ. 1951.
- 861 Fiskell, J. G. A. Investigation of the forms of phosphorus in neutron-bombarded phosphates -Role of hypophosphate. Science (Washington) 113:244-246. 1951.
- 862 Fletcher, H. F. Potassium estimation, fixation and release studies in lower Fraser Valley soils. M.S.A. Thesis, Univ. British Columbia. 1951.

- 863 Fulkerson, R. S., J. R. Weir, and G. P. McRostie. The effect of some fertilizer carriers upon seven grass species. *Sci. Agr.* 31:32-38. 1951.
- 864 Gillespie, J. E. The Osprey series considered to belong to the Brown Forest great soil group. M.S.A. Thesis, Univ. Toronto. 1951.
- 865 Hill, K. W. Effects of forty years of cropping under irrigation. *Sci. Agr.* 31:349-357. 1951.
- 866 Holm, W. M. The use of calcium cyanamide in relationship to crop response, weed control and rate of decomposition of crop residues. M.Sc. Thesis, Univ. Saskatchewan. 1951.
- 867 Johnson, W. E. Physical properties in relation to the morphological characteristics of solonetzic soils. M.Sc. Thesis, Univ. Saskatchewan. 1951.
- 868 Kasting, R., and J. C. Woodward. Persistence and toxicity of parathion when added to the soil. *Sci. Agr.* 31:133-138. 1951.
- 869 Koeslag, J. G. The effect of topdressing permanent pastures on yield and nutrient content of herbage, as determined on soils of the Dumfries and Perth series. M.S.A. Thesis, Univ. Toronto. 1951.
- 870 Lane, T. H. Soil fertility investigations on four soil types using field and greenhouse techniques with particular reference to forage crops. M.S.A. Thesis, Univ. Toronto. 1951.
- 871 Leahey, A. Soil surveys in relation to land use and conservation in Canada. *Proc. U.N. Sci. Conf.* 6:120-122. 1951.
- 872 Lehane, J. J., and W. J. Staple. Desiccator method for determining permanent wilting percentages of soils. *Soil Sci.* 72:429-434. 1951.
- 873 Lochhead, A. G., and R. H. Thexton. Vitamin B12 as a growth factor for soil bacteria. *Nature (London)* 167:1034. 1951.
- 874 Lutwick, L. E. Interaction of leachates from decomposing leaves with soil-forming materials. M.Sc. Thesis, McGill Univ. 1951.
- 875 MacVicar, R. M., and D. R. Gibson. Effect of sources of nitrogen, rates of application and method of application on seed production of orchard grass. *Sci. Agr.* 31:399-412. 1951.

- 876 McKinley, W. P. Investigations on the acidity of leachates from decomposing leaves of deciduous trees. M.Sc. Thesis, McGill Univ. 1951.
- 877 McMillan, N. J. Platy structure and concretions in Saskatchewan soils by use of thin sections. M.Sc. Thesis, Univ. Saskatchewan. 1951.
- 878 Milne, R. A. The non-symbiotic nitrogen fixation of some Saskatchewan grassland soils. M.Sc. Thesis, Univ. Alberta. 1951.
- 879 Newton, J. D. Legume inoculation. Univ. Alberta Circ. 4. 5th ed. 1951.
- 880 Ouellette, G. J. Iron-manganese interrelationships in plant nutrition. Sci. Agr. 31:277-285. 1951.
- 881 Rice, H. M., and H. J. Atkinson. Soil mineralogy: II. Preliminary results in the mineralogical investigation of Canadian soils. Chem. Can. 3:28 - 30. 1951.
- 882 Schalin, E. The composition and properties of colloidal fractions isolated from soils. Ph.D. Thesis, McGill Univ. 1951.
- 883 Smith, J. A. Magnesium-potassium relationships in calcareous soils as indicated by yield and quality of soybeans. M.S.A. Thesis, Univ. Toronto. 1951.
- 884 Sowden, F. J., and H. J. Atkinson. The effect of waste sulphite liquor solids on the chemical and physical properties of soil. Sci. Agr. 31:93 - 98. 1951.
- 885 Spencer, J. F. T. Factors influencing the growth and survival of *Rhizobia* in humus and soil cultures. M.Sc. Thesis, Univ. Alberta. 1951.
- 886 Spinks, J. W. T., D. A. Lane, and B. B. Torchinsky. A new method of moisture determination in soil. Can. J. Technol. 29:371-374. 1951.
- 887 Stevenson, I. L. A comparative study of the microflora under three systems of orchard management. M.S.A. Thesis, Univ. Toronto. 1951.
- 888 Webster, G. R. Base saturation studies of some Vancouver Island soils and a method for estimating lime requirement. M.S.A. Thesis, Univ. British Columbia. 1951.
- 889 Woodbridge, C. G. The incidence of zinc deficiency in the Okanagan Valley of British Columbia. Sci. Agr. 31:40. 1951.

- 890 Woodbridge, C. G., and H. R. MacLarty. Manganese deficiency in peach and apple in British Columbia. *Sci. Agr.* 31:435-438. 1951.
- 891 Atkinson, H. J., A. J. MacLean, and N. R. Wiancko. Soil fertility studies: III. Manure and fertilizers for field crops at Kapuskasing, Ontario. *Sci. Agr.* 32:526-534. 1952.
- 892 Baker, R. A. *Streptomyces scabies* and its habitat. M.S.A. Thesis, Univ. British Columbia. 1952.
- 893 Ballantyne, A. K. Reclamation in saline and alkaline soils through the application of gypsum and subsequent leaching. M.Sc. Thesis, Univ. Saskatchewan. 1952.
- 894 Bird, H. D. The application of the Warburg apparatus in respiration studies of soil microflora. M.S.A. Thesis, Univ. Toronto. 1952.
- 895 Bolton, E. F., and L. R. Webber. Effect of cropping systems on the aggregation of a Brookston clay soil at three depths. *Sci. Agr.* 32:555-558. 1952.
- 896 Burton, M. O., and A. G. Lochhead. Production of vitamin B12 by *Rhizobium* species. *Can. J. Bot.* 30:521-524. 1952.
- 897 Clayton, J. S., and J. G. Ellis. Soil survey of the experimental stations and substations of the Canada Department of Agriculture in Saskatchewan. *Can. Dep. Agr. Publ.* 1952.
- 898 Coldwell, B. B., and W. A. DeLong. Studies on the holocellulose fraction of hardwood leaves. *Sci. Agr.* 32:99-108. 1952.
- 899 Dalton, J. D., G. C. Russell, and D. H. Sieling. Effect of organic matter on phosphate availability. *Soil Sci.* 73:173-182. 1952.
- 900 Dolson, D. D. Application of radiochemistry to a study of soil and fertilizer phosphorus uptake by oat plants on a calcareous soil. M.S.A. Thesis, Univ. Toronto. 1952.
- 901 Doughty, J. L. Soil moisture conservation. *In Agricultural research in Canada*, p. 31-35. *Agr. Inst. Can.* 1952.
- 902 Doyle, J. J. Organo-clay relationships in soil aggregate formation. Ph.D. Thesis, Ohio State Univ. 1952.
- 903 Evans, E. J. Hydroxyl content of soil minerals and relation to chemical weathering. Ph.D. Thesis, Univ. Wisconsin. 1952.

- 904 Evans, E. J., and M. L. Jackson. Chemical determination of sorbed water and structural hydroxyl in colloidal minerals of soils and sediments. *Soil Sci. Soc. Amer. Proc.* 16:364 - 368. 1952.
- 905 Ferguson, W. S. Factors affecting the movement of carbonates in the soil. M.Sc. Thesis, Univ. Saskatchewan. 1952.
- 906 Fiskell, J. G. A., W. A. DeLong, and W. F. Oliver. Uptake by plants of labelled phosphate from neutron-irradiated calcium phosphates: I. Uptake by seedlings from solution cultures. *Sci. Agr.* 32:474-479. 1952.
- 907 Fiskell, J. G. A., W. A. DeLong, and W. F. Oliver. Uptake by plants of labelled phosphate from neutron-irradiated calcium phosphates: II. Uptake by seedlings from soil-sand culture. *Sci. Agr.* 32:480-483. 1952.
- 908 Fiskell, J. G. A., W. A. DeLong, and W. F. Oliver. Investigations of the forms of phosphorus in neutron-bombarded phosphates: II. Nature of the phosphorus-32. *Can. J. Chem.* 30:9-16. 1952.
- 909 Fiskell, J. G. A., W. A. DeLong, and W. F. Oliver. Investigations of the forms of phosphorus in neutron-bombarded phosphates: III. Superphosphate and calcium sulphate hemihydrate. *Can. J. Chem.* 30:185-193. 1952.
- 910 Fulton, J. M. The effect of a number of three-year rotations on some of the physical properties of a Brookston clay and a correlation of these with yield of hybrid corn. M.S.A. Thesis, Univ. Toronto. 1952.
- 911 Gilmore, L. E. Fertilizers for tobacco. In *Agricultural research in Canada*, p. 86-94. Agr. Inst: Can. 1952.
- 912 Hill, H. Foliage analysis as a means of determining orchard fertilizer requirements. 13th Int. Hort. Congr. (London) p. 199-214. 1952.
- 913 Hills, G. A. The classification and evaluation of site for forestry. Res. Rep. No. 24, Ont. Dep. Lands Forests. August 1952.
- 914 Hoffman, D. W., and N. R. Richards. Soil survey of Perth County. Ont. Soil Surv. Rep. No. 15. 1952.
- 915 Hoffman, D. W., N. R. Richards, and F. F. Morwick. Soil survey of Huron County. Ont. Soil Surv. Rep. No. 13. 1952.

- 916 Hortie, H. J. A comparative study of certain physical and mineralogical features of Gray Wooded soils. M.Sc. Thesis, Univ. Alberta. 1952.
- 917 Howling, H. L. The "A" value as a measure of the availability of soil and fertilizer phosphorus in Saskatchewan soils. M.Sc. Thesis, Univ. Saskatchewan. 1952.
- 918 King, K. M. Splash erosion of soil. M.Sc. Thesis, Univ. Wisconsin. 1952.
- 919 Knowles, R. P., and D. A. Cooke. Response of bromegrass to nitrogen fertilizers. *Sci. Agr.* 32:548-554. 1952.
- 920 Korven, H. C. The effect of wind on the uniformity of water distribution by some rotary sprinklers. *Sci. Agr.* 32:226-240. 1952.
- 921 Lochhead, A. G. Soil microbiology. *Ann. Rev. Microbiol.* 6:185-206. 1952.
- 922 Lochhead, A. G. The nutritional classification of soil bacteria. *Proc. Soc. Appl. Bacteriol.* 15:15-20. 1952.
- 923 Lochhead, A. G., M. O. Burton, and R. H. Thexton. A bacterial growth-factor synthesized by a soil bacterium. *Nature (London)* 170:282-283. 1952.
- 924 Lochhead, A. G., and R. H. Thexton. Qualitative studies of soil microorganisms: X. Bacteria requiring vitamin B12 as growth factor. *J. Bacteriol.* 63:219-226. 1952.
- 925 Lutwick, L. E., B. B. Coldwell, and W. A. DeLong. Leachates from decomposing leaves: I. Some general characteristics. *Sci. Agr.* 32:603-613. 1952.
- 926 Mason, J. L. Potassium, phosphorus and magnesium contents of consecutive groups of McIntosh apple leaves on terminal shoots of various lengths. M.Sc. Thesis, Washington State Univ. 1952.
- 927 Matthews, B. C. The fixation and release of soil potassium. Ph.D. Thesis, Cornell Univ. 1952.
- 928 Matthews, B. C., and N. R. Richards. Soil survey of Dundas County. *Ont. Soil Surv. Rep. No. 14.* 1952.
- 929 McConkey, O. M. Conservation in Canada. J. M. Dent and Sons (Can.) Ltd., Toronto. 1952.

- 930 Mitchell, J. Soil surveys in Canada. In *Agricultural research in Canada*, p. 18-23. Agr. Inst. Can. 1952.
- 931 Mitchell, J., J. E. Dehm, and H. G. Dion. The effect of small additions of elemental sulphur on the availability of phosphate fertilizers. *Sci. Agr.* 32:311-316. 1952.
- 932 Mitchell, J., A. M. Kristjanson, H. G. Dion, and J. W. T. Spinks. Availability of fertilizer and soil phosphorus to grain crops and the effect of placement and rate of application on phosphorus uptake. *Sci. Agr.* 32:511-525. 1952.
- 933 Newton, J. D. Gray Wooded soils. In *Agricultural research in Canada*, p. 24-30. Agr. Inst. Can. 1952.
- 934 Nielsen, K. F. Influence of alfalfa green manure on the availability of phosphorus to plants. Ph.D. Thesis, Ohio State Univ. 1952.
- 935 Odynsky, W., A. Wynnyk, and J. D. Newton. Reconnaissance soil survey of the High Prairie and McLennan sheets. *Univ. Alberta Bull.* 59, Res. Counc. Alberta Rep. No. 63, Alberta Soil Surv. Rep. No. 17. 1952.
- 936 Parker, D. I., F. J. Sowden, and H. J. Atkinson. The nitrogen distribution and amino acid content of certain soil organic matter fractions. *Sci. Agr.* 32:163-169. 1952.
- 937 Pratt, L. E. A. Halomorphism in Manitoba soils. M.Sc. Thesis, Univ. Manitoba. 1952.
- 938 Rennie, D. A. Soil aggregation. Ph.D. Thesis, Univ. Wisconsin. 1952.
- 939 Robinson, J. B. The effect of ammonia-nitrogen on actinomycetes and its possible application in the control of potato scab. M.S.A. Thesis, Univ. Toronto. 1952.
- 940 Russell, G. C. Dilute solution reactions of phosphate with kaolinite. Ph.D. Thesis, Purdue Univ. 1952.
- 941 Schnitzer, M. Properties of cation-enriched leaf extracts and leachates. M.Sc. Thesis, McGill Univ. 1952.
- 942 Schnitzer, M., and W. A. DeLong. A note on the podzolization process. *Sci. Agr.* 32:680-681. 1952.
- 943 Sommerfeldt, T. G. The penetrability of soil as affected by texture, moisture and bulk density. M.Sc. Thesis, Utah State Univ. 1952.

- 944 Sowden, F. J., D. I. Parker, and H. J. Atkinson. Comparison of organic matter fractions from three soil types. *Sci. Agr.* 32:127-134. 1952.
- 945 Spence, C. C. Irrigation in Alberta. *Agr. Inst. Rev.* 7(3):11-14, 58-62. 1952.
- 946 Staple, W. J., and J. J. Lehane. The conservation of soil moisture in southern Saskatchewan. *Sci. Agr.* 32:36-47. 1952.
- 947 Stobbe, P. C. The morphology and genesis of the Gray-Brown Podzolic and related soils of Eastern Canada. *Soil Sci. Soc. Amer. Proc.* 16:81-84. 1952.
- 948 Tanner, C. B., and S. J. Bourget. Particle-shape discrimination of round- and square-holed sieves. *Soil Sci. Soc. Amer. Proc.* 16:88. 1952.
- 949 Timonin, M. I., and G. R. Giles. Effect of different soil treatments on microbial activity and availability of manganese in manganese-deficient soil. *J. Soil Sci.* 3:145-155. 1952.
- 950 Turner, R. C., and H. M. Rice. Role of the fluoride ion in release of phosphate adsorbed by aluminum and iron hydroxides. *Soil Sci.* 74:141-148. 1952.
- 951 U.S.D.A. Soil Surv. Lab. Field and laboratory data on some Podzol, Brown Podzolic, Brown Forest and Gray Wooded soils in Northern United States and Southern Canada. U.S. Dep. Agr. Mem. No. 1. 1952.
- 952 Vanterpool, T. C., and D. J. Samborski. Gray speck of oats in Saskatchewan. *Proc. Can. Phytopathol. Soc.* 19:19. 1952.
- 953 Warder, F. G., and H. G. Dion. The nature of the clay minerals in some Saskatchewan soils. *Sci. Agr.* 32:535-547. 1952.
- 954 Webber, L. R., F. F. Morwick, T. J. Heeg, N. J. Thomas, and N. R. Richards. Ontario soils, their use, management and improvement. *Ont. Dep. Agr. Bull.* 492. 1952.
- 955 Wilcox, J. C. Irrigation of horticultural crops: Practices and problems in B.C. *Agr. Inst. Rev.* 7:20-23. 1952.
- 956 Williams, B. H., and W. E. Bowser. Gray Wooded soils in parts of Alberta and Montana. *Soil Sci. Soc. Amer. Proc.* 16:130-133. 1952.
- 957 Woodbridge, C. G. Micronutrients in plant nutrition. In *Agricultural research in Canada*, p. 78-85. *Agr. Inst. Can.* 1952.

- 958 Woodbridge, C. G., A. Carney, and H. R. McLarty. A boron deficiency in pear growing in soil having an adequate boron content. *Sci. Agr.* 32:440-442. 1952.
- 959 Woodward, J. C. Trace elements in plant and animal nutrition. *Agr. Inst. Rev.* 7(4):15-19, 44-46. 1952.
- 960 Wright, J. R. The effect of certain soil treatments on the cobalt-supplying power of some Nova Scotia soils. Ph.D. Thesis, Michigan State Univ. 1952.
- 961 Yaphe, W. The study of physiology of *Sporocytophaga* strains isolated from soil. Ph.D. Thesis, McGill Univ. 1952.
- 962 Anderson, D. T. Handling straw and trash cover: II. Mechanical aspects. *Agr. Inst. Rev.* 8(5):13 - 14, 66. 1953.
- 963 Atkinson, H. J. Applications of chemistry in soil research. *Chem. Can.* 5:29-32, 49-52. 1953.
- 964 Atkinson, H. J., G. R. Giles, and A. J. MacLean. Fertility studies on soil types: II. The physical and chemical composition of soils from Carleton and Grenville counties in Ontario. *Can. J. Agr. Sci.* 33:116-124. 1953.
- 965 Baskin, D. R. Some fertility requirements of two soils from Renfrew County as indicated by chemical and greenhouse tests. M.S.A. Thesis, Univ. Toronto. 1953.
- 966 Beaton, J. D. Influence of burning on the soil in the timber range area of Lac Le Jeune, B.C. M.S.A. Thesis, Univ. British Columbia. 1953.
- 967 Birch, E. C. Effect of soil conditioners on the physical conditions of Haldimand clay. M.S.A. Thesis, Univ. Toronto. 1953.
- 968 Bishop, R. F. The effect of lime on the chemical composition of a Charlottetown fine sandy loam and the effect of several amendments on its water-soluble boron as shown by soil and plant analysis. Ph.D. Thesis, Michigan State Univ. 1953.
- 969 Bourget, S. J., and C. B. Tanner. Removal of organic matter with sodium hypobromite for particle-size analysis of soils. *Can. J. Agr. Sci.* 33:579-585. 1953.
- 970 Boyer, M. Q. The soil bacterial flora in relation to the incidence of potato scab. M.S.A. Thesis, Univ. Toronto. 1953.

- 971 Bruce, R. R., and L. R. Webber. The use of a diffusion chamber as a measure of the rate of oxygen supplied by a soil. *Can. J. Agr. Sci.* 33:430-436. 1953.
- 972 Burton, M. O., and A. G. Lochhead. Nutritional requirements of *Arthrobacter terregens*. *Can. J. Bot.* 31:145-151. 1953.
- 973 Chancey, H. W. R. Some chemical, physical and micropedological studies of Vancouver Island shot soils. M.S.A. Thesis, Univ. British Columbia. 1953.
- 974 Chapman, L. J. The climate of northern Ontario. *Can. J. Agr. Sci.* 33:41-73. 1953.
- 975 Chase, F. E., and P. H. H. Gray. Use of the Warburg respirometer to study microbial activities in soils. *Nature (London)* 171:481. 1953.
- 976 Chinn, S. H. F. A mechanism for the control of common root rot of wheat. *Phytopathology* 43:701. 1953.
- 977 Chinn, S. H. F. A slide technique for the study of fungi and actinomycetes in soil with special reference to *Helminthosporium sativum*. *Can. J. Bot.* 31:718-724. 1953.
- 978 Clark, J. S. Phosphate equilibria in soil and clay suspensions. Ph.D. Thesis, Cornell Univ. 1953.
- 979 Dargie, G. Effects of mulched and incorporated sawdust on some chemical and physical properties of Fraser Valley upland soils. M.S.A. Thesis, Univ. British Columbia. 1953.
- 980 DeLong, W. A., D. C. MacKay, and H. A. Stepler. Coordinated soil-plant analyses. *Soil Sci. Soc. Amer. Proc.* 17:262-266. 1953.
- 981 Dolson, D. D., and J. W. Ketcheson. A study of soil and fertilizer phosphorus uptake on a calcareous soil by oat plants, using radioactive tracer technique. *Can. J. Agr. Sci.* 33:225-230. 1953.
- 982 Dionne, J. L. Release of phosphorus by liming acid soils to various pH levels. Ph.D. Thesis, Univ. Wisconsin. 1953.
- 983 Ehrlich, W. A., E. A. Poyser, L. E. Pratt, and J. H. Ellis. Report of reconnaissance soil survey of Winnipeg and Morris map sheet areas. *Man. Soil Surv. Rep. No. 5.* 1953.

- 984 Farstad, L., and A. Leahey. Soils of the Cordillera in British Columbia. Proc. 7th Pac. Sci. Congr. 6:10-16. 1953.
- 985 Fiskell, J. G. A., W. A. DeLong, and W. F. Oliver. The uptake by plants of labelled phosphate from neutron-irradiated calcium phosphates. III. Penetration into soil and uptake by pasture herbage. Can. J. Agr. Sci. 33:559-565. 1953.
- 986 Fiskell, J. G. A., L. C. Raymond, H. A. Stepler, and W. A. DeLong. Some observations on the effects of weather on the utilization of superphosphate and manure applied as a top dressing to a permanent pasture. Can. J. Agr. Sci. 33:531-541. 1953.
- 987 Forsberg, D. E. The response of various forage crops to saline soils. Sci. Agr. 33:542-549. 1953.
- 988 Fulton, J. M., and L. R. Webber. Soil porosity and corn yields under nine three-year rotations. Can. J. Agr. Sci. 33:494-499. 1953.
- 989 Gillespie, J. E. Evidence for polygenesis in soils of the Osprey series. Can. J. Agr. Sci. 33:520 - 530. 1953.
- 990 Hilchey, J. D. Potassium fixation by some Eastern Canadian soils. M.Sc. Thesis, McGill Univ. 1953.
- 991 Hill, H., R. F. Bishop, and H. B. Cannon. The effect of various cropping rotations on certain soil constituents over a five-year period. Can. J. Agr. Sci. 33:210-215. 1953.
- 992 Hill, K. W., and A. E. Palmer. Irrigation farming in southern Alberta. Can. Dep. Agr. Publ. 883. 1953.
- 993 Hoff, D. J. Fertility studies with radioactive and non-radioactive sulphur on some Gray Wooded soils of Alberta. M.Sc. Thesis, Univ. Alberta. 1953.
- 994 Hoffman, D. W., and N. R. Richards. Soil survey of Peel County. Ont. Soil Surv. Rep. No. 18. 1953.
- 995 Ho-Yen, B. O. The effect of management on soil organic matter. M.Sc. Thesis, McGill Univ. 1953.
- 996 Ivarson, K. C. Non-symbiotic nitrogen fixation in some Alberta soils. M.Sc. Thesis, Univ. Alberta. 1953.

- 997 Ketcheson, J. W., and R. H. Bray. Adsorbed phosphorus in high-lime Ontario soils. *Can. J. Agr. Sci.* 33:141-146. 1953.
- 998 King, H. de L. Bacteria in soil surrounding the roots of barley and oats. M.Sc. Thesis, McGill Univ. 1953.
- 999 Leahey, A. Preliminary soil survey of lands adjacent to the Mackenzie Highway in the Northwest Territories. *Can. Dep. Agr. Exp. Farms Serv. Processed.* 1953.
- 1000 Leahey, A. Factors affecting the occurrence and nature of arable soils in the Yukon. *Proc. 7th Pac. Sci. Congr.* 6:16-20. 1953.
- 1001 Lehane, J. J., and W. J. Staple. Water retention and availability in soils related to drought resistance. *Can. J. Agr. Sci.* 33:265-273. 1953.
- 1002 Lochhead, A. G., and M. O. Burton. An essential bacterial growth factor produced by microbial synthesis. *Can. J. Bot.* 37:7-22. 1953.
- 1003 Lochhead, A. G., and M. O. Burton. A bacterial growth factor produced by a soil organism. *Atti VI (Congr. Int. Microbiol. Roma)* 1:298-301. 1953.
- 1004 Mack, A. R. Fertilization of spring grain to overcome the influence of immobilization of nitrogen and phosphorus by decomposing straw residues. M.Sc. Thesis, Iowa State Univ. 1953.
- 1005 MacLean, A. J., R. F. Bishop, and L. E. Lutwick. Fertility studies on soil types: III. Phosphorus supply and requirement as shown by greenhouse studies and laboratory tests. *Can. J. Agr. Sci.* 33:330-343. 1953.
- 1006 MacLeod, L. B. Apparent effect of management practices on the phosphorus status of a Brown Forest soil. M.Sc. Thesis, McGill Univ. 1953.
- 1007 McKibbin, R. R. [Compiler] The changing pattern of agronomy and horticulture in Canada. *Advan. Agron.* V:319-381. 1953.
- 1008 McMillan, N. J., and J. Mitchell. A microscopic study of platy and concretionary structures in certain Saskatchewan soils. *Can. J. Agr. Sci.* 33:178-182. 1953.
- 1009 Mitchell, J., H. G. Dion, A. M. Kristjanson, and J. W. T. Spinks. Crop and variety response to applied phosphate and uptake of phosphorus from soil and fertilizer. *Agron. J.* 45:6-11. 1953.

- 1010 Newton, J. D. Handling straw and trash cover: I. Effects on the soil. *Agr. Inst. Rev.* 8(5):11 - 12. 1953.
- 1011 Newton, J. D. Influence of soil zone on the chemical composition of cereals in Alberta. *Can. J. Agr. Sci.* 33:359-363. 1953.
- 1012 Nielsen, K. F., P. F. Pratt, and W. P. Martin. Influence of alfalfa green manure on the availability of phosphorus to corn. *Soil Sci. Soc. Amer. Proc.* 17:46-48. 1953.
- 1013 Olding, A. B. Field and laboratory studies of Oneida and Haldimand soil profiles. M.S.A. Thesis, Univ. Toronto. 1953.
- 1014 Penner, E. Radiation effect on crops in connection with the application of radioactive phosphate. M.Sc. Thesis, Univ. Saskatchewan. 1953.
- 1015 Renner, R., C. F. Bentley, and L. W. McElroy. Nine essential amino acids in the protein of wheat and barley grown on sulphur-deficient soil. *Soil Sci. Soc. Amer. Proc.* 17:270-273. 1953.
- 1016 Rice, H. M., and R. Levick. Material removed by Jeffries' magnesium-ribbon-potassium-oxalate method for cleaning soil particles. *Soil Sci.* 75:243-246. 1953.
- 1017 Risi, J., C. E. Brunette, D. Spence, and H. Girard. Etude chimique des tourbes du Québec. Province de Que. Ministère des Mines Rep. No. 281. 1953.
- 1018 Risi, J., C. E. Brunette, D. Spence, and H. Girard. Etude chimique des tourbes du Québec. Province de Que. Ministère des Mines Rep. No. 282. 1953.
- 1019 Rouatt, J. W. Types and distribution of actinomycetes in soil. Ph.D. Thesis, Rutgers Univ. 1953 .
- 1020 Sowden, F. J., and D. I. Parker. Amino nitrogen of soils and of certain fractions isolated from them. *Soil Sci.* 76:201-208. 1953.
- 1021 Spencer, J. F. T., and J. D. Newton. Factors influencing the growth and survival of rhizobia in humus and soil cultures. *Can. J. Bot.* 31:253 - 264. 1953.
- 1022 Stevenson, I. L., and F. E. Chase. Nitrification in an orchard soil under three cultural practices. *Soil Sci.* 76:107-114. 1953.

- 1023 Stevenson, I. L., and A. G. Lochhead. The use of a percolation technique in studying antibiotic production in soil. *Can. J. Bot.* 31:23-27. 1953.
- 1024 Stevenson, I. L., and J. W. Rouatt. Qualitative studies of soil microorganisms: XI. Further observations on the nutritional classification of bacteria. *Can. J. Bot.* 31:438-447. 1953.
- 1025 Stewart, J. A. The use of saline irrigation water on Fraser River delta soil. M.S.A. Thesis, Univ. British Columbia. 1953.
- 1026 Stobbe, P. C., and A. Leahey. Soil classification systems in Canada. *Proc. 7th Pac. Sci. Congr.* 6:99-102. 1953.
- 1027 Toogood, J. A., and T. W. Peters. Comparison of methods of mechanical analysis of soils. *Can. J. Agr. Sci.* 33:159-171. 1953.
- 1028 Vaisey, E. B. Actinomycetes isolated from soil and their ability to cause potato scab. M.S.A. Thesis, Univ. Toronto. 1953.
- 1029 Wallace, R. A. Certain genetic soil types of the Swan River area of Manitoba. M.Sc. Thesis, Univ. Manitoba. 1953.
- 1030 Warkentin, B. P. Nutrient status of peas through tissue analyses. M.Sc. Thesis, Washington State Univ. 1953.
- 1031 Webber, L. R., and J. A. Shivas. The identification of clay minerals in some Ontario soils. *Soil Sci. Soc. Amer. Proc.* 17:96-99. 1953.
- 1032 Wicklund, R. E., and K. K. Langmaid. Soil survey of southwestern New Brunswick. N.B. Soil Surv. Rep. No. 4. 1953.
- 1033 Wilcox, J. C. Sprinkler irrigation of tree fruits and vegetables in B.C. *Can. Dep. Agr. Publ.* 878. 1953.
- 1034 Wilcox, J. C., and J. L. Mason. The determination of an irrigation schedule for deciduous orchards. *Proc. 13th Int. Hort. Congr.* (1952):990-998. 1953.
- 1035 Wilcox, J. C., and J. L. Mason. Consumptive use of water in orchard soils: I. Effects of soil depth. *Can. J. Agr. Sci.* 33:101-115. 1953.
- 1036 Wilcox, J. C., J. L. Mason, and J. M. McDougald. Consumptive use of water in orchard soils: II. Effects of evaporating power of air and of length of irrigation interval. *Can. J. Agr. Sci.* 33:231 - 245. 1953.

- 1037 Woodbridge, C. G., and H. R. McLarty. Further observations and investigations on manganese deficiency in fruit trees in British Columbia. *Can. J. Agr. Sci.* 33:153-158. 1953.
- 1038 Woodward, J. C. Residues in relation to soils, plants and animals. *Agr. Inst. Rev.* 8(2):65-66. 1953.
- 1039 Zwarich, M. A. Relation of chemical characteristics to the morphological characteristics of two gray podzolic soils in Saskatchewan. M.Sc. Thesis, Univ. Saskatchewan. 1953.
- 1040 Anderson, C. H. Soil and crop relationships in the Peace River region. *Agr. Inst. Rev.* 9(1):17- 18, 52. 1954.
- 1041 Archibald, E. S. What land use means to the people of Canada. *Agr. Inst. Rev.* 9(2):11, 15. 1954.
- 1042 Atkinson, H. J., G. R. Giles, and J. G. Desjardins. Trace element content of farmyard manure. *Can. J. Agr. Sci.* 34:76-80. 1954.
- 1043 Banting, A. Drainage problems in land use. *Agr. Inst. Rev.* 9(2):54-56. 1954.
- 1044 Bates, T. E. The movement of nitrate-nitrogen through columns of coarse-textured soil materials. M.Sc. Thesis, North Carolina State Coll. 1954.
- 1045 Bishop, R. F., and H. J. Atkinson. Changes in organic matter and certain other soil constituents in forty years of cropping under irrigation. *Can. J. Agr. Sci.* 34:177-180. 1954.
- 1046 Bishop, R. F., H. J. Atkinson, and R. C. Parent. The effect of limestone applications on soil composition, potato-scab development and yields of potatoes, barley and clover. *Can. J. Agr. Sci.* 34:573-581. 1954.
- 1047 Bishop, R. F., A. J. MacLean, and L. E. Lutwick. Fertility studies on soil types: IV. Potassium supply and requirement as shown by greenhouse studies and laboratory tests. *Can. J. Agr. Sci.* 34:374-384. 1954.
- 1048 Bourget, S. J. Electrical resistance units for moisture measurements: their moisture hysteresis, reproducibility and sensitivity. Ph.D. Thesis, Univ. Wisconsin. 1954.
- 1049 Brydon, J. E. A mineralogy study of the Lindley silt loam. M.Sc. Thesis, Univ: Missouri. 1954.

- 1050 Burton, M. O., F. J. Sowden, and A. G. Lochhead. Studies on the isolation and nature of the "Terregens factor." *Can. J. Biochem. Physiol.* 32:400-406. 1954.
- 1051 Cann, D. B. The genesis of a Podzol - Gray Brown Podzolic intergrade soil profile in Michigan. Ph.D. Thesis, Michigan State Univ. 1954.
- 1052 Cann, D. B., and J. D. Hilchey. Soil survey of Antigonish County, Nova Scotia. N.S. Soil Surv. Rep. No. 6. 1954.
- 1053 Cann, D. B., J. D. Hilchey, and G. R. Smith. Soil survey of Hants County, Nova Scotia. N.S. Soil Surv. Rep. No. 5. 1954.
- 1054 Casserly, L. M. The effect of chemical fertilizer treatment on culm diameter, crown development and plant height of three varieties of oats as related to lodging. M.Sc. Thesis, McGill Univ. 1954.
- 1055 Chisholm, D., and C. R. MacEachern. Zinc for potatoes in Nova Scotia. *Can. J. Agr. Sci.* 34:598 - 600. 1954.
- 1056 Corke, C. T. Thermophilic actinomycetes with special reference to the genus *Thermoactinomyces* Tsiklinsky. Ph.D. Thesis, Rutgers Univ. 1954.
- 1057 DeLong, W. A. Soil science--some problems and possibilities. *Agr. Inst. Rev.* 9(6):18-20, 48. 1954.
- 1058 Doughty, J. L., F. D. Cook, and F. G. Warder. Effect of cultivation on the organic matter and nitrogen of Brown soils. *Can. J. Agr. Sci.* 34:406-411. 1954.
- 1059 Doughty, J. L., F. G. Warder, and F. D. Cook. Note on high nitrate in saline areas. *Can. J. Agr. Sci.* 34:323. 1954.
- 1060 Duncan, D. A. Moisture in soils under crop rotations in southwestern Manitoba. M.Sc. Thesis, Univ. Manitoba. 1954.
- 1061 Edwards, A. P. An analysis of the results in field trials with fertilizers in Saskatchewan, 1939 - 1953. M.Sc. Thesis, Univ. Saskatchewan. 1954.
- 1062 Ehrlich, W. A. Pedological processes of some Manitoba soils. Ph.D. Thesis, Univ. Minnesota. 1954.
- 1063 Elliot, J. M. Characteristics of soil types devoted to flue-cured tobacco growing in Ontario. *The Lighter* 24(1):14-16. 1954.

- 1064 Ellis, J. H. Soil erosion in Western Canada. *Agr. Res. Inst.* 9(2):36-39, 46. 1954.
- 1065 Farstad, L., and D. G. Laird. Soil survey of the Quesnel, Nechako, Francois Lake and Bulkley-Terrace areas in the central interior of British Columbia. *B.C. Soil Surv. Rep.* No. 4. 1954.
- 1066 Gillespie, J. E., and N. R. Richards. Soil survey of Gray County. *Ont. Soil Surv. Rep.* No. 17. 1954.
- 1067 Gray, D. M. The permeability characteristics of some heavy clay soils as a basis for drainage design. M.S.A. Thesis, Univ. Toronto. 1954.
- 1068 Gray, P. H. H. Effects of benzene hexachloride on soil microorganisms: I. Experiments with autotrophic bacteria. *Can. J. Bot.* 32:1-9. 1954.
- 1069 Gray, P. H. H. Effects of benzene hexachloride on soil microorganisms: II. Experiments with urea-hydrolyzing bacteria. *Can. J. Bot.* 32:10-15. 1954.
- 1070 Gray, P. H. H. Effects of benzene hexachloride on soil microorganisms: III. Experiments with heterotrophic bacteria. *Appl. Microbiol.* 2:3740. 1954.
- 1071 Halstead, R. L. Soil aggregation as influenced by microbial gums, lime, fertilizers and type of crop. Ph.D. Thesis, Univ. Wisconsin. 1954.
- 1072 Hill, H., A. B. Durkee, H. B. Heeney, and G. M. Ward. Phosphorus content of potato plants in relation to yield and to phosphorus concentrations in nutrient solutions. *Can. J. Agr. Sci.* 34:644 - 650. 1954.
- 1073 Hill, K. W. These soils have grown wheat for fifty years. *Crops Soils* 6:14-15. 1954.
- 1074 Hill, K. W. Wheat yields and soil fertility on the Canadian Prairies after a half century of farming. *Soil Sci. Soc. Amer. Proc.* 18:182-184. 1954.
- 1075 Hoffman, D. W., and N. R. Richards. Soil survey of Bruce County. *Ont. Soil Surv. Rep.* No. 16. 1954.
- 1076 Ho-Yen, B. O., L. B. MacLeod, W. A. DeLong, and H. A. Stepler. Apparent effects of management on the organic matter, nitrogen and phosphorus contents of a Brown Forest soil. *Can. J. Agr. Sci.* 34:507-513. 1954.
- 1077 Jacobson, W. L. Better land use through irrigation. *Agr. Inst. Rev.* 9(2):51-53. 1954.

- 1078 Jaques, R. P. The effect of carbamates on the soil microflora with reference to actinomycetes and possible application in control of potato scab. M.S.A. Thesis, Univ. Toronto. 1954.
- 1079 Katznelson, H., J. W. Rouatt, and T. M. B. Payne. Liberation of amino acids by plant roots in relation to desiccation. *Nature (London)* 174:1110 - 1112. 1954.
- 1080 Lajoie, P., and R. Baril. Soil survey of Montreal, Jesus and Bizard islands in the Province of Quebec. *Que. Soil Surv. Rep.* 1954.
- 1081 Laplante, L., and L. Choinière. Etude pédologique des sols du comté d'Yamaska. Province de Québec, Ministère de l'Agriculture. *Bull. tech. No. 3.* 1954.
- 1082 Leahey, A. Soil and agricultural problems in subarctic and arctic Canada. *Arctic* 7:249-254. 1954.
- 1083 Lindsay, J. D. A comparative study of five soil profiles from the East Kootenay district of British Columbia. M.S.A. Thesis, Univ. British Columbia. 1954.
- 1084 Lutwick, L. E., and W. A. DeLong. Leachates from decomposing leaves: II. Interaction with soil-forming materials. *Can. J. Agr. Sci.* 34:203-213. 1954.
- 1085 MacKay, D. C. Cationic interrelationships in the nutrition of the corn plant (*Zea mais*). Ph.D. Thesis, McGill Univ. 1954.
- 1086 MacKay, D. C., and W. A. DeLong. Coordinated soil-plant analysis: II. Accuracy and precision of flame photometric methods for cation analysis. *Can. J. Agr. Sci.* 34:451-459. 1954.
- 1087 MacLean, A. J. The effect of soil pH, as modified by liming, on the availability of phosphorus and potassium for alfalfa in some eastern Ontario soils. Ph.D. Thesis, Michigan State Univ. 1954.
- 1088 MacLean, K. S. Carbohydrate-like components of aqueous extracts and leachates from leaves of trees. M.Sc. Thesis, McGill Univ. 1954.
- 1089 Mailloux, A., and G. Godbout. Etude pédologique des sols des comtés de Huntingdon et Beauharnois. Province de Québec, Ministère de l'Agriculture. *Bull. tech. No. 4.* 1954.
- 1090 Mathieu, A. L. The effects of soil amendments on the physical structure of solodized solonetz soils under irrigation. M.Sc. Thesis, Univ. Alberta. 1954.

- 1091 Matthews, B. C., and N. R. Richards. Soil survey of Stormont County. Ont. Soil Surv. Rep. No. 20. 1954.
- 1092 McEvoy, E. T. The relation of ammonium and sulphate ions to magnesium deficiency in tobacco. Can. J. Agr. Sci. 34:281-287. 1954.
- 1093 Moore, C. M. Conservation practices of Western Canadian farmers. Agr. Inst. Rev. 9(2):29-31. 1954.
- 1094 Moss, H. C. Soil classification in Saskatchewan, Canada. J. Soil Sci. 5:192-204. 1954.
- 1095 Newton, J. D. Microbiological maintenance of nitrogen in Western Canada's Gray Wooded, Black Earth and Brown Prairie soils. Trans. 5th Int. Congr. Soil Sci. 3:76-87. 1954.
- 1096 Newton, J. D., W. Odynsky, and T. W. Peters. Some characteristics of bleached horizon soils in Alberta, Canada. Trans. 5th Int. Congr. Soil Sci. 4:286-295. 1954.
- 1097 Ouellette, G. J., and R. O. Lachance. Soil and plant analysis as means of diagnosing boron deficiency in alfalfa in Quebec. Can. J. Agr. Sci. 34:494-503. 1954.
- 1098 Pelton, W. L. The effects of irrigation and chemical fertilization on the yield and protein content of a pasture mixture. M.S.A. Thesis, Univ. Toronto. 1954.
- 1099 Penner, E. The effect of P³² radiation on crop growth and phosphorus uptake. I. Greenhouse studies. Can. J. Agr. Sci. 34:41-47. 1954.
- 1100 Penner, E. The effect of P³² radiation on crop growth and phosphorus uptake. II. Field studies. Can. J. Agr. Sci. 34:214-221. 1954.
- 1101 Peterson, E. A., and H. Katznelson. Studies on the nutrition of *Helminthosporium sativum* and certain related species. Can. J. Microbiol. 1:190-197. 1954.
- 1102 Pleva, E. G. Urban-rural relationships in soil and water conservation. Agr. Inst. Rev. 9(2):64- 65. 1954.
- 1103 Pratt, L. E., and J. H. Ellis. The nature and distribution of saline soils in Manitoba. Can. J. Agr. Sci. 34:364-373. 1954.

- 1104 Reid, R. F. Formation and development of the Oneida and Haldimand soils. M.S.A. Thesis, Univ. Toronto. 1954.
- 1105 Reid, R. F., and B. C. Matthews. The genesis of the Oneida series in southern Ontario. *Can. J. Agr. Sci.* 34:614-623. 1954.
- 1106 Rennie, D. A., and J. Mitchell. The effect of nitrogen additions on fertilizer phosphate availability. *Can. J. Agr. Sci.* 34:353-363. 1954.
- 1107 Rennie, D. A., E. Truog, and O. N. Allen. Soil aggregation as influenced by microbial gums, level of fertility and kind of crop. *Soil Sci. Soc. Amer. Proc.* 18:399-403. 1954.
- 1108 Richards, N. R. Soil erosion in Eastern Canada. *Agr. Inst. Rev.* 9(2):40-43. 1954.
- 1109 Richardson, A. H. Conservation and flood control. *Agr. Inst. Rev.* 9(2):61-63. 1954.
- 1110 Ripley, P. O. Fertility and crop rotation. *Agr. Inst. Rev.* 9(2):44-46. 1954.
- 1111 Rogers, C. G. Soil bacteria that are resistant to benzene hexachloride. M.Sc. Thesis, McGill Univ. 1954.
- 1112 Russell, G. C., and P. F. Low. Reaction of phosphate with kaolinite in dilute solution. *Soil Sci. Soc. Amer. Proc.* 18:22-25. 1954.
- 1113 Schnitzer, M., and W. A. DeLong. Note on the reaction of 2,2'-dipyridyl with iron in presence of organic matter. *Can. J. Agr. Sci.* 34:324-325. 1954.
- 1114 Schnitzer, M., and W. A. DeLong. Note on relative capacities of solutions obtained from forest vegetation for mobilization of iron. *Can. J. Agr. Sci.* 34:542-543. 1954.
- 1115 Sheard, R. W. Use of P^{32} and anion-exchange resins to measure the phosphorus supplying power of twenty-four Ontario soils. M.S.A. Thesis, Univ. Toronto. 1954.
- 1116 Staple, W. J., and J. J. Lehane. Movement of moisture in unsaturated soils. *Can. J. Agr. Sci.* 34:329-342. 1954.
- 1117 Staple, W. J., and J. J. Lehane. Wheat yield and use of moisture on substations in southern Saskatchewan. *Can. J. Agr. Sci.* 34:460-468. 1954.

- 1118 Staple, W. J., and J. J. Lehane. Weather conditions influencing wheat yields in tanks and field plots. *Can. J. Agr. Sci.* 34:552-564. 1954.
- 1119 Stevenson, I. L. Antibiotic production of actinomycetes in soil demonstrated by morphological changes induced in *Helminthosporium sativum*. *Nature (London)* 174:598-599. 1954.
- 1120 Stevenson, I. L. Antibiotic production of actinomycetes in soil and their effect on root rot of wheat (*Helminthosporium sativum*). 8th Int. Bot. Congr., C.r. Seances Congr. 24:69-71. 1954.
- 1121 Tanner, C. B., S. J. Bourget, and W. E. Holmes. Moisture tension plates constructed from alundum filter discs. *Soil Sci. Soc. Amer. Proc.* 18:222 - 223. 1954.
- 1122 Wallace, R. H., and H. de L. King. Nutritional groups of soil bacteria on the roots of barley and oats. *Soil Sci. Soc. Amer. Proc.* 18:282-286. 1954.
- 1123 Wilde, S. A., G. K. Voigt, and R. S. Pierce. The relationship of soils and forest growth in the Algoma district of Ontario, Canada. *J. Soil Sci.* 5:22-38. 1954.
- 1124 Woodbridge, C. G. Zinc deficiency in fruit trees in the Okanagan Valley in British Columbia. *Can. J. Agr. Sci.* 34:545-551. 1954.
- 1125 Wright, J. R., and K. Lawton. Cobalt investigations on some Nova Scotia soils. *Soil Sci.* 77:95-106. 1954.
- 1126 Ahmad, N. Some physical and chemical properties of the. Stoney Marine clays in the Lower Fraser Valley area of British Columbia. M.S.A. Thesis, Univ. British Columbia. 1955.
- 1127 Archibald, J. A., and A. E. Erickson. Cation- exchange properties of a number of clay conditioner systems. *Soil Sci. Soc. Amer. Proc.* 19:444-446. 1955.
- 1128 Bentley, C. F., D. J. Hoff, and D. B. Scott. Fertilizer studies with radioactive sulphur: II. *Can. J. Agr. Sci.* 35:264-281. 1955.
- 1129 Birk, L. A. Penetration of and persistence in soil of the herbicide 3- (p-chlorophenyl) -1, 1-dimethylurea (CMU). *Can. J. Agr. Sci.* 35:377 - 387. 1955.
- 1130 Bolton, E. F., J. M. Fulton, and J. W. Aylesworth. The effects of two soil conditioners on some physical properties of a Brookston clay soil. *Can. J. Agr. Sci.* 35:51-57. 1955.

- 1131 Brockman, F. J., and O. C. W. Allenby. Factors affecting the laboratory evaluation of soil conditioners. *Can. J. Agr. Sci.* 35:27-35. 1955.
- 1132 Byrne, P. J. S. Some observations on montmorillonite-organic complexes. 2nd Nat. Conf. on Clays and Clay Minerals 241 - 253. 1955.
- 1133 Cann, D. B., and E. P. Whiteside. A study of the genesis of a Podzol-Gray-Brown Podzolic intergrade soil profile in Michigan. *Soil Sci. Soc. Amer. Proc.* 19:497-501. 1955.
- 1134 Chiasson, T. C. The effect of various increments of N, P and K on the yield and botanical composition of permanent pastures. M.Sc. Thesis, McGill Univ. 1955.
- 1135 Chisholm, D., A. W. MacPhee, and C. R. MacEachern. Effects of repeated applications of pesticides to soil. *Can. J. Agr. Sci.* 35:433-439. 1955.
- 1136 Clark, J. S. Solubility criteria for the existence of hydroxyapatite. *Can. J. Chem.* 33:1696-1700. 1955.
- 1137 Clark, J. S., and M. Peech. Solubility criteria for the existence of calcium and aluminum phosphates in soils. *Soil Sci. Soc. Amer. Proc.* 19:171-174. 1955.
- 1138 Clark, J. S., and R. C. Turner. Reactions between solid calcium carbonate and orthophosphate solutions. *Can. J. Chem.* 33:665-671. 1955.
- 1139 Cordukes, W. E., A. J. MacLean, and R. F. Bishop. The comparative effects of manure and commercial fertilizer in a long-term soil fertility experiment. *Can. J. Agr. Sci.* 35:229-237. 1955.
- 1140 DeLong, W. A., and M. Schnitzer. Investigations on the mobilization and transport of iron in forested soils: 1. The capacities of leaf extracts and leachates to react with iron. *Soil Sci. Soc. Amer. Proc.* 19:360-363. 1955.
- 1141 Dubetz, S., G. C. Russell, and K. W. Hill. Crop sequence studies on irrigated land in southern Alberta. *Can. J. Agr. Sci.* 35:564-567. 1955.
- 1142 Ehrlich, W. A., and H. M. Rice. Post-glacial weathering of Mankato till in Manitoba. *J. Geol.* 63:527-537. 1955.
- 1143 Ehrlich, W. A., H. M. Rice, and J. H. Ellis. Influence of the composition of parent materials on soil formation in Manitoba. *Can. J. Agr. Sci.* 35:407-421. 1955.

- 1144 Elrick, D. E. Influence of sample pretreatment on soil moisture retention. M.Sc. Thesis, Univ. Wisconsin. 1955.
- 1145 Findlay, W. I. The nutrient status of corn with special reference to nitrogen and phosphorus. M.Sc. Thesis, McGill Univ. 1955.
- 1146 Finn, B. J. Comparison of rock phosphate to superphosphate for oats and alfalfa on three podzolized soils in eastern Canada. Ph.D. Thesis, Michigan State Univ. 1955.
- 1147 Fulton, J. M., and H. F. Murwin. The relationship between available soil moisture levels and potato yields. *Can. J. Agr. Sci.* 35:552-556. 1955.
- 1148 Gareau, L. Some effects of commercial fertilizers on yield and quality of forage crops in Alberta. M.Sc. Thesis, Univ. Alberta. 1955.
- 1149 Hamilton, H. A. The extractability of soil phosphorus. M.Sc. Thesis, McGill Univ. 1955.
- 1150 Heeney, H. B., R. F. Bishop, and H. Hill. The relationship of soil phosphorus tests to crop yield and to the requirement of the tomato for phosphatic fertilizer. *Can. J. Agr. Sci.* 35:11 - 18. 1955.
- 1151 Hoffman, D. W., and N. R. Richards. Soil survey of York County. Ont. Soil Surv. Rep. No. 19. 1955.
- 1152 Holmes, R. M. Soil conditioner effects on soils and crops. Ph.D. Thesis, Rutgers Univ. 1955.
- 1153 Hutcheon, W. L. Moisture flow induced by thermal gradients within unsaturated soils. Ph.D. Thesis, Univ. Minnesota. 1955.
- 1154 Hutcheon, W. L. Characteristics of moisture movement in unsaturated soils. Div. Bldg. Res., N.R.C. Bull. 4. 1955.
- 1155 Katznelson, H., J. W. Rouatt, and T. M. B. Payne. The liberation of amino acids and reducing compounds by plant roots. *Plant Soil* 7:35-48. 1955.
- 1156 Kozulis, J. A. The cause and control of variability in the nutritional grouping of soil bacteria. M.S.A. Thesis, Univ. Toronto. 1955.
- 1157 Leclaire, F. P. Causes of nitrate contamination of ground waters occurring locally in the Neepawa-Langruth areas. M.Sc. Thesis, Univ. Manitoba. 1955.

- 1158 Lochhead, A. G., and M. O. Burton. Qualitative studies of soil microorganisms: XII. Characteristics of vitamin B12-requiring bacteria. *Can. J. Microbiol.* 1: 319-330. 1955.
- 1159 Lochhead, A. G., and J. W. Rouatt. The "rhizosphere effect" on the nutritional groups of soil bacteria. *Soil Sci. Soc. Amer. Proc.* 19:48-49. 1955.
- 1160 Lutwick, L. E., A. J. MacLean, and R. F. Bishop. Fertility studies on soil types: V. The effect of continued cropping in the greenhouse on the phosphorus supplying power of soils. *Can. J. Agr. Sci.* 35:101-110. 1955.
- 1161 MacKay, D. C., and W. A. DeLong. Coordinated soil-plant analysis: III. Exchange equilibria in soil suspensions as possible indicators of potassium availability. *Can. J. Agr. Sci.* 35:181-188. 1955.
- 1162 MacLean, A. A., J. J. Doyle, and F. G. Hamlyn. Fertility studies on some New Brunswick soils: I. Soil phosphorus supply as shown by greenhouse and chemical tests. *Can. J. Agr. Sci.* 35:388 - 396. 1955.
- 1163 MacLean, A. J., and R. L. Cook. The effect of soil reaction on the availability of phosphorus for alfalfa in some eastern Ontario soils. *Soil Sci. Soc. Amer. Proc.* 19:311-314. 1955.
- 1164 MacLean, A. J., L. E. Lutwick, and R. F. Bishop. Fertility studies on soil types: VI. The effect of continued cropping in the greenhouse on the potassium supplying power of soils. *Can. J. Agr. Sci.* 35:397-406. 1955.
- 1165 Matthews, B. C., D. W. Hoffmann, and D. J. Eagle. Brown Forest-Gray Wooded soil sequence in the Temiskaming District of Ontario. *Can. J. Agr. Sci.* 35:538-551. 1955.
- 1166 Matthews, B. C., R. F. Reid, and A. B. Olding. Genesis and morphology of the Oneida and Haldimand series--Gray-Brown Podzolic soils in Ontario. *Can. J. Agr. Sci.* 35:500-510. 1955.
- 1167 McConkey, O. M. Grassland and soil conservation. *Agr. Inst. Rev.* 10(2):58-61. 1955.
- 1168 McIver, R. N., and E. V. McCurdy. The improvement of burnout lands in south-central Saskatchewan. *Can. Dep. Agr. Publ.* 600, *Farmers' Bull.* 50. 1955.

- 1169 Miller, M. H. Phosphorus-nitrogen relationship in the utilization of phosphatic fertilizer by corn. M.Sc. Thesis, Purdue Univ. 1955.
- 1170 Millette, J. F. G. Loess and loess-like deposits of the Susquehanna River valley and a section of the Laurentians in Canada. Ph.D. Thesis, Pennsylvania State Univ. 1955.
- 1171 Moss, H. C., and R. J. St. Arnaud. Gray Wooded (Podzolic) soils of Saskatchewan, Canada. *J. Soil Sci.* 6:293-311. 1955.
- 1172 Patrick, Z. A. The peach replant problem in Ontario: II. Toxic substances from microbial decomposition products of peach root residues. *Can. J. Bot.* 33:461-486. 1955.
- 1173 Pawluk, S. The exchangeable cation status of some west-central Alberta soils. M.Sc. Thesis, Univ. Alberta. 1955.
- 1174 Pelton, W. L., and L. R. Webber. The effects of irrigation and chemical fertilization on the yield and protein content of a pasture mixture. *Can. J. Agr. Sci.* 35:1-10. 1955.
- 1175 Pretty, K. M. The effect of certain liming practices upon the chemical composition and properties of several Michigan soils. M.Sc. Thesis, Michigan State Coll. 1955.
- 1176 Ripley, P. O. Fertility for grasslands. *Agr. Inst., Rev.* 10(2):17-20. 1955.
- 1177 Robertson, J. A. A pedological study of the Newdale soil association. M.Sc. Thesis, Univ. Manitoba. 1955.
- 1178 Rouatt, J. W., and A. G. Lochhead. Qualitative studies of soil microorganisms: XIII. Effect of decomposition of various crop plants on the nutritional groups of soil bacteria. *Soil Sci.* 80:147-154. 1955.
- 1179 Schnitzer, M. Interaction of cations with extracts and leachates of forest trees. Ph.D. Thesis, McGill Univ. 1955.
- 1180 Schnitzer, M., and W. A. DeLong. Investigations on the mobilization and transport of iron in forested soils: II. The nature of the reaction of leaf extracts and leachates with iron. *Soil Sci. Soc. Amer. Proc.* 19:363-368. 1955.
- 1181 Sheard, R. W., and A. G. Caldwell. The use of anion exchange resins in phosphorus fertility studies. *Can. J. Agr. Sci.* 35:36-41. 1955.

- 1182 Smith, R. E. Molybdenum in soils, forage crops and water supply in the Swan River valley of Manitoba. M.Sc. Thesis, Univ. Manitoba. 1955.
- 1183 Soper, R. J. Effect of applied nitrogen on the utilization of fertilizer phosphorus. M.Sc. Thesis, Univ. Saskatchewan. 1955.
- 1184 Sowden, F. J. Estimation of amino acids in soil hydrolysates by the Moore and Stein method. *Soil Sci.* 80:181-188. 1955.
- 1185 Staple, W. J., and J. J. Lehane. The influence of field shelterbelts on wind velocity, evaporation, soil moisture and crop yield. *Can. J. Agr. Sci.* 35:440-453. 1955.
- 1186 Stevenson, I. L. Antibiotic activity of actinomycetes with special reference to their effects on *Helminthosporium sativum* in soil. Ph.D. Thesis, Univ. London. 1955.
- 1187 van Ryswyk, A. L. Soils of the Doukhobor (former CCUP) lands of British Columbia. M.S.A. Thesis, Univ. British Columbia. 1955.
- 1188 Westlake, D. W. Influence of 2,4-D on the soil microflora. M.S.A. Thesis, Univ. British Columbia. 1955.
- 1189 Wickland, R. E. Characteristics of a toposequence of soils, the Caribou catena, in the Podzol region of eastern Canada. Ph.D. Thesis, Michigan State Univ. 1955.
- 1190 Wilcox, J. C., and C. H. Ferrier. A comparison of furrow and sprinkler irrigation in the Okanagan Valley. *Can. Dep. Agr. Publ.* 954. 1955.
- 1191 Wilcox, J. C., T. G. Willis, and W. L. Jacobson. Irrigation of grassland. *Agr. Inst. Rev.* 10(2):21 - 23. 1955.
- 1192 Wilner, J. The effect of low temperatures on available soil moisture during winters on the Canadian prairies. *Agron. J.* 47:411-413. 1955.
- 1193 Woodbridge, C. G. Magnesium deficiency in apple in British Columbia. *Can. J. Agr. Sci.* 35:350 - 357. 1955.
- 1194 Wright, J. R., R. Levick, and H. J. Atkinson. Trace element distribution in virgin profiles representing four great soil groups. *Soil Sci. Soc. Amer. Proc.* 19:340-344. 1955.
- 1195 Anderson, C. H., and E. C. Stacey. Soil management practices in the Upper Peace River region. *Can. Dep. Agr. Publ.* 985. 1956.

- 1196 Baker, J. The influence of nitrogenous fertilizers and leaching on the base status of soils. Ph.D. Thesis, Washington State Univ. 1956.
- 1197 Basaraba, J. The importance of *Azotobacter* in some Ontario soils. M.S.A. Thesis, Univ. Toronto. 1956.
- 1198 Bentley, C. F. Equipment for seeding fertilizer experiments with small grains. Can. J. Agr. Sci. 36:508-509. 1956.
- 1199 Bentley, C. F., L. Gareau, R. Renner, and L. W. McElroy. Fertilizers and nutritive values of hays: I. Sulphur-deficient Gray Wooded soils. Can. J. Agr. Sci. 36:315-325. 1956.
- 1200 Brydon, J. E. The Hagerstown silt loam in Missouri. Ph.D. Thesis, Univ. Missouri. 1956.
- 1201 Choinière, L. Dosage des cations échangeables du sol par le spectrophotomètre à flamme Beckman. Can. J. Agr. Sci. 36:203-204. 1956.
- 1202 Coffin, D. E. The release of organic matter from the B horizons of Podzol soils. M.Sc. Thesis, McGill Univ. 1956.
- 1203 Ehrlich, W. A., L. E. Pratt, and E. A. Poyser. Report of reconnaissance soil survey of Rosburn and Virden map sheet areas. Man. Soil Surv. Rep. No. 6. 1956.
- 1204 Elliot, J. M., and L. S. Vickery. Ontario flue-cured tobacco soils and their fertilizer requirements. Can. Dep. Agr. Publ. 987. 1956.
- 1205 Fack, H. J. A comparison of different methods of extraction for determining available phosphorus and potassium in organic soils. M.S.A. Thesis, Univ. Toronto. 1956.
- 1206 Gray, P. H. H. Effects of hexachlorocyclohexane on certain soil bacteria. Trans. 6th Int. Congr. Soil Sci. C:15-18. 1956.
- 1207 Gunawardene, K. J. Comparison of liquid and dry forms of nitrogen, phosphorus and potassium fertilizer as measured in plant growth and nutrient uptake. M.S.A. Thesis, Univ. Toronto. 1956.
- 1208 Halstead, R. L., A. J. MacLean, and L. E. Lutwick. Availability of phosphorus in soils pretreated with superphosphate. Can. J. Agr. Sci. 36:471 - 482. 1956.
- 1209 Hill, K. W. Soil drifting - Its causes and control. Can. Dep. Agr. Publ. 896. 1956.

- 1210 Hoffman, D. W., R. E. Wicklund, and N. R. Richards. Soil survey of New Liskeard-Englehart area. Ont. Soil Surv. Rep. No. 21. 1956.
- 1211 Illustration Stations Division, Exp. Farms Service. Fertility and management studies on Gray Wooded soils. Can. Dep. Agr. Progress Report. 1927-1956.
- 1212 Ivarson, K. C. The persistence, biological and physicochemical effects of surface-active agents in soil. Ph.D. Thesis, Rutgers Univ. 1956.
- 1213 Ivarson, K. C., and D. Pramer. The persistence and biological effects of surface-active agents in soil. Soil Sci. Soc. Amer. Proc. 20:371-374. 1956.
- 1214 Jackson, L. P. The effect of soil water content and oxygen diffusion rate on growth of potato sets. M.Sc. Thesis, Michigan State Univ. 1956.
- 1215 Janzen, W. K., and H. C. Moss. Exchangeable cations in solodized-solonetz and solonetz-like soils of Saskatchewan. J. Soil Sci. 7:203 - 213. 1956.
- 1216 Jeyaseelan, K. N. Morphological and chemical changes in soils as related to management and cropping. M.S.A. Thesis, Univ. Toronto. 1956.
- 1217 Jeyaseelan, K. N., and B. C. Matthews. Chemical properties of southern Ontario soils. Can. J. Agr. Sci. 36:394-400. 1956.
- 1218 Katznelson, H. The "rhizosphere effect" of mangels on certain groups of soil microorganisms. Soil Sci. 62:343-354. 1956.
- 1219 Katznelson, H., and I. L. Stevenson. Observations on the metabolic activity of the soil microflora. Can. J. Microbiol. 2:611-622. 1956.
- 1220 Kelley, C. C., and P. N. Sprout. Soil survey of the Upper Kootenay and Elk River valleys in the East Kootenay District of British Columbia. B.C. Soil Surv. Rep. No. 5. 1956.
- 1221 Kempton, A. G. The effect of dithiocarbamate fungicides and allied compounds on *Streptomyces scabies* and the incidence of potato scab. M.S.A. Thesis, Univ. Toronto. 1956.
- 1222 Ketcheson, J. W. Soil phosphorus forms in two non-calcareous Ontario soils. Ph.D. Thesis, Univ. Illinois. 1956.
- 1223 King, H. de L., and R. H. Wallace. Morphological and physiological groups of soil bacteria from the roots of barley and oats. Can. J. Microbiol. 2:473-488. 1956.

- 1224 King, K. M. Pasture irrigation control according to soil and meteorological measurements. Ph.D. Thesis, Univ. Wisconsin. 1956.
- 1225 King, K. M., C. B. Tanner, and V. E. Suami. A floating lysimeter and its evaporation recorder. Trans. Amer. Geophys. Union 37: 738-742. 1956.
- 1226 Laird, D. G., and E. J. Fennell. Boron content of British Columbia soils. 7th Pac. Sci. Congr. Proc. 6:42-47. 1956.
- 1227 Laird, D. G., and C. A. Rowles. Soil resources and land use in British Columbia. 7th Pac. Sci. Congr. Proc. 6:68-73. 1956.
- 1228 Lindsay, J. D., and W. Odynsky. Exploratory soil survey by helicopter. Agr. Inst. Rev. 11(6):1112, 54. 1956.
- 1229 Lochhead, A. G., and M. O. Burton. Importance of soil extract for the enumeration and study of soil bacteria. Trans. 6th Int. Congr. Soil Sci. C:157-162. 1956.
- 1230 Lochhead, A. G., and M. O. Burton. Incidence in soil of bacteria requiring vitamin B12 and the Terregens factor. Soil Sci. 82:237-246. 1956.
- 1231 Lochhead, A. G., and M. O. Burton. Soil as a habitat of vitamin-requiring bacteria. Nature (London) 178:144-145. 1956.
- 1232 MacLean, A. J. Influence of additions of lime to soils on the availability of potassium and other cations for alfalfa. Can. J. Agr. Sci. 36:213 - 220. 1956.
- 1233 MacLean, K. S., and W. A. DeLong. On the carbohydrate component in leaf extracts and in leachates obtained under forest canopy. Can. J. Agr. Sci. 36:267-275. 1956.
- 1234 Mason, J. L. Effect of chelate compounds on the iron nutrition of the bean, *Phaseolus vulqaris* L. Ph.D. Thesis, Oregon State Univ. 1956.
- 1235 Matthews, B. C. Soil resources and land use hazards in southern Ontario. Can. Geogr. 8:55-62. 1956.
- 1236 McKercher, R. B. The measurement of absorbed phosphorus in soils. M.Sc. Thesis, Univ. Saskatchewan. 1956.
- 1237 Moss, H. C. Physical features and soils of the Mortlach archaeological area. In B. N. Wettlander, The Mortlach site in the Besant valley of central Saskatchewan. Anthropol. Ser. No. 1. 1955. Sask. Golden Jubilee Comm. 1956.

- 1238 Moss, H. C. Problems of soil nomenclature - A review of "Multilingual vocabulary of soil science." *Soil Sci.* 81:327-332. 1956.
- 1239 Natesan, S. The effect of time of application of ammonia to soil on its utilization by a crop. M.S.A. Thesis, Univ. Toronto. 1956.
- 1240 Newton, J. D. Microbial and nutritional effects of trash cover in Western Canada's Gray Wooded, Black Earth, and Brown Prairie soils. *Trans. 6th Int. Congr. Soil Sci. C*:213-224. 1956.
- 1241 Odynsky, W., A. Wynnyk, and J. D. Newton. Reconnaissance soil survey of the Grande Prairie and Sturgeon Lake sheets. *Univ. Alberta Bull. No. 60. Res. Counc. Alberta Rep. No. 74. Alberta Soil Surv. Rep. No. 18.* 1956.
- 1242 Paul, E. A. Aerobic non-symbiotic nitrogen fixing bacteria and their biochemical activities. M.Sc. Thesis, Univ. Alberta. 1956.
- 1243 Pawluk, S., and C. F. Bentley. Exchangeable cation characteristics of some west-central Alberta soils. *Can. J. Agr. Sci.* 36:380-389. 1956.
- 1244 Payne, T. M. B., J. W. Rouatt, and H. Katznelson. Detection of free amino acids in soil. *Soil Sci.* 82:521-524. 1956.
- 1245 Radforth, N. w. Peat in Canada and Britain Economic implications. *J. Roy. Soc. Arts* 104:968 - 979. 1956.
- 1246 Rayment, A. F. The tolerance of various forage crops to salinity, with special reference to seed germination. M.Sc. Thesis, Univ. Alberta. 1956.
- 1247 Reeder, S. W. Mineralogy of the sand and clay fractions of two New Brunswick Podzols. The Queens series. M.Sc. Thesis, McGill Univ. 1956.
- 1248 Reeder, S. W. The use of 8-quinolinol in chloroform for cleaning mineral grains from soils for identification. *Can. J. Agr. Sci.* 36:245. 1956.
- 1249 Rennie, D. A. Variations in percentage phosphorus and protein content of wheat as induced by fertilizer treatment, soil type and season. *Can. J. Agr. Sci.* 36:491-504. 1956.
- 1250 Robinson, D. B., and J. E. Campbell. Whiptail of cauliflower in Prince Edward Island. *Can. J. Agr. Sci.* 36:241-244. 1956.

- 1251 Schnitzer, M., and J. R. Wright. The extraction of organic matter from the B horizon of a Podzol soil. *Can. J. Agr. Sci.* 36:511-512. 1956.
- 1252 Smith, J. A. Yield-of-nutrient curves and availability of phosphorus and potassium in Burford loam in the greenhouse. *Can. J. Agr. Sci.* 36:339 - 348. 1956.
- 1253 Sowden, F. J. Distribution of amino acids in selected horizons of soil profiles. *Soil Sci.* 82:491-496. 1956.
- 1254 Stevenson, D. S. Percolation of soil water as related to consumptive use. M.Sc. Thesis, Oregon State" Univ. 1956.
- 1255 Stevenson, I. L. Some observations on the microbial activity in remoistened air-dried soils. *Plant Soil* 8:170-182. 1956.
- 1256 Stevenson, I. L. Antibiotic activity of actinomycetes in soil as demonstrated by direct observation technique. *J. Gen. Microbiol.* 15:372 - 380. 1956.
- 1257 Stevenson, I. L. Antibiotic activity in soil and their controlling effects on rootrot of wheat. *J. Gen. Microbiol.* 14:440-449. 1956.
- 1258 Thorne, K. H. G. The use of gaseous ammonia as a plant nutrient. M.Sc. Thesis, McGill Univ. 1956.
- 1259 Toogood, J. A. The use of soil cores in assessing physical properties. *Proc. 6th Int. Congr. Soil Sci. (Paris)* B:227. 1956.
- 1260 Turner, R. C., and J. S. Clark. The pH of calcareous soils. *Soil Sci.* 82:337-342. 1956.
- 1261 Warkentin, B. P. Bonding between montmorillonite clay particles. Ph.D. Thesis, Cornell Univ. 1956.
- 1262 Wikramanayake, V. E. A. The infiltration characteristics of Guelph loam soil. M.S.A. Thesis, Univ. Toronto. 1956.
- 1263 Wright, J. R., and R. Levick. Development of a profile in a soil column leached with a chelating agent. *Trans. 6th Int. Congr. Soil Sci.* E:257 - 262. 1956.
- 1264 Atkinson, H. J., and J. R. Wright. Chelation and the vertical movement of soil constituents. *Soil Sci.* 84:1-12. 1957.

- 1265 Ayers, H. D. The effect of crop cover on the infiltration characteristics of Guelph loam soil. *Can. J. Soil Sci.* 37:128-133. 1957.
- 1266 Baldwin, C. S. Some factors influencing the behavior of certain nitrogen fertilizers. M.S.A. Thesis, Univ. Toronto. 1957.
- 1267 Baril, R., et B. Rochefort. Etude pédologique du comté Lotbinière dans la Province de Québec. *Que. Soil Surv. Rep.* 1957.
- 1268 Beaton, J. D. Thermodynamics of phosphate adsorption on several charcoals. Ph.D. Thesis, Utah State Univ. 1957.
- 1269 Bentley, C. F. Soils and fertilizers for Alberta gardens and lawns. *Univ. Alberta Circ.* 30. 1957.
- 1270 Bolton, E. F., and J. W. Aylesworth. A comparison of some tillage methods for corn on Brookston clay soil. *Can. J. Soil Sci.* 37:113-119. 1957.
- 1271 Bourget, S. J., and J. G. Kemp. Wet sieving apparatus for stability analysis of soil aggregates. *Can. J. Soil Sci.* 37:60. 1957.
- 1272 Bowren, K. E., and H. E. Wilson. Crop rotation studies on White Fox soils, 1936-1957. *Can. Dep. Agr. Unnumbered publ.* 1957.
- 1273 Burton, M. O. Characteristics of bacteria requiring the terregens factor. *Can. J. Microbiol.* 3:107 - 112. 1957.
- 1274 Byers, G. L., and L. R. Webber. Tillage practices in relation to crop yields, power requirements and soil properties. *Can. J. Soil Sci.* 37:71 - 78. 1957.
- 1275 Campbell, W. L. Effect of various limestone particles on sandy soil. M.S.A. Thesis, Univ. Toronto. 1957.
- 1276 Chase, F. E., and P. H. H. Gray. Application of the Warburg respirometer in studying respiratory activity in soil. *Can. J. Microbiol.* 3:335. 1957.
- 1277 Cook, F. D., F. G. Warder, and J. L. Doughty. Relationship of nitrate accumulation to yield response of wheat in some Saskatchewan soils. *Can. J. Soil Sci.* 37:84-88. 1957.
- 1278 Darcel, F. C. Pedogenesis in the Rocky Mountain Trench region of southeast British Columbia. M.S.A. Thesis, Univ. British Columbia. 1957.

- 1279 Dawkins, R. A. Aerobic cellulose-decomposing bacteria and relationship to soil organic matter. M.Sc. Thesis, McGill Univ. 1957.
- 1280 Day, J. H., and A. Leahey. Reconnaissance soil survey of the Slave River lowlands in the Northwest Territories. Can. Dep. Agr. Rep. 1957.
- 1281 Ehrlich, W. A., E. A. Poyser, and L. E. Pratt. Report of reconnaissance soil survey of Carberry map sheet area. Man. Soil Surv. Rep. No. 7. 1957.
- 1282 Elliot, J. M. Effect of Mg and Cl in flue-cured tobacco fertilizer. *The Lighter* 214(4):1-2. 1957.
- 1283 Ellis, J. G. The relationship of topography to soil development. M.Sc. Thesis, Univ. Saskatchewan. 1957.
- 1284 Elofson, R. M. Infrared spectra of humic acids and related materials. *Can. J. Chem.* 35:926-931. 1957.
- 1285 Elrick, D. E. Liquid content and conductivity of soils using volumetric pressure plates. Ph.D. Thesis, Univ. Wisconsin. 1957.
- 1286 Farstad, L., D. G. Laird, and C. A. Rowles. Soil map of British Columbia. Resource Map No. 5. B. C. Atlas of Resources. 1957.
- 1287 Ferguson, W. S. The effect of stubble and straw residue on the availability of nitrogen. *Can. J. Soil Sci.* 37:145-146. 1957.
- 1288 Finn, B. J., R. L. Cook, and C. N. Harrison. Comparison of rock phosphate to superphosphate for oats and alfalfa on three podzolized soils of Eastern Canada. *Agron. J.* 49:465-468. 1957.
- 1289 Follwell, J. H. The role of soil insecticides in agriculture. *Agr. Inst. Rev.* 12(3):19-22. 1957.
- 1290 Gillespie, J. E., and N. R. Richards. Soil survey of Victoria County. Ont. Soil Surv. Rep. No. 25. 1957.
- 1291 Godbout, G. Etude pédologique du Comté de Berthier. Que. Ministère de l'Agriculture Bull. tech. no. 5. 1957.
- 1292 Gray, P. H. H., and R. A. Lachance. Assimilation of berberine and chelidoxanthine by bacteria. *Plant Soil* 8:354-366. 1957.

- 1293 Halstead, R. L., K. F. Nielsen, and A. J. MacLean. Phosphorus and potassium supply for alfalfa in soils sampled at different depths. *Can. J. Soil Sci.* 37:61-70. 1957.
- 1294 Hedlin, R. A., R. E. Smith, and F. P. Leclaire. Effect of crop residues and fertilizer treatments on the yield and protein content of wheat. *Can. J. Soil Sci.* 37:34-40. 1957.
- 1295 Heeg, T. J. Lime acid soils for better yields. *Ont. Dep. Agr. Bull.* 523. 1957.
- 1296 Heeney, H. B., and R. L. Halstead. Further studies on the relationship of soil phosphorus tests to the phosphatic fertilizer requirement of the tomato. *Can. J. Plant Sci.* 37:347-352. 1957.
- 1297 Holmes, R. M., and S. J. Toth. Soil conditioners: their effect on coarse-textured soils, crop yields and composition. *Can. J. Soil Sci.* 37:102-112. 1957.
- 1298 Holmes, R. M., and S. J. Toth. Physico-chemical behaviour of clay conditioner complexes. *Soil Sci.* 84:479-488. 1957.
- 1299 Hore, F. R., and D. M. Gray. An evaluation of some tile-drain depth and spacing formulae from the physical properties of some Ontario soils. *Can. J. Soil Sci.* 37:120-127. 1957.
- 1300 Irving, R. M. Land use planning and urban development in southern Ontario. *Agr. Inst. Rev.* 12(6):18-22, 53. 1957.
- 1301 Irving, R. M. [Compiler] Factors affecting land use in a selected area in southern Ontario (Louth Twp., Lincoln Co.). *Ont. Dep. Agr.* 1957.
- 1302 Janke, W. E. The effect of cultivation on the availability of soil nitrogen in some Manitoba soils. M.Sc. Thesis, Univ. Manitoba. 1957.
- 1303 Katznelson, H., and J. W. Rouatt. Studies on the incidence of certain physiological groups of bacteria in the rhizosphere. *Can. J. Microbiol.* 3:265-269. 1957.
- 1304 Katznelson, H., and J. W. Rouatt. Manometric studies with rhizosphere and non-rhizosphere soil. *Can. J. Microbiol.* 3:673-678. 1957.
- 1305 Ketcheson, J. W. Some effects of soil temperature on phosphorus requirements of young corn plants in the greenhouse. *Can. J. Soil Sci.* 37:41-47. 1957.

- 1306 Landerkin, G. B., P. D. McKercher, G. L. Bannister, R. V. L. Walker, and C. A. Mitchell. A study of the antiphage and antiviral activities of actinomycetes from soils of northern Canada. *Antibiot. Chemother.* 12:641-644. 1957.
- 1307 Leuken, H. The influence of nitrogen on the decomposition of plant residues in the soil. M.Sc. Thesis, Univ. Saskatchewan. 1957.
- 1308 Lochhead, A. G. Qualitative studies of soil microorganisms: XV. Capability of the predominant bacterial flora for synthesis of various growth factors. *Soil Sci.* 84:395-403. 1957.
- 1309 Lochhead, A. G., and M. O. Burton. Qualitative studies of soil microorganisms: XIV. Specific vitamin requirements of the predominant bacterial flora. *Can. J. Microbiol.* 3:35-42. 1957.
- 1310 Mack, A. R. The influence of temperature and moisture on soil phosphorus as characterized by plant uptake and chemical fractionation. Ph.D. Thesis, Purdue Univ. 1957.
- 1311 MacKenzie, A. F. The influence of soil type on the availability of added phosphorus. M.Sc. Thesis, Univ. Saskatchewan. 1957.
- 1312 MacLean, A. A., J. J. Doyle, and F. G. Hamlyn. Fertility studies on some New Brunswick soils: II. Soil potassium supply as shown by greenhouse and chemical tests. *Can. J. Soil Sci.* 37:29-33. 1957.
- 1313 Matthews, B. C., N. R. Richards, and R. E. Wicklund. Soil survey of Lambton County. *Ont. Soil Surv. Rep. No. 22.* 1957.
- 1314 Matthews, B. C., N. R. Richards, and R. E. Wicklund. Soil survey of Glengarry County. *Ont. Soil Surv. Rep. No. 24.* 1957.
- 1315 Matthews, B. C., and J. A. Smith. A percolation method for measuring potassium-supplying power of soils. *Can. J. Soil Sci.* 37:21-28. 1957.
- 1316 McCann, G. E. The effect of lime on alfalfa grown on fine-textured soils. M.S.A. Thesis, Univ. Toronto. 1957.
- 1317 McEwen, H. B. Measurement of exchangeable potassium and potassium-supplying power of soils. M.S.A. Thesis, Univ. Toronto. 1957.
- 1318 Miller, M. H. Water-soluble chelating agents in organic materials and their influence on the plant availability of trace metals in soils. Ph.D. Thesis, Purdue Univ. 1957.

- 1319 Mitchell, J. Review of tracer studies in Saskatchewan on the utilization of phosphates by grain crops. *J. Soil Sci.* 8:73-85. 1957.
- 1320 Nichol, W. E., and R. C. Turner. The pH of non-calcareous, near-neutral soils. *Can. J. Soil Sci.* 37:96-101. 1957.
- 1321 Nyborg, M. P. K. The effect of plant residues on available soil phosphorus. M.Sc. Thesis, Univ. Saskatchewan. 1957.
- 1322 Olding, A. B., R. E. Wicklund, and N. R. Richards. Soil survey of Ontario County. *Ont. Soil Surv. Rep. No. 23.* 1957.
- 1323 Pawluk, S. Some forest soil characteristics and the relation to jack pine growth. Ph.D. Thesis, Univ. Minnesota. 1957.
- 1324 Pawluk, S., and H. F. Arneman. The residual effects of lime added for the growth of various conifers in Minnesota. *Soil Sci. Soc. Amer. Proc.* 21:653 - 655. 1957.
- 1325 Peterson, E. A. Rhizosphere fungi. Ph.D. Thesis, Univ. London. 1957.
- 1326 Poyser, E. A., R. A. Hedlin, and A. O. Ridley. The effect of farm and green manures on the fertility of black-earth-meadow clay soils. *Can. J. Soil Sci.* 37:48-56. 1957.
- 1327 Reeder, S. W., and A. L. McAllister. A staining method for the quantitative determination of feldspars in rocks and sands from soils. *Can. J. Soil Sci.* 37:57-59. 1957.
- 1328 Robinson, D. B., K. E. LeLacheur, and G. A. Brossard. Effect of molybdenum applications on leguminous hay crops in Prince Edward Island. *Can. J. Plant Sci.* 37:193-195. 1957.
- 1329 Rouatt, J. W., and H. Katznelson. The comparative growth of bacterial isolates from rhizosphere and non-rhizosphere soils. *Can. J. Microbiol.* 3:271-275. 1957.
- 1330 Rowles, C. A. Soils of British Columbia. Univ. Saskatchewan, Saskatoon, Modern Press. 1957.
- 1331 Rowles, C. A. Contributions of science to agriculture: The contribution of soil science. *Agr. Inst. Rev.* 12(2):36-38. 1957.
- 1332 Sahanek, E. Growth characteristics of microorganism: on soil extract media

prepared by various methods. M.S.A. Thesis, Univ. Toronto. 1957.

- 1333 Schnitzer, M. Mobilization of iron in Podzol soils by aqueous leaf extracts. *Chem. Ind.* 1594-1595. 1957.
- 1334 Schnitzer, M., and J. R. Wright. Extraction of organic matter from podzolic soils by means of dilute inorganic acids. *Can. J. Soil Sci.* 37:89 - 95. 1957.
- 1335 Smith, J. A., and B. C. Matthews. Release of potassium by 18 Ontario soils during continuous cropping in the greenhouse. *Can. J. Soil Sci.* 37:1-10. 1957.
- 1336 Smith, J. A., and R. W. Sheard. Evaluation and calibration of phosphorus soil test methods for predicting fertilizer requirements of potatoes. *Can. J. Soil Sci.* 37:134-142. 1957.
- 1337 Sowden, F. J. Occurrence of amino groups in soil organic matter. *Can. J. Soil Sci.* 37:143-144. 1957.
- 1338 Stevenson, I. L. Some newer techniques in assessing microbial activity in soil. 9th Pac. Sci. Congr. Proc. (Bangkok). 1957.
- 1339 Stevenson, I. L., and F. E. Chase. Microbiological studies on an orchard soil under three cultural practices. *Can. J. Microbiol.* 3:351-358. 1957.
- 1340 Tolton, H. E. Response of cereals to anhydrous ammonia as correlated with tests for available soil nitrogen. M.Sc. Thesis, Univ. Manitoba. 1957.
- 1341 Warkentin, B. P., G. H. Bolt, and R. D. Miller. Swelling pressure of montmorillonite. *Soil Sci. Soc. Amer. Proc.* 21:495-497. 1957.
- 1342 Webster, G. R., R. M. Adamson, J. H. Crossley, J. H. Harris, R. H. Turley, and J. J. Woods. Sawdust for horticultural crops. *Can. Dep. Agr. Exp. Farm, Saanichton, B. C., Bull.* 165. 1957.
- 1343 Wilcox, J. C., W. D. Holland, and J. M. McDougald. Relation of elevation of a mountain stream to reaction and salt content of water and soil. *Can. J. Soil Sci.* 37:11-20. 1957.
- 1344 Zagallo, A. C. , and H. Katznelson. Metabolic activity of bacterial isolates from wheat rhizosphere and control soil. *J. Bacteriol.* 73:760-764. 1957.

- 1345 Atkinson, H. J., G. R. Giles, and J. G. Desjardins. Effect of farmyard manure on the trace element content of soils and of plants grown thereon. *Plant Soil* 10:32-36. 1958.
- 1346 Atkinson, H. J., G. R. Giles, A. J. MacLean, and J. R. Wright. Chemical methods of soil analysis. *Can. Dep. Agr., Chem. Div., Sci. Ser. Contrib. No. 169*. 1958.
- 1347 Ayers, H. D., and V. E. A. Wikramanayake. The effect of the water storage capacity of the soil on mass infiltration. *Can. J. Soil Sci.* 38:44 - 48. 1958.
- 1348 Baldwin, C. S., and J. W. Ketcheson. Influence of soil texture, reaction and temperature on the uptake of nitrogen from three nitrogen fertilizers. *Can. J. Soil Sci.* 38:134-142. 1958.
- 1349 Bishop, R. F., and R. L. Cook. Laboratory and greenhouse studies on effect of lime and other amendments on water-soluble boron in soil. *Can. J. Soil Sci.* 38:27-35. 1958.
- 1350 Black, W. N., and R. R. Cairns. The effect of varying levels of nitrogen, phosphorus and potassium and manure on the yield and starch content of potatoes. *Can. J. Soil Sci.* 38:1-7. 1958.
- 1351 Bolt, G. H., and B. P. Warkentin. The negative adsorption of anions by clay suspensions. *Kolloid Z.* 156:41-46. 1958.
- 1352 Bourget, S. J., D. E. Elrick, and C. B. Tanner. Electrical resistance units for moisture measurements: Their moisture hysteresis, uniformity and sensitivity. *Soil Sci.* 86:298 - 304. 1958.
- 1353 Bowser, W. E., and J. N. Leat. Seasonal pH fluctuations in a Gray Wooded soil. *Can. J. Soil Sci.* 38:128-133. 1958.
- 1354 Brydon, J. E. Mineralogical analysis of the soils of the Maritime Provinces. *Can. J. Soil Sci.* 38:155-160. 1958.
- 1355 Brydon, J. E., and H. Heystek. A mineralogical and chemical study of the dikeland soils of Nova Scotia. *Can. J. Soil Sci.* 38:171-186. 1958.
- 1356 Brydon, J. E., and C. E. Marshall. Mineralogy and chemistry of the Hagerstown soil in Missouri. *Univ. Mo., Coll. Agr. (Agr. Exp. Sta.) Res. Bull.* 655. 1958.

- 1357 Cairns, R. R. Alfalfa response to applied sulphur and the soil and plant sulphur relationship on two Gray Wooded soils in northwest Canada. Ph.D. Thesis, Pennsylvania State Univ. 1958.
- 1358 Cann, D. B., and J. D. Hilchey. Soil survey of Lunenburg County, Nova Scotia. Nova Scotia Soil Surv. Rep. No. 7. 1958.
- 1359 Carson, J. A. The composition, yield, and nutritional value of wheat from Breton plots. M.Sc. Thesis, Univ. Alberta. 1958.
- 1360 Chase, F. E. Manometric studies in agricultural and forest soils. Proc. N. Amer. Forest Soils Conf. 122-129. 1958.
- 1361 Corke, C. T. Nitrogen transformations in Ontario forest Podzols. Proc. N. Amer. Forest Soils Conf. 1:116-121. 1958.
- 1362 Dessureaux, L., and G. J. Ouellette. Tolerance of alfalfa to manganese toxicity in sand culture. Can. J. Soil Sci. 38:8-13. 1958.
- 1363 Dormaar, J. F. The effectiveness of different nitrogen carriers on growth and nutrient uptake by crops grown in the greenhouse. M.S.A. Thesis, Univ. Toronto. 1958.
- 1364 Doyle, J. J., and A. A. MacLean. The effect of soil aggregate size on availability of oxygen and on growth of tomatoes. Can. J. Soil Sci. 38:143-146. 1958.
- 1365 Dubetz, S. The effect of soil moisture and fertilizers on seed germination. M.Sc. Thesis, Utah State Univ. 1958.
- 1366 Eagle, D. J. Laboratory measurement of nitrogen availability in soils. M.S.A. Thesis, Univ. Toronto. 1958.
- 1367 Eagle, D. J., and B. C. Matthews. Measurement of nitrate-supplying power of soils by an incubation method and correlation with crop yield response. Can. J. Soil Sci. 38:161-170. 1958.
- 1368 Ehrlich, W. A., L. E. Pratt, E. A. Poyser, and F. P. Leclaire. Report of reconnaissance soil survey of West-lake map sheet area. Man. Soil Surv. Rep. No. 8. 1958.
- 1369 Ehrlich, W. A., and R. E. Smith. Halomorphism of some clay soils in Manitoba. Can. J. Soil Sci. 38:103-113. 1958.

- 1370 Fulton, J. M. Irrigating early potatoes in southwestern Ontario. Can. Dep. Agr. Publ. 1028. 1958.
- 1371 Halstead, R. L., A. J. MacLean, and K. F. Nielsen. Ca:Mg ratios in soil and the yield and composition of alfalfa. Can. J. Soil Sci. 38:85-93. 1958.
- 1372 Harrison, M. B. Effects of some soil and microclimatic variables on corn and pasture. M.S.A. Thesis, Univ. Toronto. 1958.
- 1373 Hay, J. R. Soil sterilants. Agr. Inst. Rev. 13(1):20-24, 60. 1958.
- 1374 Heeg, T. J., and J. K. Richardson. Potato common scab investigations: II. Five years of plot studies on soil reaction changes and incidence of scab as affected by limestone and sulphur applications on Fox fine sandy loam. Amer. Potato J. 35:662-675. 1958.
- 1375 Herne, D. C., and D. Chisholm. Accumulation of DDT in the soil of an Ontario peach orchard. Can. J. Soil Sci. 38:23-26. 1958.
- 1376 Hoffman, I., M. Schnitzer, and J. R. Wright. Thermogravimetry of soils. Chem. Ind. (London) 261. 1958.
- 1377 Hutcheon, W. L. Moisture flow induced by thermal gradients within unsaturated soils. Nat. Acad. Sci., Nat. Res. Counc. Highw. Res. Bd. Publ. 629, 113-133. 1958.
- 1378 Kilcher, M. R. Fertilizer effect on hay production of three cultivated grasses in southwestern Saskatchewan. J. Range Manage. 11:231-234. 1958.
- 1379 King, K. M. Effects of soil, plant and meteorological factors on evapotranspiration. Roy. Meteorol. Soc. Canadian Branch. 8:1-10. 1958.
- 1380 Korven, H. C. The Peltier effect and its use for measuring relative activity of soil water. M.Sc. Thesis, Utah State Univ. 1958.
- 1381 Krogman, K. K. The influence of phosphorus fertilization on water requirements of barley on shallow Chin loam at Vauxhall. M.Sc. Thesis, Univ. Alberta. 1958.
- 1382 Leefe, J. S. The use of nitrogenous fertilizer in the production of grassland herbage. Can. J. Plant Sci. 38:260-267. 1958.

- 1383 Lindsay, J. D., P. K. Heringa, S. Pawluk, and W. Odynsky. Exploratory soil survey of Alberta map sheets 84-C (east half), 84-B, 84-A and 74-D. Res. Counc. Alta., Prelim. Soil Surv. Rep. 581 1958.
- 1384 Lochhead, A. G. Soil bacteria and growth promoting substances. *Bacteriol. Rev.* 22:145-153. 1958.
- 1385 Lochhead, A. G. The soil microflora, the plant, and the root pathogen. *Trans. Roy. Soc. Can. Ser. 5*, 52:17-24. 1958.
- 1386 Logsdail, D. E. The effect of freezing and thawing on the physical properties of Haldimand clay. M.S.A. Thesis, Univ. Toronto. 1958.
- 1387 MacLeod, L. B. The liming of dikeland soils. *Can. J. Soil Sci.* 38:69-76. 1958.
- 1388 Mathieu, A. L., and J. A. Toogood. A self-recording soil penetrometer. *Can. J. Soil Sci.* 38:100-102. 1958.
- 1389 McEwen, H. B., and B. C. Matthews. Rate of release of non-exchangeable potassium by Ontario soils in relation to natural soil characteristics and management practices. *Can. J. Soil Sci.* 38:3643. 1958.
- 1390 McKeague, J. A. Some Alberta soils under different drainage conditions. M.Sc. Thesis, Univ. Alberta. 1958.
- 1391 McLean, A., and W. D. Holland. Vegetation zones and their relationship to the soils and climate of the Upper Columbia Valley. *Can. J. Plant Sci.* 38:328-345. 1958.
- 1392 Millette, J. F. G., and H. W. Higbee. Periglacial loess: I. Morphological properties. *Amer. J. Sci.* 256:284-293. 1958.
- 1393 Nielsen, K. F. Rate of change of pH in some acid soils due to liming. *Can. J. Soil Sci.* 38:114 - 119. 1958.
- 1394 Odynsky, W. U-shaped dunes and effective wind directions in Alberta. *Can. J. Soil Sci.* 38:5662. 1958.
- 1395 Ouellette, G. J. Persistence of borax in sandy soils. *Can. J. Soil Sci.* 38:77-84. 1958.
- 1396 Ouellette, G. J., and L. Dessureaux. Chemical composition of alfalfa as related to degree of tolerance to manganese and aluminum. *Can. J. Plant Sci.* 38:206-214. 1958.

- 1397 Parups, E. Nutrition of lettuce with nitrogen, phosphorus and potassium on organic soils in Ontario. Proc. Amer. Soc. Hort. Sci. 71:399-406. 1958.
- 1398 Patrick, Z. A., and L. W. Koch. Inhibition of respiration, germination and growth by substances arising during the decomposition of certain plant residues in the soil. Can. J. Bot. 36:621-647. 1958.
- 1399 Paul, E. A. The extraction and quantitative estimation of free amino acids in soils. Ph.D. Thesis, Univ. Minnesota. 1958.
- 1400 Pearce, D. C. Ground temperature studies at Saskatoon and Ottawa, Canada. Int. Ass. Sci. Hydrol. Publ. 46, Gen. Assembly Toronto (1957) 4:279-290. 1958.
- 1401 Pelton, W. L. Potential evapotranspiration estimates by the Penman and Thornthwaite methods. Ph.D. Thesis, Univ. Wisconsin. 1958.
- 1402 Pretty, K. M. The effect of soil treatment on the accumulation of ions by several crops. Ph. D. Thesis, Michigan State Univ. 1958.
- 1403 Read, D. W. L. Horizontal movement of moisture in soil. M.Sc. Thesis, Utah State Univ. 1958.
- 1404 Rennie, D. A., and R. J. Soper. The effect of nitrogen additions on fertilizer-phosphorus availability: II. J. Soil Sci. 9:155-167. 1958.
- 1405 Ridley, A. O. Effect of mineral fertilizers and manures on the phosphorus content of a clay soil and on crop yields. M.Sc. Thesis, Univ. Manitoba. 1958.
- 1406 Russell, G. C., A. D. Smith, and U. J. Pittman. The effect of nitrogen and phosphorus fertilizers on the yield and protein content of spring wheat grown on stubble fields in southern Alberta. Can. J. Plant Sci. 38:139-144. 1958.
- 1407 Schnitzer, M., J. R. Wright, and J. G. Desjardins. A comparison of the effectiveness of various extractants for organic matter from two horizons of a Podzol profile. Can. J. Soil Sci. 38:49 - 53. 1958.
- 1408 Sheard, R. W., and G. R. Johnston. Influence of nitrogen, phosphorus and potassium on the cooking quality of potatoes. Can. J. Plant Sci. 38:394 - 400. 1958.

- 1409 Skinner, S. I. M., and R. L. Halstead. Rapid method for determination of carbonates in soils. *Can. J. Soil Sci.* 38:187-188. 1958.
- 1410 Smith, D. G., C. Bryson, E. M. Thompson, and E. G. Young. Chemical composition of the peat bogs of the Maritime Provinces. *Can. J. Soil Sci.* 38:120-127. 1958.
- 1411 Sowden, F. J. The forms of nitrogen in the organic matter of different horizons of soil profiles. *Can. J. Soil Sci.* 38:147-154. 1958.
- 1412 Stevenson, I. L. The effect of sonic vibration on the bacterial plate count of soil. *Plant Soil* 10:1-8. 1958.
- 1413 Stevenson, I. L., and H. Katznelson. The oxidation of ethanol and acetate in soil. *Can. J. Microbiol.* 4:73-79. 1958.
- 1414 Stobbe, P. C., and F. S. Nowosad. Report on the soils and settlement possibilities in the Goose Bay, Labrador, area, Newfoundland, Canada. *Can. Dep. Agr.* 1958.
- 1415 Syngal, K. N. Assessing nitrogen requirements of some Alberta soils. Ph.D. Thesis, Univ. Alberta. 1958.
- 1416 Toogood, J. A. A simplified textural classification diagram. *Can. J. Soil Sci.* 38:54-55. 1958.
- 1417 Turner, R. C. A theoretical treatment of the pH of calcareous soils. *Soil Sci.* 86:32-34. 1958.
- 1418 Turner, R. C., and W. E. Nichol. The pH of strongly acid soils. *Can. J. Soil Sci.* 38:63-68. 1958.
- 1419 Turner, R. C., W. E. Nichol, and K. E. Miles. Leachates from calcareous soils and related materials. *Can. J. Soil Sci.* 38:94-99. 1958.
- 1420 Vered, N. Relationship of permeability to per cent moisture saturation in sand media in the frozen state. M.S.A. Thesis, Univ. Toronto. 1958.
- 1421 Ward, G. M. Potassium in plant metabolism: I. Effects of light on the mineral composition of normal and potassium-deficient wheat seedlings. *Can. J. Plant Sci.* 38:292-299. 1958.

- 1422 Warkentin, B. P., and R. D. Miller. Conditions affecting formation of the montmorillonite -polyacrylic acid bond. *Soil Sci.* 85:14-18. 1958.
- 1423 Warkentin, B. P., and R. K. Schofield. Swelling pressures of dilute montmorillonite pastes. 7th Nat. Conf. Clay Mineral. Pergamon Press. p. 343 - 349. 1958.
- 1424 Warren, F. S., and F. W. Calder. Pasture renovation in the Maritime Provinces. Can. Dep. Agr. Publ. 1024. 1958.
- 1425 Werkhoven, C. H. E. Uptake of soil and fertilizer phosphorus by sugarbeets. M.S.A. Thesis, Univ. Toronto. 1958.
- 1426 Wilcox, J. C., and D. S. Stevenson. A procedure for use of electrical resistance blocks in controlling irrigation. Can. Dep. Agr. Bull. S.P. 10. 1958.
- 1427 Wright, J. R., M. Schnitzer, and R. Levick. Some characteristics of the organic matter extracted by dilute inorganic acids from a podzolic B horizon. *Can. J. Soil Sci.* 38:14-22. 1958.
- 1428 Anstey, T. H., G. M. Weiss, A. W. Watt, J. C. Wilcox, and P. N. Sprout. Relation of soil, temperature and topography to fruit growing in Summerland, B. C. *Can. J. Plant Sci.* 39:297-315. 1959.
- 1429 Archambault, J. Le mécanisme de l'érosion et quelques-unes de ses manifestations dans la région de Baie St.-Paul. M.Sc. Thesis, Laval Univ. 1959.
- 1430 Atkinson, H. J. Soil: A challenge to the chemist. *Chem. Can.* 11:37-43. 1959.
- 1431 Barber, T. E. Measurement of the release of certain cations by some Ontario soils. M.S.A. Thesis, Univ. Toronto. 1959.
- 1432 Beaton, J. D. The influence of burning on the soil in the timber range area of Lac Le Jeune, British Columbia: I. Physical properties. *Can. J. Soil Sci.* 39:1-5. 1959.
- 1433 Beaton, J. D. The influence of burning on the soil in the timber range area of Lac Le Jeune, British Columbia: II. Chemical properties. *Can. J. Soil Sci.* 39:6-11. 1959.
- 1434 Beaton, J. D., and K. F. Nielsen. The availability to alfalfa of phosphorus from twelve different carriers. *Can. J. Soil Sci.* 39:54-63. 1959.

- 1435 Bolton, E. F., and J. W. Aylesworth. Effect of tillage traffic on certain physical properties and crop yield on a Brookston clay soil. *Can. J. Soil Sci.* 39:98-102. 1959.
- 1436 Bose, B., I. L. Stevenson, and H. Katznelson. Further observations on the metabolic activity of the soil microflora. *Proc. Nat. Inst. Sci. India, B*, 25:223-229. 1959.
- 1437 Boswall, G. W. Extraction and identification of organic phosphorus compounds of soils. Ph.D. Thesis, McGill Univ. 1959.
- 1438 Boswall, G. W., and W. A. DeLong. The use of 8-hydroxy quinoline (oxine) in the extraction of soil organic phosphorus. *Can. J. Soil Sci.* 39:20 - 26. 1959.
- 1439 Bourget, S. J. Influence of bulk density and field structure of soil on the calibration curves of gypsum moisture blocks. *Can. J. Soil Sci.* 39:12 - 19. 1959.
- 1440 Bourget, S. J., B. J. Finn, and K. F. Nielsen. Technique to control excessive soil moisture. *Agron. J.* 51:429-430. 1959.
- 1441 Bowser, W. E., and W. Odynsky. Alberta's land resources. *Agr. Inst. Rev.* 14(6):9-11, 56. 1959.
- 1442 Brydon, J. E., and F. J. Sowden. A study of the clay-humus complexes of a Chernozemic and a Podzol soil. *Can. J. Soil Sci.* 39:136-143. 1959.
- 1443 Cann, D. B., and J. D. Hilchey. Soil survey of Queens County, Nova Scotia. N.S. Soil Surv. Rep. No. 8. 1959.
- 1444 Cho, C. M. Effect of pH upon the cationic distribution around clay particles. Ph.D. Thesis, Univ. Minnesota. 1959.
- 1445 Chubey, B. B. Leaf composition, yield and quality of sweet corn as influenced by differential fertilizer treatments. M.Sc. Thesis, Pennsylvania State Univ. 1959.
- 1146 Coffin, D. E. Organic material extracted from a Podzol. Ph.D. Thesis, McGill Univ. 1959.
- 1447 Cook, F. D., and A. G. Lochhead. Growth factor relationships of soil microorganisms as affected by proximity to the plant root. *Can. J. Microbiol.* 5:323-334. 1959.

- 1448 Day, J. H., L. Farstad, and D. G. Laird. Soil survey of Southeast Vancouver Island and Gulf Islands, British Columbia. B.C. Soil Surv. Rep. No. 6. 1959.
- 1449 Day, T. C. The nature and availability of residual fertilizer phosphate. M.Sc. Thesis, Univ. Saskatchewan. 1959.
- 1450 Dell, C. I. A study of the mineralogical composition of sand in southern Ontario. Can. J. Soil Sci. 39:185-196. 1959.
- 1451 de Vries, J. The effect of artificial compaction and previous cultural treatment on some moisture properties of soils. M.S.A. Thesis, Univ. Toronto. 1959.
- 1452 Doyle, J. J., and A. A. MacLean. Studies with waste sulphite liquor. H. Waste sulphite liquor as a soil aggregating agent. Can. J. Soil Sci. 39:92-97. 1959.
- 1453 Dubé, A. Etude pédogénétique et agronomique du limon de Taillon. M.Sc. Thesis, Laval Univ. 1959.
- 1454 Dubetz, S., R. L. Smith, and G. C. Russell. The effect of fertilizers and osmotic pressure on germination. Can. J. Soil Sci. 39:157-164. 1959.
- 1455 Ehrlich, W. A., L. E. Pratt, J. A. Barr, and F. P. Leclaire. Soil survey of a cross-section through the Upper Nelson River basin along the Hudson Bay Railway in Northern Manitoba. Man. Soil Surv. Rep. No. 10. 1959.
- 1456 Ehrlich, W. A., L. E. Pratt, and F. P. Leclaire. Report of reconnaissance soil survey of Grandview map sheet area. Man. Soil Surv. Rep. No. 9. 1959.
- 1457 Elliot, J. M., and L. S. Vickery. Ontario flue-cured tobacco soils and their fertilizer requirements. Can. Dep. Agr. Publ. 987. 1959.
- 1458 Forman, S. A., and H. M. Rice. A mineralogical study of some core samples from the Bearpaw formations. Can. J. Soil Sci. 39:178-184. 1959.
- 1459 Gardner, E. H. The fertilization of irrigated grass and grass-clover pasture swards with emphasis on the rate and frequency of nitrogen applications. M.S. Thesis, Oregon State Univ. 1959.
- 1460 Halstead, R. L., and H. B. Heeney. Exchangeable and water-soluble potassium in soils and degree of saturation in relation to tomato yields. Can. J. Soil Sci. 39:129-135. 1959.

- 1461 Hoffman, D. W., R. E. Wicklund, and N. R. Richards. Soil survey of Manitoulin Island. Ont. Soil Surv. Rep. No. 26. 1959.
- 1462 Hutcheon, W. L. Moisture flow induced by thermal gradients within unsaturated soils; water and its conduction in soils. Nat. Acad. Sci., Nat. Res. Council., Highw. Res. Bd., Spec. Rep. No. 40. 113-133. 1959.
- 1463 Ivarson, K. C., and F. J. Sowden. Decomposition of forest litters: I. Production of ammonia and nitrate nitrogen, changes in microbial population, and rate of decomposition. Plant Soil 11:237 - 248. 1959.
- 1464 James, N. Plate counts of bacteria and fungi in a saline soil. Can. J. Microbiol. 5:431-439. 1959.
- 1465 Jaques, R. P., J. B. Robinson, and F. E. Chase. Effects of thiourea, ethyl urethane and some dithiocarbamate fungicides on nitrification in Fox sandy loam. Can. J. Soil Sci. 39:235-244. 1959.
- 1466 Katznelson, H., and B. Bose. Metabolic activity and phosphate-dissolving capability of bacterial isolates from wheat roots, rhizosphere and non-rhizosphere soil. Can. J. Microbiol. 5:79-85. 1959.
- 1467 Kendrick, W. B. The time factor in the decomposition of coniferous leaf litter. Can. J. Bot. 37:907 - 912. 1959.
- 1468 Knowles, R., and E. Laishley. Factors in forest- tree litter extracts affecting the growth of soil micro-organisms. Nature (London) 184:1169. 1959.
- 1469 Korven, H. C., and S. A. Taylor. The Peltier effect and its use for determining relative activity of soil water. Can. J. Soil Sci. 39:76-85. 1959.
- 1470 Langille, W. M., and J. F. Mahoney. Boron toxicity in oats. Can. J. Plant Sci. 39:401. 1959.
- 1471 Laplante, L. Etude pédologique du Comté de Bagot. Québec Ministère de l'Agriculture Bull. tech. No. 6. 1959.
- 1472 Lee, C. C. Distribution of radioactivity in wheat plants grown in the presence of strontium-90. Science 129:1280. 1959.

- 1473 Lindsay, J. D., S. Pawluk, and W. Odynsky. Exploratory soil survey of Alberta map sheets 84-D (north half), 84-E, 84-F and 84-G. Res. Counc. Alta. Prelim. Soil Surv. Rep. 59-1. 1959.
- 1474 Lindsay, W. L., M. Peech, and J. S. Clark. Determination of aluminum ion activity in soil extracts. Soil Sci. Soc. Amer. Proc. 23:266-269. 1959.
- 1475 Lindsay, W. L., M. Peech, and J. S. Clark. Solubility criteria for the existence of variscite in soils. Soil Sci. Soc. Amer. Proc. 23:357-360. 1959.
- 1476 Logsdail, D. E., and L. R. Webber. Effect of frost action on structure of Haldimand clay. Can. J. Soil Sci. 39:103-106. 1959.
- 1477 MacKay, D. C., and J. B. Eaton. The penetration of radioactive superphosphate into a Podzol soil. Can. J. Soil Sci. 39:215-221. 1959.
- 1478 MacKay, D. C., and C. A. Eaves. The response of several vegetables to "anthraxylate" soil treatment. Can. J. Plant Sci. 39:253-254. 1959.
- 1479 MacKay, D. C., C. R. MacEachern, and R. F. Bishop. The relation of soil test values to fertilizer response by the potato. I. Nitrate production and crop yield. Can. J. Soil Sci. 39:144-150. 1959.
- 1480 MacKenzie, A. F. The chemical and physical changes occurring during the formation of peat from plant material. Ph.D. Thesis, Cornell Univ. 1959.
- 1481 MacLean, A. A., and J. J. Doyle. Studies with waste sulphite liquor. I. Effects of waste sulphite liquor on crop yields and on soil properties. Can. J. Soil Sci. 39:87-91. 1959.
- 1482 Mason, J. L., and J. E. Miltimore. Increase in yield and protein content of native bluebunch wheatgrass from N fertilization. Can. J. Plant Sci. 39:501-504. 1959.
- 1483 McBeath, D. K. Midsummer applications of nitrogen fertilizer on nitrogen-deficient fields. M.Sc. Thesis, Univ. Alberta. 1959.
- 1484 Mennel, P. J. The effects of some pesticides on the activity of soil microorganisms. M.S.A. Thesis, Univ. Toronto. 1959.

- 1485 Michalyna, W. Consumptive use of water by plants' and nitrate content in soil as influenced by cropping sequence and fertilizer treatments. M.Sc. Thesis, Univ. Manitoba. 1959.
- 1486 Miller, M. H., and C. H. E. Werkhoven. An in-situ technique for the quantitative determination of fertilizer phosphorus in growing plants. *Can. J. Soil Sci.* 39:205-214. 1959.
- 1487 Moss, H. C. Modern soil science (pedology) in relation to geological and allied sciences. *Trans. Roy. Soc. Canada, Ser. 3, 53 (Sect. 4):27-35.* 1959.
- 1488 Munro, D. C. The transformation and availability of nitrogen as influenced by crop residue. M.Sc Thesis, Univ. Saskatchewan. 1959.
- 1489 Murray, J. S. Influence of calcium carbonate and calcium chloride on some chemical soil properties and the yield and composition of alfalfa grown on Oneida clay loam. M.S.A. Thesis, Univ. Toronto. 1959.
- 1490 Newton, J. D., C. F. Bentley, J. A. Toogood, and J. A. Robertson. Gray Wooded soils and their management. Univ. Alta. Fac. Agr., Bull. No. 21. 5th ed., Revised. 1959.
- 1491 Ouellet, C. E. Study of soil temperature from the surface to a depth of 8 feet. *Agriculture* 16(3):77-79, 82. 1959.
- 1492 Peters, T. W., and W. E. Bowser. Soil survey of the Rocky Mountain House sheet. Alta. Soil Surv. Rep. No. 19. Univ. Alberta Bull. No. 55-1. 1959.
- 1493 Pohjakas, K. The use of a monomolecular film to retard evaporation from free water surfaces. M.S.A. Thesis, Univ. British Columbia. 1959.
- 1494 Read, D. W. L. Horizontal movement of water in soil. *Can. J. Soil Sci.* 39:27-31. 1959.
- 1495 Rennie, D. A., and R. B. McKercher. Adsorption of phosphorus by four Saskatchewan soils. *Can. J. Soil Sci.* 39:64-75. 1959.
- 1496 Rice, H. M., S. A. Forman, and L. M. Patry. A study of some profiles from major soil zones in Saskatchewan and Alberta. *Can. J. Soil Sci.* 39:165-177. 1959.

- 1497 Robertson, G. W., and R. M. Holmes. Estimating irrigation water requirements from meteorological data. Can. Dep. Agr. Publ. 1054. 1959.
- 1498 Robinson, J. B., and C. T. Corke. Preliminary studies on the distribution of actinophages in soil. Can. J. Microbiol. 5:479-484. 1959.
- 1499 Rouatt, J. W. Initiation of the rhizosphere effect. Can. J. Microbiol. 5:67-71. 1959.
- 1500 Schaedle, M. The growth of Douglas fir seedlings. M.S.A. Thesis, Univ. British Columbia. 1959.
- 1501 Schnitzer, M. Interaction of iron with rainfall leachates. J. Soil Sci. 10:300-308. 1959.
- 1502 Schnitzer, M., D. A. Shearer, and J. R. Wright. A study in the infrared of high molecular weight organic matter extracted by various reagents from a podzolic B horizon. Soil Sci. 87:252-257. 1959.
- 1503 Schnitzer, M., J. R. Wright, and I. Hoffman. Use of the thermobalance in the analysis of soils and clays. Anal. Chem. 31:440-444. 1959.
- 1504 Seaton, O. M. The relationship between water-soluble, exchangeable and non-exchangeable potassium in organic soils. M.S.A. Thesis, Univ. Toronto. 1959.
- 1505 Skinner, S. I. M., R. L. Halstead, and J. E. Brydon. Quantitative manometric determination of calcite and dolomite in soils and limestones. Can. J. Soil Sci. 39:197-204. 1959.
- 1506 Soper, R. J. Characteristics of soil leachates collected under eastern hemlock (*Tsuga canadensis*). Ph.D. Thesis, McGill Univ. 1959.
- 1507 Sowden, F. J. Investigations on the amounts of hexosamines found in various soils and methods for their determination. Soil Sci. 88:138-143. 1959.
- 1508 Sowden, F. J., and K. C. Ivarson. Decomposition of forest litters: II. Changes in the nitrogenous constituents. Plant Soil 11:249-261. 1959.
- 1509 Stevenson, I. L. Dehydrogenase activity in soils. Can. J. Microbiol. 5:229-235. 1959.

- 1510 Stobbe, P. C., and J. R. Wright. Modern concepts of the genesis of Podzols. *Soil Sci. Soc. Amer. Proc.* 23:161-164. 1959.
- 1511 Synghal, K. N. Some factors affecting nitrification in a few Alberta soils. *J. Indian Soc. Soil Sci.* 7:73-80. 1959.
- 1512 Synghal, K. N., J. A. Toogood, and C. F. Bentley. Assessing nitrogen requirements of some Alberta soils. *Can. J. Soil Sci.* 39:120-128. 1959.
- 1513 Theisen, A. A., G. R. Webster, and M. E. Harward. The occurrence of chlorite and vermiculite in the clay fractions of three British Columbia soils. *Can. J. Soil Sci.* 39:244-251. 1959.
- 1514 Thomas, R. L. Effects of optimum moisture, saturation and nitrate levels on *Rhizobium meliloti*. M.Sc. Thesis, Univ. Alberta. 1959.
- 1515 Toogood, J. A., and D. L. Lynch. Effect of cropping systems and fertilizers on mean weight-diameter of aggregates of Breton plot soils. *Can. J. Soil Sci.* 39:151-156. 1959.
- 1516 Walker, D. R. The determination of sulphur deficiency in soils. M.Sc. Thesis, Univ. Alberta. 1959.
- 1517 Walker, E. K., and L. S. Vickery. Some effects of sprinkler irrigation on flue-cured tobacco. *Can. J. Plant Sci.* 39:164-174. 1959.
- 1518 Ward, G. M. Potassium in plant metabolism: II. Effect of potassium upon the carbohydrate and mineral composition of potato plants. *Can. J. Plant Sci.* 39:246-252. 1959.
- 1519 Webber, L. R. The aggregate size distribution and aggregate stability in Haldimand clay treated with four soil additives. *Can. J. Soil Sci.* 39:252-253. 1959.
- 1520 Webster, G. R., and J. H. Crossley. Fertilizer recommendations for holly trees. *Can. Dep. Agr. Bull.* 170. 1959.
- 1521 Webster, G. R., and M. E. Harward. Hydrogen and calcium ion ratios in dilute equilibrium solutions as related to cation saturation. *Soil Sci. Soc. Amer. Proc.* 23:446-451. 1959.
- 1522 Weir, C. C. Manganese transformations in soils. M.S.A. Thesis, Univ. Toronto. 1959.

- 1523 Wicklund, R. E., and E. P. Whiteside. Morphology and genesis of the soils of the Caribou catena, in New Brunswick, Canada. *Can. J. Soil Sci.* 39:222-234. 1959.
- 1524 Wilcox, J. C. Rate of soil drainage following an irrigation. I. Nature of soil drainage curves. *Can. J. Soil Sci.* 39:107-119. 1959.
- 1525 Wright, J. R., A. Leahey, and H. M. Rice. Chemical, morphological and mineralogical characteristics of a chronosequence of soils on alluvial deposits in the Northwest Territories. *Can. J. Soil Sci.* 39:32-43. 1959.
- 1526 Wright, J. R., and M. Schnitzer. Alkaline permanganate oxidation of the organic matter of the A₀ and B₂₁ horizons of a Podzol. *Can. J. Soil Sci.* 39:44-53. 1959.
- 1527 Wright, J. R., and M. Schnitzer. Oxygen-containing functional groups in the organic matter of a Podzol soil. *Nature (London)* 184:1462-1463. 1959.
- 1528 Anderson, C. H., P. B. Hoyt, and S. H. Pawlowski. Fertilizer studies with wheat, oats and barley grown on Gray Wooded and Black soils in the Peace River region of Northwestern Canada. *Can. J. Soil Sci.* 40:199-206. 1960.
- 1529 Archibald, J. A. Orchard soil management. *Ont. Dep. Agr. Publ.* 457. 1960.
- 1530 Beaton, J. D., H. B. Peterson, and N. Bauer. Some aspects of phosphate adsorption by charcoal. *Soil Sci. Soc. Amer. Proc.* 24:340-346. 1960.
- 1531 Beaton, J. D., R. A. J. Warren, and W. A. Hubbard. Nitrate supplying power of eight grassland soils of the Kamloops, B.C., area and correlation with range forage production. *Can. J. Soil Sci.* 40:63 - 70. 1960.
- 1532 Bell, G. R. Studies on a soil *Achromobacter* which degrades 2,4-dichlorophenoxy-acetic acid. *Can. J. Microbiol.* 6:325-337. 1960.
- 1533 Bentley, C. F., J. A. Carson, and J. P. Bowland. Fertilizers and the nutritive value of wheat grown on a sulphur-deficient Gray Wooded soil. *Can. J. Plant Sci.* 40:146-155. 1960.
- 1534 Bisal, F. The effect of raindrop size and impact velocity on sand-splash. *Can. J. Soil Sci.* 40:242 - 245. 1960.
- 1535 Bowser, W. E. The soils of the prairies. *Agr. Inst. Rev.* 15(2):24-26. 1960.

- 1536 Cairns, R. R., and A. C. Richer. A comparative study of a sulphur responsive and a non-responsive Gray Wooded soil. *Can. J. Soil Sci.* 40:246-254. 1960.
- 1537 Cameron, C. D. T., and L. S. Hamilton. Value of surface applications of limestone and superphosphate on dikeland and upland pastures. *Can. Dep. Agr. Publ.* 1086. 1960.
- 1538 Cann, D. B., and J. F. G. Millette. Soils of the Appalachian region. *Agr. Inst. Rev.* 15(2):44 - 47. 1960.
- 1539 Chandool, D. E. Chemical measurement of soil nitrogen fractions in soils cropped at two nitrogen levels in the greenhouse. M.S.A. Thesis, Univ. Toronto. 1960.
- 1540 Chapman, L. J. Physiography, climate and natural vegetation of Canada. *Agr. Inst. Rev.* 15(2):15 - 19. 1960.
- 1541 Chiasson, T. C. The effects of various increments of N, P and K on the yield and botanical composition of permanent pastures. *Can. J. Plant Sci.* 40:235-247. 1960.
- 1542 Chinn, S. H. F., R. J. Ledingham, and B. J. Sallans. Population and viability studies of *Helminthosporium sativum* in field soils. *Can. J. Bot.* 38:533-539. 1960.
- 1543 Chipman, E. W., and D. C. MacKay. The interactions of plant populations and nutritional levels on the production of sweet corn. *Proc. Amer. Soc. Hort. Sci.* 76:442-447. 1960.
- 1544 Choinière, L. Etude pédologique du Comté de Drummond. *Que. Dep. Agr. Bull. tech.* no. 7. 1960.
- 1545 Clark, J. S., and M. Peech. Influence of neutral salts on the phosphate ion concentration in soil solution. *Soil Sci. Soc. Amer. Proc.* 24:346-348. 1960.
- 1546 Coffin, D. E., and W. A. DeLong. Extraction and characterization of organic matter of a Podzol B horizon. *Trans. 7th Int. Congr. Soil Sci. (Madison)* 2:91-97. 1960.
- 1547 Comar, V. K. Soil permeability as affected by different clay minerals and exchangeable cations. M.S.A. Thesis, Univ. British Columbia. 1960.
- 1548 Cooper, D. J., and H. B. Heeney. Precision plot irrigator for use in irrigation studies. *Can. J. Plant Sci.* 40:745-749. 1960.

- 1549 Cooper, D. J., K. F. Nielsen, J. W. White, and W. Kalbfleisch. An apparatus for controlling soil temperatures. *Can. J. Soil Sci.* 40:105-107. 1960.
- 1550 Corke, C. T., and J. B. Robinson. Herbicides and the soil population. *Proc. 7th Annu. Meet. Agr. Pest. Tech. Soc. (Canada)* 69-72. 1960.
- 1551 Dessureaux, L. The reaction of lucerne seedlings to high concentrations of manganese. *Plant Soil* 13:114-122. 1960.
- 1552 Dion, H. G. Land use in Canada--Present and future. *Agr. Inst. Rev.* 15(2):57-59. 1960.
- 1553 Dormaar, J. F., and J. W. Ketcheson. The effect of nitrogen form and soil temperature on the growth and phosphorus uptake of corn plants grown in the greenhouse. *Can. J. Soil Sci.* 40:177-184. 1960.
- 1554 Doyle, J. J., and F. G. Hamlyn. Effects of different cropping systems and of a soil conditioner (NANA) on some soil physical properties and on growth of tomatoes. *Can. J. Soil Sci.* 40:89-98. 1960.
- 1555 Doyle, J. J., and A. A. MacLean. Relationships between Ca:K ratio, pH, and prevalence of potato scab. *Can. J. Plant Sci.* 40:616-619. 1960.
- 1556 Dryden, R. D. Soil and crop yield analysis of a long-term crop rotation experiment. M.Sc. Thesis, Univ. Manitoba. 1960.
- 1557 Eaves, C. A., J. S. Leefe, and C. R. MacEachern. The influence of dolomitic limestone on the cation relationships in leaves, bark and roots of Cortland apple trees. *J. Hort. Sci.* 35:98-102. 1960.
- 1558 Ehrlich, W. A., and W. Odynsky. Soils developed under forest in the great plains region. *Agr. Inst. Rev.* 15(2):29-32. 1960.
- 1559 Ehrlich, W. A., L. E. Pratt, and F. P.- Leclaire. Report of detailed soil survey of Pasquia map area in northern Manitoba. *Man. Soil Surv. Rep.* 11. 1960.
- 1560 Ellis, J. H. The call of the land. *Agr. Inst. Rev.* 15 (2) :11-12, 19. 1960.
- 1561 Farstad, L., and C. A. Rowles. Soils of the Cordilleran region. *Agr. Inst. Rev.* 15(2):33 - 36, 50. 1960.

- 1562 Fulton, J. M., and W. I. Findlay. The nutrient composition of hybrid corn as influenced by fertilization: I. The nitrogen percentage of leaf and grain. *Can. J. Soil Sci.* 40:42-48. 1960.
- 1563 Gardner, E. H. Potassium release from several western Oregon soils and its relationship to crop growth and soil mineralogy. Ph.D. Thesis, Oregon State Univ. 1960.
- 1564 Gardner, E. H., T. L. Jackson, G. R. Webster, and R. H. Turley. Some effects of fertilization on the yield, botanical and chemical composition of irrigated grass and grass-clover pasture swards. *Can. J. Plant Sci.* 40:546-562. 1960.
- 1565 Gervais, P. Effects of varying levels of phosphorus and potassium applications on productivity, and botanical and chemical composition of a ladino clover - timothy association. *Can. J. Soil Sci.* 40:185-198. 1960.
- 1566 Graveland, D. N. Gypsum in reclamation of solonchaks soils. M.Sc. Thesis, Univ. Alberta. 1960.
- 1567 Guitard, A. A. The precision of rod-row tests with wheat as influenced by alleviating a phosphorus deficiency. *Can. J. Plant Sci.* 40:539-541. 1960.
- 1568 Gupta, U. C. The influence of different cropping schemes on the amino acid content, total nitrogen and total organic carbon content of soil. Ph.D. Thesis, Purdue Univ. 1960.
- 1569 Hamilton, H. A., and J. R. Lessard. Phosphorus fractions in a soil sampled at different depths and the effect of lime and fertilizer on oats and clover in a greenhouse test. *Can. J. Soil Sci.* 40:71-79. 1960.
- 1570 Hilchey, J. D., D. B. Cann, and J. F. MacDougall. Soil survey of Yarmouth County, Nova Scotia. N.S. Soil Surv. Rep. No. 9. 1960.
- 1571 Hills, G. A. Soils of the Canadian shield. *Agr. Inst. Rev.* 15(2):41-43. 1960.
- 1572 Hinds, R. A. The effects of potassium deficiency on the soluble nitrogenous components of legumes. M.Sc. Thesis, McGill Univ. 1960.
- 1573 Hoekstra, P. The swelling of calcium-saturated clays in water. M.Sc. Thesis, McGill Univ. 1960.

- 1574 Hoffman, I., M. Schnitzer, and J. R. Wright. Application of thermogravimetry to the analysis of carbonates occurring in soils: II. Analysis of carbonates in soils. *J. Sci. Food Agr.* 11:167- 172. 1960.
- 1575 Holmes, R. M., and G. W. Robertson. Soil heaving in alfalfa plots in relation to soil and air temperature. *Can. J. Soil Sci.* 40:212-218. 1960.
- 1576 Hope, G. W., and D. C. MacKay. The effect of harvest date and rate of nitrogen fertilization on the maturity, yield and chipping quality of potatoes. *Amer. Potato J.* 37:28-33. 1960.
- 1577 Hutcheon, W. L. The application of information from soil surveys. *Agr. Inst. Rev.* 15(2):51-53. 1960.
- 1578 Ivarson, K. C., and H. Katznelson. Studies on the rhizosphere microflora of yellow birch seedlings. *Plant Soil* 12:30-40. 1960.
- 1579 Janzen, P. J., N. A. Korven, G. K. Harris, and J. J. Lehane. Influence of depth of moist soil at seeding time and of seasonal rainfall on wheat yields in southwestern Saskatchewan. *Can. Dep. Agr. Publ.* 1090. 1960.
- 1580 Jasmin, J. J., and H. B. Heeney. Reclaiming acid dome peat bogs for agricultural use. *Can. Dep. Agr. Publ.* 1089. 1960.
- 1581 Karrow, P. F. Canadian pleistocene marine clays. *Proc. 14th Can. Soil Mech. Conf., Nat. Res. Counc. Ass. Comm. on Soil and Snow Mech., Tech. Mem.* 69:94-106. 1960.
- 1582 Katznelson, H. Recent studies on the rhizosphere phenomenon. *Trans. 7th Int. Congr. Soil Sci. (Madison)* 2:537-544. 1960.
- 1583 Keser, N. Soils as related to site index of Douglas fir. M.S.A. Thesis, Univ. British Columbia. 1960.
- 1584 Kevan, K. M. Soil entomology in Canada. A review of recent and current work. *Ann. Soc. Entomol. Que.* 6:19-45. 1960.
- 1585 Lajoie, P. G. Soil survey of Argenteuil, Two Mountains and Terrebonne counties, Quebec. *Can. Dep. Agr. Unnumbered Publ.* 1960.
- 1586 Ledingham, R. J., B. J. Sallans, and A. Wenhardt. Influence of cultural practices on incidence of common root rot in wheat in Saskatchewan. *Can. J. Plant Sci.* 40:310-316. 1960.

- 1587 Ledoux, R. La composition minéralogique d'un profil de sable fin Saint-Jude. M.Sc. Thesis, Laval Univ. 1960.
- 1588 Lehane, J. J., and W. J. Staple. Relationship of the permanent wilting percentage and the soil moisture content at harvest to the 15-atmosphere percentage. *Can. J. Soil Sci.* 40:264-269. 1960.
- 1589 Levesque, M. P. Some effects of soil temperature on growth and phosphorus uptake by two varieties of alfalfa. M.S.A. Thesis, Univ. Toronto. 1960.
- 1590 Lindsay, J. D., S. Pawluk, and W. Odynsky. Exploratory soil survey of Alberta map sheets 84-J, 84-K and 84-L. *Res. Counc. Alta., Prelim. Soil Surv. Rep.* 60-1. 1960.
- 1591 Lowe, L. E. The sulphur status of soils. M.Sc. Thesis, McGill Univ. 1960.
- 1592 Lutwick, L. E. The nature and distribution of free iron in the Gray Wooded (podzolic) soils of Saskatchewan. Ph.D. Thesis, Univ. Saskatchewan. 1960.
- 1593 Lynch, D. L. The effect of rose bengal on polysaccharide production in soils. *Can. J. Microbiol.* 6:673-674. 1960.
- 1594 Mack, A. R., and S. A. Barber. A bath for soil temperature control in pot culture work. *Agron. J.* 52:299. 1960.
- 1595 Mack, A. R., and S. A. Barber. Influence of temperature and moisture on soil phosphorus. I. Effect on soil phosphorus fractions. *Soil Sci. Soc. Amer. Proc.* 24:381-385. 1960.
- 1596 Mack, A. R., and S. A. Barber. Influence of temperature and moisture on soil phosphorus: II. Effect prior to and during cropping on soil phosphorus availability for millet. *Soil Sci. Soc. Amer. Proc.* 24:482-484. 1960.
- 1597 MacLean, A. A. The extraction, isolation and identification of organic phosphorus compounds from a Podzol. Ph.D. Thesis, McGill Univ. 1960.
- 1598 MacLeod, L. B., R. F. Bishop, L. P. Jackson, and E. T. Goring. Effects of long-term surface applications of limestone and fertilizers to permanent hayland. *Can. J. Soil Sci.* 40:28-34. 1960.
- 1599 MacLeod, L. B., R. F. Bishop, L. P. Jackson, C. R. MacEachern, and E. T. Goring. A long-term field experiment with commercial fertilizers and manure. I. Fertility levels and crop yields in a rotation of swedes, oats and hay. *Can. J. Soil Sci.*

40:136-145. 1960.

- 1600 MacPhee, A. W., D. Chisholm, and C. R. MacEachern. The persistence of certain pesticides in the soil and their effect on crop yields. *Can. J. Soil Sci.* 40:59-62. 1960.
- 1601 Mann, M., *et al.* Land classification of the Bow River project. P.F.R.A., Regina. April 1960.
- 1602 Mathieu, A. L. The mineralogy of the clay fraction in relation to the genesis of solodized solonetz soils. Ph.D. Thesis, Univ. Saskatchewan. 1960.
- 1603 Matthews, B. C., and R. W. Baril. Soils of the Great Lakes - St. Lawrence Lowlands. *Agr. Inst. Rev.* 15(2):37-40. 1960.
- 1604 Matthews, B. C., and C. G. Sherrell. Effect of drying on exchangeable potassium of Ontario soils and the relation of exchangeable potassium to crop yield. *Can. J. Soil Sci.* 40:35-41. 1960.
- 1605 McBeath, D. K., C. F. Bentley, and D. L. Lynch. The nutritional value of increased levels of protein resulting from nitrogen fertilization of barley. *Can. J. Anim. Sci.* 40:57-66. 1960.
- 1606 McBeath, D. K., and J. A. Toogood. The effect of nitrogen top dressing on yield and protein content of nitrogen-deficient cereals. *Can. J. Soil Sci.* 40:130-135. 1960.
- 1607 McKeague, J. A., and C. F. Bentley. The effect of drainage condition on the redox potential, leachate composition and morphological characteristics of a soil parent material studied in the laboratory. *Can. J. Soil Sci.* 40:121-129. 1960.
- 1608 McMillan, N. J. Soils of the Queen Elizabeth Islands (Canadian Arctic). *J. Soil Sci.* 11:131-139. 1960.
- 1609 Miller, M. H., and G. C. Ashton. The influence of fertilizer placement and rate of nitrogen on fertilizer phosphorus utilization by oats as studied using a central composite design. *Can. J. Soil Sci.* 40:157-167. 1960.
- 1610 Moss, H. C. Mapping our soils -- The work of Canadian soil surveys. *Agr. Inst. Rev.* 15(2):13 - 14. 1960.
- 1611 Moss, H. C. Modern soil science (pedology) in relation to geological and allied sciences. *Trans. Roy. Soc. Can.* 53(Sect. IV). 1960.

- 1612 Nielsen, K. F., T. F. Cuddy, and W. B. Woods. The influence of the extract of some crops and soil residues on germination and growth. *Can. J. Plant Sci.* 40:188-197. 1960.
- 1613 Nielsen, K. F., R. L. Halstead, A. J. MacLean, R. M. Holmes, and S. J. Bourget. The influence of soil temperature on the growth and mineral composition of oats. *Can. J. Soil Sci.* 40:255 - 263. 1960.
- 1614 Nowosad, F. S., and A. Leahey. Soils of the Arctic and Sub-Arctic regions. *Agr. Inst. Rev.* 15(2):4850. 1960.
- 1615 Nuttall, W. F. The influence of soil moisture stress on the use of water by Thatcher wheat. M.Sc. Thesis, Univ. Saskatchewan. 1960.
- 1616 Nyborg, M., and J. G. Stoker. A fertilizer placement seeder. *Can. J. Soil Sci.* 40:108-110. 1960.
- 1617 Osborne, V. E. Mineralogical and chemical studies of Alberni clay. M.S.A. Thesis, Univ. British Columbia. 1960.
- 1618 Ouellet, R. Etude comparée de la microfaune et des facteurs de fertilité sur trois types de sols de la region de Sainte-Anne-de-la-Pocatière. M.Sc. Thesis, Laval Univ. 1960.
- 1619 Parups, E. V., and K. F. Nielsen. The growth of tobacco at certain soil temperatures and nutrient levels in greenhouse. *Can. J. Plant Sci.* 40:281 - 287. 1960.
- 620 Parups, E. V., K. F. Nielsen, and S. J. Bourget. The growth, nicotine and phosphorus content of tobacco grown at different soil temperature, moisture and phosphorus levels. *Can. J. Plant Sci.* 40:516-523. 1960.
- 1621 Patil, A. S. Self-diffusion coefficient of rubidium as influenced by soil moisture. M.S.A. Thesis, Univ. Toronto. 1960.
- 1622 Patrick, Z. A. The effect of preceding crops, crop residues and soil toxins on growth of tobacco. *The Lighter* 30(2):21-23. 1960.
- 1623 Paul, E. A., and E. L. Schmidt. Extraction of free amino acids from soil. *Soil Sci. Soc. Amer. Proc.* 24:195-198. 1960.

- 1624 Pawluk, S. Characteristics of Gray Wooded soils developed from glacial till deposits in the Peace River district and north central regions of Alberta. Trans. 7th Int. Congr. Soil Sci. (Madison) 4:314-322. 1960.
- 1625 Pawluk, S. Some podzol soils of Alberta. Can. J. Soil Sci. 40:1-14. 1960.
- 1626 Pelton, W. L., K. M. King, and C. B. Tanner. An evaluation of the Thornthwaite and mean temperature methods for determining potential evapotranspiration. Agron. J. 52:387-395. 1960.
- 1627 Penner, E. The importance of freezing rate in frost action in soils. Proc. Amer. Soc. Testing Mater. 60:1151-1165. 1960.
- 1628 Protz, R. An evaluation of methods for determining particle size distribution. M.Sc. Thesis, Univ. Saskatchewan. 1960.
- 1629 Raymond, R. Pédologie comparative des argiles limoneuses Normandin et Hébertville du Lac-Saint-Jean (Province de Québec). M.Sc. Thesis, Laval Univ. 1960.
- 1630 Read, D. C., and K. E. LeLacheur. The effectiveness of insecticides applied to mineral soils of various levels of acidity, with and without lime applications at time of seeding, in controlling root maggots attacking rutabagas. Can. J. Plant Sci. 40:578-579. 1960.
- 1631 Rennie, E. A., and J. S. Clayton. The significance of local soil types to soil fertility studies. Can. J. Soil Sci. 40:146-156. 1960.
- 1632 Ripley, P. O., and H. J. Atkinson. Organization and major lines of soil research. Agr. Inst. Rev. 15(2):54-56. 1960.
- 1633 Robertson, J. A. Soil testing in Alberta. Univ. Alta. Bull. S-T-1. 1960.
- 1634 Rouatt, J. W., and H. Katznelson. Influence of light on bacterial flora of roots. Nature (London) 186:659-660. 1960.
- 1635 Rouatt, J. W., H. Katznelson, and T. M. B. Payne. Statistical evaluation of the rhizosphere effect. Soil Sci. Soc. Amer. Proc. 24:271-273. 1960.
- 1636 Saini, G. R. Properties of water-stable aggregates. Ph.D. Thesis, Ohio State Univ. 1960.

- 1637 Schmidt, E. L., H. D. Putnam, and E. A. Paul. Behavior of free amino acids in soil. *Soil Sci. Soc. Amer. Proc.* 24:107-109. 1960.
- 1638 Schnitzer, M., and J. R. Wright. Nitric acid oxidation of the organic matter of a Podzol. *Soil Sci. Soc. Amer. Proc.* 24:273-276. 1960.
- 1639 Schnitzer, M., and J. R. Wright. Studies on the oxidation of the organic matter of the A₀ and Bh horizons of a Podzol. *Trans. 7th Int. Congr. Soil Sci. (Madison)* 2:112-119. 1960.
- 1640 Spratt, E. D. The effect of soil and plant environment on "A" values. M.Sc. Thesis, Univ. Saskatchewan. 1960.
- 1641 Staple, W. J. Significance of fallow as a management technique in continental and winter-rainfall climates. UNESCO, Arid zone res. XV. 1960.
- 1642 Staple, W. J., J. J. Lehane, and A. Wenhardt. Conservation of soil moisture from fall and winter precipitation. *Can. J. Soil Sci.* 40:80-88. 1960.
- 1643 Stobbe, P. C. The great soil groups of Canada-Their characteristics and distribution. *Agr. Inst. Rev.* 15(2):20-22, 26. 1960.
- 1644 Tanner, C. B., and W. L. Pelton. Potential evapotranspiration estimates by the approximate energy balance method of Penman. *J. Geophys. Res.* 65:3391-3413. 1960.
- 1645 Teuscher, H., and R. Adler. *The soil and its fertility.* Reinhold Pub. Corp. 1960.
- 1646 Thomas, R. L., and D. L. Lynch. Quantitative fractionation of organic phosphorus compounds in some Alberta soils. *Can. J. Soil Sci.* 40:113 - 120. 1960.
- 1647 Tiwari, N. C. The effect of cover materials on the movement of soil into tile drains. M.S.A. Thesis, Univ. Toronto. 1960.
- 1648 Tribe, H. T. Aspects of decomposition of cellulose in Canadian soils. I. Observations with the microscope. *Can. J. Microbiol.* 6:309-316. 1960.
- 1649 Tribe, H. T. Aspects of decomposition of cellulose in Canadian soils: II. Nitrate-nitrogen levels and carbon dioxide evolution. *Can. J. Microbiol.* 6:317-323. 1960.

- 1650 Turner, R. C. An investigation of the intercept method for determining the proportion of dolomite and calcite in mixtures of the two. I. Theoretical aspects of the rate of solution of dolomite when a number of crystals are present. *Can. J. Soil Sci.* 40:219-231. 1960.
- 1651 Turner, R. C., and S. I. M. Skinner. An investigation of the intercept method for determining the proportion of dolomite and calcite in mixtures of the two. H. Experimental rates of solution of dolomite and calcite in samples consisting of a number of crystals. *Can. J. Soil Sci.* 40:232-241. 1960.
- 1652 van Groenewoud, H. Methods and samplers for obtaining undisturbed soil samples in the forest. *Soil Sci.* 90:272-274. 1960.
- 1653 Vij, V. N. Some chemical and physiological effects of nitrogen in a fertilizer phosphorus band. M.S.A. Thesis, Univ. Toronto. 1960.
- 1654 Ward, G. M. Potassium in plant metabolism: III. Some carbohydrate changes in the wheat seedling associated with varying rates of potassium supply. *Can. J. Plant Sci.* 40:729-735. 1960.
- 1655 Warren, H. W., and R. E. Delavault. Observations on the biogeochemistry of lead in Canada. *Trans. Roy. Soc. Can.* 54 (Ser. III) :11-20. 1960.
- 1656 Webster, G. R., and R. M. Adamson. Effects of sawdust used as a mulch and as a soil amendment on soil temperatures under irrigated and unirrigated conditions. *Can. J. Soil Sci.* 40:207 - 211. 1960.
- 1657 Werkhoven, C. H. E., and M. H. Miller. Absorption of fertilizer phosphorus by sugar beets as influenced by placement of phosphorus and nitrogen. *Can. J. Soil Sci.* 40:49-58. 1960.
- 1658 Wilcox, J. C. Rate of soil drainage following an irrigation: II. Effects on determination of rate of consumptive use. *Can. J. Soil Sci.* 40:15-27. 1960.
- 1659 Wilcox, J. C. Effect of irrigation interval on peak flow requirements in sprinkler irrigated orchards. *Can. J. Soil Sci.* 40:99-104. 1960.
- 1660 Wilcox, J. C. A statistical comparison of laboratory methods of determining the permanent wilting point of soil. *Can. J. Soil Sci.* 40:111-112. 1960.

- 1661 Wright, J. R., I. Hoffman, and M. Schnitzer. Application of thermogravimetry to the analysis of carbonates occurring in soils: I. Analysis of pure carbonates and naturally occurring limestones. *J. Sci. Food Agr.* 11:163-167. 1960.
- 1662 Wright, J. R., and M. Schnitzer. Oxygen-containing functional groups in the organic matter of the A_o and Bh horizons of a Podzol. *Trans. 7th Int. Congr. Soil Sci. (Madison)* 2:120-127. 1960.
- 1663 Acton, C. J. The relationship of polysaccharides to the physical condition of the soil. M.Sc. Thesis, Univ. Saskatchewan. 1961.
- 1664 Acton, D. F. Micropedology of the major profile types of the Weyburn catena. M.Sc. Thesis, Univ. Saskatchewan. 1961.
- 1665 Ahmad, N. Stony marine clays of the (Lower) Fraser Valley, British Columbia: 1. Description and physical characteristics of the deposits. *Soil Sci.* 91:257-261. 1961.
- 1666 Ahmad, N. Stony marine clays of the (Lower) Fraser Valley, British Columbia: 2. Chemical characteristics of the deposits. *Soil Sci.* 91:328 - 331. 1961.
- 1667 Amer, S. A. W. The chemical reactions of some phosphorus fractions. M.S.A. Thesis, Univ. Toronto. 1961.
- 1668 Anderson, D. T. Surface trash conservation with tillage machines. *Can. J. Soil Sci.* 41:99-114. 1961.
- 1669 Armstrong, J. E. Soils of the coastal area of southwestern British Columbia, p. 22-32. *In* R. F. Legget [ed.] *Soils in Canada: geological, pedological and engineering studies.* Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961.
- 1670 Ashford, R., and J. L. Bolton. Effects of sulphur and nitrogen fertilization, and inoculation with *Rhizobium meliloti* on the growth of sweet clover (*Mellilotus alba* Desr.). *Can. J. Plant Sci.* 41:81-90. 1961.
- 1671 Atkinson, H. J. Lime and other soil amendments. Can. Dep. Agr. Publ. 869. 1961.
- 1672 Banham, F. L. The persistence of certain soil insecticides for control of the tuber flea beetle, *Epitrix tuberis* (Gent.), in the interior of British Columbia. *Can. J. Plant Sci.* 41:664-671. 1961.

- 1673 Barron, G. L. Studies on species of *Oidiodendron*, *Helicodendron* and *Stachybotrys* from soil. *Can. J. Bot.* 39:1563-1571. 1961.
- 1674 Barron, G. L. *Monocillium humicola* sp. nov. and *Paecilomyces variabilis* sp. nov. from soil. *Can. J. Bot.* 39:1573-1578. 1961.
- 1675 Bates, T. E. Potassium release in soils as affected by drying. Ph.D. Thesis, Iowa State Univ. 1961.
- 1676 Beaton, J. D., N. A. Gough, and C. A. Rowles. The influence of base saturation and fertility treatments on yield and cation composition of crops grown on two British Columbia soils high in organic matter: I. Oats. *Can. J. Soil Sci.* 41:52-67. 1961.
- 1677 Beaton, J. D., and R. Speer. Influence of several moisture tension ranges and chloride levels on the yield and chloride content of bromegrass. *J. Sci. Food Agr.* 12:265-269. 1961.
- 1678 Beaton, J. D., and T. G. Willis. Irrigation water quality of the Kamloops (B.C.) area. *Can. Dep. Agr. Publ.* 1961.
- 1679 Bhuiya, Z. H. The physical and chemical effects resulting from the adsorption of sodium by a soil. M.S.A. Thesis, Univ. Toronto. 1961.
- 1680 Bowser, W. E. Genesis and characteristics of Solonetzic soils, with particular reference to those of Alberta, Canada, p. 167-173. *In* R. F. Legget [ed.] *Soils in Canada: geological, pedological and engineering studies*. Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961.
- 1681 Brydon, J. E., J. S. Clark, and V. Osborne. Dioctahedral chlorite. *Can. Mineral.* 6(5):595 - 609. 1961.
- 1682 Brydon, J. E., and L. M. Patry. Mineralogy of Champlain Sea sediments and a Rideau clay soil profile. *Can. J. Soil Sci.* 41:169-181. 1961.
- 1683 Cairns, R. R. Some chemical characteristics of a solonetzic soil sequence at Vegreville, Alberta, with regard to possible amelioration. *Can. J. Soil Sci.* 41:24-34. 1961.
- 1684 Cameron, H. L. Glacial geology and the soils of Nova Scotia, p. 109-114. *In* R. F. Legget [ed.] *Soils in Canada: geological, pedological and engineering studies*. Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961.
- 1685 Campbell, C. A. The influence of concentrated phosphorus solutions upon some of

the chemical properties of clay. M.S.A. Thesis, Univ. Toronto. 1961.

- 1686 Carder, A. C. Rate of evaporation from a free-water surface as influenced by exposure. *Can. J. Plant Sci.* 41:199-203. 1961.
- 1687 Case, V. W. Soil temperature and water solubilities of phosphorus fertilizer. M.Sc. Thesis, Cornell Univ. 1961.
- 1688 Chan, E. C. S., and H. Katznelson. Growth interactions of *Arthrobacter globiformis* and *Pseudomonas* sp. in relation to the rhizosphere effect. *Can. J. Microbiol.* 7:759-767. 1961.
- 1689 Chapman, L. J., and P. Dermine. Evapotranspiration at Kapuskasing, Ontario. *Can. J. Plant Sci.* 41:563-567. 1961.
- 1690 Clark, J. S., C. A. Gobin, and P. N. Sprout. Yellow mottles in some poorly drained soils of the Lower Fraser Valley, British Columbia. *Can. J. Soil Sci.* 41:218-227. 1961.
- 1691 Cook, F. D. Denitrifying bacteria of soil. Ph. D. Thesis, Edinburgh Univ. 1961.
- 1692 Crowle, A. M., Committee Secretary. Summary and final report of the ten-year (1951-1960) experimental projects, Trossacks-Radville burnout soils. Sask. Dep. Agr. Processed Publ. 1961.
- 1693 Day, J. H., F. S. Nowosad, and D. J. Cooper. Improved soil borer for sampling in permafrost. *Can. J. Soil Sci.* 41:138-139. 1961.
- 1694 deVries, J., and K. M. King. The volume of influence of a neutron surface moisture probe. *Can. J. Soil Sci.* 41:253-257. 1961.
- 1695 Dormaar, J. F. The determination of organic phosphorus in soils. Ph.D. Thesis, Univ. Alberta. 1961.
- 1696 Doyle, J. J., and A. A. MacLean. Use of a soil conditioner to increase the precision of soil fertility experiments. *Can. J. Soil Sci.* 41:86 - 88. 1961.
- 1697 Dreimanis, A. Tills of southern Ontario, p. 80 - 96. In R. F. Legget [ed.] *Soils in Canada: geological, pedological and engineering studies*. Roy. Soc. Can. Spec. Publ. No. 3 Univ. Toronto. 1961.
- 1698 Dubetz, S. Effect of soil type, soil moisture, and nitrogen fertilizer on the growth of spring wheat. *Can. J. Soil Sci.* 41:44-51. 1961.

- 1699 Elliot, J. M., and L. S. Vickery. The effect of chlorine on the hygroscopicity of flue-cured tobacco. *Can. J. Plant Sci.* 41:195-198. 1961.
- 1700 Elliott, C. R., C. H. Anderson, and B. D. Owen. Studies with fertilized pastures on a heavy textured soil in northern Alberta. *Can. J. Plant Sci.* 41:261-267. 1961.
- 1701 Elson, J. A. Soils of the Lake Agassiz region, p. 51-79. In R. F. Legget [ed.] *Soils in Canada: geological, pedological and engineering studies*. Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961.
- 1702 Emmond, G. S. The effect of fertilizers, crop rotations, tillage and crop residue management practices on soil structure. M.Sc. Thesis, Univ. Manitoba. 1961.
- 1703 Findlay, W. I. The effects of fertilization with nitrogen and phosphorus on the yield and composition of the corn plant. Ph.D. Thesis, McGill Univ. 1961.
- 1704 Finn, B. J., S. J. Bourget, K. F. Nielsen, and B. K. Dow. Effects of different soil moisture tensions on grass and legume species. *Can. J. Soil Sci.* 41:16-23. 1961.
- 1705 Fletcher, H. F. Differential effects of phosphorus fertility on soybean varieties. Ph.D. Thesis, Univ. Illinois. 1961.
- 1706 Forde, St. C. Ionic reactions in calcareous soils. M.S.A. Thesis, Univ. British Columbia. 1961.
- 1707 Forman, S. A., and J. E. Brydon. Clay mineralogy of Canadian soils, p. 140-146. In R. F. Legget [ed.] *Soils in Canada: geological, pedological and engineering studies*. Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961..
- 1708 Fulton, J. M., C. G. Mortimore, and A. A. Hildebrand. The relation of soil bulk density to the incidence of *Phytophthora* root and stalk rot of soybeans. *Can. J. Soil Sci.* 41:247. 1961.
- 1709 Gough, N. A. Phosphorus availability in two calcareous soils. M.S.A. Thesis, Univ. British Columbia. 1961.
- 1710 Graham, W. G., and K. M. King. Fraction of net radiation utilized in evapotranspiration from a corn crop. *Soil Sci. Soc. Amer. Proc.* 25:158 - 160. 1961.

- 1711 Grant, E. A., and C. S. Brown. Yield and nitrogen uptake of forage seedlings as affected by nitrogen fertilization. *Can. J. Plant Sci.* 41:176-187. 1961.
- 1712 Graveland, D. N., and D. L. Lynch. Distribution of uronides and polysaccharides in the profiles of a soil catena. *Soil Sci.* 91:162-165. 1961.
- 1713 Gravenor, C. P., and L. A. Bayrock. Glacial deposits of Alberta, p. 33-50. In R. F. Legget [ed.] *Soils in Canada: geological, pedological, and engineering studies.* Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961.
- 1714 Haagsma, T. The release of non-exchangeable soil potassium to cation-exchange resins as influenced by temperature and moisture. M.S.A. Thesis, Univ. Toronto. 1961.
- 1715 Heeney, H. B., S. R. Miller, and W. M. Rutherford. A meteorological method of calculating the irrigation requirement of the canning tomato crop. *Can. J. Plant Sci.* 41:31-41. 1961.
- 1716 Heinrichs, D. H., and K. W. Clark. Clipping frequency and fertilizer effects on productivity and longevity of five grasses. *Can. J. Plant Sci.* 41:97-108. 1961.
- 1717 Henderson, V. E., and H. Katznelson. The effect of plant roots on the nematode population of the soil. *Can. J. Microbiol.* 7:163-167. 1961.
- 1718 Hilchey, J. D. Land reclamation through dyking and drainage. *Agr. Inst. Rev.* 16(3):16-18, 30. 1961.
- 1719 Holmes, R. M. A comparison of computed and measured soil moisture under snap beans. *J. Geophys. Res.* 66:3620-3622. 1961.
- 1720 Hutcheon, W. L., and D. A. Rennie. The relationship of soil moisture stress and nutrient availability to the growth characteristics and quality of wheat. *Trans. 7th Int. Congr. Soil Sci. (Madison, 1960)* 3:488-495. 1961.
- 1721 Ibrahim, S. A. S. An assessment of wind erosion damage to Alberta soils. M.Sc. Thesis, Univ. Alberta. 1961.
- 1722 Illustration Stations Division, Exp. Farms Service. Farm management data from Illustration Station Farms, 1953-1958. *Can. Dep. Agr. Publ.* 1137. 1961.

- 1723 Janzen, W. K. Mechanical composition of Solodized Solonetz and Solonetz-like soils of Saskatchewan. *J. Soil Sci.* 12:101-110. 1961.
- 1724 Johnson, W. E. Wind and water erosion -- in Western Canada. *Agr. Inst. Rev.* 16(3):12-15. 1961.
- 1725 Jones, L. H. Some effects of potassium deficiency on the metabolism of the tomato plant. *Can. J. Bot.* 39:593-606. 1961.
- 1726 Karrow, P. F. The Champlain Sea and its sediments, p. 97-108. In R. F. Legget [ed.] *Soils in Canada: geological, pedological and engineering studies*. Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961.
- 1727 Katznelson, H. Microorganisms in the rhizosphere. *Recent Advan. Bot.* 610-614. 1961.
- 1728 Katznelson, H., and J. C. Sirois. Auxin production by species of *Arthrobacter*. *Nature (London)* 191:1323-1324. 1961.
- 1729 Katznelson, H., and E. Strzelczyk. Studies on the interaction of plants and free-living nitrogen-fixing microorganisms. I. Occurrence of azotobacter in the rhizosphere of crop plants. *Can. J. Microbiol.* 7:437-446. 1961.
- 1730 Kelley, C. C., and W. D. Holland. Soil survey of the upper Columbia River valley in the East Kootenay district of British Columbia. B.C. Soil Surv. Rep. No. 7. 1961.
- 1731 King, K. M. Evaporation from land surfaces. *Proc. 2nd Can. Hydrol. Symp., Comm. Geod. Geophys., Nat. Res. Counc.* 1961.
- 1732 Krogman, K. K., and L. E. Lutwick. Consumptive use of water by forage crops in the upper Kootenay River valley. *Can. J. Soil Sci.* 41:1-4. 1961.
- 1733 Krogman, K. K., and R. A. Milne. Suitability for irrigation of a Solonetzic soil complex in east-central Alberta. *Can. J. Soil Sci.* 41:188-195. 1961.
- 1734 Laishley, E. J. Non-symbiotic nitrogen fixation studies in woodland soils. M.Sc. Thesis, McGill Univ. 1961.
- 1735 Laverty, D. H. Effects of fertilizers on nutritive value of forages. M.Sc. Thesis, Univ. Alberta. 1961.

- 1736 Leahey, A. The soils of Canada from a pedological viewpoint, p. 147-157. *In* R. F. Legget [ed.] Soils in Canada: geological, pedological and engineering studies. Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961.
- 1737 Ledingham, R. J. Crop rotations and common rootrot in wheat. *Can. J. Plant Sci.* 41:479-486. 1961.
- 1738 Lee, C. C. Effects of plant nutrients on uptake of radiostrontium by Thatcher wheat. *Science (Washington)* 133:1921-1922. 1961.
- 1739 Lee, C. C., Director. The uptake of radioactive strontium by agricultural crops. *Sask. Res. Counc. 15th Annu. Rep.* 1961.
- 1740 Leo, M. W. M. A new system for designating soil texture. *Soil Sci.* 92:420. 1961.
- 1741 Lindsay, J. D., S. Pawluk, and W. Odynsky. Exploratory soil survey of Alberta map sheets 84-M, 84-N, and 84-O. Prelim. *Soil Surv. Rep. 61-1, Res. Counc. Alta.* 1961.
- 1742 Lochhead, A. G. Associative and antagonistic phenomena in soils. *Recent Advan. Bot.* 619-623. 1961.
- 1743 Lowe, L. E., and W. A. DeLong. Aspects of the sulphur status of three Quebec soils. *Can. J. Soil Sci.* 41:141-146. 1961.
- 1744 MacDougall, J. I., D. B. Cann, and J. D. Hilchey. Soil survey of Shelburne County, Nova Scotia. *N.S. Soil Surv. Rep. No. 10.* 1961.
- 1745 Mack, A. R., and R. B. Sanderson. A semi-automatic dispenser for water in the greenhouse. *Can. J. Soil Sci.* 41:248-249. 1961.
- 1746 MacKay, D. C., and E. W. Chipman. The response of several vegetables to applied nitrogen, phosphorus and potassium on a sphagnum peat soil. *Soil Sci. Soc. Amer. Proc.* 25:309-312. 1961.
- 1747 MacKenzie, A. F., and J. E. Dawson. The preparation and study of thin sections of wet organic soils materials. *J. Soil Sci.* 12:142-144. 1961.
- 1748 MacLean, A. J. Potassium-supplying power of some Canadian soils. *Can. J. Soil Sci.* 41:196-206. 1961.

- 1749 MacLean, A. J. Water-soluble K, per cent K saturation and $pK - \frac{1}{2} p(Ca + Mg)$ as indices of management effects on K status of soils. *Trans. 7th Int. Congr. Soil Sci.* (Madison, 1960) 3:86-91. 1961.
- 1750 Michalyna, W., and R. A. Hedlin. A study of moisture storage and nitrate accumulation in soil as related to wheat yields on four cropping sequences. *Can. J. Soil Sci.* 41:5-15. 1961.
- 1751 Miller, M. H., and C. E. Broadwell. Yield and sugar content of beets as influenced by fertilizer placement in Ontario. *Proc. 11th East. Reg. Meet., Amer. Soc. Sugar Beet Tech.* 1961.
- 1752 Molberg, E. S. Injurious effects of fertilizers applied with the seed on the emergence of flax. *Can. J. Soil Sci.* 41:35-43. 1961.
- 1753 Moss, H. C. The major soil profiles of Saskatchewan and their agricultural significance. An introductory study of Saskatchewan soils in relation to their productivity and use. *Univ. Saskatchewan Dep. Soil Sci.*, p. 52. 1961.
- 1754 Nielsen, K. F., R. L. Halstead, A. J. MacLean, et al. Effects of soil temperature on the growth and chemical composition of lucerne. *Proc. 8th Int. Grassland Congr.* (Reading, 1960) 287-292. 1961.
- 1755 Nielsen, K. F., R. L. Halstead, A. J. MacLean, S. J. Bourget, and R. M. Holmes. The influence of soil temperature on the growth and mineral composition of corn, bromegrass and potatoes. *Soil Sci. Soc. Amer. Proc.* 25:369-371. 1961.
- 1756 Nyborg, M. The effect of fertilizers on emergence of cereal grains, flax and rape. *Can. J. Soil Sci.* 41:89-98. 1961.
- 1757 Odynsky, W., J. D. Lindsay, S. W. Reeder, and A. Wynnyk. Reconnaissance soil survey of the Beaverlodge and Blueberry Mountain sheets. *Alta. Soil Surv. Rep. No. 20*, (Univ. Alberta Bull. SS-3; Res. Counc. Alta. Rep. 81) . 1961.
- 1758 Pageau, E. Etude pédologique du comté de Joliette. *Que. Ministère de l'Agr. Bull tech. no. 8.* 1961.
- 1759 Paul, E. A., and J. D. Newton. Studies of aerobic non-symbiotic nitrogen-fixing bacteria. *Can. J. Microbiol.* 7:7-13. 1961.

- 1760 Paul, E. A., and E. L. Schmidt. Formation of free amino acids in rhizosphere and nonrhizosphere soil. *Soil Sci. Soc. Amer. Proc.* 25:359-362. 1961.
- 1761 Pawluk, S. Mineralogical composition of some Gray Wooded soils developed from glacial till. *Can. J. Soil Sci.* 41:228-240. 1961.
- 1762 Pawluk, S., and H. F. Arneman. Some forest soil characteristics and their relationship to jack pine growth. *Forest Sci.* 7:160-173. 1961.
- 1763 Penner, E. Alternate freezing and thawing not a requirement for frost heaving in soils. *Can. J. Soil Sci.* 41:160-163. 1961.
- 1764 Peterson, E. A. Observations on the influence of plant illumination on the fungal flora of roots. *Can. J. Microbiol.* 7:1-6. 1961.
- 1765 Pratt, L. E., W. A. Ehrlich, F. P. Leclaire, et al. Report of detailed reconnaissance soil survey of Fisher and Teulon map sheet areas. *Man. Soil Surv. Rep. No. 12.* 1961.
- 1766 Prest, V. K. Geology of the soils of Canada, p. 6-21. *In* R. F. Legget (ed.) *Soils in Canada: geological, pedological and engineering studies.* Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961.
- 1767 Racz, G. J. The P³² injection method of studying root development. M.Sc. Thesis, Univ. Saskatchewan. 1961.
- 1768 Read, D. W. L., and R. J. Reynolds. Calculating per cent moisture with a desk calculator. *Can. J. Soil Sci.* 41:258-259. 1961.
- 1769 Reeder, S. W., H. G. Dion, and A. L. McAllister. Mineralogy of the Queens loam and Queens clay loam soils of eastern New Brunswick. *Can. J. Soil Sci.* 41:147-159. 1961.
- 1770 Reid, A. S. J. Exchange reactions of Mn⁵⁴ with soil manganese. M.S.A. Thesis, Univ. Toronto. 1961.
- 1771 Rennie, D. A., and E. D. Spratt. The influence of fertilizer placement on "A" values. *Trans. 7th Int. Congr. Soil Sci. (Madison, 1960)* 3:535 - 543. 1961.

- 1772 Richards, N. R. The soils of southern Ontario, p. 174-182. *In* R. F. Legget [ed.] Soils in Canada: geological, pedological and engineering studies. Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961.
- 1773 Richards, N. R. Production possibilities and technology, fertility and soil management - Eastern Canada. "Resources for Tomorrow" Conf. 1:55-65. 1961.
- 1774 Ripley, P. O. Wind and water erosion -- Problem and prevention in Eastern Canada. *Agr. Inst. Rev.* 16(3):9-11, 15. 1961.
- 1775 Ripley, P. O., W. Kalbfleisch, S. J. Bourget, and D. J. Cooper. Soil erosion by water. *Can. Dep. Agr. Publ.* 1083. 1961.
- 1776 Ritchie, J. C. Soil and minor vegetation of pine forests in southeast Manitoba. *Can. Dep. Forest., Forest Res. Div. Tech. Note* 96. 1961.
- 1777 Robertson, J. A. The characteristics of different genetic soil types in the Newdale soil association of Manitoba. *Can. J. Soil Sci.* 41:124-133. 1961.
- 1778 Robinson, D. B., and W. A. Hodgson. The effect of some amino acids on manganese toxicity in potato. *Can. J. Plant Sci.* 41:436- 437. 1961.
- 1779 Rouatt, J. W., and H. Katznelson. A study of the bacteria on the root surface and in the rhizosphere soil of crop plants. *J. Appl. Bacteriol.* 24:164 - 171. 1961.
- 1780 Schnitzer, M., and I. Hoffman. Thermogravimetry of the organic matter of a Podzol soil. *Chem. Ind., No.* 35:1397-1398. 1961.
- 1781 Sherrell, C. G. The effectiveness of several band applications of fertilizer for oats in the greenhouse. M.S.A. Thesis, Univ. Toronto. 1961.
- 1782 Shieh, H.-S. Nitrogen transformation by soil microorganisms. M.Sc. Thesis, McGill Univ. 1961.
- 1783 Shields, S. F. Water storage and flood control. *Agr. Inst. Rev.* 16(3):20-24. 1961.
- 1784 Sillanpaa, M., and L. R. Webber. The effect of freezing-thawing and wetting-drying cycles on soil aggregation. *Can. J. Soil Sci.* 41:182-187. 1961.
- 1785 Sjors, H. Forest and peatland at Hawley Lake, northern Ontario. *Nat. Mus. Can. Bull.* 171. 1961.

- 1786 Sommerfeldt, T. G. Effect of anions on the sodium adsorption capacity and electrophoretic mobility of sodium-saturated Utah bentonite. Ph.D. Thesis, Utah State Univ. 1961.
- 1787 Sowden, F. J., and H. Deuel. Fractionation of fulvic acids from the B horizon of a Podzol. *Soil Sci.* 91:44-48. 1961.
- 1788 Spence, C. C. Irrigation in Canada -- its impact on agriculture. *Agr. Inst. Rev.* 16(3):26-30. 1961.
- 1789 Staple, W. J. Vegetative management and shelterbelts in evaporation control. *Proc. Hydrol. Symp. No. 2 on Evaporation. Nat. Res. Council. Comm. Geod Geophys.* 214-230. 1961.
- 1790 St. Arnaud, R. J. The pedogenesis of a Black - Gray Wooded sequence of soils in Saskatchewan. Ph.D. Thesis, Michigan State Univ. 1961.
- 1791 Stevenson, D. S. Study of temperature, relative humidity, moisture stress and nutrition in relation to plant growth. Ph.D. Thesis, Oregon State Univ. 1961.
- 1792 Stevenson, I. L. Growth studies on *Arthrobacter globiformis*. *Can. J. Microbiol.* 7:569-575. 1961.
- 1793 Stevenson, I. L. Natural synchronization of a vitamin B12-requiring *Arthrobacter* sp. *Can. J. Microbiol.* 7:667-671. 1961.
- 1794 Stobbe, P. C. Characteristics and genesis of Podzol soils, p. 158-164. *In* R. F. Legget (ed.) *Soils in Canada: geological, pedological and engineering studies.* Roy. Soc. Can. Spec. Publ. No. 3. Univ. Toronto Press. 1961.
- 1795 Strzelczyk, E. Studies on the interaction of plants and free-living, nitrogen-fixing microorganisms: II. Development of antagonists of *Azotobacter* in the rhizosphere of plants at different stages of growth in two soils. *Can. J. Microbiol.* 7:507 - 513. 1961.
- 1796 Subba-Rao, N.S., and D. L. Bailey. Rhizosphere studies in relation to varietal resistance or susceptibility of tomato to verticillium wilt. *Can. J. Bot.* 39:1747-1758. 1961.
- 1797 Subba-Rao, N.S., R. G. S. Bidwell, and D. L. Bailey. The effect of rhizoplane fungi on the uptake and metabolism of nutrients by tomato plants. *Can. J. Bot.* 39:1759-1764. 1961.

- 1798 Thomas, R. L., and D. L. Lynch. A method for the quantitative estimation of pentoses in soil. *Soil Sci.* 91:312-316. 1961.
- 1799 Toogood, J. A. Use of soil cores in soil classification. *Can. J. Soil Sci.* 41:241-246. 1961.
- 1800 Vij, V. N., and M. H. Miller. The influence of nitrogen in a fertilizer band on the root growth and fertilizer phosphorus absorption of sugar beets. *Proc. 11th East. Reg. Meet., Amer. Soc. Sugar Beet Tech.* 1961.
- 1801 Walker, D. R., and C. F. Bentley. Sulphur fractions of legumes as indicators of sulphur deficiency. *Can. J. Soil Sci.* 41:164-168. 1961.
- 1802 Warkentin, B. P. Interpretation of the upper plastic limit of clays. *Nature (London)* 190:287-288. 1961.
- 1803 Warkentin, B. P., and M. Bozozuk. Shrinking and swelling properties of two Canadian clays. 5th *Int. Conf. Soil Mech., Paris.* 1961.
- 1804 Webber, L. R. Spraying sodium wastes on soil. *Proc. 8th Ind. Waste Conf. Ont. Water Res. Comm.* 1961.
- 1805 Webster, G. R. The effect of sawdust, straw, compost and manure on the yield and chemical composition of strawberries and on soil moisture, acidity and organic matter content. *Can. J. Plant Sci.* 41:42-49. 1961.
- 1806 Wells, R. E. A parent material study of two solonetzic soil sequences. M.Sc. Thesis, Univ. Alberta. 1961.
- 1807 Werkhoven, C. H. E. Physico-chemical characterization of fertilizer bands. Ph.D. Thesis, Purdue Univ. 1961.
- 1808 Wicklund, R. E., and N. R. Richards. Soil survey of Oxford County. *Ont. Soil Surv. Rep. No. 28.* 1961.
- 1809 Wilcox, J. C. Effects of wetting and drying on readings of electrical resistance blocks in soil. *Can. J. Soil Sci.* 41:250-252. 1961.
- 1810 Wilcox, J. C., and C. H. Brownlee. Sprinkler irrigation requirements for tree fruits in the Okanagan Valley. *Can. Dep. Agr. Publ. 1121.* 1961.

- 1811 Wilks, J. M., and J. A. Stewart. Response of little cherry-infected cherry trees to zinc treatments. *Can. J. Plant Sci.* 41:517-522. 1961.
- 1812 Wright, J. R., and M. Schnitzer. An estimate of the aromaticity of the organic matter of a Podzol soil. *Nature (London)* 190:703-704. 1961.
- 1813 Aberson, G. The role of the inorganic fraction of an organic soil in the release of potassium. M.S.A. Thesis, Univ. Toronto. 1962.
- 1814 Arno, J. R., R. A. Struchtemeyer, K. K. Langmaid, and J. F. G. Millette. A look at the Caribou soils. *Can. Dep. Agr. Processed Publ.* 1962.
- 1815 Ashford, R., and D. W. L. Read. White surface mulch effect on growth of sweet clover (*Melilotus officinalis* L.) in the greenhouse. *Can. J. Plant Sci.* 42:667-671. 1962.
- 1816 Atkinson, H. J., and A. J. MacLean. Manures and compost. *Can. Dep. Agr. Publ.* 868. 1962.
- 1817 Ballantyne, A. K. Tolerance of cereal crops to saline soils in Saskatchewan. *Can. J. Soil Sci.* 42:61-67. 1962.
- 1818 Barber, T. E., and B. C. Matthews. Release of non-exchangeable soil potassium by resin-equilibration and its significance for crop growth. *Can. J. Soil Sci.* 42:266-272. 1962.
- 1819 Barron, G. L., and L. V. Busch. Studies on the soil hyphomycete *Scolecobasidium*. *Can. J. Bot.* 40:77-84. 1962.
- 1820 Beaton, J. D., and N. A. Gough. The influence of soil moisture regime and phosphorus source on the response of alfalfa to phosphorus. *Soil Sci. Soc. Amer. Proc.* 26:265-270. 1962.
- 1821 Beaton, J. D., N. A. Gough, and C. A. Rowles. The influence of base saturation and fertility treatments on yield and cation composition of crops grown on two British Columbia soils high in organic matter. II. Red clover. *Empire J. Exp. Agr.* 30:49-56. 1962.
- 1822 Beaton, J. D., and D. W. L. Read. Phosphorus uptake from a calcareous Saskatchewan soil treated with monoammonium phosphate and its reaction products. *Soil Sci.* 94:404-408. 1962.

- 1823 Beaton, J. D., D. W. L. Read, and W. C. Hinman. Phosphorus uptake by alfalfa as influenced by phosphate source and moisture. *Can. J. Soil Sci.* 42:254-265. 1962.
- 1824 Beauchamp, E. G. The response of oat crops and succeeding hay crops to chemical fertilizers on different soil types in southwestern Quebec. M.Sc. Thesis, McGill Univ. 1962.
- 1825 Beckford, D. P. Forms of manganese in the soil and their extraction. M.S.A. Thesis, Univ. Toronto. 1962.
- 1826 Bisal, F., and K. F. Nielsen. Movement of soil particles in saltation. *Can. J. Soil Sci.* 42:81 - 86. 1962.
- 1827 Bishop, R. F., and D. Chisholm. Arsenic accumulation in Annapolis Valley orchard soils. *Can. J. Soil Sci.* 42:77-80. 1962.
- 1828 Bishop, R. F., L. B. MacLeod, L. P. Jackson, C. R. MacEachern, and E. T. Goring. A long-term field experiment with commercial fertilizers and manure. II. Fertility levels and crop yields in a rotation of potatoes, oats and hay. *Can. J. Soil Sci.* 42:49-60. 1962.
- 1829 Bourget, S. J., and R. B. Carson. Effect of soil moisture stress on yield, water-use efficiency and mineral composition of oats and alfalfa grown at two fertility levels. *Can. J. Soil Sci.* 42:712. 1962.
- 1830 Bowser, W. E., A. A. Kjearsgaard, T. W. Peters, et al. Soil survey of Edmonton sheet (83-H). *Univ. Alberta Bull.* SS-4. 1962.
- 1831 Bowser, W. E., R. A. Milne, and R. R. Cairns. Characteristics of the major soil groups in an area dominated by solonetzic soils. *Can. J. Soil Sci.* 42:165-179. 1962.
- 1832 Broadwell, C. E., and M. H. Miller. The effect of various rates of nitrogen on sugar content and yield of sugar beets. *Proc. 12th Gen. Meet., Amer. Soc. Sugar Beet Tech.* 1962.
- 1833 Cairns, R. R. Some moisture relations in a solonetzic soil complex. *Can. J. Soil Sci.* 42:17 - 22. 1962.
- 1834 Cairns, R. R. Some effects of deep working on solonetz soil. *Can. J. Soil Sci.* 42:273-275. 1962.

- 1835 Cairns, R. R., R. A. Milne, and W. E. Bowser. A nutritional disorder in barley seedlings grown on an alkali solonetz soil. *Can. J. Soil Sci.* 42:1-6. 1962.
- 1836 Chan, E. C. S., and I. L. Stevenson. On the biotin requirement of *Arthrobacter globiformis*. *Can. J. Microbiol.* 8:403-405. 1962.
- 1837 Chandra, P. The effect of shifting temperatures on nitrification in a loam soil. *Can. J. Soil Sci.* 42:314-315. 1962.
- 1838 Chandra, P., J. D. Beaton, and D. W. L. Read. Effect of fertilizers on the bacterial population of a Saskatchewan soil. *Nature (London)* 193:1308 - 1309. 1962.
- 1839 Chang, R. K. Availability of soil phosphorus and fertilizer response for oats in selected Quebec soils. M.Sc. Thesis, McGill Univ. 1962.
- 1840 Clark, J. S., J. E. Brydon, and H. J. Hortie. The clay minerals in some British Columbia subsoils. *Can. J. Soil Sci.* 42:296-301. 1962.
- 1841 Clark, J. S., and A. J. Green. A pipetting assembly for the mechanical analysis of soils. *Can. J. Soil Sci.* 42:316. 1962.
- 1842 Collins, W. B., and R. F. Bishop. The effect of various organic amendments on certain chemical properties of soil, on plant nutrient levels in strawberry foliage and on fruit yields. *Can. J. Plant Sci.* 42:437-444. 1962.
- 1843 Cook, F. D., and C. Quadling. Peroxide production by *Rhizobium meliloti*. *Can. J. Microbiol.* 8:933 - 935. 1962.
- 1844 Day, J. H. Pedogenic study of soils containing permafrost in the Mackenzie River basin. *Nat. Res. Counc. Can. Tech. Memo.* 76. 1962.
- 1845 Day, J. H. Reconnaissance soil survey of the Takhini and Dezadeash valleys in the Yukon Territory. *Can. Dep. Agr. Res. Branch Publ.* 1962.
- 1846 DeLong, W. A., and L. E. Lowe. Carbon-bonded sulphur in soil. *Can. J. Soil Sci.* 42:223. 1962.
- 1847 de Vries, J., and L. R. Webber. Field capacity of a soil as affected by previous cultural treatment. *Can. J. Soil Sci.* 42:13-16. 1962.

- 1848 Dionne, J. L., P. Gervais, et W. S. Richardson. Action du phosphore et du potassium sur le rendement et la composition chimique du trèfle ladino cultivé sur deux types de sol. *Can. J. Plant Sci.* 42:501-509. 1962.
- 1849 Dormaar, J. F., and D. L. Lynch. Amendments to the determination of "Uronic Acids" in soils with carbazole. *Soil Sci. Soc. Amer. Proc.* 26:251 - 254. 1962.
- 1850 Dubetz, S., G. C. Russell, and D. T. Anderson. Effect of soil temperature on seedling emergence. *Can. J. Plant Sci.* 42:481-487. 1962.
- 1851 Dubetz, S., G. C. Russell, and K. W. Hill. Growing irrigated crops in southern Alberta. *Can. Dep. Agr. Publ.* 1152. 1962.
- 1852 Ehrlich, W. A., L. E. Pratt, and F. P. Leclaire. Report of detailed-reconnaissance soil survey of Swan River. *Man. Soil Surv. Rep. No.* 13. 1962.
- 1853 El Bagouri, I. H. M. The effect of soil carbonate on the availability of added and native phosphorus in some calcareous soils. M.Sc. Thesis, Univ. Manitoba. 1962.
- 1854 Evans, E. J., and A. J. Dekker. The influence of soil properties and soil amendments on the Sr⁹⁰ content of oats grown in selected Canadian soils. *Can. J. Soil Sci.* 42:23-30. 1962.
- 1855 Evans, E. J., and A. J. Dekker. Comparative Sr⁹⁰ content of agricultural crops grown in a contaminated soil. *Can. J. Plant Sci.* 42:252 - 258. 1962.
- 1856 Ferguson, W. S. Phosphate nutrition of plants grown on saline soils. Ph.D. Thesis, Univ. Manitoba. 1962.
- 1857 Gervais, P., J. L. Dionne, and W. S. Richardson. Productivity and chemical composition of alfalfa as influenced by varying levels of phosphorus and potassium applications. *Can. J. Plant Sci.* 42:1-10. 1962.
- 1858 Gillespie, J. E., R. E. Wicklund, and N. R. Richards. Soil survey of Hastings County, Ontario. *Ont. Soil Surv. Rep. No.* 27. 1962.
- 1859 Godbout, G. Etude pédologique du Comté de Maskinongé. *Que. Dep. Agr. and Colonization Bull. tech. no.* 9. 1962.

- 1860 Goettel, A. W. The potassium status of some Alberta soils. M.Sc. Thesis, Univ. Alberta. 1962.
- 1861 Hamilton, H. A. Effect of monocalcium and diammonium phosphates on crop yield and their influence on soil solution movement and characteristics when associated with different salts. Ph.D. Thesis, Cornell Univ. 1962.
- 1862 Heeney, H. B. Growing strawberries in Eastern Canada -- Soil management. Can. Dep. Agr. Publ. 1171. 1962.
- 1863 Hilchey, J. D., D. B. Cann, and J. I. MacDougall. Soil survey of Digby County, N.S. N.S. Soil Surv. Rep. No. 11. 1962.
- 1864 Hinman, W. C., J. D. Beaton, and D. W. L. Read. Some effects of moisture and temperature on transformation of monocalcium phosphate in soil. Can. J. Soil Sci. 42:229-239. 1962.
- 1865 Hoffman, D. W., R. E. Wicklund, and N. R. Richards. Soil survey of Simcoe County. Ont. Soil Surv. Rep. No. 29. 1962.
- 1866 Hoffman, D. W., R. E. Wicklund, and N. R. Richards. Soil survey of Parry Sound district. Ont. Soil Surv. Rep. No. 31. 1962.
- 1867 Hoffman, I., E. V. Parups, and R. B. Carson. Analysis for maleic hydrazide: II. Determination and persistence in soils. J. Agr. Food Chem. 10:453-455. 1962.
- 1868 Hoyt, P. B., and A. M. F. Hennig. Nutrient availability to barley in some Gray Wooded topsoils of the Peace River region. Can. J. Soil Sci. 42:240-246. 1962.
- 1869 Hsu, Pa Ho, and D. A. Rennie. Reactions of phosphate in aluminum systems: I. Adsorption of phosphate by X-ray amorphous "Aluminum hydroxide". Can. J. Soil Sci. 42:197-209. 1962.
- 1870 Hsu, Pa Ho, and D. A. Rennie. Reactions of phosphate in aluminum systems: II. Precipitation of phosphate by exchangeable aluminum on a cation exchange resin. Can. J. Soil Sci. 42:210-221. 1962.
- 1871 Huang, P. M. Evaluation of soil tests for predicting nitrogen requirements of cereals for some Manitoba soils. M.Sc. Thesis, Univ. Manitoba. 1962.
- 1872 Hutcheon, W. L. The use of soil classification in agriculture, forestry, and related fields. Comm. IV and V, Int. Soc. Soil Sci. (New Zealand, 1962) 325-331. 1962.

- 1873 Ivarson, K. C., and F. J. Sowden. Methods for the analysis of carbohydrate material in soil: I. Colorimetric determination of uronic acids, hexoses and pentoses. *Soil Sci.* 94:245-250. 1962.
- 1874 Jackson, L. P. The relation of soil aeration to the growth of potato sets. *Amer. Potato J.* 39:436 - 438. 1962.
- 1875 Jackson, L. P. Effects of soil water and temperature on the growth of potato sets. *Amer. Potato J.* 39:452-455. 1962.
- 1876 Janke, W. E. Characterization of Valdres drift soil parent material in northeast Wisconsin. Ph.D. Thesis, Univ. Wisconsin. 1962.
- 1877 Janzen, W. K. Exchangeable cations and mechanical composition of solodic soils of Saskatchewan. *J. Soil Sci.* 13:116-123. 1962.
- 1878 Jasmin, J. J., and H. B. Heeney. The effect of lime on the status of nitrogen, phosphorus, potassium, calcium and magnesium in a few vegetables grown on acid peat soils. *Can. J. Plant Sci.* 42:445-451. 1962.
- 1879 Jasmin, J. J., and J. Laliberte. Asparagus planting on organic soils. *Proc. Amer. Soc. Hort. Sci.* 81:295-298. 1962.
- 1880 John, M. K. Distribution and transformation of soil phosphorus. Ph.D. Thesis, Univ. Illinois. 1962.
- 1881 Katznelson, H., and V. E. Henderson. Studies on the relationships between nematodes and other soil microorganisms. I. The influence of actinomycetes and fungi on *Rhabditis (Cephaloboides) oxycerca* de Man. *Can. J. Microbiol.* 8:875-882. 1962.
- 1882 Katznelson, H., and V. E. Henderson. Associative phenomena among soil nematodes, actinomycetes and fungi. *Bacteriol. Proc.* 62:24. 1962.
- 1883 Katznelson, H., E. A. Peterson, and J. W. Rouatt. Phosphate-dissolving microorganisms on seed and in the root zone of plants. *Can. J. Bot.* 40:1181 - 1186. 1962.
- 1884 Katznelson, H., J. W. Rouatt, and E. A. Peterson. The rhizosphere effect of mycorrhizal and non-mycorrhizal roots of yellow birch seedlings. *Can. J. Bot.* 40:377-382. 1962.

- 1885 Kendrick, W. B. Soil fungi of a copper swamp. *Can. J. Microbiol.* 8:639-647. 1962.
- 1886 King, K. M. Soil moisture and its measurement. Symposia on water balance of the soil and forest meteorology. Tech. Comm. for Agr. Meteorol., World Meteorol. Organ. Toronto. 1962.
- 1887 Korven, H. C. Border ditch and border dike irrigation. *Trans. Amer. Soc. Agr. Eng.* 5:192 - 196. 1962.
- 1888 Korven, N. A., A. Wenhardt, G. K. Harris, and P. J. Janzen. Importance of working summerfallow early in southwestern Saskatchewan. *Can. Dep. Agr. Publ.* 1149. 1962.
- 1889 Krogman, K. K., and D. T. Anderson. A sampler for taking soil cores for the greenhouse and laboratory. *Can. J. Soil Sci.* 42:224. 1962.
- 1890 Lajoie, P. G. Etude pédologique des comtés de Gatineau et de Pontiac, Québec. *Que. Soil Surv. Rep.* 1962.
- 1891 Laplante, L. Etude pédologique de comté de Levis. *Que. Dep. Agr. and Colonization Bull. tech.* 10. 1962.
- 1892 Lee, C. C. Uptake of strontium-85 by alfalfa. *Science (Washington)* 138:41-42. 1962.
- 1893 Lehane, J. J., and W. J. Staple. Effects of soil moisture tensions on growth of wheat. *Can. J. Soil Sci.* 42:180-188. 1962.
- 1894 Lieth, H., and R. Ouellette. Studies on the vegetation of the Gaspé Peninsula. II. The soil respiration of some plant communities. *Can. J. Bot.* 40:127-140. 1962.
- 1895 Lindsay, J. D., S. Pawluk, and W. Odynsky. Exploratory soil survey of Alberta map sheets 84-P, 84-I, and 84-H. *Prelim. Soil Surv. Rep.* 62-1, Res. Counc. Alta. 1962.
- 1896 Leuken, H. Saline soils under dryland agriculture in southeastern Saskatchewan (Canada) and possibilities for their improvement. Part I. Distribution and composition of water-soluble salts in soils in relation to physiographic features and plant growth. *Plant Soil* 17:1-25. 1962.

- 1897 Leuken H. Saline soils under dryland agriculture in southeastern Saskatchewan (Canada) and possibilities for their improvement. Part II. Evaluation of effects of various treatments on soil salinity and crop yields. *Plant Soil* 17:26 - 48. 1962.
- 1898 Leuken, H. Saline soils under dryland agriculture in southeastern Saskatchewan (Canada) and possibilities for their improvement. Part III. Influence of organic matter applications on soil salinity and crop yields. *Plant Soil* 17:49-67. 1962.
- 1899 Leuken H., W. L. Hutcheon, and E. A. Paul. The influence of nitrogen on the decomposition of crop residues in the soil. *Can. J. Soil Sci.* 42:276-288. 1962.
- 1900 Lynch, D. L., and D. N. Graveland. Some organic matter - clay mineral relationships in four Alberta soil profiles. *Can. J. Soil Sci.* 42:68-76. 1962.
- 1901 Maas, E. F., G. R. Webster, E. H. Gardner, and R. H. Turley. Yield response, residual nitrogen and clover content of an irrigated grass-clover pasture as affected by various rates and frequencies of nitrogen application. *Agron. J.* 54:212-214. 1962.
- 1902 Mack, A. R. Low-temperature research on nitrate release from soil. *Nature (London)* 193:803-804. 1962.
- 1903 MacKay, D. C., and R. F. Bishop. A comparison of acetic acid-soluble and total nutrient levels in plant tissue as indicators of nutritional status. *Can. J. Plant Sci.* 42:229-237. 1962.
- 1904 MacKay, D. C., and E. W. Chipman. Molybdenum deficiency in sphagnum peat soil. *Can. J. Soil Sci.* 42:222. 1962.
- 1905 MacKay, D. C., and C. A. Eaves. The influence of irrigation treatments on yields and on fertilizer utilization by sweet corn and snap beans. *Can. J. Plant Sci.* 42:219-228. 1962.
- 1906 MacKay, D. C., W. M. Langille, and E. W. Chipman. Boron deficiency and toxicity in crops grown on sphagnum peat soil. *Can. J. Soil Sci.* 42:302 - 310. 1962.
- 1907 MacKay, D. C., and J. S. Leefe. Optimum leaf levels of nitrogen, phosphorus and potassium in sweet corn and snap beans. *Can. J. Plant Sci.* 42:238 - 246. 1962.

- 1908 MacKay, D. C., and C. R. MacEachern. The influence of liming on several properties of soil potassium in a loam Podzol. *Soil Sci. Soc. Amer. Proc.* 26:54-57. 1962.
- 1909 MacKenzie, A. F. Inorganic soil phosphorus fractions of some Ontario soils as studied using isotopic exchange and solubility criteria. *Can. J. Soil Sci.* 42:150-156. 1962.
- 1910 Mackenzie, A. F., and J. E. Dawson. A study of organic soil horizons using electrophoretic techniques. *J. Soil Sci.* 13:160-166. 1962.
- 1911 MacLean, A. J. Fixation of potassium in some Canadian soils. *Can. J. Soil Sci.* 42:96-104. 1962.
- 1912 MacLean, A. J. Use of limestone in Canadian agriculture. *Can. Mining and Metallurgical Bull. No. 55*:806-810. 1962.
- 1913 MacLeod, L. B. Effect of liming and potassium fertilization on soil solution and on yield and composition of alfalfa and orchardgrass mixtures. Ph.D. Thesis, Cornell Univ. 1962.
- 1914 Matthews, B. C., and P. H. T. Beckett. A new procedure for studying the release and fixation of potassium ions in soil. *J. Agr. Sci.* 58:59 - 64. 1962.
- 1915 McBeath, D. K. Inhibition of nitrification by thiourea and 2-chloro-6-(trichloromethyl)pyridine. Ph.D. Thesis, Cornell Univ. 1962.
- 1916 McKeague, J. A. Silica in solution in the presence of soil and related material: Form, concentrations and reactions. Ph.D. Thesis, Cornell Univ. 1962.
- 1917 Miller, M. H. The inhibitory influence of water extracts of three organic materials on soybean germination and growth in soil and sand cultures. *Can. J. Plant Sci.* 42:262-269. 1962.
- 1918 Miller, M. H., and V. N. Vij. Some chemical and morphological effects of ammonium sulphate in a fertilizer phosphorus band for sugar beets. *Can. J. Soil Sci.* 42:87-95. 1962.
- 1919 Miltimore, J. E., J. L. Mason, and C. B. W. Rogers. Increase in seed production from nitrogen fertilization of native beardless wheatgrass. *Can. J. Plant Sci.* 42:359-364. 1962.

- 1920 Morita, H. Composition of peat humus and its derivatives. Oxidative conversion to lignin model compounds. *J. Org. Chem.* 27:1079-1080. 1962.
- 1921 Penner, E. Thermal conductivity of saturated Leda clay. *Geotechnique* 12(2):168-175. 1962.
- 1922 Pierpoint, G., and J. L. Farrar. The water balance of the University of Toronto forest. Univ. Toronto Fac. Forest. Tech. Rep. 3. 1962.
- 1923 Pluth, D. J. Forest soil and tree growth characteristics related to a synecological coordinate system. M.Sc. Thesis, Univ. Minnesota. 1962.
- 1924 Potter, J. G. Soil temperature records at eight localities in Canada, 1959-60. Can. Dep. Transport. 1962.
- 1925 Rapp, E. Tile drainage in shallow glacial till soils. M.Sc. Thesis, Utah State Univ. 1962.
- 1926 Read, D. W. L., S. V. Fleck, and W. L. Pelton. Self-irrigating greenhouse pots. *Agron. J.* 54:467- 468. 1962.
- 1927 Rennie, P. J. Methods of assessing forest site capacity. Comm. IV and V, Int. Soc. Soil Sci. (New Zealand, 1962) 770-785. 1962.
- 1928 Ridley, A. O., and R. A. Hedlin. Effect of mineral fertilizers and manures on the phosphorus content of a clay soil and on crop yields and quality in a long-term crop rotation. *Can. J. Soil Sci* 42:137-149. 1962.
- 1929 Robertson, J. A. Comparison of an acid and an alkaline extracting solution for measuring available phosphorus in Alberta soils. *Can. J. Soil Sci.* 42:115-121. 1962.
- 1930 Ross, R. G., and D. K. R. Stewart. Movement and accumulation of mercury in apple trees and soil. *Can. J. Plant Sci.* 42:280-285. 1962.
- 1931 Sawyer, C. D. Alterations in the composition of organic matter as related to podzolic degradation of chernozemic soils. M.Sc. Thesis, Univ. Alberta. 1962.
- 1932 Schnitzer, M., and J. G. Desjardins. Molecular and equivalent weights of the organic matter of a Podzol. *Soil Sci. Soc. Amer. Proc.* 26:362-365. 1962.

- 1933 Schnitzer, M., Z. R. Wright, and I. Hoffman. High temperature thermogravimetry of chlorides and sulphates: A study of the application to soils. *Anal. Chim. Acta* 26:371-377. 1962.
- 1934 Scott, A. D., and T. E. Bates. Effect of organic additions on the changes in exchangeable potassium observed on drying soils. *Soil Sci. Soc. Amer. Proc.* 26:209-210. 1962.
- 1935 Sherrell, C. G., R. W. Sheard, and B. C. Matthews. A cone-type dispenser for applying fertilizer on small grain plots. *Can. J. Soil Sci.* 42:311 - 313. 1962.
- 1936 Shieh, H.-S. The metabolism of coumarin and o-coumarin acid by soil fungi. Ph.D. Thesis, McGill Univ. 1962.
- 1937 Smeltzer, G. G., W. M. Langille, and K. S. MacLean. Effects of some trace elements on grass and legume production in Nova Scotia. *Can. J. Plant Sci.* 42:46-52. 1962.
- 1938 Smith, A. D., J. S. Horricks, and J. E. Andrews. Effect of cover crops on winter survival, common root rot, and yield of winter wheat. *Can. J. Plant Sci.* 42:286-293. 1962.
- 1939 Sowden, F. J., and K. C. Ivarson. Methods for the analysis of carbohydrate material in soil: 2. Use of cellulose column and paper chromatography for determination of the constituent sugars. *Soil Sci.* 94:340-344. 1962.
- 1940 Sowden, F. J., and K. C. Ivarson. Decomposition of forest litters: II. Changes in the carbohydrate constituents. *Plant Soil* 26:389-400. 1962.
- 1941 Staple, W. J. Hysteresis effects in soil moisture movement. *Can. J. Soil Sci.* 42:247-253. 1962.
- 1942 Staple, W. J., and J. J. Lehane. Variability in soil moisture sampling. *Can. J. Soil Sci.* 42:157 - 164. 1962.
- 1943 Stevenson, I. L. The effect of decomposition of various crop plants on the metabolic activity of the soil microflora. *Can. J. Microbiol.* 8:501 - 509. 1962.
- 1944 Stevenson, I. L. Growth studies on *Arthrobacter globiformis*: II. Changes in macromolecular level during growth. *Can. J. Microbiol.* 8:655-661. 1962.

- 1945 Stobbe, P. C. Classification of Canadian soils. Comm. IV and V, Int. Soc. Soil Sci. (New Zealand, 1962) 318-324. 1962.
- 1946 Subba-Rao, N. S., R. G. S. Bidwell, and D. L. Bailey. Studies of rhizosphere activity by the use of isotopically labelled carbon. *Can. J. Bot.* 40:203 - 212. 1962.
- 1947 Trojan, O. A. D., and K. G. McNeill. Radioactive contamination of soil. *Can. J. Phys.* 40:370-372. 1962.
- 1948 Turner, R. C., and J. E. Brydon. Formation of double hydroxides and the titration of clays. *Science (Washington)* 136:1052-1054. 1962.
- 1949 Turner, R. C., and W. E. Nichol. A study of the lime potential: 1. Conditions for the lime potential to be independent of salt concentration in aqueous suspensions of negatively charged clays. *Soil Sci.* 93:374-382. 1962.
- 1950 Turner, R. C., and W. E. Nichol. A study of the lime potential: 2. Relation between lime potential and per cent base saturation of negatively charged clays in aqueous salt suspensions. *Soil Sci.* 94:58-63. 1962.
- 1951 Turner, R. C., and M. Schnitzer. Thermogravimetry of the organic matter of a Podzol. *Soil Sci.* 93:225-232. 1962.
- 1952 Valencia, L. G. The effect of flooding on the availability of phosphorus and on the growth of rice. Ph.D. Thesis, McGill Univ. 1962.
- 1953 van Schaik, J. C., and R. A. Milne. Reclamation of a saline-sodic soil with shallow tile drainage. *Can. J. Soil Sci.* 42:43-48. 1962.
- 1954 Voisey, P. W., and D. J. Cooper. An instrument for measuring soil water level. *Can. J. Soil Sci.* 42:226. 1962.
- 1955 Warkentin, B. P. Water retention and swelling pressure of clay soils. *Can. J. Soil Sci.* 42:189 - 196. 1962.
- 1956 Warkentin, B. P., and R. K. Schofield. Swelling pressure of Na-montmorillonite in NaCl solutions. *J. Soil Sci.* 13:98-105. 1962.
- 1957 Warren, H. V., and R. E. Delavault. Lead in some food crops and trees. *J. Sci. Food Agr.* 13:96 - 98. 1962.

- 1958 Weir, C. C. Behavior of phosphates in some calcareous Manitoba soils. Ph.D. Thesis, Univ. Manitoba. 1962.
- 1959 Weir, C. C., and M. H. Miller. The manganese cycle in soil: I. Isotopic-exchange reactions of Mn-54 in an alkaline soil. *Can. J. Soil Sci.* 42:105 - 114. 1962.
- 1960 Weir, C. C., and R. J. Soper. Adsorption and exchange studies of phosphorus in some Manitoba soils. *Can. J. Soil Sci.* 42:31-42. 1962.
- 1961 Wenhardt, A. Surface clod production characteristics of some tillage machines on a clay loam soil. *Can. J. Agr. Eng.* 4:33-35. 1962.
- 1962 Wicklund, R. E., and N. R. Richards. Soil survey of Russell and Prescott counties, Ontario. *Ont. Soil Surv. Rep. No. 33.* 1962.
- 1963 Wilcox, J. C. Rate of soil drainage following an irrigation: III. A new concept of the upper limit of available moisture. *Can. J. Soil Sci.* 42:122 - 128. 1962.
- 1964 Wilcox, J. C. Rate of soil drainage following an irrigation: IV. Effects of consumptive use and soil depth on upper limit of available moisture. *Can. J. Soil Sci.* 42:129-136. 1962.
- 1965 Wilcox, J. C. Effects of shielding Bellani plates on rate of evaporation. *Can. J. Plant Sci.* 42:400-401. 1962.
- 1966 Woolley, D. G., and W. H. Bennett. Effect of soil moisture, nitrogen fertilization, variety and harvest date on root yields and sucrose content of sugarbeets. *J. Amer. Soc. Sugar Beet Technol.* 12:233-237. 1962.
- 1967 Wright, H. C. Effect of freezing on initial and incubatable nitrate-nitrogen in a soil. M.S.A. Thesis, Univ. Toronto. 1962.
- 1968 Acton, C. J., E. A. Paul, and D. A. Rennie. Measurement of the polysaccharide content of soils. *Can. J. Soil Sci.* 43:141-150. 1963.
- 1969 Acton, C. J., D. A. Rennie, and E. A. Paul. The relationship of polysaccharides to soil aggregation. *Can. J. Soil Sci.* 43:201-209. 1963.
- 1970 Acton, D. E., and R. J. St. Arnaud. Micropedology of the major profile types of the Weyburn catena. *Can. J. Soil Sci.* 43:377-386. 1963.

- 1971 Anderson, C. H. The precision of rod-row tests with barley grown at three topographical locations as influenced by alleviating a phosphorus deficiency. *Can. J. Plant Sci.* 43:519-521. 1963.
- 1972 Ballantyne, A. K. Recent accumulation of salts in the soils of southeastern Saskatchewan. *Can. J. Soil Sci.* 43:52-58. 1963.
- 1973 Ballantyne, A. K., and J. S. Clayton. The relationship of water-soluble cations to field separations of chernozemic and solonetzic soils. *Can. J. Soil Sci.* 43:359-369. 1963.
- 1974 Barton, D. H. R., and M. Schnitzer. A new experimental approach to the humic acid problem. *Nature (London)* 198:217-218. 1963.
- 1975 Beaton, J. D., T. L. Charlton, and R. Speer. Identification of soil-fertilizer reaction products in a calcareous Saskatchewan soil by infra-red absorption analysis. *Nature (London)* 197:1329-1330. 1963.
- 1976 Beaton, J. D., and D. W. L. Read. Effects of temperature and moisture on phosphorus uptake from a calcareous Saskatchewan soil treated with several pelleted sources of phosphorus. *Soil Sci. Soc. Amer. Proc.* 27:61-65. 1963.
- 1977 Beaton, J. D., R. Speer, D. W. L. Read, et al. Distribution of monocalcium and monoammonium phosphate reaction products in a calcareous Saskatchewan soil. *Nature (London)* 198:813-814. 1963.
- 1978 Beauchamp, E. G., and H. A. Stepler. A method of studying subsoils in the greenhouse by means of a lysimeter. *Can. J. Soil Sci.* 43:405-407. 1963.
- 1979 Beeler, B. E. Methods of measuring the availability of magnesium in Ontario soil. M.S.A. Thesis, Univ. Toronto. 1963.
- 1980 Bhuiya, Z. H., and L. R. Webber. The use of soils for the disposal of sodium wastes from canneries *Can. J. Soil Sci.* 43:400-401. 1963.
- 1981 Bigsby, F. W. A constant moisture balance for maintaining the moisture content of individual soil containers. *Can. J. Plant Sci.* 43:433-435. 1963.
- 1982 Bigsby, F. W., and M. R. Kilcher. The modification of a soil penetrometer for measuring sponginess of turf. *Can. J. Plant Sci.* 43:425-427. 1963..

- 1983 Black, W. N. The effect of frequency of rotational burning on blueberry production. *Can. J. Plant Sci.* 43:161-165. 1963.
- 1984 Blair, S. S. The effect of moisture stress on plant-available soil phosphorus. M.Sc. Thesis, Univ. Saskatchewan. 1963.
- 1985 Boswall, R. L., and D. C. MacKay. Vacuum filtration assembly for soil samples. *Chem. Anal.* 52:54. 1963.
- 1986 Bourget, S. J., and A. J. MacLean. The effect of water erosion on physical and chemical properties of Rideau clay. *Can. J. Soil Sci.* 43:370-376. 1963.
- 1987 Bourget, S. J., and E. V. Parups. Growth of tobacco and soil-moisture evaporation as influenced by long-chain fatty alcohols in the soil. *Soil Sci* 96:82-85. 1963.
- 1988 Bowser, W. E., T. W. Peters, and A. A. Kjearsgaard. Soil survey of eastern portion of St. Mary and Milk Rivers Development Irrigation Project. *Alta. Soil Surv. Rep.* No. 22. 1963.
- 1989 Braun, P. Crops and soil management for the Wabowden area of northern Manitoba. *Can. Dep. Agr. Publ.* 1164. 1963.
- 1990 Brydon, J. E., W. G. Dore, and J. S. Clark. Silicified plant asterosclereids preserved in soil. *Soil Sci. Soc. Amer. Proc.* 27:476-477. 1963.
- 1991 Brydon, J. E., H. M. Rice, and G. C. Scott. The recovery of clays from suspension by freeze-drying. *Can. J. Soil Sci.* 43:404-405. 1963.
- 1992 Cairns, R. R. Nitrogen mineralization in solonchic soil samples and some influencing factors. *Can. J. Soil Sci.* 43:387-392. 1963.
- 1993 Calder, F. W., and W. M. Langille. Trace element effects on oats and alfalfa grown on three soils. *Can. J. Plant Sci.* 43:482-489. 1963.
- 1994 Cann, D. B., J. I. MacDougall, and J. D. Hilchey. Soil survey of Cape Breton Island, N.S. N.S. *Soil Surv. Rep.* No. 12. 1963.
- 1995 Chan, E. C. S., H. Katznelson, and J. W. Rouatt. The influence of soil and root extracts on the associative growth of selected soil bacteria. *Can. J. Microbiol.* 9:187-197. 1963.

- 1996 Clark, J. S., and J. E. Brydon. Characteristics and genesis of Concretionary Brown soils of British Columbia. *Soil Sci.* 96:410-417. 1963.
- 1997 Clark, J. S., J. E. Brydon, and L. Farstad. Chemical and clay mineralogical properties of the Concretionary Brown soils of British Columbia, Canada. *Soil Sci.* 95:344-352. 1963.
- 1998 Coffin, D. E. A method for the determination of free iron in soils and clays. *Can. J. Soil Sci.* 43:7-17. 1963.
- 1999 Cunningham, R. K., and K. F. Nielsen. Evidence against relationships between root cation exchange capacity and cation uptake by plants. *Nature (London)* 200:1344-1345. 1963.
- 2000 Dell, C. I. A study of the mineralogical composition of sand in northern Ontario. *Can. J. Soil Sci.* 43:189-200. 1963.
- 2001 Doran, W. J., G. H. Bowman, and D. R. Walker. The productivity of fertilized pastures in central Alberta. *Can. J. Plant Sci.* 43:188-194. 1963.
- 2002 Dormaar, J. F. Humic acid associated phosphorus in some soils of Alberta. *Can. J. Soil Sci.* 43:235-241. 1963.
- 2003 Dormaar, J. F., and G. R. Webster. Status of organic phosphorus in some Alberta soils. *Can. J. Soil Sci.* 43:27-34. 1963.
- 2004 Dormaar, J. F., and G. R. Webster. Determination of total organic phosphorus in soils by extraction methods. *Can. J. Soil Sci.* 43:35-43. 1963.
- 2005 Elliot, J. M., and M. E. Back. Effects of potassium and chlorine on the production of tobacco seedlings. *Can. J. Soil Sci.* 43:268-274. 1963.
- 2006 Elliot, J. M., and W. B. Mountain. The influence of spring and fall applications of nematicides on *Pratylenchus penetrans* and quality of flue-cured tobacco grown with various forms of nitrogen. *Can. J. Soil Sci.* 43:18-26. 1963.
- 2007 Evans, E. J., and A. J. Dekker. The effect of potassium fertilization on the Sr90 content of crops. *Can. J. Soil Sci.* 43:309-315. 1963.
- 2008 Ferguson, W. S. Effect of intensity of cropping on the efficiency of water use. *Can. J. Soil Sci.* 43:156-165. 1963.

- 2009 Ferguson, W. S., and R. A. Hedlin. Effect of soluble salts on plant response to and absorption of phosphorus. *Can. J. Soil Sci.* 43:210-218. 1963.
- 2010 Fulton, J. M. The relation between soil aeration and the accumulation of ethanol and certain other metabolites in tomato plants. Ph.D. Thesis, Michigan State Univ. 1963.
- 2011 Gardiner, J. S. Response of legumes to lime application on selected Ontario soils in the greenhouse. M.S.A. Thesis, Univ. Toronto. 1963.
- 2012 Gervais, P., J. L. Dionne, et W. S. Richardson. Influence du phosphate et de la potasse sur l'établissement, le rendement et la composition chimique du lotier cultivé sur deux types de sol. *Can. J. Plant Sci.* 43:97-106. 1963.
- 2013 Ghanem, I. S. The sulphur status of soils with emphasis on sulphate-sulphur. Ph.D. Thesis, McGill Univ. 1963.
- 2014 Gillespie, J. E., R. E. Wicklund, and B. C. Matthews. Soil survey of Lennox and Addington County. *Ont. Soil Surv. Rep. No. 36.* 1963.
- 2015 Gillingham, J. T. Influence of anions on the uptake of calcium and magnesium by plants and on calcium and magnesium movement in soils. Ph.D. Thesis, Chemson Univ. 1963.
- 2016 Gold, L. W. Influence of the snow cover on the average annual ground temperature at Ottawa, Canada. *Int. Ass. Sci. Hydrol. Publ.* 61 Gen. Assembly (Berkeley) 82-91. 1963.
- 2017 Gorham, E. Comparison of natural and fallout radioactivity in Ontario soils under pine. *Can. J. Bot.* 41:1309-1318. 1963.
- 2018 Gough, N. A., and J. D. Beaton. Influence of phosphorus source and soil moisture on the solubility of phosphorus. *J. Sci. Food Agr.* 14:224-228. 1963.
- 2019 Graveland, D. N., and J. A. Toogood. Gypsum as an ameliorating agent for solonetzic soils in Alberta. *Can. J. Soil Sci.* 43:1-6. 1963.
- 2020 Gubbels, G. H. Gardening in the Yukon. *Can. Dep. Agr. Publ.* 1192. 1963.
- 2021 Gunner, H. B. Nitrification by *Arthrobacter globiformis*. *Nature (London)* 197:1127-1128. 1963.

- 2022 Gupta, U. C., and F. J. Sowden. Occurrence of free sugars in soil organic matter. *Soil Sci.* 96:217 - 218. 1963.
- 2023 Gupta, U. C., F. J. Sowden, and P. C. Stobbe. The characterization of carbohydrate constituents from different soil profiles. *Soil Sci. Soc. Amer. Proc.* 27:380-382. 1963.
- 2024 Haagsma, T., and M. H. Miller. The release of nonexchangeable soil potassium to cation-exchange resins as influenced by temperature, moisture and exchanging ion. *Soil Sci. Soc. Amer. Proc.* 27:153-156. 1963.
- 2025 Hagarty, J. J. Utilization of phosphorus by different forage species. M.S.A. Thesis, Univ. Toronto. 1963.
- 2026 Halstead, R. L., J. M. Lapensée, and K. C. Ivarson. Mineralization of soil organic phosphorus with particular reference to the effect of lime. *Can. J. Soil Sci.* 43:97-106. 1963.
- 2027 Hamilton, H. A., and J. R. Lessard. Crop response to lime and fertilizer superimposed on different tillage treatments for a virgin Gray Wooded soil. *Can. J. Soil Sci.* 43:298-308. 1963.
- 2028 Hedlin, R. A., and K. Schreiber. Sugar beet yields on fallowed and nonfallowed land on two soil types. *Agron. J.* 55:10-12. 1963.
- 2029 Hobbs, E. H., and K. K. Krogman. Water use in a southern Alberta irrigation district. *Trans. Amer. Soc. Agr. Eng.* 6:266-267. 1963.
- 2030 Hobbs, E. H., K. K. Krogman, and L. G. Sonmor. Effects of levels of minimum available soil moisture on crop yields. *Can. J. Plant Sci.* 43:441-446. 1963.
- 2031 Hobbs, E. H., and G. C. Russell. Effect of method of irrigation on the distribution of salts in a Chin loam soil. *Can. J. Soil Sci.* 43:65-69. 1963.
- 2032 Hoffman, D. W., B. C. Matthews, and R. E. Wicklund. Soil survey of Wellington County, Ontario. *Ont. Soil Surv. Rep. No.* 35. 1963.
- 2033 Holmes, R. M. Hot water bottle lysimeter. *Can. J. Soil Sci.* 43:186-188. 1963.

- 2034 Holmes, R. M., and G. W. Robertson. Application of the relationship between actual and potential evapotranspiration and dry land agriculture. Trans. Amer. Soc. Agr. Eng. 6:65-67. 1963.
- 2035 Hoyt, P. B., and G. W. Cooke. Decomposition of chlorophyll-type compounds in soil. Rep. Rothamst. Exp. Sta. (1962) 45. 1963.
- 2036 Hubbard, W. A., H. H. Nicholson, and A. McLean. Irrigated pastures for British Columbia's interior. Can. Dep. Agr. Publ. 1169. 1963.
- 2037 Husain. S. S., and W. E. McKeen. Interactions between strawberry roots and *Rhizoctonia fragariae*. Phytopathology 53:541-545. 1963.
- 2038 Jeffrey, W. W. Soil temperature measurements in forests of northwestern Canada. Ecology 44:151 - 153. 1963.
- 2039 Kalbfleisch, W., R. R. McIntyre, T. M. MacIntyre, J. A. Roberts, and C. E. Henry. Machines for marshland ditching. Can. Dep. Agr. Publ. 1195. 1963.
- 2040 Katznelson, H., and V. E. Henderson. Ammonium as an "attractant" for a soil nematode. Nature (London) 198:907-908. 1963.
- 2041 Kemp, J. G., and S. J. Bourget. Effect of different tillage treatments on crop yields and soil physical properties. J. Can. Soc. Agr. Eng. 5:9-10, 13 - 16. 1963.
- 2042 Kevan, D. K. McE. The soil fauna--its nature and ecology. Int. Symp. on Ecology of soil-borne plant pathogens, Univ. California (1963) 33-51. 1963.
- 2043 Khan, S. U. Poor growth of alfalfa in the Stoney Plain area on certain soils that had previously grown this crop. M.Sc. Thesis, Univ. Alberta. 1963.
- 2044 Kilcher, M. R., and L. J. Anderson. Wheat yields and soil aggregation after perennial grasses in a semi-arid environment. Can. J. Plant Sci. 43:289-294. 1963.
- 2045 Krogman, K. K. A method for soil-moisture control in greenhouse pots. Can. J. Plant Sci. 43:410 - 411. 1963.
- 2046 Lavkulich, L. M. Evaluation of profile development. M.Sc. Thesis, Univ. Alberta. 1963.

- 2047 Lawrence, T. The influence of fertilizer on the winter survival of intermediate wheatgrass following a long period of drought. *J. Brit. Grassland Soc.* 18:292-294. 1963.
- 2048 Leahey, A. The Canadian system of soil classification and the Seventh Approximation. *Soil Sci. Soc. Amer. Proc.* 27:224-225. 1963.
- 2049 Lemieux, G. J. Soil-vegetation relationships in the northern hardwoods of Quebec. *Can. Dep. Forest., Forest Res. Branch Contrib.* 563. 1963.
- 2050 Leo, M. W. M. Effect of freezing and thawing on some physical properties of soils as related to tomato and barley plants. *Soil Sci.* 96:267-274. 1963.
- 2051 Leo, M. W. M. A rapid method for estimating structural stability of soils. *Soil Sci.* 96:342 - 346. 1963.
- 2052 Leo, M. W. M. Effects of cropping and fallowing on soil salinization. *Soil Sci.* 96:422-427. 1963.
- 2053 Leo, M. W. M. Determination of soil carbonates by a rapid gasometric method. *J. Agr. Food Chem.* 11:452-455. 1963.
- 2054 Lessard, J. R., S. J. Bourget, H. A. Hamilton, and M. Levesque. Influence of different depths of plowing on the physical properties of a clay soil at Guyenne, Quebec. *Can. J. Soil Sci.* 43:178 - 185. 1963.
- 2055 Levesque, M., and J. W. Ketcheson. The influence of variety, soil temperature, and phosphorus fertilizer on yield and phosphorus uptake by alfalfa. *Can. J. Plant Sci.* 43:355-360. 1963.
- 2056 Ley, A. N. Factors affecting mineralization of nitrogen by incubation. M.S.A. Thesis, Univ. Toronto. 1963.
- 2057 Lindsay, J. D., S. Pawluk, and W. Odynsky. Exploratory soil survey of Alberta map sheets 74-M, 74-L, 74-E, and 73-L (north half). Prelim. *Soil Surv. Rep.* 63-1. Res. Counc. Alberta. 1963.
- 2058 Lowe, L. E. The sulphur status of Quebec soils with particular reference to the amount of organically combined sulphur and the nature of its combination. Ph.D. Thesis, McGill Univ. 1963.

- 2059 Lowe, L. E., and W. A. DeLong. Carbon-bonded sulphur in selected Quebec soils. *Can. J. Soil Sci.* 43:151-155. 1963.
- 2060 Maas, E. F. The effect of seed spacing and nitrogen levels on the size of Netted Gem potatoes grown on two organic soils. *Amer. Potato J.* 40:133 - 136. 1963.
- 2061 MacDougall, J. I., D. B. Cann, and J. D. Hilchey. Soil survey of Halifax County, Nova Scotia. N.S. Soil Surv. Rep. No. 13. 1963.
- 2062 Mack, A. R. Biological activity and mineralization of nitrogen in three soils as induced by freezing and drying. *Can. J. Soil Sci.* 43:316-324. 1963.
- 2063 MacKay, D. C., C. R. MacEachern, and R. F. Bishop. The relation of soil test values to fertilizer response by the potato: II. Nitrate production and nitrogenous fertilizer requirements. *Can. J. Soil Sci.* 43:242-249. 1963.
- 2064 MacKenzie, A. F., and C. A. Campbell. The influence of the meta-stable triple point solution of monocalcium phosphate monohydrate upon the clay separates of two Ontario soils. *Can. J. Soil Sci.* 43:260-267. 1963.
- 2065 MacLean, A. A., and J. J. Doyle. The evaluation of the residual effect of fertilizer in long-term fertility plots 1. Potassium. *Can. J. Soil Sci.* 43:229-234. 1963.
- 2066 MacLean, A. J., and J. E. Brydon. Release and fixation of potassium in different size fractions of some Canadian soils as related to their mineralogy. *Can. J. Soil Sci.* 43:123-134. 1963.
- 2067 MacLeod, L. B., and R. Bradfield. Effect of liming and potassium fertilization on the yield and composition of an alfalfa- orchardgrass association. *Agron. J.* 55:435-439. 1963.
- 2068 Mason, J. L., A. L. van Ryswyk, and J. E. Miltimore. Changes in sulphur, phosphorus and potassium content of alfalfa with soil zone. *Can. J. Plant Sci.* 43:94-96. 1963.
- 2069 McKeague, J. A., and M. G. Cline. Silica in soil solutions: I. The form and concentration of dissolved silica in aqueous extracts of some soils. *Can. J. Soil Sci.* 43:70-82. 1963.
- 2070 McKeague, J. A., and M. G. Cline. Silica in soil solutions: II. The absorption of monosilicic acid by soil and by other substances. *Can. J. Soil Sci.* 43:83-96. 1963.

- 2071 Mirza, C. Determination of a procedure for the measurement of subsidence of organic soils. M.S.A. Thesis, Univ. Toronto. 1963.
- 2072 Mueller-Dombois, D. Techniques for studying soil-water growth relations on an artificial slope. Can. Dep. Forest., Forest Res. Branch Contrib. 561. 1963.
- 2073 Neal, J. L., Jr. Influence of slash-burning on microbial population and activities in a Douglas-fir forest soil. M.Sc. Thesis, Oregon State Univ. 1963.
- 2074 Nielsen, K. F., R. B. Carson, and I. Hoffman. A study of ion interactions in the uptake of nitrogen, phosphorus, potassium, calcium, chlorine, and sulfur by corn. Soil Sci. 95:315-321. 1963.
- 2075 Nyborg, M. P. K. Fixation of applied ammonia by soils. Ph.D. Thesis, McGill Univ. 1963.
- 2076 Ouellet, C. E., et G. Laporte. Probabilité des températures gélives à sept stations du Québec: La Pocatière, L'Assomption, Ste-Clothilde, Port-Daniel, Lennoxville, Normandin, Amos. Can. Dep. Agr. Publ. 1186. 1963.
- 2077 Ouellette, G. J. La relation potassium-bore dans la culture de la luzerne. Can. J. Soil Sci. 43:59-64. 1963.
- 2078 Ouellette, G. J. Effects of lime, nitrogen and phosphorus on the response of Ladino clover to molybdenum. Can. J. Soil Sci. 43:117-122. 1963.
- 2079 Ouellette, G. J. Solubilité et finesse de mouture de divers fertilisants borates. Can. J. Soil Sci. 43:166-170. 1963.
- 2080 Patil, A. S., K. M. King, and M. H. Miller. Self-diffusion of rubidium as influenced by soil moisture tension. Can. J. Soil Sci. 43:44-51. 1963.
- 2081 Patrick, Z. A., and L. W. Koch. The adverse influence of phytotoxic substances from decomposing plant residues on resistance of tobacco to black root rot. Can. J. Bot. 41:747-758. 1963.
- 2082 Patrick, Z. A., T. A. Toussoun, and W. C. Snyder. Phytotoxic substances in arable soils associated with decomposition of plant residues. Phytopathology 53:152-161. 1963.

- 2083 Pawluk, S. Characteristics of 14 A clay minerals in the B horizons of podzolized soils of Alberta. Proc. 11th Nat. Conf. Clays (Pergamon Press) XI: 74-82. 1963.
- 2084 Pawluk, S., and J. A. Carson. Evaluation of methods for determination of exchange acidity in soils. Can. J. Soil Sci. 43:325-335. 1963.
- 2085 Penner, E. Sensitivity of Lido clay. Nature (London) 197:347. 1963.
- 2086 Percy, M. J. Infiltration capacity curves for Guelph loam from hydrologic data. M.S.A. Thesis, Univ. Toronto. 1963.
- 2087 Peters, J. R. The effect of fertilizer phosphorus on the forage yield and the phosphorus and sulphate uptake of oats grown on saline and non-saline soils. M.Sc. Thesis, Univ. Manitoba. 1963.
- 2088 Presant, E. W. A trace element study of selected soil profiles from the Bathurst, New Brunswick, area. M.Sc. Thesis, Carleton Univ. 1963.
- 2089 Read, D. W. L., and J. D. Beaton. Effect of fertilizer, temperature, and moisture on germination of wheat. Agron. J. 55:287-290. 1963.
- 2090 Read, D. W. L., W. C. Hinman, and J. D. Beaton. Use of alfalfa in short-term evaluation of phosphorus fertilizers. Agron. J. 55:401-402. 1963.
- 2091 Reid, A. S. J., and M. H. Miller. The manganese cycle in soils: II. Forms of soil manganese in equilibrium with solution manganese. Can. J. Soil Sci. 43:250-259. 1963.
- 2092 Ricketson, C. L., H. W. Goble, and C. B. Kelly. The strawberry in Ontario. Ont. Dep. Agr. Publ. 513. 1963.
- 2093 Rouatt, J. W., E. A. Peterson, and H. Katznelson. Microorganisms in the root zone in relation to temperature. Can. J. Microbiol. 9:227-236. 1963.
- 2094 Sawyer, C. D., and S. Pawluk. Characteristics of organic matter in degrading chernozemic surface soils. Can. J. Soil Sci. 43:275-286. 1963.
- 2095 Schnitzer, M., and S. I. M. Skinner. Organo-metallic interactions in soils: 1. Reactions between a number of metal ions and the organic matter of a Podzol Bh horizon. Soil Sci. 96:86-93. 1963.

- 2096 Schnitzer, M., and S. I. M. Skinner. Organo-metallic interaction in soils: 2. Reactions between different forms of iron and aluminum and the organic matter of a Podzol Bh horizon. *Soil Sci.* 96:181-186. 1963.
- 2097 Sexsmith, J. J., and U. J. Pittman. Effect of nitrogen fertilizers on germination and stand of wild oats. *Weeds* 11:99-101. 1963.
- 2098 Sexsmith, J. J., and G. C. Russell. Effect of nitrogen and phosphorus fertilization on wild oats. *Can. J. Plant Sci.* 43:64-69. 1963.
- 2099 Sharma, G. D., and D. K. McE. Kevan. Observations on *Isotoma notabilis* (Collembola: Isotomidae) in Eastern Canada. *Pedobiologia* 3:34-47. 1963.
- 2100 Sharma, G. D., and D. K. McE. Kevan. Observations on *Folsomia similis* (Collembola: Isotomidae) in Eastern Canada. *Pedobiologia* 3:48-61. 1963.
- 2101 Sharma, G. D., and D. K. McE. Kevan. Observations on *Pseudosinella petterseni* and *Pseudosinella alba* (Collembola: Entomobryidae) in Eastern Canada. *Pedobiologia* 3:62-74. 1963.
- 2102 Siemens, L. B. Cropping systems -- An evaluative review of literature. *Fac. Agr. and Home Econ. Univ. Manitoba Tech. Bull.* 1. 1963.
- 2103 Sonmor, L. G. Seasonal consumptive use of water by crops grown in southern Alberta and its relationship to evaporation. *Can. J. Soil Sci.* 43:287-297. 1963.
- 2104 Soper, R. J., and P. M. Huang. The effect of nitrate- nitrogen in the soil profile on the response of barley to fertilizer nitrogen. *Can. J. Soil Sci.* 43:350-358. 1963.
- 2105 Sosulski, F. W., E. A. Paul, and W. L. Hutcheon. The influence of soil moisture, nitrogen fertilization, and temperature on quality and amino acid composition of Thatcher wheat. *Can. J. Soil Sci.* 43:219-228. 1963.
- 2106 Spilsbury, R. H., J. W. C. Arlidge, N. Keser *et al.* A co-operative study of the classification of forest land in British Columbia. 2nd N. Amer. Forest Soils Conf., Forest-Soil Relationships in North America. 1963.
- 2107 Spratt, E. D., and D. A. Rennie. Factors affecting, and the significance of "A" values using band placement. In *Radioisotopes in soil-plant nutrition studies*. Int. At. Energy Agency (Vienna, 1962) p. 329-342. 1963.

- 2108 Sprout, P. N., and C. C. Kelley. Soil survey of the Ashcroft-Savona area, Thompson River valley, British Columbia. B.C. Dep. Agr. Interim Rep. 1963.
- 2109 Stanek, W. The collection of organic soils *in situ* for physical property tests and mounting of profiles. Can. J. Soil Sci. 43:401-402. 1963.
- 2110 St. Arnaud, R. J., and M. M. Mortland. Characteristics of the clay fractions in a Chernozemic to Podzolic sequence of soil profiles in Saskatchewan. Can. J. Soil Sci. 43:336-349. 1963.
- 2111 St. Arnaud, R. J., and E. P. Whiteside. Physical breakdown in relation to soil development. J. Soil Sci. 14:267-281. 1963.
- 2112 Stewart, J. W. B. Aluminum, phosphorus and other elements in relation to plant growth. Ph.D. Thesis, Queen's (Belfast) Univ. 1963.
- 2113 Thomas, R. L. Fractionation and characterization of the polysaccharides extracted from the Brookston soil. Ph.D. Thesis, Ohio State Univ. 1963.
- 2114 Thompson, O. L. Thermally induced water vapor transfer in soils. M.Sc. Thesis, Univ. Saskatchewan. 1963.
- 2115 Toogood, J. A. Water erosion in Alberta. J. Soil Water Conserv. 18 (6): 238-240. 1963.
- 2116 Turchot, R., and J. J. Jasmin. A new organic soil sampler. Can. J. Soil Sci. 43:402-403. 1963.
- 2117 Toussoun, T. A., and Z. A. Patrick. Effect of phytotoxic substances from decomposing plant residues on root rot of bean. Phytopathology 53:265-270. 1963.
- 2118 Toussoun, T. A., Z. A. Patrick, and W. C. Snyder. Influence of crop residue decomposition products on the germination of *Fusarium solani f. phaseoli* chlamydospores in soil. Nature (London) 197:1314 - 1316. 1963.
- 2119 Townsend, L. R., and D. C. MacKay. The effect of cropping on some chemical properties of a sphagnum peat soil. Can. J. Soil Sci. 43:171-177. 1963.
- 2120 Tu, C.-M. Changes in constituents of soil organic matter due to physical treatment. M.Sc. Thesis, Univ. Saskatchewan. 1963.

- 2121 Turley, R. H., and E. F. Maas. Growing forage crops on Vancouver Island. Can. Dep. Agr. Publ. 1181. 1963.
- 2122 Turley, R. H., G. R. Webster, and R. B. Carson. The effect of irrigation on yield, seasonal distribution and chemical composition of three pasture mixtures. Can. J. Plant Sci. 43:575-582. 1963.
- 2123 Turner, R. C., I. Hoffman, and D. Chen. Thermogravimetry of the dehydration of $Mg(OH)_2$. Can. J. Chem. 41:243-251. 1963.
- 2124 Turner, R. C., W. E. Nichol, and J. E. Brydon. A study of the lime potential: 3. Concerning reactions responsible for the magnitude of the lime potential. Soil Sci. 95:186-191. 1963.
- 2125 van Schaik, J. C., and R. A. Milne. Salt accumulation in a glacial till soil in the presence of saline groundwater at shallow depths. Can. J. Soil Sci. 43:135-140. 1963.
- 2126 Venkataraman, S. Quartz as an index mineral in pedogenic studies. M.Sc. Thesis, Univ. Saskatchewan. 1963.
- 2127 Ward, G. M. The application of tissue analysis to greenhouse tomato nutrition. Proc. Amer. Soc. Hort. Sci. 83:695-699. 1963.
- 2128 Warder, F. G., J. J. Lehane, W. C. Hinman, and W. J. Staple. The effect of fertilizer on growth, nutrient uptake and moisture use of wheat on two soils in southwestern Saskatchewan. Can. J. Soil Sci. 43:107-116. 1963.
- 2129 Webber, M. D. The phosphorus feeding habits of flax, cereals and rapeseed. M.Sc. Thesis, Univ. Manitoba. 1963.
- 2130 Weir, C. C., and R. J. Soper. Interaction of phosphates with ferric organic complexes. Can. J. Soil Sci. 43:393-399. 1963.
- 2131 Weir, C. C., and R. J. Soper. Solubility studies of phosphorus in some calcareous Manitoba soils. J. Soil Sci. 14:256-261. 1963.
- 2132 Wensley, R. N., and C. D. McKeen. Populations of *Fusarium oxysporum f. melonis* and their relation to the wilt potential of two soils. Can. J. Microbiol. 9:237-249. 1963.

- 2133 White, R. P. Effect of nitrogen supply on the cation exchange capacity of cereal roots and its relation to calcium adsorption from calcium-hydrogen bentonite clay systems by excised roots. M.Sc. Thesis, Univ. Massachusetts. 1963.
- 2134 Wicklund, R. E., and B. C. Matthews. Soil survey of Lincoln County, Ontario. Ont. Soil Surv. Rep. No. 34. 1963.
- 2135 Wilcox, J. C. Effects of weather on evaporation from Bellani plates and evapotranspiration from lysimeters. Can. J. Plant Sci. 43:1-11. 1963.
- 2136 Wilcox, J. C., and J. L. Mason. Suitability for irrigation of water from lakes and streams in the southern interior of British Columbia. Can. Dep. Agr. Publ. 1179. 1963.
- 2137 Wilson, D. B., and S. Dubetz. Effects of fertilizers on an irrigated pasture in southern Alberta. Emp. J. Exp. Agr. 31:161-166. 1963.
- 2138 Wright, J. R., and M. Schnitzer. Metallo-organic interactions associated with podzolization. Soil Sci. Soc. Amer. Proc. 27:171-176. 1963.
- 2139 Allard, J., J. Richard, et J. A. Bélanger. Comparaison de deux methodes pour determiner le moment d'irriguer le tabac jaune. Can. J. Plant Sci. 44:276-282. 1964.
- 2140 Anderson, D. T. Some factors affecting trash conservation with disc-type tillage instruments. Can. Agr. Eng. J. 6:11-13, 19. 1964.
- 2141 Anderson, D. T., and G. C. Russell. Effects of various quantities of straw mulch on the growth and yield of spring and winter wheat. Can. J. Soil Sci. 44:109-118. 1964.
- 2142 Arshad, M. A. Characteristics of solonetzic soils. Ph.D. Thesis, Univ. Alberta. 1964.
- 2143 Baker, J., and W. T. Burns. The determination of exchangeable cations and cation exchange capacity of soils using nickel chloride. Can. J. Soil Sci. 44:360-365. 1964.
- 2144 Baldwin, C. S. Effect of time and rate of application of nitrogen, date of harvest and various production practices on the yield and sucrose content of sugarbeets. Ph.D. Thesis, Michigan State Univ. 1964.

- 2145 Ballantyne, A. K., and J. S. Clayton. The relationship of exchangeable cations in the B horizons to the field separations of Solonetzic and Chernozemic soils. *Can. J. Soil Sci.* 44:43 - 49. 1964.
- 2146 Basaraba, J. Mineralization of urea-formaldehyde compounds at different pH levels and temperatures. *Can. J. Soil Sci.* 44:131-136. 1964.
- 2147 Basaraba, J. Influence of vegetable tannins on nitrification in soil. *Plant Soil* 21:8-16. 1964.
- 2148 Bates, T. E., and A. D. Scott. Changes in exchangeable potassium observed on drying soils after treatment with organic compounds: I. Release. *Soil Sci. Soc. Amer. Proc.* 28:769-772. 1964.
- 2149 Baxter, R. The effect of potassium salts and nitrogen upon the yield and nitrogen components of alfalfa and orchard grass. M.S.A. Thesis, Univ. Toronto. 1964.
- 2150 Beaton, J. D., J. M. Bryan, J. C. Russell, *et al.* Reaction of several clay minerals and gibbsite with monoammonium and monopotassium phosphate. *Nature (London)* 201:739-740. 1964.
- 2151 Beaton, J. D., R. Kosick, and R. C. Speer. Chemical composition of foliage from fertilized plus Douglas fir trees and adjacent unfertilized check trees. *Soil Sci. Soc. Amer. Proc.* 28:445-449. 1964.
- 2152 Beke, G. J. Chemical and mineralogical characterization and comparison of an Orthic Black, an Orthic Dark Gray and an Orthic Gray Wooded soil. M.Sc. Thesis, Univ. Manitoba. 1964.
- 2153 Bentley, C. F., and S. Pawluk. Eroded pits in solodized solonetz soils of North America. *Trans. 8th Int. Congr. Soil Sci. (Bucharest) V*:703-714. 1964.
- 2154 Bernier, B., and M. Pineau. A study *in vitro* of the mineralization of organic nitrogen in forest humus: II. The influence of incorporation of sugar maple litter. *Trans. 8th Int. Congr. Soil Sci. (Bucharest) III*:655-663. 1964.
- 2155 Bezeau, L. M., and L. G. Sonmor. The influence of levels of irrigation on the nutritive value of alfalfa. *Can. J. Plant Sci.* 44:505-508. 1964.
- 2156 Bisal, F., and K. F. Nielsen. Soil aggregates do not necessarily break down over winter. *Soil Sci.* 98:345-346. 1964.

- 2157 Bishop, R. F., L. P. Jackson, C. P. MacEachern, and L. B. MacLeod. A long-term field experiment with commercial fertilizers and manure: III. Fertility levels, crop yields, and nutrient levels in corn, oats, and clover. *Can. J. Soil Sci.* 44:56-65. 1964.
- 2158 Bowser, W. E. Physical characteristics of Alberta's irrigated areas. *Proc. Irrig. Econ. Conf., Univ. Alta.* 1964.
- 2159 Brach, E. J., A. R. Mack, and A. G. Plessers. Electronic device monitors moisture changes in soil. *Electronics and Commun.* 12(9):44-46. 1964.
- 2160 Brydon, J. E. A reappraisal of the mixed-layer clay minerals in the marine clays near Alberni, B.C. *Can. Mineral.* 8:111-113. 1964.
- 2161 Buglass, E. Seed production of crested wheatgrass as influenced by various management practices. *Can. J. Plant Sci.* 44:66-74. 1964.
- 2162 Case, V. W. The phosphorus and potassium requirements of corn and peas in the lower Fraser valley of B.C. *Proc. 15th Amer. Fert. Conf. Pac. N.W., Salem, Oregon.* 1964.
- 2163 Case, V. M., N. C. Brady, and D. J. Lathwell. The influence of soil temperature and phosphorus fertilizers of different water-solubilities on the yield and phosphorus uptake by oats. *Soil Sci. Soc. Amer. Proc.* 28:409-412. 1964.
- 2164 Chang, P.-C. The microbial fixation of nitrogen in soils. M.Sc. Thesis, McGill Univ. 1964.
- 2165 Chiasson, T. C. Effect of N, P, Ca and Mg treatments on yield of barley varieties grown on acid soils. *Can. J. Plant Sci.* 44:525-530. 1964.
- 2166 Clark, J. S. A paint shaker for suspending soils and clays. *Can. J. Soil Sci.* 44:163. 1964.
- 2167 Clark, J. S. An examination of the pH of calcareous soils. *Soil Sci.* 98:145-151. 1964.
- 2168 Clark, J. S. Aluminum and iron fixation in relation to exchangeable hydrogen in soils. *Soil Sci.* 98:302-306. 1964.
- 2169 Clark, J. S. Some cation-exchange properties of soils containing free oxides. *Can. J. Soil Sci.* 44:203-211. 1964.

- 2170 Clark, J. S., and A. J. Green. Some characteristics of Gray soils of low base saturation from northeastern British Columbia. *Can. J. Soil Sci.* 44:319-328. 1964.
- 2171 Clark, J. S., and R. G. Hill. The pH - percent base saturation relationships of soils. *Soil Sci. Soc. Amer. Proc.* 28:490-492. 1964.
- 2172 Clements, J. R. The potential influence of soil splashing by raindrops on seedling survival. *Can. Dep. Forest., Forest Res. Br., Contrib. No. 621.* 1964.
- 2173 Corke, C. T., and F. E. Chase. Comparative studies of actinomycete populations in acid podzolic and neutral mull forest soils. *Soil Sci. Soc. Amer. Proc.* 28:68-70. 1964.
- 2174 Cotton, D. R. The influence of soil characteristics and fertilizer treatment on growth and chemical composition of *Pinus resinosa*. M.Sc. Thesis, McGill Univ. 1964.
- 2175 Damman, A. W. H. Some forest types of central Newfoundland and their relation to environmental factors. *Can. Dep. Forest., Forest Res. Br., Contrib. 596.* 1964.
- 2176 Dawley, W. K., R. D. Dryden, E. V. McCurdy, E. S. Holberg, K. E. Bowren, and D. A. Dew. The effect of cultural and fertilizer treatments on yields of wheat on second crop land. *Can. J. Soil Sci.* 44:212-216. 1964.
- 2177 Dawson, A. B., and C. C. Kelley. Soil survey of the Eagle River Valley, British Columbia. *B.C. Dep. Agr. Interm Rep.* 1964.
- 2178 Dawson, A. B., G. G. Runka, P. N. Sprout, and C. C. Kelley. Soil surveys of the Lakeview Irrigation District Extension Proposal, the City of Penticton Irrigation System and the Kaleden Irrigation District, Okanagan Valley, British Columbia. *B.C. Dep. Agr. Interim Rep.* 1964.
- 2179 Day, J. H. Characteristics of soil of the Hazen Camp area, northern Ellesmere Island, N.W.T. *Operation Hazen, D phys. R (G) Hazen 24, D.R.B.* 1964.
- 2180 Day, J. H., and H. M. Rice. The characteristics of some permafrost soils in the Mackenzie Valley, N.W.T. *Arctic* 17:223-236. 1964.
- 2181 deJong, E. Volume change, moisture retention and permeability of clay-sand mixtures. Ph.D. Thesis, McGill Univ. 1964.

- 2182 Dionne, J. L., et S. A. Rola-Pleszczynski. Comportement différentiel de la luzerne en regard du chaulage sur cinq types de sols de Québec. *Can. J. Soil Sci.* 44:119-130. 1964.
- 2183 Dodd, J. D., D. A. Rennie, and R. T. Coupland. The nature and distribution of salts in uncultivated saline soils in Saskatchewan. *Can. J. Soil Sci.* 44:165-175. 1964.
- 2184 Dormaar, J. F. Fractionation of the humus of some chernozemic soils of southern Alberta. *Can. J. Soil Sci.* 44:232-236. 1964.
- 2185 Dormaar, J. F. Evaluation of methods for determination of total organic phosphorus in chernozemic soils of southern Alberta. *Can. J. Soil Sci.* 44:265-271. 1964.
- 2186 Dormaar, J. F., and G. R. Webster. Losses inherent in ignition procedures for determining total organic phosphorus. *Can. J. Soil Sci.* 44:1-6. 1964.
- 2187 Douglas, C. S., W. E. Bowser, G. Haase, T. H. Anstey, and G. C. Russell. Handbook for the classification of irrigated lands in the Prairie Provinces. P.F.R.A., Regina, Sask. 1964.
- 2188 Dryden, R. D., W. K. Dawley, and K. W. Hill. Control of soil drifting in southwestern Manitoba. *Can. Dep. Agr. Publ.* 1178. 1964.
- 2189 Dubetz, S., and K. W. Hill. Effect of irrigated crop rotations on yield and soil fertility. *Can. J. Plant Sci.* 44:139-144. 1964.
- 2190 Dubetz, S., and G. C. Russell. Soil temperature and nitrogen effects on yield and phosphorus uptake by sugar beets. *J. Amer. Soc. Sugar Beet Technol.* 13:238-243. 1964.
- 2191 Dubetz, S., and L. G. Sonmor. Comparison of gravimetric, tensiometer and neutron methods of measuring soil moisture. *Can. Agr. Eng. J.* 6(1):32-34. 1964.
- 2192 Duffy, P. J. B. Forest land classification in Alberta, Canada. *Trans. 8th Int. Congr. Soil Sci. (Bucharest) V*:1093-1101. 1964.
- 2193 Dumanski, J. A micropedological study of eluviated horizons. M.Sc. Thesis, Univ. Saskatchewan. 1964.

- 2194 Elliot, J. M. The influence of levels of potassium applied to some Ontario muck soils for the production of flue-cured tobacco seedlings. *Tobacco Sci.* 8:138-141. 1964.
- 2195 Elwin, J. H. Yield responses of oats to fertilizer nitrogen as influenced by certain nitrogen fractions in selected Quebec soils. M.Sc. Thesis, McGill Univ. 1964.
- 2196 Erickson, A. E., J. M. Fulton, and G. H. Brandt. New techniques for relating soil aeration and plant response. *Trans. Int. Congr. Soil Sci. (Bucharest)* 2:171-176. 1964.
- 2197 Ferguson, W. S. Effect of rainfall on plant responses to phosphorus. *Can. J. Soil Sci.* 44:180 - 187. 1964.
- 2198 Ferguson, W. S., and B. J. Gorby. Effect of straw on availability of nitrogen to cereal crops. *Can. J. Soil Sci.* 44:286-291. 1964.
- 2199 Findlay, W. I., and J. M. Fulton. The nutrient composition of hybrid corn as influenced by fertilization: II. The phosphorus percentage. *Can. J. Soil Sci.* 44:217-222. 1964.
- 2200 Finn, B. J., and A. R. Mack. Differential response of orchardgrass varieties (*Dactylis glomerata* L.) to nitrogen and phosphorus under controlled soil temperature and moisture conditions. *Soil Sci. Soc. Amer. Proc.* 28:782-785. 1964.
- 2201 Fletcher, H. F., and L. T. Kurtz. Differential effects of phosphorus fertility on soybean varieties. *Soil Sci. Soc. Amer. Proc.* 28:225 - 228. 1964.
- 2202 Forman, S. A. The change in the b-dimension when dioctahedral smectite is converted to illite in soils. *Nature (London)* 201:528. 1964.
- 2203 Fulton, J. M. Irrigating cucumbers for southwestern Ontario. *Can. Dep. Agr. Publ.* 1207. 1964.
- 2204 Fulton, J. M., and A. E. Erickson. Relation between soil aeration and ethyl alcohol accumulation in xylem exudate of tomatoes. *Soil Sci. Soc. Amer. Proc.* 28:610-614. 1964.
- 2205 Fulton, J. M., A. E. Erickson, and N. E. Tolbert. Distribution of C14 among metabolites of flooded and aerobically grown tomato plants. *Agron. J.* 56:527-529. 1964.

- 2206 Fulton, J. M., and W. I. Findlay. Cumulative effects of supplemental irrigation on fertilizer requirement, yield and dry matter content of early potatoes. *Amer. Potato J.* 41:315-318. 1964.
- 2207 Gardiner, R. T. The effect of moisture stress and nitrogen fertilization on the disposition of mineral nitrogen during crop growth. M.Sc. Thesis Univ. Saskatchewan. 1964.
- 2208 Gillespie, J. E., R. E. Wickland, and B. C. Matthews Soil survey of Renfrew County, Ontario. *Ont. Soil Surv. Rep. No. 37.* 1964.
- 2209 Gupta, R. P., and W. J. Staple. Infiltration into vertical columns of soil under a small positive head. *Soil Sci. Soc. Amer. Proc.* 28:729-732. 1964.
- 2210 Gupta, U. C., and F. J. Sowden. Isolation and characterization of cellulose from soil organic matter. *Soil Sci.* 97:328-333. 1964.
- 2211 Hall, I. V., L. E. Alders, and L. R. Townsend. The effects of soil pH on the mineral composition and growth of the lowbush blueberry. *Can. J. Plant Sci.* 44:433-438. 1964.
- 2212 Halstead, R. L. Phosphatase activity of soils as influenced by lime and other treatments. *Can. J. Soil Sci.* 44:137-144. 1964.
- 2213 Hamilton, H. A., and D. J. Lathwell. Investigation of some factors important in differential crop response to diammonium and monocalcium phosphate *Can. J. Soil Sci.* 44:14-21. 1964.
- 2214 Harris, C. R. Influence of soil type and soil moisture on the toxicity of insecticides in soils to insects. *Nature (London)* 202:724. 1964.
- 2215 Harris, C. R. Influence of soil moisture on the toxicity of insecticides in a mineral soil to insects. *J. Econ. Entomol.* 57:946-950. 1964.
- 2216 Hedlin, R. A., and A. O. Ridley. Effect of crop sequence and manure and fertilizer treatments on crop yields and soil fertility. *Agron. J.* 56:425-427. 1964.
- 2217 Heeney, H. B., G. M. Ward, and W. M. Rutherford. Zinc deficiency in eastern Ontario orchards. *Can. J. Plant Sci.* 44:195-200. 1964.
- 2218 Hew, E. G. L. The yield, botanical composition and quality of forage as influenced by chemical fertilizers. M.Sc. Thesis, McGill Univ. 1964.

- 2219 Hilchey, J. D., D. B. Cann, and J. I. MacDougall. Soil survey of Guysborough County, Nova Scotia. N.S. Soil Surv. Rep. No. 14. 1964.
- 2220 Hill, K. W. Protein content of wheat as affected by agronomic practices. Can. J. Plant Sci. 44:115- 122. 1964.
- 2221 Hinman, W. C. Fixed ammonium in some Saskatchewan soils. Can. J. Soil Sci. 44:151-157. 1964.
- 2222 Hoffman, D. W., B. C. Matthews, and R. E. Wicklund. Soil associations of southern Ontario. Ont. Soil Surv. Rep. No. 30. 1964.
- 2223 Hoffman, D. W., B. C. Matthews, and R. E. Wicklund. Soil survey of Dufferin County, Ontario. Ont. Soil Surv. Rep. No. 38. 1964.
- 2224 Hoffman, I., and M. Schnitzer. Thermogravimetry: A valuable analytical tool. Chem. Can. 16(2):30-32. 1964.
- 2225 Hoyt, P. B. The decomposition of plant chlorophyll and its derivatives in soil. Ph.D. Thesis, Univ. London. 1964.
- 2226 Humble, G. D. The movement of ions to plant roots as influenced by soil moisture tension. M.S.A. Thesis, Univ. Toronto. 1964.
- 2227 Ivarson, K. C., and I. L. Stevenson. The decomposition of radioactive acetate in soils: II. The distribution of radioactivity in soil organic fractions. Can. J. Microbiol. 10:677 - 682. 1964.
- 2228 Janzen, W. K., J. G. Ellis, and A. K. Ballantyne. Description and analyses of soil profiles in the Willow Bunch map sheet 72H. Sask. Soil Surv. (Processed) 1964.
- 2229 Jasmin, J. J., H. B. Heeney, and R. Turchot. Potassium and phosphorus accumulation in organic soil and their influence on potato crops. Can. J. Soil Sci. 44:280-285. 1964.
- 2230 Jurdant, M. Pedology, phytosociology and classification of forest soils in Canada. Trans. 8th Int. Congr. Soil Sci. (Bucharest) V:1103-1110. 1964.
- 2231 Katznelson, H., D. C. Gillespie, and F. D. Cook. Studies on the relationships between nematodes and other soil microorganisms: III. Lytic action of soil myxobacteria on certain species of nematodes. Can. J. Microbiol. 10:699-704. 1964.

- 2232 Khan, M. F. Volatile nitrogen losses in Alberta soils. Ph.D. Thesis, Univ. Alberta. 1964.
- 2233 Kodama, H., and J. E. Brydon. Interstratified montmorillonite-mica from subsoils of the Prairie Provinces, Western Canada. *Clays & Clay Mineral.* 157-173. 1964.
- 2234 Korven, H. C., and J. C. Wilcox. Effects of flow variations on the salt content and reaction of a mountain creek. *Can. J. Soil Sci.* 44:352-359. 1964.
- 2235 Krogman, K. K., and L. E. Lutwick. Uptake of nitrogen by wheat and phosphorus by alfalfa from some grassland soils of southern Alberta. *Can. J. Soil Sci.* 44:304-309. 1964.
- 2236 Langmaid, K. K. Some effects of earthworm invasion in virgin Podzols. *Can. J. Soil Sci.* 44:34-37. 1964.
- 2237 Langmaid, K. K., J. K. MacMillan, J. G. Losier, and J. F. G. Millette. Description of sandy soils in cleared areas of coastal Kent and southern Northumberland counties, New Brunswick. N.B. Soil Surv. Rep. No. 6. 1964.
- 2238 Lavkulich, L. M., S. Pawluk, and W. Odynsky. Soil profile development in some Peace River soils. *Can. J. Soil Sci.* 44:188-195. 1964.
- 2239 Lawrence, T., and M. R. Kilcher. Effect of time of fertilizer application on the seed and forage yield of Russian wild ryegrass. *J. Range Manage.* 17:272-273. 1964.
- 2240 Lehane, J. J., F. G. Warder, and W. J. Staple. Decline of wheat yields and depletion of some nutrients on a loam soil during a 36-year period. *Can. J. Soil Sci.* 44:50-55. 1964.
- 2241 Lemieux, G. J. Efficiency of various shakers in the particle-size analysis of soils. *Can. J. Soil Sci.* 44:228-231. 1964.
- 2242 Leo, M. W. M. Plant-water-salt relationships: as studied with a split-root technique. *Irish J. Agr. Res.* 3:129-131. 1964.
- 2243 Leonce, F. S. Some morphological and physiological effects of nitrogen addition to a fertilizer phosphorus band. M.S.A. Thesis, Univ. Toronto. 1964.

- 2244 Lindsay, J. D., A. Wynnyk, and W. Odynsky. Exploratory soil survey of Alberta map sheets 83L, 83K, 83F and 83J. Prelim. Soil Surv. Rep. 64-2. Alta. Res. Counc. 1964.
- 2245 Lowe, L. E. An approach to the study of the sulphur status of soils and its application to selected Quebec soils. *Can. J. Soil Sci.* 44:176-179. 1964.
- 2246 Lutwick, L. E., and E. H. Hobbs. Relative productivity of soil horizons, singly and in mixture. *Can. J. Soil Sci.* 44:145-150. 1964.
- 2247 Lutwick, L. E., and K. K. Krogman. Fertilizer response of forage crops in the Upper Kootenay River Valley. *Can. J. Soil Sci.* 44:38-42. 1964.
- 2248 MacKay, D. C., E. W. Chipman, and W. M. Langille. Crop responses to some micronutrients and sodium on sphagnum peat soil. *Soil Sci. Soc. Amer. Proc.* 28:101-104. 1964.
- 2249 MacKay, D. C., C. R. MacEachern, and R. F. Bishop. The relation of soil test values to fertilizer response by the potato: III. Exchangeable potassium and potassium fertilizer requirements. *Can. J. Soil Sci.* 44:310-318. 1964.
- 2250 MacKay, D. C., and D. C. Munro. Soil fertility in the Atlantic region. *Agr. Inst. Rev.* 19(6):16-19. 1964.
- 2251 MacKenzie, A. F., and S. A. Amer. Reactions of iron, aluminum and calcium phosphates in six Ontario soils. *Plant Soil* 21:17-25. 1964.
- 2252 Mackintosh, E. E. Mineralogical and chemical study of Lower Fraser Valley sediments. M.S.A. Thesis, Univ. British Columbia. 1964.
- 2253 MacLean, A. A. The evaluation of the residual effect of fertilizer in long-term fertility plots: II. Phosphorus. *Can. J. Soil Sci.* 44:223-227. 1964.
- 2254 MacLean, A. A. Measurement of nitrogen supplying power of soils by extraction with sodium bicarbonate. *Nature (London)* 203:1307-1308. 1964
- 2255 MacLean, A. H. Distribution of phosphorus fractions in some Ontario profiles. M.S.A. Thesis, Univ. Toronto. 1964.

- 2256 MacLean, A. J. Recovery by plants of potassium added to soils and fixed in non-exchangeable form. *Trans. 8th Int. Congr. Soil Sci. (Bucharest) IV*:693-699. 1964.
- 2257 MacLean, A. J., R. L. Halstead, A. R. Mack, and J. J. Jasmin. Comparison of procedures for estimating exchange properties and availability of phosphorus and potassium in some eastern Canadian organic soils. *Can. J. Soil Sci.* 44:66-75. 1964.
- 2258 MacLeod, L. B. A method for extracting soil solution from an active soil-plant system. *Can. J. Soil Sci.* 44:367-370. 1964.
- 2259 MacLeod, L. B., R. F. Bishop, F. W. Calder, and C. R. MacEachern. Effect of various rates of liming and fertilization on certain chemical properties of a strongly acid soil and on the establishment, yield, botanical and chemical composition of a forage mixture. *Can. J. Soil Sci.* 44:237-247. 1964.
- 2260 MacLeod, L. B., and R. Bradfield. Greenhouse evaluation of the relative importance of lime and potassium for the establishment and maintenance of alfalfa and orchardgrass seedlings. *Agron. J.* 56:381-386. 1964.
- 2261 Mante, E. E. Methods of measuring soil permeability. M.S.A. Thesis, Univ. British Columbia. 1964.
- 2262 Marcoux, R. Etude pédologique et agronomique des battures de l'Île-aux-Grues. M.Sc. Thesis, Laval Univ. 1964.
- 2263 Mason, J. L. Effect of exchangeable magnesium, potassium and calcium in the soil on magnesium content of apple seedlings. *Proc. Amer. Soc. Hort. Sci.* 84:32-38. 1964.
- 2264 Mason, J. L. Yield and quality of apples grown under four nitrogen levels in uncultivated grass sod. *Proc. Amer. Soc. Hort. Sci.* 85:42-47. 1964.
- 2265 Mason, J. L., and J. E. Miltimore. Effect of nitrogen content of beardless wheat grass on yield response to nitrogen fertilization. *J. Range Manage.* 17:145-147. 1964.
- 2266 McKeague, J. A., and M. G. Cline. Silica in soils. *Advan. Agron.* 15:339-396. 1964.
- 2267 McKercher, R. B. Summerfallow wheat protein variations in Saskatchewan. *Can. J. Soil Sci.* 44:196-202. 1964.

- 2268 Melvin, R. E., and F. Bisal. An improved screen for simulating rainfall. *Can. Agr. Eng. J.* 6 (1) :44. 1964.
- 2269 Millette, J. F. G., and K. K. Langmaid. Soil survey of the Andover - Plaster Rock area, New Brunswick. N.B. Soil Surv. Rep. No. 5. 1964.
- 2270 Mirza, C., and R. W. Irwin. Determination of subsidence of an organic soil in southern Ontario. *Can. J. Soil Sci.* 44:248-253. 1964.
- 2271 Munro, D. C., and D. C. MacKay. Effect of incubation method and storage conditions on nitrate production of incubated soil samples. *Soil Sci. Soc. Amer. Proc.* 28:778-782. 1964.
- 2272 Nelson, R. W. Alberta soils with low potassium values. M.Sc. Thesis, Univ. Alberta. 1964.
- 2273 Nichol, W. E., and A. R. Mack. Elemental composition of apples in relation to fruit quality, soil acidity and organic matter. *Proc. Amer. Soc. Hort. Sci.* 85:91-99. 1964.
- 2274 Nielsen, K. F., and R. K. Cunningham. The effects of soil temperature and form and level of nitrogen on growth and chemical composition of Italian ryegrass. *Soil Sci. Soc. Amer. Proc.* 28:213-218. 1964.
- 2275 Patil, A. S. Ion migration in soil. Ph.D. Thesis, Univ. Alberta. 1964.
- 2276 Patrick, Z. A., T. A. Toussoun, and L. W. Koch. Effect of crop residue decomposition products on plant roots. *Annu. Rev. Phytopathol.* 2:267 - 292. 1964.
- 2277 Paul, E. A., C. A. Campbell, D. A. Rennie, and K. J. McCallum. Investigations on the dynamics of soil humus utilizing carbon dating techniques. *Trans. 8th Int. Congr. Soil Sci. (Bucharest)* 3:201-208. 1964.
- 2278 Pawluk, S., and C. F. Bentley. The uptake of S³⁵ by crops from variable depths in the soil. *Can. J. Soil Sci.* 44:261-263. 1964.
- 2279 Pawluk, S., and J. D. Lindsay. Characteristics and genesis of brunisolic soils of northern Alberta. *Can. J. Soil Sci.* 44:292-303. 1964.
- 2280 Peterson, E. A., and H. Katznelson. Occurrence of nematode-trapping fungi in the rhizosphere. *Nature (London)* 204:1111-1112. 1964.

- 2281 Pettapiece, W. W. Micropedological studies of Orthic Black, Orthic Dark Gray and Orthic Gray Wooded soil profiles. M.Sc. Thesis, Univ. Manitoba. 1964.
- 2282 Pohjakas, K. A technique for maintaining water tables in field studies. *Can. J. Soil Sci.* 44:158 - 159. 1964.
- 2283 Protz, R. Magnesium weathering in loess-derived Brunizems. Ph.D. Thesis, Iowa State Univ. 1964.
- 2284 Protz, R., and R. J. St. Arnaud. The evaluation of four pretreatments used in particle-size distribution analyses. *Can. J. Soil Sci.* 44:345 - 351. 1964.
- 2285 Rapp, E. Equipment for irrigated land development. *Cari. Agr. Eng. J.* 6:22-25. 1964.
- 2286 Reeder, S. W., and W. Odynsky. Morphological and chemical characteristics of the Solonetzic soils of Northwestern Alberta. *Can. J. Soil Sci.* 44:22 - 33. 1964.
- 2287 Reid, A. S. Nitrogen movement, transformation and uptake in soils. Ph.D. Thesis, Univ. Alberta. 1964.
- 2288 Robertson, G. W. Evaporation measurements at Research Branch Stations, Canada Department of Agriculture. *Can. Dep. Agr. Publ.* 1210. 1964.
- 2289 Rouatt, J. W., H. Katznelson, and G. Eger. Observations on the use of different media to evaluate the rhizosphere effect. *Trans. 8th Int. Congr. Soil Sci. (Bucharest)* 3:609-615. 1964.
- 2290 Runka, G. G., and C. C. Kelley. Soil survey of the Matsqui Municipality and Suman Mountain. Lower Fraser Valley, B.C. *Soil Surv. Prelim. Rep. No.* 6. 1964.
- 2291 Schnitzer, M., and J. G. Desjardins. Gas chromatographic separation of benzene carboxylic acids. *J. Gas Chromatogr.* 2:270-271. 1964.
- 2292 Schnitzer, M., and J. G. Desjardins. Further investigations on the alkaline permanganate oxidation of organic matter extracted from a Podzol Bh horizon. *Can. J. Soil Sci.* 44:272-279. 1964.
- 2293 Schnitzer, M., and U. C. Gupta. Some chemical characteristics of the organic matter extracted from the O and B₂ horizons of a Gray Wooded soil. *Soil Sci. Soc. Amer. Proc.* 28:374-377. 1964.

- 2294 Schnitzer, M., and I. Hoffman. Pyrolysis of soil organic matter. *Soil Sci. Soc. Amer. Proc.* 28:520 - 525. 1964.
- 2295 Schnitzer, M., and S. I. M. Skinner. Organo-metallic interactions in soils: 3. Properties of iron- and aluminum-organic matter complexes, prepared in the laboratory and extracted from a soil. *Soil Sci.* 98:197-203. 1964.
- 2296 Schnitzer, M., R. C. Turner, and I. Hoffman. A thermogravimetric study of organic matter of representative Canadian Podzol soils. *Can. J. Soil Sci.* 44:7-13. 1964.
- 2297 Sheard, R. W. Influence of management, nitrogen and potassium on the development and the organic constituents of the vegetative reproductive system of timothy (*Phleum pratense* L.). Ph.D. Thesis, Cornell Univ. 1964.
- 2298 Sherrell, C. G., J. W. Ketcheson, and M. H. Miller. The effect of placement of banded fertilizer on fertilizer phosphorus absorption and yield of oats in greenhouse and field experiments. *Can. J. Soil Sci.* 44:329-337. 1964.
- 2299 Sleeman, K. J. The solubility of synthetic hydroxyapatite. M.S.A. Thesis (Part a), Univ. British Columbia. 1964.
- 2300 Sleeman, K. J. Soils of the Oyster River research farm. M.S.A. Thesis (Part b), Univ. British Columbia. 1964.
- 2301 Smith, D. G., and J. W. Lorimer. An examination of the humic acids of sphagnum peat. *Can. J. Soil Sci.* 44:76-87. 1964.
- 2302 Smith, R. E., W. A. Ehrlich, J. S. Jameson, *et al.* Soil survey of the south-eastern map sheet area. *Man. Soil Surv. Rep. No.* 14. 1964.
- 2303 Smith, R. O. Yield components of oats as influenced by seeding rate and nitrogen fertilization. M.Sc. Thesis, McGill Univ. 1964.
- 2304 Soper, R. J., and I. H. M. El Bagouri. The effect of soil carbonate level on the availability of added and native phosphorus in some calcareous Manitoba soils. *Can. J. Soil Sci.* 44:337-344. 1964.
- 2305 Sosulski, F. W., and V. M. Bendelow. The effect of irrigation on the agronomic and malting characteristics of barley. *Can. J. Plant Sci.* 44:509-514. 1964.

- 2306 Sprout, P. N., and C. C. Kelley. Soil survey of the Kettle River Valley in the Boundary District of B.C., B.C. Soil Surv. Rep. No. 9. 1964.
- 2307 St. Arnaud, R. J., and E. P. Whiteside. Morphology and genesis of a Chernozemic to Podzolic sequence of soil profiles in Saskatchewan. *Can. J. Soil Sci.* 44:88-99. 1964.
- 2308 Stevenson, D. S., and L. Boersma. Effect of soil water content on the growth of adventitious roots of sunflower. *Agron. J.* 56:509-512. 1964.
- 2309 Stevenson, D. S., and L. Boersma. Water losses from soil and rubidium uptake by adventitious roots of sunflower as related to the water content of soil. *Agron. J.* 56:512-514. 1964.
- 2310 Stevenson, I. L., and K. C. Ivarson. The decomposition of radioactive acetate in soils: I. *Can. J. Microbiol.* 10:139-142. 1964.
- 2311 Stewart, J. A. Zinc status of some Wisconsin soils. Ph.D. Thesis, Univ. Wisconsin. 1964.
- 2312 Stonehouse, H. B. The distribution of free iron in Brown and Dark Brown Chernozemic and Solonchic soils. M.Sc. Thesis, Univ. Saskatchewan. 1964.
- 2313 Tedrow, J. C. F., and L. A. Douglas. Soil investigations on Banks Island. *Soil Sci.* 98:53 - 65. 1964.
- 2314 Topp, G. C. Hysteretic moisture characteristics and hydraulic conductivities for glass bead media. Ph.D. Thesis, Univ. Wisconsin. 1964.
- 2315 van Schaik, J. C. Ion diffusion in clay-water systems. Ph.D. Thesis, Colorado State Univ. 1964.
- 2 316 Voisey, P. W., and M. Kloek. A switching system for soil moisture-temperature probes. *Can. J. Soil Sci.* 44:159-162. 1964.
- 2317 Ward, G. M. Greenhouse tomato nutrition--a growth analysis study. *Plant Soil* 21:125-133. 1964.
- 2318 Webber, L. R. Soil physical properties and erosion control. *J. Soil Water Conserv.* 19:28-30. 1964.

- 2319 Webber, L. R. (ed.) Ontario soils--physical, chemical and biological properties and principles of soil management. Ont. Dep. Agr. Publ. 492. 1964.
- 2320 Werkhoven, C. H. E. Boron in some saline and nonsaline soils in southeastern Saskatchewan. Soil Sci. Soc. Amer. Proc. 28:542-545. 1964.
- 2321 Wilcox, J. C., and H. C. Korven. Some problems encountered in the use of evaporimeters for scheduling of irrigation. Can. Agr. Eng. J. 6:29 - 31. 1964.
- 2322 Wilcox, J. C., and H. C. Korven. Effects of weather fluctuations on the scheduling of irrigation. Can. J. Plant Sci. 44:439-445. 1964.
- 2323 Wilcox, J. C., H. C. Korven, and C. H. Brownlee. The pH and salt content of stream water as affected by elevation and aspect. Can. J. Soil Sci. 44:260 - 261. 1964.
- 2324 Wilkinson, A. T. S., and D. G. Finlayson. Toxic residues in soil 9 years after treatment with aldrin and heptachlor. Science (Washington) 143:681-682. 1964.
- 2325 Wilson, D. B., and R. D. Clark. Irrigated pastures in southern Alberta. Can. Dep. Agr. Publ. 1160. 1964.
- 2326 Wilson, F. H. The climate, soils and groundwater in the Morden-Winkler area as they relate to feasibility of irrigation. M.Sc. Thesis, Univ. Manitoba. 1964.
- 2327 Woodwell, G. M., and F. T. Martin. Persistence of DDT in soils of heavily sprayed forest stands. Science (Washington) 145:481-483. 1964.
- 2328 Wynnyk, A., J. D. Lindsay, P. K. Heringa, and W. Odynsky. Exploratory soil survey of Alberta map sheets 830, 83P and 73M. Alta. Res. Counc. Prelim. Soil Surv. Rep. 64-1. 1964.
- 2329 Acton, D. F. The relationship of pattern and gradient of slopes to soil type. Can. J. Soil Sci. 45:96-101. 1965.
- 2330 Anderson, D. T. Some factors affecting trash conservation with subsurface cultivators. Can. Agr. Eng. J. 7:45-46, 49, 56. 1965.
- 2331 Arnold, R. W. Multiple working hypothesis in soil genesis. Soil Sci. Soc. Amer. Proc. 29:717-724. 1965.

- 2332 Ashford, R., and J. E. Troelsen. The effect of nitrogen fertilizer and clipping frequency upon the yield and *in vitro* digestibility of intermediate wheatgrass. J. Brit. Grassland Soc. 20:139-144. 1965.
- 2333 Baier, W. The interrelationship of meteorological factors, soil moisture and plant growth. Int. J. Bioclimatol. Biometeorol. 9:5-20. 1965.
- 2334 Baldwin, C. S., C. E. Broadwell, and J. F. Davis. Production practices affecting yield and sugar content of sugar beets grown in Ontario, Canada-1961 and 1962. J. Amer. Soc. Sugar Beet Technol. 13:509-522. 1965.
- 2335 Ballantyne, A. K., and J. S. Clayton. Transmittance of light through soil-water suspensions from B horizons of Solonetzic and Chernozemic soils. Can. J. Soil Sci. 45:19-23. 1965.
- 2336 Barghoorn, E. S., and S. A. Tyler. Microorganisms from the Gunflint chert. Science (Washington) 147:563-577. 1965.
- 2337 Baril, R., and B. Rochefort. Etude pédologique du comté de Kamouraska. Que. Soil Surv. Rep. 1965.
- 2338 Bates, T. E., and A. D. Scott. Soil moisture effects on potassium release observed on drying soils with organic additives. Soil Sci. Soc. Amer. Proc. 29:673-676. 1965.
- 2339 Beaton, J. D., R. C. Speer, and G. Brown. Effect of soil temperature and length of reaction period on water solubility of phosphorus in soil fertilizer reaction zones. Soil Sci. Soc. Amer. Proc. 29:194-198. 1965.
- 2340 Beauchamp, E. G. Effects of root zone temperature on the early growth and morphological development of *Zea mays* L. Ph.D. Thesis, Cornell Univ. 1965.
- 2341 Bowman, D. H., and K. M. King. Determination of evapotranspiration using the neutron scattering method. Can. J. Soil Sci. 45:117-126. 1965.
- 2342 Bowman, D. H., and K. M. King. Convenient cadmium-metal standard for checking neutron, soil moisture probes. Soil Sci. Soc. Amer. Proc. 29:325-327. 1965.
- 2343 Brydon, J. E. Clay illuviation in some Orthic Podzols of Eastern Canada. Can. J. Soil Sci. 45:127-138. 1965.

- 2344 Brydon, J. E., and H. M. Rice. Use of the intercept method in determining the calcite-dolomite ratio for rating agricultural limestones. *Agron. J.* 57:283-285. 1965.
- 2345 Bryson, R. A., W. N. Irving, and J. A. Larsen. Radiocarbon and soil evidence of former forest in southern Canadian tundra. *Science (Washington)* 147:46-48. 1965.
- 2346 Calder, F. W., R. F. Bishop, L. B. MacLeod, and C. R. MacEachern. Effect of limestone on pasture sward renovation with and without cultivation. *Can. J. Soil Sci.* 45:251-256. 1965.
- 2347 Calder, F. W., L. B. MacLeod, and L. P. Jackson. Effect of soil moisture content and stage of development on cold-hardiness of the alfalfa plant. *Can. J. Plant Sci.* 45:211-218. 1965.
- 2348 Cameron, C. D. T. Effects of nitrogen fertilizer application rates to grass pastures on lamb gains and herbage yields. *Can. J. Anim. Sci.* 45:79 - 83. 1965.
- 2349 Campbell, C. A. The use of naturally- occurring C¹⁴ to measure the persistence of organic components in soil. Ph.D. Thesis, Univ. Saskatchewan. 1965.
- 2350 Chan, W. T. The relationship between soil-fertilizer reaction products and the relative availability of mixed and band applications of fertilizer phosphorus. M.Sc. Thesis, Univ. Guelph. 1965.
- 2351 Chang, P. C., and R. Knowles. Non-symbiotic nitrogen fixation in some Quebec soils. *Can. J. Microbiol.* 11:29-38. 1965.
- 2352 Chaudry, G. H. Exchange of sodium on clay minerals by leaching with calcium sulphate. Ph.D. Thesis, McGill Univ. 1965.
- 2353 Chen, D. Exchange equilibria for Al-bentonite and monovalent cations. *Can. J. Soil Sci.* 45:177 - 183. 1965.
- 2354 Chu, J. P. Transformation of bacterial nitrogen in soils. M.Sc. Thesis, McGill Univ. 1965.
- 2355 Clark, J. S. Extraction of exchangeable cations from Wyoming bentonite suspensions. *Can. J. Soil Sci.* 45:39-48. 1965.

- 2356 Clark, J. S. The extraction of exchangeable cations from soils. *Can. J. Soil Sci.* 45:311-322. 1965.
- 2357 Clark, J. S., and R. C. Turner. Extraction of exchangeable cations and distribution constants for ion exchange. *Soil Sci. Soc. Amer. Proc.* 29:271-274. 1965.
- 2358 Clements, J. R. An inexpensive material for lining soil trenches. *Can. J. Soil Sci.* 45:110-111. 1965.
- 2359 Coen, G. M. Bands in soils of the Stony Plain area. M.Sc. Thesis, Univ. Alberta. 1965.
- 2360 Cooke, D. A., S. E. Beacom, and W. K. Dawley. Pasture productivity of two grass-alfalfa mixtures in northeastern Saskatchewan. *Can. J. Plant Sci.* 45:162-168. 1965.
- 2361 Cunningham, R. K., and K. F. Nielsen. Cation-anion relationships in crop nutrition. V. The effects of soil temperature, light intensity and soil-water tension. *J. Agr. Sci.* 64:379-386. 1965.
- 2362 D'Aoust, M. Some aspects of the interaction between nitrogen and water in the growth of grass swards. Ph.D. Thesis, Univ. Reading. 1965.
- 2363 Dawley, W. K. An evaluation of the residual effect of applied phosphorus on cultivated pastures as measured by barley following sod-breaking. *Can. J. Plant Sci.* 45:139-144. 1965.
- 2364 de Jong, E., and B. P. Warkentin. Water retention by clay - glass bead mixtures. *Soil Sci.* 100:108 - 111. 1965.
- 2365 Dionne, J. L. Action du phosphate et de la potasse sur les rendements et la composition botanique et chimique d'une association luzerne-mil. *Can. J. Plant Sci.* 45:18-26. 1965.
- 2366 Dubetz, S., and S. A. Wells. Yield and quality of greenhouse-grown Betzes barley as affected by water and fertilizers. *Can. J. Plant Sci.* 45:437-442. 1965.
- 2367 Ellis, J. G., D. F. Acton, and J. S. Clayton. Soils of the Regina map area (72-1) Saskatchewan. *Sask. Inst. Pedol. Publ. S1. Univ. Sask. Ext. Publ.* 176. 1965.
- 2368 Elrick, D. E. Soil water movement: theory and applications. *Proc. 1st Can. Conf. on Micrometeorol. Meteorol. Mem., Toronto.* 1965.

- 2369 Evans, E. J., and A. J. Dekker. Sr⁹⁰ concentration in deep- and shallow-rooting species as affected by placement of Sr⁹⁰ and fertilizer in the soil. *Can. J. Soil Sci.* 45:289-296. 1965.
- 2370 Evans, E. J., and A. J. Dekker. Influence of rate of Sr⁹⁰ added to soil at different phosphate levels on the concentration of Sr⁹⁰ in plants. *Can. J. Plant Sci.* 45:375-381. 1965.
- 2371 Evans, E. J., and A. J. Dekker. Foliar, floral, and root absorption of Sr⁹⁰ by crops. *Agron. J.* 57:82-83. 1965.
- 2372 Farstad, L., T. M. Lord, A. J. Green, and H. J. Hortie. Soil survey of the Peace River area in British Columbia. B.C. Soil Surv. Rep. No. 8. 1965.
- 2373 Ferguson, W. S. Relationship between evapotranspiration by wheat and the stage of crop development, Bellani-plate evaporation, and soil moisture content. *Can. J. Soil Sci.* 45:33-38. 1965.
- 2374 Fleet, M. E. L. Preliminary investigations into the sorption of boron by clay minerals. *Clay Mineral.* 6:3-15. 1965.
- 2375 Floate, M. J. S. Distribution of organic matter and phosphorus fractions in a topographic sequence of soils in southern British Columbia. *Can. J. Soil Sci.* 45:323-329. 1965.
- 2376 Floate, M. J. S. The sedimentation times used in the hydrometer method for mechanical analysis of soils. *Can. J. Soil Sci.* 45:357-359. 1965.
- 2377 Friesen, H. A. The movement and persistence of dicamba in soil. *Weeds* 13:30-33. 1965.
- 2378 Gagnon, J. D. Effect of magnesium and potassium fertilization on a 20-year-old red pine plantation. *Forest. Chron.* 41:290-294. 1965.
- 2379 Gagnon, J. D. Nitrogen deficiency in the York River burn, Gaspé, Quebec. *Plant Soil* 23:49-59. 1965.
- 2380 Gardner, E. H., I. A. Derics, and J. Basaraba. Mineralization of nitrogen in some Fraser Valley soils as affected by liming. *Can. J. Soil Sci.* 45:355-356. 1965.
- 2381 Gillingham, J. T. A new soil-extracting apparatus. *Can. J. Soil Sci.* 45:102-104. 1965.

- 2382 Gillingham, J. T. Some factors affecting the net absorption of exchangeable potassium by the Neubauer rye seedling method. *Soil Sci.* 100:384 - 390. 1965.
- 2383 Gillingham, J. T., and N. R. Page. Influence of anions on the uptake of calcium and magnesium by plants and on calcium and magnesium movement in soils. *Agron. J.* 57:83-88. 1965.
- 2384 Gupta, U. C., and D. C. MacKay. Determination of Mo in plant materials using 4-methyl 1,2-dimercaptobenzene (dithiol). *Soil Sci.* 99:415 - 416. 1965.
- 2385 Gupta, U. C., and D. C. MacKay. Extraction of water-soluble copper and molybdenum from Podzol soils. *Soil Sci. Soc. Amer. Proc.* 29:323. 1965.
- 2386 Gupta, U. C., and F. J. Sowden. Studies on methods for the determination of sugars and uronic acids in soils. *Can. J. Soil Sci.* 45:237-240. 1965.
- 2387 Hamilton, H. A. Influence of phosphorus and potassium on forage yields in relation to fertilization and stage of harvest of an oat companion crop. *J. Agr. Sci.* 64:157-159. 1965.
- 2388 Hamilton, H. A., and D. J. Lathwell. Influence of salts in association with monocalcium and diammonium phosphates on the chemical characteristics and movement of soil solution. *Can. J. Soil Sci.* 45:139-152. 1965.
- 2389 Harapiak, J. T. Chemical, physical and morphological characteristics of solodized solonetz soils. M.Sc. Thesis, Univ. Saskatchewan. 1965.
- 2390 Harris, R. E. Polyethylene covers and mulches for corn and bean production in northern regions. *Proc. Amer. Soc. Hort. Sci.* 87:288-294. 1965.
- 2391 Hennig, A. M. F. The effect of methods used to break virgin wooded soils on the yields of wheat and flax. *Can. J. Soil Sci.* 45:281-288. 1965.
- 2392 Hoffman, I., and M. Schnitzer. Thermogravimetric studies on soil humic compounds. *Int. Conf. Thermal Anal. Proc.* 62-63. 1965.
- 2393 Huang, P. M. Mechanism of neutral fluoride interaction with soil clay minerals and silica solubility scale for silicates common in soils. Ph.D. Thesis, Univ. Wisconsin. 1965.

- 2394 Huang, P. M., and M. L. Jackson. Mechanism of reaction of neutral fluoride solution with layer silicates and oxides of soils. *Soil Sci. Soc. Amer. Proc.* 29:661-665. 1965.
- 2395 Ivarson, K. C. The microbiology of some permafrost soils in the Mackenzie Valley, N.W.T. *Arctic* 18:256-260. 1965.
- 2396 John, M. K., P. N. Sprout, and C. C. Kelley. The distribution of organic phosphorus in British Columbia soils and its relationship to soil characteristics. *Can. J. Soil Sci.* 45:87-95. 1965.
- 2397 Katznelson, H. Nature and importance of the rhizosphere. In *Ecology of soil-borne plant pathogens*. *Int. Symp. Univ. Calif.* (1963), 187 - 209. 1965.
- 2398 Kilcher, M. R., et al. Effects of inorganic nitrogen and phosphorus fertilizers on selected sites of native grassland in Western Canada. *Can. J. Plant Sci.* 45:229-237. 1965.
- 2399 Kodama, H. Transformation of pyrophyllite into an interstratified structure. *Clay Sci.* 2:132 - 137. 1965.
- 2400 Korven, H. C. Time-and-motion study of undertree and overtree sprinkler irrigation. *Trans. Amer. Soc. Agr. Eng.* 8:502-504, 507. 1965.
- 2401 Korven, H. C., and J. C. Wilcox. Correlation between evaporation from Bellani plates and evapotranspiration from orchards. *Can. J. Plant Sci.* 45:132-138. 1965.
- 2402 Krause, H. H. Effect of pH on leaching losses of potassium applied to forest nursery soils. *Soil Sci. Soc. Amer. Proc.* 29:613-615. 1965.
- 2403 Krogman, K. K., and E. H. Hobbs. Evapotranspiration by irrigated alfalfa as related to season and growth stage. *Can. J. Plant Sci.* 45:309-313. 1965.
- 2404 Lajoie, P. G. Etude pédologique des comtés de L'Assomption et de Montcalm, Que. Que. *Soil Surv. Rep.* 1965.
- 2405 Laliberte, G. E., and E. Rapp. Influence of evaporation and tile drainage on water table recession. *Trans. Amer. Soc. Agr. Eng.* 8:275 - 276, 280. 1965.
- 2406 Langille, J. E., L. B. MacLeod, and F. S. Warren. Influence of harvesting management on yield, carbohydrate reserves, etiolated regrowth, and potassium utilization of alfalfa. *Can. J. Plant Sci.* 45:383-388. 1965.

- 2407 Lasalle, P. Radiocarbon date from the Lake St. John area, Quebec. *Science (Washington)* 149:860 - 862. 1965.
- 2408 Laventure, R. S. Soluble constituents and ion exchange reactions of Champlain Sea sediments M.Sc. Thesis, McGill Univ. 1965.
- 2409 Laventure, R. S., and B. P. Warkentin. Chemical properties of Champlain Sea sediments. *Can. J. Earth Sci.* 2:299-308. 1965.
- 2410 Lee, C. C., and F. W. Sosulski. Uptake of Sr^{85} by cereal crops and varieties. *Can. J. Plant Sci.* 45:13-17. 1965.
- 2411 Lehane, J. J., and W. J. Staple. Influence of soil texture, depth of soil moisture storage, and rainfall distribution on wheat yields in southwestern Saskatchewan. *Can. J. Soil Sci.* 45:207-219. 1965.
- 2412 Levesque, M. P. The behaviour of phosphorus in soil using radioisotopes. Ph.D. Thesis, Rutgers Univ. 1965.
- 2413 Lindsay, J. D., and W. Odynsky. Permafrost in organic soils of northern Alberta. *Can. J. Soil Sci.* 45:265-269. 1965.
- 2414 Lowe, L. E. Sulphur fractions of selected Alberta soil profiles of the Chernozemic and Podzolic orders. *Can. J. Soil Sci.* 45:297-303. 1965.
- 2415 Ludwig, R. A. The role of chemicals in the biological control of soil-borne plant pathogens. In *Ecology of soil-borne plant pathogens*. Int. Symp. Univ. Calif. (1963), 471-478. 1965.
- 2416 Lutwick, L. E., and P. C. Chang. Water quality of the upper Oldman River and its tributaries, Alberta. *Can. J. Soil Sci.* 45:7-14. 1965.
- 2417 Lutwick, L. E., A. D. Smith, and A. Johnston. Fertilizer experiments on native rangelands using increasing-rate spreader. *J. Range Manage.* 18:136 - 139. 1965.
- 2418 Mack, A. R. The influence of solar radiation on soil temperatures. *Can. J. Plant Sci.* 45:203 - 204. 1965.
- 2419 Mack, A. R. Effect of soil temperature and moisture on yield and nutrient uptake by barley. *Can. J. Soil Sci.* 45:337-346. 1965.

- 2420 Mack, A. R., and W. A. Evans. Soil temperature control system for field plots. *Can. J. Soil Sci.* 45:105-107. 1965.
- 2421 MacLean, A. A. Extraction of organic phosphorus from soils with sodium bicarbonate. *Can. J. Soil Sci.* 45:165-170. 1965.
- 2422 MacLean, A. A. Organic phosphorus in some New Brunswick soils. *Can. J. Soil Sci.* 45:185-188. 1965.
- 2423 MacLeod, L. B. Effect of nitrogen and potassium on the yield, botanical composition, and competition for nutrients in three alfalfa-grass associations. *Agron. J.* 57:129-134. 1965.
- 2424 MacLeod, L. B. Effect of nitrogen and potassium on the yield and chemical composition of alfalfa, brome grass, orchardgrass, and timothy grown as pure species. *Agron. J.* 57:261-266. 1965.
- 2425 MacLeod, L. B. Effect of nitrogen and potassium fertilization on the yield, regrowth, and carbohydrate content of the storage organs of alfalfa and grasses. *Agron. J.* 57:345-350. 1965.
- 2426 MacLeod, L. B., R. F. Bishop, L. P. Jackson, and C. R. MacEachern. Effect of rate and time of nitrogen and interval of phosphorus and potassium fertilization on herbage production on permanent pasture. *Can. J. Soil Sci.* 45:153-164. 1965.
- 2427 MacLeod, L. B., and R. B. Carson. Effect of source and rate of N and rate of K on the yield and chemical composition of alfalfa and orchardgrass. *Can. J. Plant Sci.* 45:557-569. 1965.
- 2428 MacLeod, L. B., and L. P. Jackson. Effect of concentration of the aluminum ion on root development and establishment of legume seedlings. *Can. J. Soil Sci.* 45:221-234. 1965.
- 2429 Malik, M. N., D. S. Stevenson, and G. C. Russell. Water-stable aggregation in relation to various cropping rotations and soil constituents. *Can. J. Soil Sci.* 45:189-197. 1965.
- 2430 Martin, J. L. The insect ecology of red pine plantations in central Ontario: III. Soil-surface fauna as indicators of stand change. *Proc. Entomol. Soc. Ont.* (1964) 95:87-102. 1965.

- 2431 McIntosh, D. L. Studying the influence of soil temperatures on infection of fruit tree rootlets by *Phytophthora cactorum*. Can. J. Bot. 43:867 - 868. 1965.
- 2432 McKay, M. C. Water permeability studies of the Carroll and Harding soil associations in Manitoba. M.Sc. Thesis, Univ. Manitoba. 1965.
- 2433 McKeague, J. A. Relationship of water table and Eh to properties of three clay soils in the Ottawa Valley. Can. J. Soil Sci. 45:-49-62. 1965.
- 2434 McKeague, J. A. Properties and genesis of three members of the Uplands catena. Can. J. Soil Sci. 45:63-77. 1965.
- 2435 McKeague, J. A. A laboratory study of gleying. Can. J. Soil Sci. 45:199-206. 1965.
- 2436 Miller, M. H. Influence of $(\text{NH}_4)_2\text{SO}_4$ on root growth and P absorption by corn from a fertilizer band. Agron. J. 57:393-396. 1965.
- 2437 Mills, G. F. Morphological, chemical and mineralogical characteristics of Orthic Gray Wooded and Degraded Brown Wooded soil profiles developed on coarse-textured parent materials. M.Sc. Thesis, Univ. Manitoba. 1965.
- 2438 Milne, R. A., and E. Rapp. Soil reclamation by deep-well pumping in the Maple Creek Upper "V" area of Saskatchewan. Congr. Int. Comm. Irrig. and Drain. 65-82. 1965.
- 2439 Moore, A. W. Fixed ammonium in some Alberta soils. Can. J. Soil Sci. 45:112-115. 1965.
- 2440 Morita, H. The phenolic acids in organic soils. Can. J. Biochem. Physiol. 43:1277-1280. 1965.
- 2441 Moss, H. C. A guide to understanding Saskatchewan soils. Sask. Inst. Pedol. Publ. MI. Univ. Sask. Ext. Publ. 175. 1965.
- 2442 Nowakowski, T. Z., R. K. Cunningham, and K. F. Nielsen. Nitrogen fractions and soluble carbohydrates in Italian ryegrass. 1. Effects of soil temperature, form and level of nitrogen. J. Sci. Food Agr. 16:124-133. 1965.
- 2443 Nuttall, W. F. Technique for measuring available soil potassium using K^{42} . Ph.D. Thesis, McGill Univ. 1965.

- 2444 Olsen, S. R., W. D. Kemper, and J. C. van Schaik. Self-diffusion coefficients of phosphorus in soil measured by transient and steady-state methods. *Soil Sci. Soc. Amer. Proc.* 29:154-158. 1965.
- 2445 Ouellette, G. J. Potato varietal tolerance to magnesium deficiency. *Can. J. Plant Sci.* 45:607 - 608. 1965.
- 2446 Ouellette, G. J., et H. Génereux. Influence de l'intoxication manganique sur six variétés de pomme de terre. *Can. J. Soil Sci.* 45:24-32. 1965.
- 2447 Ouellette, G. J., et H. Génereux. Influence du pH et des éléments fertilisants sur l'intoxication manganique de la pomme de terre. *Can. J. Soil Sci.* 45:347-353. 1965.
- 2448 Parkinson, D., and A. Thomas. A comparison of methods for the isolation of fungi from rhizospheres. *Can. J. Microbiol.* 11:1001-1007. 1965.
- 2449 Patil, B. N. Soil ammonium nitrogen in some soils of Manitoba. M.Sc. Thesis, Univ. Manitoba. 1965.
- 2450 Patrick, Z. A., and T. A. Toussoun. Plant residues and organic amendments in relation to biological control. In *Ecology of soil-borne plant pathogens*. Int. Symp. Univ. Calif. (1963), 440-459. 1965.
- 2451 Paul, E. A., and C. M. Tu. Alteration of microbial activities, mineral nitrogen and free amino acid constituents of soils by physical treatment. *Plant Soil* 22:207-219. 1965.
- 2452 Penner, E. A study of sensitivity in Leda clay. *Can. J. Earth Sci.* 2:425-441. 1965.
- 2453 Percy, M. J., L. R. Webber, and H. D. Ayers. Infiltration characteristics of a Guelph loam soil from analysis of hydrologic data. *Can. J. Soil Sci.* 45:1-6. 1965.
- 2454 Peterson, E. A., and H. Katznelson. Studies on the relationships between nematodes and other soil microorganisms. IV. Incidence of nematode-trapping fungi in the vicinity of plant roots. *Can. J. Microbiol.* 11:491-495. 1965.
- 2455 Peterson, E. A., H. Katznelson, and F. D. Cook. The influence of chitin and myxobacters on numbers of actinomycetes in soil. *Can. J. Microbiol.* 11:595-596. 1965.

- 2456 Peterson, E. A., J. W. Rouatt, and H. Katznelson. Micro-organisms in the root zone in relation to soil moisture. *Can. J. Microbiol.* 11:483-489. 1965.
- 2457 Pohjakas, K. Water losses through border dykes. *Can. Agr. Eng.* 7:28-29. 1965.
- 2458 Prasad, D. Microbial respiratory patterns in natural and artificial soil systems. M.Sc. Thesis, Univ. Guelph. 1965.
- 2459 Presant, E. W., and W. M. Tupper. Trace elements in some New Brunswick soils. *Can. J. Soil Sci.* 45:305-310. 1965.
- 2460 Pringle, W. L., and A. L. van Ryswyk. Response of water sedge in the growth room to fertilizer and temperature treatments. *Can. J. Plant Sci.* 45:60-66. 1965.
- 2461 Quastel, J. H. Soil metabolism. *Rev. Plant Physiol.* 16:217-240. 1965.
- 2462 Racz, G. J., M. D. Webber, R. J. Soper, and R. A. Hedlin. Phosphorus and nitrogen utilization by rape, flax, and wheat. *Agron. J.* 57:335-337. 1965.
- 2463 Rayment, A. F. The response of native stands of lowbush blueberry in Newfoundland to nitrogen, phosphorus, and potassium fertilizers. *Can. J. Plant Sci.* 45:145-152. 1965.
- 2464 Raymond, R., A. Mailloux, et A. Dubé. Pédologie de la region du Lac Saint Jean. *Que. Dep. Agr. Tech.. Bull.* 11. 1965.
- 2465 Reddy, T. K. R., and R. Knowles. The fungal flora of a boreal forest raw humus. *Can. J. Microbiol.* 11:837-843. 1965.
- 2466 Reeder, S. W., and W. Odynsky. Reconnaissance soil survey of the Cherry Point and Hines Creek area. *Univ. Alberta Bull. No. SS-6, Rep. No. 23, Alta. Soil Surv., Rep. No. 85, Res. Counc. of Alta.* 1965.
- 2467 Rennie, D. A., and R. B. McKercher. The potassium fertility status of selected Saskatchewan soils. *Dep. Soil Sci., Univ. Saskatchewan. Printed.* 1965.
- 2468 Roberge, M. R. Urea metabolism in a black spruce humus. Ph.D. Thesis, McGill Univ. 1965.
- 2469 Robinson, J. B., P. O. Salenius, and F. E. Chase. The differential response of *Arthrobacter* spp. and *Pseudomonas* spp. to drying soil. *Can. J. Microbiol.* 11:746-748. 1965.

- 2470 Ross, G. J. Characterization of a montmorillonite in a northern Michigan Podzol. Ph.D. Thesis, Michigan State Univ. 1965.
- 2471 Saini, G. R. Principle of the immersion method for soil moisture determination. *Soil Sci.* 100:220. 1965.
- 2472 Saini, G. R., and A. A. MacLean. Phosphorus retention capacities of some New Brunswick soils and their relationship with soil properties. *Can. J. Soil Sci.* 45:15-18. 1965.
- 2473 Sayre, R. M., Z. A. Patrick, and H. J. Thorpe. Identification of a selective nematicidal component in extracts of plant residues decomposing in soil. *Nematologica* 11:263-268. 1965.
- 2474 Schnitzer, M. The application of infrared spectroscopy to investigations on soil humic compounds. *Can. Spectroscopy* 10:Nov. 1965.
- 2475 Schnitzer, M. Contribution of organic matter to the cation exchange capacity of soils. *Nature (London)* 207:667-668. 1965.
- 2476 Schnitzer, M., and J. G. Desjardins. Carboxyl and phenolic hydroxyl groups in some organic soils and their relation to the degree of humification. *Can. J. Soil Sci.* 45:257-264. 1965.
- 2477 Schnitzer, M., and U. C. Gupta. Determination of acidity in soil organic matter. *Soil Sci. Soc. Amer. Proc.* 29:274-277. 1965.
- 2478 Schnitzer, M., and I. Hoffman. Thermogravimetry of soil humic compounds. *Geochim. Cosmochim. Acta* 29:859-870. 1965.
- 2479 Schnitzer, M., and S. I. M. Skinner. The carbonyl group in a soil organic matter preparation. *Soil Sci. Soc. Amer. Proc.* 29:400-405. 1965.
- 2480 Schnitzer, M., and S. I. M. Skinner. Organo-metallic interactions in soils: 4. Carboxyl and hydroxyl groups in organic matter and metal retention. *Soil Sci.* 99:278-284. 1965.
- 2481 Shaykewich, C. F. The relationship between soil components and soil physical constants of some Manitoba soils. M.Sc. Thesis, Univ. Manitoba. 1965.
- 2482 Shields, J. A. Application of trichromatic analysis and organic matter fractionation to the study of soil colors. M.Sc. Thesis, Univ. Saskatchewan. 1965.

- 2493 Singh, D. Differential response of corn to potassium placement. M.Sc. Thesis, Univ. Guelph. 1965.
- 2484 Singh, S. S., and R. C. Turner. Sulphate ions and cation exchange reactions with clays. *Can. J. Soil Sci.* 45:271-279. 1965.
- 2485 Smith, A. D., T. T. Mikkelsen, and P. H. Walker. Comparison of apparatus for weekly measurement of evaporation. *Can. J. Plant Sci.* 45:511-513. 1965.
- 2486 Smoliak, S. Effects of manure, straw and inorganic fertilizers on northern great plains ranges. *J. Range Manage.* 18:11-15. 1965.
- 2487 Sorensen, A. K. Sulphur status of some Alberta soils. M.Sc. Thesis, Univ. Alberta. 1965.
- 2488 Staple, W. J. Moisture tension, diffusivity, and conductivity of a loam soil during wetting and drying. *Can. J. Soil Sci.* 45:78-86. 1965.
- 2489 Stevenson, C. K. Effect of N:P atom ratio of ammonium phosphates on emergence of wheat. M.Sc. Thesis, Univ. Guelph. 1965.
- 2490 Stewart, D. Water relationships in the soil-plant-atmosphere system. M.Sc. Thesis, Univ. Guelph. 1965.
- 2491 Stewart, D. K. R., D. Chisholm, and C. J. S. Fox. Insecticide residues in potatoes and soil after consecutive soil treatments of aldrin and heptachlor. *Can. J. Plant Sci.* 45:72-78. 1965.
- 2492 Stewart, J. A., and K. C. Berger. Estimation of available soil zinc using magnesium chloride as extractant. *Soil Sci.* 100:244-250. 1965.
- 2493 Sutherland, J. R. Nematodes associated with coniferous nursery seedlings in Quebec. *Phytoprotection* 46:131-134. 1965.
- 2494 Tabi, M. Influence de l'azote sur le développement des racines. M.Sc. Thesis, Laval Univ. 1965.
- 2495 Tardif, L. Etude des sols de la paroisse de St. Charles de Caplan, comté de Bonaventure, province de Québec. M.Sc. Thesis, Laval Univ. 1965.
- 2496 Turner, R. C. A study of the lime potential: 4. The lime potential during titration of Wyoming bentonite originally saturated with ferric ions. *Soil Sci.* 99:88-92. 1965.

- 2497 Turner, R. C. A study of lime potential: 5. Significance of the lime potential in aqueous acid clay systems. *Soil Sci.* 100:14-19. 1965.
- 2498 Turner, R. C. Some properties of aluminum hydroxide precipitated in the presence of clays. *Can. J. Soil Sci.* 45:331-336. 1965.
- 2499 Turner, R. C., and D. K. Acquaye. The lime potential and degree of base saturation of some Ghana soils. *Ghana J. Sci.* 5:185-190. 1965.
- 2500 Turner, R. C., and J. E. Brydon. Factors affecting the solubility of $Al(OH)_3$ precipitated in the presence of montmorillonite. *Soil Sci.* 100:176 - 181. 1965.
- 2501 Turner, R. C., and J. S. Clark. Lime potential and degree of base saturation of soils. *Soil Sci.* 99:194-199. 1965.
- 2502 Varshney, V. C. The effect of soil temperature on root development and on phosphorus uptake by corn seedlings. M.Sc. Thesis, Univ. Guelph. 1965.
- 2503 Vezina, P. E. Methods of pH determination and seasonal pH fluctuations in Quebec forest humus. *Ecology* 46:752-755. 1965.
- 2504 Wang, C. Occurrence of lithologic discontinuities in two Guelph soils. M.Sc. Thesis, Univ. Guelph. 1965.
- 2505 Ward, G. M. Fertilizer schedule for greenhouse tomatoes in southwestern Ontario. *Can. Dep. Agr. Publ.* 1237. 1965.
- 2506 Warkentin, B. P. Physical properties of Ste. Rosalie clay soils. *Dep. Soil Sci., Macdonald Coll. Soil. Res. Bull.* 1965.
- 2507 Webber, G. R., and J. U. Jellema. Comparison of chemical composition of soils and bedrock at Mont St. Hilaire, Quebec. *Can. J. Earth Sci.* 2:44 - 58. 1965.
- 2508 Webber, L. R. Soil polysaccharides and aggregation in crop sequences. *Soil Sci. Soc. Amer. Proc.* 29:39-42. 1965.
- 2509 Wilcox, J. C. Time of sampling after an irrigation to determine field capacity of soil. *Can. J. Soil Sci.* 45:171-176. 1965.
- 2510 Acquaye, D. K., and A. J. MacLean. Influence of form and mode of nitrogen fertilizer application on the availability of soil and fertilizer potassium. *Can. J. Soil Sci.* 46:23-28. 1966.

- 2511 Acquaye, D. K., and A. J. MacLean. Potassium potential of some selected soils. *Can. J. Soil Sci.* 46:177-184. 1966.
- 2512 Adams, C. A. Alteration in the nitrogen metabolism of alfalfa and orchard-grass as influenced by potassium and sulphur nutrition. M.Sc. Thesis, Univ. Guelph. 1966.
- 2513 Adams, C. A., and R. W. Sheard. Alterations in the nitrogen metabolism of *Medicago sativa* and *Dactylis glomerata* as influenced by potassium and sulfur nutrition. *Can. J. Plant Sci.* 46:671 - 680. 1966.
- 2514 Allard, J., J. Richard, et J. A. Belanger. Recherche de la dose optimum d'azote minéral sur le tabac jaune irrigué. *Can. J. Plant Sci.* 46:405-409. 1966.
- 2515 Anderson, C. H. Soil conservation in the semi-arid region of Western Canada. *Trans. 1st Pan-Amer. Congr. Soil Ccnserv. (Sao Paulo, Brazil).* 1966
- 2516 Anderson, C. H., and D. W. L. Read. Water-use efficiency of some varieties of wheat, oats, barley, and flax grown in the greenhouse. *Can. J. Plant Sci.* 46:375-378. 1966.
- 2517 Anderson, C. H., and A. Wenhardt. Soil erodibility, fall and spring. *Can. J. Soil Sci.* 46:255-259. 1966.
- 2518 Anderson, D. T., *et al.* Soil erosion by wind-cause, damage, control. *Can. Dep. Agr. Publ.* 1266. 1966.
- 2519 Anderson, D. T., and A. D. Smith. Seeding mechanism. for trash-cover farming. *Can. Agr. Eng.* 8:35- 36. 1966.
- 2520 Anderson, D. W. Available sulphur in some Manitoba soils as estimated by plant growth and chemical analyses. M.Sc. Thesis, Univ. Manitoba. 1966.
- 2521 Armson, K. A. The growth and absorption of nutrients fertilized and unfertilized white spruce seedlings. *Forest. Chron.* 42(2):127-136. 1966.
- 2522 Arnold, R. W. Differentiation of soils having cyclic or recurring horizons. *Can. J. Soil Sci.* 46:69-74. 1966.
- 2523 Arshad, M. A., and L. E. Lowe. Fractionation and characterization of naturally occurring organo-clay complexes. *Soil Sci. Soc. Amer. Proc.* 30:731 - 735. 1966.

- 2524 Arshad, M. A., and S. Pawluk. Characteristics of some Solonetzic soils in the glacial Lake Edmonton basin of Alberta. I. Physical and chemical. *J. Soil Sci.* 17:36-47. 1966.
- 2525 Arshad, M. A., and S. Pawluk. Characteristics of some Solonetzic soils in the glacial Lake Edmonton basin of Alberta. II. Mineralogy. *J. Soil Sci.* 17:48-55. 1966.
- 2526 Atkinson, H. J. Soil contamination in Canada. Conf. on Pollution and our environment. Montreal, Oct. 31 - Nov. 4. 1966.
- 2527 Atkinson, H. J. Soil research in Canada (Cercetarea solului in Canada). *Știința Solului (Romania)* 4(4):50-55. 1966.
- 2528 Baier, W., and G. W. Robertson. A new versatile soil moisture budget. *Can. J. Plant Sci.* 46:299315. 1966.
- 2529 Bailey, L. D. The availability of potassium to plants from several calcareous and non-calcareous Manitoba soils. M.Sc. Thesis, Univ. Manitoba. 1966.
- 2530 Baker, J. The effect of burning logging slash on chemical properties of soil. *Can. Dep. Forest. Bi-mon. Res. Notes* 22:5, 7. 1966.
- 2531 Baldwin, C. S., and J. F. Davis. Effect of time and rate of application of nitrogen and date of harvest on yield and sucrose content of sugar beets. *Agron. J.* 58:373-376. 1966.
- 2532 Beaton, J. D. Sulphur requirements of cereals, tree fruits, vegetables and other crops. *Soil Sci.* 101:267-282. 1966.
- 2533 Beauchamp, E. G., and D. J. Lathwell. Effect of root zone temperatures on corn leaf morphology. *Can. J. Plant Sci.* 46:593-601. 1966.
- 2534 Beauchamp, E. G., and D. J. Lathwell. Root zone temperature effects on the vascular development of adventitious roots in *Zea mays*. *Bot. Gaz.* 127:153-158. 1966.
- 2535 Biederbeck, V. O. Use of C¹⁴-labelled plant materia to measure the turnover of organic residues in soil. M.Sc. Thesis, Univ. Saskatchewan. 1966.
- 2536 Bisal, F., and J. Hsieh. Influence of moisture on erodibility of soil by wind. *Soil Sci.* 102:143 - 146. 1966.

- 2537 Bole, J. B. Phosphorus fertilizer placement for wheat. M.Sc. Thesis, Univ. Saskatchewan. 1966.
- 2538 Bolton, E. F. Some effects of soil aeration levels on the accumulation of certain plant metabolites under various temperature and light intensities. Ph.D. Thesis, Michigan State Univ. 1966.
- 2539 Bourget, S. J. La erosion causada por el agua en el este del Canada. Trans. 1st Congr. pan-Amer. de Conserv. des Sols (Sao Paulo, Brazil). 1966.
- 2540 Bourget, S. J., B. J. Finn, and B. K. Dow. Effects of different soil moisture tensions on flax and cereals. Can. J. Soil Sci. 46:213-216. 1966.
- 2541 Bourget, S. J., et M. L. Tabi. Changements physiques des sols durant le tamisage. Can. J. Soil Sci. 46:195-198. 1966.
- 2542 Bowman, B. T. The movement of phytic acid in soil. M.Sc. Thesis, Univ. Guelph. 1966.
- 2543 Brach, E. J., and A. R. Mack. Tensiometer plate assembly for soil samples. Can. J. Soil Sci. 46:96-97. 1966.
- 2544 Brownscombe, R. H., W. R. Johnston, V. I. Myers, E. Rapp, *et al.* Guide for investigation of subsurface drainage problems on irrigated lands. Amer. Soc. Agr. Eng. 1966.
- 2545 Brydon, J. E., and H. Kodama. The nature of aluminum hydroxide - montmorillonite complexes. Amer. Mineral. 51:875-889. 1966.
- 2546 Brydon, J. E., and G. J. Ross. Stability of chlorite in dilute acid solutions. Soil Sci. Soc. Amer. Proc. 30:740-744. 1966.
- 2547 Calder, F. W., and L. B. MacLeod. Effect of cold treatment on alfalfa as influenced by harvesting system and rate of potassium application. Can. J. Plant Sci. 46:17-26. 1966.
- 2548 Calder, F. W., L. B. MacLeod, and R. L. Hayden. Electrical resistance in alfalfa roots as affected by temperature and light. Can. J. Plant Sci. 46:185-194. 1966.
- 2549 Cameron, C. D. T. The effects of nitrogen fertilizer rates to grass on forage yields, body weight gains, feed utilization and vitamin A status of steers. Can. J. Anim. Sci. 46:19-24. 1966.

- 2550 Campbell, J. D., and L. V. Gusta. The response of carrots and onions to micronutrients on an organic soil in Manitoba. *Can. J. Plant Sci.* 46:419-423. 1966.
- 2551 Cann, D. B., J. I. MacDougall, and J. D. Hilchey. Soil survey of Kings County, Nova Scotia. N.S. Soil Surv. Rep. No. 15. 1966.
- 2552 Carder, A. C., and A. M. F. Hennig. Soil moisture regimes under summerfallow, wheat and red fescue in the upper Peace River region. *Agr. Meteorol.* 3:311-331. 1966.
- 2553 Carnie, A. Exchangeable ammonium and its availability to plants. M.Sc. Thesis, Univ. Manitoba. 1966.
- 2554 Chang, P. C., and J. C. van Schaik. Automated method for soil salinity studies. Technician symp. (1965) 94-95. 1966.
- 2555 Chang, R. K. Water retention in clay soils by capillary and swelling forces. Ph.D. Thesis, McGill Univ. 1966.
- 2556 Chiang, L. Yield of progeny from nitrogen- and phosphorus-treated plants. M.Sc. Thesis, Univ. Alberta. 1966.
- 2557 Chopra, N. M. Persistence and degradation of heptachlor in some soils. *J. Econ. Entomol.* 59:326-330. 1966.
- 2558 Clark, J. S. The relation between pH and soluble and exchangeable Al in some acid soils. *Can. J. Soil Sci.* 46:94-96. 1966.
- 2559 Clark, J. S. The distribution constant for exchange of calcium and magnesium in Wyoming bentonite. *Can. J. Soil Sci.* 46:271-280. 1966.
- 2560 Clark, J. S. The pH values of soils suspended in dilute salt solutions. *Soil Sci. Soc. Amer. Proc.* 30: 11-14. 1966.
- 2561 Clark, J. S. The lime potential and percent base saturation of some representative Podzolic and Brunisolic soils in Canada. *Soil Sci. Soc. Amer. Proc.* 30:93-97. 1966.
- 2562 Clark, J. S., J. A. McKeague, and W. E. Nichol. The use of pH-dependent cation-exchange capacity for characterizing the B horizons of Brunisolic and Podzolic soils. *Can. J. Soil Sci.* 46:161 - 166. 1966.

- 2563 Clark, J. S., and W. E. Nichol. The lime potential - percent base saturation relations of acid surface horizons of mineral and organic soils. *Can. J. Soil Sci.* 46:281-285. 1966.
- 2564 Clark, R. D., and D. B. Wilson. Sheep production on irrigated pasture as influenced by forage mixture and fertilization. *Can. J. Anim. Sci.* 46:97-106. 1966.
- 2565 Clayton, J. S., C. J. Acton, J. A. Shields, and H. P. W. Rostad. A guide to soil capability and land inventory maps in Saskatchewan. *Sask. Inst. Pedol. Publ. M2.* 1966.
- 2566 Coen, G. M., S. Pawluk, and W. Odynsky. The origin of bands in sandy soils of the Stony Plain area. *Can. J. Soil Sci.* 46:245-254. 1966.
- 2567 Collin, G. H., and R. A. Cline. The interaction effect of potassium and environment on tomato ripening disorders. *Can. J. Plant Sci.* 46:379 - 387. 1966.
- 2568 Collins, W. B. Effects of winter mulches on strawberry yields. *Proc. Amer. Soc. Hort. Sci.* 89:331-335. 1966.
- 2569 Crowle, W. L. The influence of nitrogen fertilizer, row spacing, and irrigation on seed yield of nine grasses in central Saskatchewan. *Can. J. Plant Sci.* 46:425-431. 1966.
- 2570 Day, J. H. Reconnaissance soil survey of the Liard River valley, N.W.T. *Can. Dep. Agr. Publ.* 1966.
- 2571 de Jong, E. Hydraulic conductivity of clays during shrinkage. *Soil Sci. Soc. Amer. Proc.* 30:289 - 292. 1966.
- 2572 Dermine, P., H. J. Knutti, and L. A. Charette. Herbage and beef productivity of fertilized pastures in northern Ontario. *J. Brit. Grassland Soc.* 21:276-283. 1966.
- 2573 Dillon, H. B., and O. B. Andersland. Predicting unfrozen water contents in frozen soils. *Can. Geotechnol. J.* 3:53-60. 1966.
- 2574 Dionne, J. L. Comportement différentiel du tréfle Ladino en regard du chaulage sur cinq types de sol du Québec. *Can. J. Soil Sci.* 46:261-270. 1966.
- 2575 Dodd, J. D., and R. T. Coupland. Osmotic pressures of native plants of saline soil in Saskatchewan. *Can. J. Plant Sci.* 46:479-486. 1966.

- 2576 Dodd, J. D., and R. T. Coupland. Vegetation of saline areas in Saskatchewan. *Ecology* 47:958 - 968. 1966.
- 2577 Dormaar, J. F., and L. E. Lutwick. A biosequence of soils of the rough fescue prairie - poplar transition in southwestern Alberta. *Can. J. Earth Sci.* 3:457-472. 1966.
- 2578 Dubetz, S., and E. H. Hobbs. Irrigation water-its use and application. *Can. Dep. Agr. Publ.* 1199. 1966.
- 2579 Dumanski, J., and R. J. St. Arnaud. A micropedological study of eluvial soil horizons. *Can. J. Soil Sci.* 46:287-292. 1966.
- 2580 Elie, S. Correction d'un sol rendu improductif par suite de dépôts poussiéreux émanant d'une mine d'amiante. M.Sc. Thesis, Laval Univ. 1966.
- 2581 Elrick, D. E., J. W. Biggar, and L. R. Webber. Soil pollutants: their origin and behavior. *J. Soil Water Conserv.* 21:7-11. 1966.
- 2582 Elrick, D. E., K. T. Erh, and H. K. Krupp. Applications of miscible displacement techniques to soils. *Water Resour. Res.* 2:717-727. 1966.
- 2583 Elrick, D. E., and L. K. French. Miscible displacement patterns on disturbed and undisturbed soil cores. *Soil Sci. Soc. Amer. Proc.* 30:153 - 156. 1966.
- 2584 Elrick, D. E., and A. H. MacLean. Movement, adsorption and degradation of 2,4-dichlorophenoxyacetic acid in soil. *Nature (London)* 212:102-104. 1966.
- 2585 Erh, K. T. Use of the miscible displacement technique to study the nitrifying capacity of soil cores. M.Sc. Thesis, Univ. Guelph. 1966.
- 2586 Evans, E. J., and A. J. Dekker. Plant uptake of Cs¹³⁷ from nine Canadian soils. *Can. J. Soil Sci.* 46:167-176. 1966.
- 2587 Evans, E. J., and A. J. Dekker. Fixation and release of Cs¹³⁷ in soils and soil separates. *Can. J. Soil Sci.* 46:217-222. 1966.
- 2588 Ferguson, W. S. Salt-induced changes in the composition of lipid classes in barley roots. *Can. J. Plant Sci.* 46:639-646. 1966.
- 2589 Ferguson, W. S., and F. J. Sowden. A comparison of methods of determining nitrogen fractions in soils. *Can. J. Soil Sci.* 46:1-6. 1966.

- 2590 Findlay, W. I., and J. M. Fulton. An automatic plot shelter for field irrigation experiments. *Can. J. Soil Sci.* 46:98-99. 1966.
- 2591 Fletcher, H. F., and A. R. Maurer. A movable rain shelter for small experimental plots. *Can. J. Plant Sci.* 46:695-698. 1966.
- 2592 Floate, M. J. S. A chemical, physical, and mineralogical study of soils developed on glacial lacustrine clays in north central British Columbia. *Can. J. Soil Sci.* 46:227-236. 1966.
- 2593 Fox, C. J. S., and D. Chisholm. The effect of soil texture on the penetration of aldrin. *Phytoprotection* 47:110-113. 1966.
- 2594 Fraser, D. A. The water cycle over a 16-year period on several forest sites at Chalk River, Ontario, Canada. *Int. Symp. Forest Hydrol. Pennsylvania (1965)*, 463-475. 1966.
- 2595 Fulton, J. M. Evaporation from bare soil compared with evapotranspiration from a potato crop. *Can. J. Soil Sci.* 46:199-204. 1966.
- 2596 Fulton, J. M., and W. I. Findlay. Influence of soil moisture and ambient temperature on nutrient percentage of oat tissue. *Can. J. Soil Sci.* 46:75-81. 1966.
- 2597 Fulton, J. M., and W. I. Findlay. Reproducibility of evapotranspiration measurements from floating lysimeters. *Can. J. Plant Sci.* 46:685-687. 1966.
- 2598 Gillingham, J. T. Some factors affecting the net absorption of exchangeable potassium by the Neubauer rye seedling method: II. The disproportionate influences of nitrogen and phosphate. *Soil Sci.* 102:147-150. 1966.
- 2599 Grant, E. A., and A. A. MacLean. Effect of nitrogen, phosphorus, and potassium on yield, persistence, and nutrient content of timothy. *Can. J. Plant Sci.* 46:577-582. 1966.
- 2600 Greenlee, G. M. Soil salinity and groundwater seepage. M.Sc. Thesis, Univ. Alberta. 1966.
- 2601 Grover, R. Influence of organic matter, texture and available water on the toxicity of simazine in soil. *Weeds* 14:148-151. 1966.
- 2602 Gupta, U. C. A modified procedure for the determination of total boron from soil fused with sodium carbonate. *Soil Sci. Soc. Amer. Proc.* 30:655-656. 1966.

- 2603 Gupta, U. C., and D. C. MacKay. The relationship of soil properties to exchangeable and water-soluble copper and molybdenum status in Podzol soils of Eastern Canada. *Soil Sci. Soc. Amer. Proc.* 30:373-375. 1966.
- 2604 Gupta, U. C., and D. C. MacKay. Procedure for the determination of exchangeable copper and molybdenum in Podzol soils. *Soil Sci.* 101:93-97. 1966.
- 2605 Halstead, E. H. Mechanisms for the movement of manganese from the soil to the plant root. Ph.D. Thesis, Purdue Univ. 1966.
- 2606 Halstead, R. L., G. Anderson, and N. M. Scott. The extraction of organic matter from soils by means of ultrasonic dispersion in aqueous acetylacetone. *Nature (London)* 211:1430-1431. 1966.
- 2607 Hamid, A. Salt movement and tracing water movement in soils. Ph.D. Thesis, McGill Univ. 1966.
- 2608 Hamilton, A. B. Freezing shrinkage in compacted clays. *Can. Geotechnol. J.* 3:1-17. 1966.
- 2609 Hamilton, H. A. Effect of nitrogenous and potassic salts with phosphates on the yield and phosphorus, nitrogen, potassium, and manganese contents of oats (*Avena sativa* L.). *Soil Sci. Soc. Amer. Proc.* 30:239-242. 1966.
- 2610 Hamilton, H. A., P. Dermine, and M. Hidioglou. Effect of seasonal temperature on the yield and chemical composition of a lucerne-timothy mixture. *J. Agr. Sci.* 66:263-269. 1966.
- 2611 Hamilton, H. A., M. Levesque, and J. R. Lessard. The residual effect of lime on crop yields, pH, and other chemical characteristics of a Gray Wooded soil broken to different depths. *Can. J. Soil Sci.* 46:61-68. 1966.
- 2612 Hansen, E. H., and M. Schnitzer. The alkaline permanganate oxidation of Danish illuvial organic matter. *Soil Sci. Soc. Amer. Proc.* 30:745-748. 1966.
- 2613 Harris, C. R. Influence of soil type on the activity of insecticides in soil. *J. Econ. Entomol.* 59:1221-1225. 1966.
- 2614 Harris, C. R., and J. H. Mazurek. Laboratory evaluation of candidate materials as potential soil insecticides. *J. Econ. Entomol.* 59:1215 - 1221. 1966.

- 2615 Harris, C. R., W. W. Sans, and J. R. Miles. Exploratory studies on occurrence of organochlorine insecticide residues in agricultural soils in southwestern Ontario. *J. Agr. Food Chem.* 14:398 - 403. 1966.
- 2616 Heinrichs, D. H., and K. F. Nielsen. Growth response of alfalfa varieties of diverse genetic origin to different root zone temperatures. *Can. J. Plant Sci.* 46:291-298. 1966.
- 2617 Hinman, W. C. Ammonium fixation in relation to exchangeable K and organic matter content in two Saskatchewan soils. *Can. J. Soil Sci.* 46:223 - 225. 1966.
- 2618 Hobbs, E. H., and K. K. Krogman. Evapotranspiration from alfalfa as related to evaporation and other meteorological variables. *Can. J. Plant Sci.* 46:271-277. 1966.
- 2619 Hobbs, E. H., and K. K. Krogman. A comparison of measured and calculated evapotranspiration for alfalfa in southern Alberta. *Can. Agr. Eng. J.* 8:9-11. 1966.
- 2620 Hoyt, P. B. Chlorophyll-type compounds in soil: Their origin. *Plant Soil* 25:167-180. 1966.
- 2621 Hoyt, P. B. Chlorophyll-type compounds in soil: Their decomposition. *Plant Soil* 25:313-328. 1966.
- 2622 Hunsigi, G. Effect of soil temperature on phosphorus fertilizer reaction in soil and on growth and phosphorus absorption by plants. M.Sc. Thesis, Univ. Guelph. 1966.
- 2623 Hutcheon, W. L., and E. A. Paul. Control of the protein content of Thatcher wheat by nitrogen fertilization and moisture stress. *Can. J. Soil Sci.* 46:101-108. 1966.
- 2624 Ivarson, K. C., and F. J. Sowden. Effect of freezing on the free amino acids in soil. *Can. J. Soil Sci.* 46:115-120. 1966.
- 2625 Jarvis, J. M. Seeding white spruce, black spruce and jack pine on burned seedbeds in Manitoba. *Can. Dep. Forest. Publ.* 1166. 1966.
- 2626 Kalra, Y. P. A comparative study of phosphate uptake by several field crops. M.Sc. Thesis, Univ. Manitoba. 1966.
- 2627 Kay, B. D. The adsorption and movement of lindane in soils. M.Sc. Thesis, Univ. Guelph. 1966.

- 2628 Kemper, W. D., and E. J. Koch. Aggregate stability of soils from western United States and Canada. Measurement procedure, correlation with soil constituents. U.S. Dep. Agr., Agr. Res. Serv. Tech. Bull. 1355. 1966.
- 2629 Kemper, W. D., and J. C. van Schaik. Diffusion of salts in clay-water systems. Soil Sci. Soc. Amer. Proc. 30:534-540. 1966.
- 2630 Khan, S. U., and G. R. Webster. Certain equilibrium ion ratios for a Solonetzic soil. J. Soil Sci. 17:248-254. 1966.
- 2631 Kilcher, M. R. Fertilizers and seed ratios for controlling lucerne domination in mixtures. J. Brit. Grassland Soc. 21:135-139. 1966.
- 2632 Kodama, H. The nature of the component layers of rectorate. Amer. Mineral. 51:1035-1055. 1966.
- 2633 Korven, H. C., and J. C. Wilcox. An evaluation of flow and pressure regulators for sprinkler irrigation. Trans. Amer. Soc. Agr. Eng. 9:516-519. 1966.
- 2634 Krupp, H. K. Factors influencing miscible displacement in porous media. M.Sc. Thesis, Univ. Guelph. 1966.
- 2635 Langille, J. E., J. W. G. Nicholson, F. S. Warren, and R. B. Carson. Influence of nitrogen fertilization and harvesting management on yield and chemical composition of *Spartina pectinata* on dikeland. Can. J. Plant Sci. 46:561-566. 1966.
- 2636 Leonce, F. S., and M. H. Miller. A physiological effect of nitrogen on phosphorus absorption by corn. Agron. J. 58:245-249. 1966.
- 2637 Levesque, M. A rapid digestion method for total iron and aluminum in soils. Can. J. Soil Sci. 46:205-206. 1966.
- 2638 Levesque, M., and W. J. Hanna. Downward movement of phosphorus and iron in some podzolic soils of New Jersey. Can. J. Soil Sci. 46:53-60. 1966.
- 2639 Levesque, M., and W. J. Hanna. Chemical properties of a New Jersey podzol as affected by leaching with various agents. Soil Sci. 102:333-338. 1966.
- 2640 Levesque, M., and M. Schnitzer. Effects of NaOH concentration on the extraction of organic matter and of major inorganic constituents from a soil. Can. J. Soil Sci. 46:7-12. 1966.

- 2641 Lowe, L. E. The separation and determination of organic and inorganic sulfate in soil extracts. *Can. J. Soil Sci.* 46:92-93. 1966.
- 2642 Lyford, W. H., and D. W. MacLean. Mound and pit microrelief in relation to soil disturbance and tree distribution in New Brunswick, Canada. *Harvard Forest Pap. No. 15.* 1-18. 1966.
- 2643 Mack, A. R., and E. J. Brach. Soil moisture measurement with ultrasonic energy. *Soil Sci. Soc. Amer. Proc.* 30:544-548. 1966.
- 2644 Mack, A. R., and E. J. Brach. Measurement of moisture content with ultrasonic energy. *J. Agr Eng. Res.* 11:222-223. 1966.
- 2645 MacKay, D. C., E. W. Chipman, and U. C. Gupta. Copper and molybdenum nutrition of crops grown on acid sphagnum peat soil. *Soil Sci. Soc. Amer. Proc.* 30:755-759. 1966.
- 2646 MacKay, D. C., C. R. MacEachern, and R. F. Bishop. Optimum nutrient levels in potato leaves (*Solanum tuberosum* L.). *Soil Sci. Soc. Amer. Proc.* 30:73 - 76. 1966.
- 2647 Mackintosh, E. E., and E. H. Gardner. A mineralogical and chemical study of lower Fraser River alluvial sediments. *Can. J. Soil Sci.* 46:37-46. 1966.
- 2648 MacLean, A. A., and T. C. Chiasson. Differential performance of two barley varieties to varying aluminum concentrations. *Can. J. Soil Sci.* 46:147 - 153. 1966.
- 2649 MacLeod, L. B., and R. B. Carson. Influence of K on the yield and chemical composition of grasses grown in hydroponic culture with 12, 50 and 75% of the N supplied as NH_4^+ . *Agron. J.* 58:52-57. 1966.
- 2650 Marcoux, R. Pedological study of the Bellechasse and Montmagny counties. *Div. Sols Que. Min. Agr. Bull. tech.* 12. 1966.
- 2651 Mathur, S. P. Microbial utilization and degradation of soil humic acids. Ph.D. Thesis, Univ. Saskatchewan. 1966.
- 2652 Mathur, S. P., and E. A. Paul. A microbiological approach to the problem of soil humic acid structures. *Nature (London)* 212:646-647. 1966.
- 2653 Matthews, J. S., and L. G. Denby. The effect of nitrogen and phosphorus nutrition on pH of tomato. *Can. J. Plant Sci.* 46:681-684. 1966.

- 2654 McKeague, J. A. The fixation of Fe^{+2} by ferric oxides in soils. *Can. J. Soil Sci.* 46:91-92. 1966.
- 2655 McKeague, J. A., and J. H. Day. Dithionite- and oxalate-extractable Fe and Al as aids in differentiating various classes of soils. *Can. J. Soil Sci.* 46:13-22. 1966.
- 2656 McKercher, R. B. The distribution and significance of various categories of organic and inorganic phosphorus in soils. Ph.D. Thesis, Univ. Aberdeen. 1966.
- 2657 Miljkovic, N. S., B. C. Matthews, and M. H. Miller. The available boron content of the genetic horizons of some Ontario soils. I. The relationship between water-soluble boron and other soil properties. *Can. J. Soil Sci.* 46:133-138. 1966.
- 2658 Miljkovic, N. S., B. C. Matthews, and M. H. Miller. The available boron content of the genetic horizons of some Ontario soils. II. The relationship between boron absorption by sunflowers and other soil properties. *Can. J. Soil Sci.* 46:139-145. 1966.
- 2659 Morita, H. Facile methylation of humic acids from organic soils. *Can. J. Chem.* 44:1593-1594. 1966.
- 2660 Morita, H. The differential thermographic features of some crystalline biopolymers. *Biopolymers* 4:215-222. 1966.
- 2661 Nicholson, J. W. G., and L. B. MacLeod. Effect of form of nitrogen fertilizer, a preservative and a supplement on the value of high moisture grass silage. *Can. J. Anim. Sci.* 46:71-82. 1966.
- 2662 Nielsen, K. F., and E. C. Humphries. Effects of root temperature on plant growth. *Soils Fert.* 29:1-7. 1966.
- 2663 Parkinson, D. Soil micro-organisms and plant roots. *In Soil biology.* Academic Press. 449-478. 1966.
- 2664 Peterson, E. A., D. C. Gillespie, and F. D. Cook. A wide spectrum antibiotic produced by a species of *Soranqium*. *Can. J. Microbiol.* 12:221-230. 1966.
- 2665 Pierpoint, G., and J. L. Farrar. The equipotential zone above the water table. *Can. J. Soil Sci.* 46:121-132. 1966.

- 2666 Pissarides, A. S. Phosphorus adsorption by selected clay minerals. M.Sc. Thesis, Univ. Saskatchewan. 1966.
- 2667 Pohjakas, K. The effect of soluble salts on the compactibility of four Saskatchewan soils. *Can. J. Soil Sci.* 46:47-52. 1966.
- 2668 Pohjakas, K. Distribution rates and patterns from plastic subirrigation pipe. *Can. Agr. Eng.* 6:37 - 38. 1966.
- 2669 Racz, G. J. Reaction products of orthophosphates in soils containing varying amounts of calcium and magnesium. Ph.D. Thesis, Univ. Manitoba. 1966.
- 2670 Rayment, A. F., and H. W. R. Chancey. Peat soils in Newfoundland--reclamation and use. *Agr. Inst. Rev.* 21:8-11. 1966.
- 2671 Read, D. W. L. Relationship of soil phosphorus to fertilizer response of irrigated forage. *Agron. J.* 58:225-226. 1966.
- 2672 Rennie, P. J. The use of micropedology in the study of some Ontario podzolic profiles. *J. Soil Sci.* 17:99-106. 1966.
- 2673 Rennie, P. J. A forest sampling procedure for nutrient uptake studies. *Commonw. Forest. Rev.* 45:119-127. 1966.
- 2674 Rice, W. A. The role of anaerobiosis in asymbiotic nitrogen fixation in soil. M.Sc. Thesis, Univ. Saskatchewan. 1966.
- 2675 Robertson, J. A., B. T. Kang, F. Ramirez-Pas, C. H. E. Werkhoven, and A. J. Ohlrogge. Principles of nutrient uptake from fertilizer bands. VII. P^{32} uptake by brace roots of maize and its distribution within the leaves. *Agron. J.* 58:293-296. 1966.
- 2676 Ross, G. J., and M. M. Mortland. A soil beidellite. *Soil Sci. Soc. Amer. Proc.* 30:337-343. 1966.
- 2677 Russell, W. E. Soil capability as a basis for natural resource planning. M.Sc. Thesis, Univ. Guelph. 1966.
- 2678 Saini, G. R. Sequestering of iron and aluminum by soil polysaccharides. *Curr. Sci.* 35:259-261. 1966.

- 2679 Saini, G. R. Organic matter as a measure of bulk density of soil. *Nature (London)* 210:1295-1296. 1966.
- 2680 Saini, G. R., and A. A. MacLean. Adsorption-flocculation reactions of soil polysaccharides with kaolinite. *Soil Sci. Soc. Amer. Proc.* 30:697 - 699. 1966.
- 2681 Saini, G. R., A. A. MacLean, and J. J. Doyle. The influence of some physical and chemical properties on soil aggregation and response to VAMA. *Can. J. Soil Sci.* 46:155-160. 1966.
- 2682 Salenius, P. O. Microbial recolonization of sterile soils. M.Sc. Thesis, Univ. Guelph. 1966.
- 2683 Schnitzer, M., and J. G. Desjardins. Oxygen-containing functional groups in organic soils and their relation to the degree of humification as determined by solubility in sodium pyrophosphate solution. *Can. J. Soil Sci.* 46:237-243. 1966.
- 2684 Schnitzer, M., and I. Hoffman. A thermogravimetric approach to the classification of organic soils. *Soil Sci. Soc. Amer. Proc.* 30:63-66. 1966.
- 2685 Schnitzer, M., and H. Kodama. Montmorillonite: Effect of pH on its absorption of a soil humic compound. *Science (Washington)* 153:70-71. 1966.
- 2686 Schnitzer, M., and S. I. M. Skinner. A polarographic method for the determination of carbonyl groups in soil humic compounds. *Soil Sci.* 101:120-124. 1966.
- 2687 Schnitzer, M., and S. I. M. Skinner. Organo-metallic interactions in soils: 5. Stability constants of Cu^{2+} , Fe^{2+} , and Zn^{2+} - fulvic acid complexes. *Soil Sci.* 102:361-365. 1966.
- 2688 Searl, W. E. Use of morphological properties of soils to establish land capability ratings. M.Sc. Thesis, McGill Univ. 1966.
- 2689 Shields, J. A., R. J. St. Arnaud, E. A. Paul, and J. S. Clayton. Measurement of soil color. *Can. J. Soil Sci.* 46:83-90. 1966.
- 2690 Skyring, G. W., and J. P. Thompson. The availability of organic matter in dried and undried soil, estimated by an anaerobic respiration technique. *Plant Soil* 24:289-298. 1966.
- 2691 Smith, J. A. An evaluation of nitrogen soil test methods for Ontario soils. *Can. J. Soil Sci.* 46:185-194. 1966.

- 2692 Sosulski, F. W., D. M. Lin, and E. A. Paul. Effect of moisture, temperature, and nitrogen on yield and protein quality of Thatcher wheat. *Can. J. Plant Sci.* 46:583-588. 1966.
- 2693 Sowden, F. J. The determination of amino acids and amino sugars in soil hydrolysates with the auto-analyzer using long and short columns. *Proc. 1966 Symp. Automat. in Anal. Chem.* VI:129-132. 1966.
- 2694 Sowden, F. J. Nature of the amino acid compounds of soil: I. Isolation and fractionation. *Soil Sci.* 102:202-207. 1966.
- 2695 Sowden, F. J. Nature of the amino acid compounds of soil: II. Amino acids and peptides produced by partial hydrolysis. *Soil Sci.* 102:264-271. 1966.
- 2696 Sowden, F. J., and K. C. Ivarson. The 'free' amino acids of soil. *Can. J. Soil Sci.* 46:109-114. 1966.
- 2697 Spratt, E. D. Fertility of a Chernozemic clay soil after 50 years of cropping with and without forage crops in the rotation. *Can. J. Soil Sci.* 46:207 - 212. 1966.
- 2698 Spratt, E. D., and E. V. McCurdy. The effect of various long-term soil fertility treatments on the phosphorus status of a clay Chernozem. *Can. J. Soil Sci.* 46:29-35. 1966.
- 2699 Stanfield, B., D. P. Ormrod, and H. F. Fletcher. Response of peas to environment. II. Effects of temperature in controlled-environment cabinets. *Can. J. Plant Sci.* 46:195-203. 1966.
- 2700 Staple, W. J. Infiltration and redistribution of water in vertical columns of loam soil. *Soil Sci. Soc. Amer. Proc.* 30:553-558. 1966.
- 2701 Staple, W. J., and R. P. Gupta. Infiltration into homogeneous and layered columns of aggregated loam, silt loam, and clay soil. *Can. J. Soil Sci.* 46:293-305. 1966.
- 2702 Stark, J., P. Lajoie, and A. J. Green. Soil and land-use surveys. No. 20, St. Lucia. I.C.T.A., Rep. Regist. Res. Cent. Trinidad. 49 p. 1966.
- 2703 Sterling, G. R. A soil fertility study on the Wanham project. M.Sc. Thesis, Univ. Alberta. 1966.
- 2704 Thomas, R. L., and B. T. Bowman. The occurrence of high molecular weight organic phosphorus compounds in soil. *Soil Sci. Soc. Amer. Proc.* 30:799-801. 1966.

- 2705 Thompson, J. L., R. E. Melvin, and W. Nicholaichuk. Runoff frequency from a small prairie watershed. *Can. Agr. Eng.* 7-9. 1966.
- 2706 Tisdale, E. W., M. A. Fosberg, and C. E. Poulton. Vegetation and soil development on a recently glaciated area near Mount Robson, British Columbia. *Ecology* 47:517-523. 1966.
- 2707 Topp, G. C. Surface tension and water contamination as related to the selection of flow system components. *Soil Sci. Soc. Amer. Proc.* 30:128 - 129. 1966.
- 2708 Topp, G. C., and E. E. Miller. Hysteretic moisture characteristics and hydraulic conductivities for glassbead media. *Soil Sci. Soc. Amer. Proc.* 30:156-162. 1966.
- 2709 Townsend, L. R. Effect of nitrate and ammonium nitrogen on the growth of the lowbush blueberry. *Can. J. Plant Sci.* 46:209-210. 1966.
- 2710 Turner, R. C., and J. S. Clark. Lime potential in acid clay and soil suspensions. *Int. Soc. Soil Sci., Trans. Comm. II and IV.* 207-215. 1966.
- 2711 Valentine, K. W. G. Particle size variation in orthic Podzol profiles. M.Sc. Thesis, McGill Univ. 1966.
- 2712 van Ryswyk, A. L., A. McLean, and L. S. Marchand. The climate, native vegetation, and soils of some grasslands at different elevations in British Columbia. *Can. J. Plant Sci.* 46:35-50. 1966.
- 2713 van Schaik, J. C., and W. D. Kemper. Chloride diffusion in clay-water systems. *Soil Sci. Soc. Amer. Proc.* 30:22-25. 1966.
- 2714 van Schaik, J. C., W. D. Kemper, and S. R. Olsen. Contribution of adsorbed cations to diffusion in clay-water systems. *Soil Sci. Soc. Amer. Proc.* 30:17-22. 1966.
- 2715 Walker, E. K. Water movement through sandy flue-cured tobacco soils. *Lighter* 36:11-15. 1966.
- 2716 Warnars, B. C. The yield and quality of selected improved and unimproved pastures in Quebec in response to differential fertilization. M.Sc. Thesis, McGill Univ. 1966.
- 2717 Webber, L. R. Soil pollution--You can't bury a waste and forget it. *Water and Pollution Control* 102:35-37. 1966.

- 2718 Webber, L. R., and D. E. Elrick. Soil pollution in rural areas. *Agr. Inst. Rev.* 21(4):13-15. 1966.
- 2719 Webber, L. R., and D. E. Elrick. Research needs for soil pollution control. *Agr. Sci. Rev.* 4:1020. 1966.
- 2720 Webber, L. R., and D. Tel. Available moisture in Ontario soils. Univ. Guelph, Dep. Soil Sci. Res Bull. 1966.
- 2721 Webber, M. D. Studies on inorganic soil phosphate. Ph.D. Thesis, Univ. London. 1966.
- 2722 Wells, S. A., and S. Dubetz. Reaction of barley varieties to soil water stress. *Can. J. Plant Sci.* 46:507-512. 1966.
- 2723 Wensley, R. N., and C. D. McKeen. Influence of resistant and susceptible varieties of muskmelon on size of populations of the *Fusarium* wilt fungus and wilt in naturally infested soils. *Can. J. Microbiol.* 12:1115-1118. 1966.
- 2724 Werkhoven, C. H. E., P. J. Salisbury, and W. H. Cram. Germination and survival of Colorado spruce, Scots pine, caragana, and Siberian elm at four salinity and two moisture levels. *Can. J. Plant Sci.* 46:1-7. 1966.
- 2725 Wilcox, J. C. Effects of irrigation interval on peak evapotranspiration per interval. *Can. Agr. Eng.* 8:4-6. 1966.
- 2726 Williams, P. J. Movement of air through water in partly saturated soils. *Nature (London)* 212:1463 - 1464. 1966.
- 2727 Williams, P. J. Downslope soil movement at a subarctic location with regard to variations with depth. *Can. Geotechnol. J.* 3:191-203. 1966.
- 2728 Wilson, D. B., R. D. Clark, and S. Dubetz. Effects of nitrogen fertilizer on herbage yields and sheep production on irrigated pasture, and a comparison of methods of yield assessment. *Can. J. Plant Sci.* 46:433-439. 1966.
- 2729 Zandstra, H. G. Relation of potassium exchange equilibria and yield responses of oats, barley and corn on some selected Quebec soils. M.Sc. Thesis, McGill Univ. 1966.

- 2730 Acquaye, D. K., A. J. MacLean, and H. M. Rice. Potential and capacity of potassium in some representative soils of Ghana. *Soil Sci.* 103:7989. 1967.
- 2731 Alarie, A. Can garbage become a "national asset"? *Compost Sci.* 8(1):3-7. 1967.
- 2732 Alexander, T. G. Inorganic phosphorus forms in Alberta soils. M.Sc. Thesis, Univ. Alberta. 1967.
- 2733 Anderson, D. T. Factors affecting trash conservation with the wideblade cultivator. *Can. Agr. Eng.* 9:98-127. 1967.
- 2734 Anderson, D. T. The cultivation of wheat, p. 333 - 336. In K. F. Nielsen (ed.) *Canadian Centennial Wheat Symposium*. Western Coop. Fert. Ltd., Modern Press, Saskatoon. 1967.
- 2735 Anon. Chemical industry shows 8½ per cent gain in volume. Part I: Fertilizers. *Chem. Can.* 19(5):23-25. 1967.
- 2736 Arshad, M. A., and J. A. Carson. Ion exchange behavior in a loam soil as indicated by movement of radiocalcium. *Soil Sci. Soc. Amer. Proc.* 31:321-324. 1967.
- 2737 Aubé, C. Antagonism of soil fungi against *Verticillium albo-estrum* R. and B., agent of *Verticillium* wilt of lucerne. *Can. J. Microbiol.* 13:227-233. 1967.
- 2738 Baier, W. Recent advancements in the use of standard climatic data for estimating soil moisture. *Ann. Arid Zone* 6:1-21. 1967.
- 2739 Baier, W., and G. W. Robertson. Estimating yield components of wheat from calculated soil moisture. *Can. J. Plant Sci.* 47:617-630. 1967.
- 2740 Baier, W., and G. W. Robertson. Estimating supplemental irrigation water requirements from climatological data. *Can. Agr. Eng.* 9:46-50. 1967.
- 2741 Barakso, J. J. Relationships between some elements in rocks, soils and plants of some mineralized areas of British Columbia. M.S.A. Thesis, Univ. British Columbia. 1967.
- 2742 Barber, S. A., E. H. Halstead, and R. F. Follett. Significant mechanisms controlling the movement of manganese and molybdenum to plant roots growing in soil. *Int. Soc. Soil Sci. Trans. Comm. II and IV (Aberdeen 1966)*:299-304. 1967.

- 2743 Baril, R., and G. Bitton. Anomalous values of free iron in some Quebec soils containing magnetite. *Can. J. Soil Sci.* 47:261. 1967.
- 2744 Baweja, A. S. Some effects of fertilizer form on respiration and growth of corn seedlings. M.Sc. Thesis, Univ. Guelph. 1967.
- 2745 Beaton, J. D., and W. A. Hubbard. New sulphur fertilizers evaluated on alfalfa. *Sulphur Inst. J.* 3(2):8-11. 1967.
- 2746 Beaton, J. D., W. A. Hubbard, and R. C. Speer. Coated urea, thiourea, urea-formaldehyde, hexamine, oxamide, glycoluril, and oxidized nitrogen-enriched coal as slowly available sources of nitrogen for orchardgrass. *Agron. J.* 59:127-133. 1967.
- 2747 Beauchamp, E. G., and D. J. Lathwell. Effect of changes in root zone temperature on the subsequent growth and development of young corn plants. *Agron. J.* 59:189-193. 1967.
- 2748 Bezeau, L. M., L. E. Lutwick, A. D. Smith, and A. Johnston. Effect of fertilization on chemical composition, nutritive value and silica content of rough fescue, *Festuca scabrella*. *Can. J. Plant Sci.* 47:269-272. 1967.
- 2749 Bisal, F. Infiltration rate as related to rainfall energy. *Can. J. Soil Sci.* 47:33-37. 1967.
- 2750 Bisal, F., and B. R. Caswell. An automatic single-screen soil sieve. *Can. J. Soil Sci.* 47:255-256. 1967.
- 2751 Bisal, F., and K. F. Nielsen. Effect of frost action on the size of soil aggregates. *Soil Sci.* 104:268-272. 1967.
- 2752 Bishop, R. F., C. R. MacEachern, and D. C. MacKay. The relation of soil test values to fertilizer response by the potato. IV. Available phosphorus and phosphatic fertilizer requirements. *Can. J. Soil Sci.* 47:175-185. 1967.
- 2753 Bitton, G. Contenu en magnésium échangeable et total des sols du Québec en relation avec leur distribution pédologique et géographique. M.Sc. Thesis, Laval Univ. 1967.
- 2754 Blatt, C. R. Calcium-phosphorus relationships in the strawberry. *Can. J. Plant Sci.* 47:197-202. 1967.

- 2755 Bolton, E. F. Effects of soil flooding on ethanol content of tomato plants related to certain environmental conditions. Diss. Abstr. 28B(1):12. 1967.
- 2756 Bordeleau, L. M. Nutrition of *Corynebacterium sepedonicum*. M.Sc. Thesis, Laval Univ. 1967.
- 2757 Bourget, S. J., et L. Z. Rousseau. Efficacité de différents agitateurs mécaniques dans l'analyse granulométrique des sols. Can. J. Soil Sci. 47:251-252. 1967.
- 2758 Bowman, B. T., R. L. Thomas, and D. E. Elrick. The movement of phytic acid in soil cores. Soil Sci. Soc. Amer. Proc. 31:477-481. 1967.
- 2759 Bowren, K. E., and R. D. Dryden. Methods of seeding spring wheat on summerfallow in the Black soil area of Manitoba and Saskatchewan. Can. Agr. Eng. 9:101-103. 1967.
- 2760 Bowser, W. E. Land capability for wheat, p. 47 -70. In K. F. Nielsen [ed.] Canadian Centennial Wheat Symposium. Western Coop. Fert. Ltd., Modern Press, Saskatoon. 1967.
- 2761 Bowser, W. E., and R. R. Cairns. Some effects of deep plowing a Solonetz soil Can. J. Soil Sci. 47:239-244. 1967.
- 2762 Burger, D. Distribution and origin of parent soil materials in part of the Ottawa and Bonnechere River valleys. Can. J. Earth Sci. 4:397-411. 1967.
- 2763 Cairns, R. R., N. E. Bowser, R. A. Milne, and P. C. Chang. Effects of nitrogen fertilization of bromegrass grown on Solonetzic soils. Can. J. Soil Sci. 47:1-6. 1967.
- 2764 Calder, F. W., and F. S. Warren. Pasture renovation in the Maritime Provinces. Can. Dep. Agr. Publ. 1024. Revised. 1967.
- 2765 Campbell, C. A., E. A. Paul, D. A. Rennie, and K. J. McCallum. Factors affecting the accuracy of the carbon-dating method in soil humus studies. Soil Sci. 104:81-85. 1967.
- 2766 Campbell, C. A., E. A. Paul, D. A. Rennie, and K. J. McCallum. Applicability of the carbon-dating method of analysis to soil humus studies. Soil Sci. 104:217-224. 1967.

- 2767 Campbell, N. E. R., R. Dular, H. Lees, et al. The production of $^{13}\text{N}_2$ by 50-MeV protons for use in biological nitrogen fixation. *Can. J. Microbiol.* 13:587-599. 1967.
- 2768 Can. Dep. Forest. and Rural Develop. Review of forest fertilization in Canada. Forest Res. Branch, Can. Dep. Forest. Publ. 1186. 1967.
- 2769 Chandra, P. Effect of two chlorinated insecticides on soil microflora and nitrification process as influenced by different soil temperatures and textures. In *Progress in soil biology*, p. 320 - 330. Friedr. Vieweg and Sohn, Braunschweig. 1967.
- 2770 Chase, F. E., C. T. Corke, and J. B. Robinson. Nitrifying bacteria in soil. In *The Ecology of soil bacteria*, p. 593-611. 1967.
- 2771 Cheng, B.-T. Influence des ions chlore et sulfate sur l'intoxication manganique de la pomme de terre. M.Sc. Thesis, Laval Univ. 1967.
- 2772 Cheng, S. M. The reaction and movement of chelated zinc in soils. M.Sc. Thesis, Univ. Guelph. 1967.
- 2773 Chinn, S. H. F. Differences in fungistasis in some Saskatchewan soils with special reference to *Cochliobolus sativus*. *Phytopathology* 57:224-226. 1967.
- 2774 Chinn, S. H. F., and R. J. Ledingham. Influence of substances and soil treatments on the germination of spores of *Cochliobolus sativus*. *Phytopathology* 57:580-583. 1967.
- 2775 Chisholm, D., and R. F. Bishop. Lead accumulation in Nova Scotia orchards. *Phytoprotection* 48:78 - 81. 1967.
- 2776 Clapperton, R. I. Influence of a driven rigid wheel on the subsidence of an organic soil. M.Sc. Thesis, Univ. Guelph. 1967.
- 2777 Clark, J. S., A. J. Green, and W. E. Nichol. Cation exchange and associated properties of some soils from Vancouver Island, British Columbia. *Can. Soil Sci.* 47:187-202. 1967.
- 2778 Cook, F. D. Some microbiological factors, p. 173 - 192. In K. F. Nielsen [ed.] *Canadian Centennial Wheat Symposium*. Western Coop. Fert. Ltd., Modern Press, Saskatoon. 1967.

- 2779 Cutcliffe, J. A., D. C. MacKay, and D. C. Munro. Effect of nitrogen, phosphorus, potassium, and manure on size, rate of development, and yield of Brussels sprouts. *Can. J. Plant Sci.* 47:641 - 648. 1967.
- 2780 Dangerfield, J. A. Soil development under different vegetation. M.Sc. Thesis, Univ. Alberta. 1967.
- 2781 de Jong, E., and D. A. Rennie. Physical soil factors influencing the growth of wheat, p. 61-132. *In* F. Nielsen [ed.] Canadian Centennial Wheat Symposium. Western Coop. Fert. Ltd., Modern Press, Saskatoon. 1967.
- 2782 DeKimpe, C. R. Hydrothermal aging of synthetic aluminosilicate gels. *Clay Minerals* 7:203-214. 1967.
- 2783 Dionne, J. L. Comportement différentiel du lotier en regard du chaulage sur cinq types du sol du Québec. *Ann. ACFAS* 34:13-17. 1967.
- 2784 Dionne, J. L., P. O. Roy, O. Allard et R. L. Granger. Action de l'azote, du potassium et du magnésium sur deux vergers de pommiers McIntosh. *Can. J. Plant Sci.* 47:563-570. 1967.
- 2785 Doane, J. F. The influence of soil moisture and some soil physical factors on the ovipositional behavior of the prairie grain wireworm, *Ctenicera destructor*. *Entomol. Exp. Appl.* 10:275-286. 1967.
- 2786 Dormaar, J. F. Infrared spectra of humic acids from soils formed under grass or trees. *Geoderma* 1:37-45. 1967.
- 2787 Dormaar, J. F. Infrared absorption spectra of mineral matter derived from electrodyalyzed humic acids. *Geoderma* 1:131-138. 1967.
- 2788 Dormaar, J. F. Polysaccharides in Chernozemic soils of southern Alberta. *Soil Sci.* 103:417-423. 1967.
- 2789 Dormaar, J. F. Distribution of inositol phosphates in some Chernozemic soils of southern Alberta. *Soil Sci.* 104:17-24. 1967.
- 2790 Duffy, J. R., and N. Wong. Residues of organochlorine insecticides and their metabolites in soils in the Atlantic Provinces of Canada. *J. Agr. Food Chem.* 15:457-464. 1967.

- 2791 Durzan, D. J., and F. C. Steward. The nitrogen metabolism of *Picea glauca* (Moench) Voss and *Pinus banksiana* Lamb. as influenced by mineral nutrition. *Can. J. Bot.* 45:695-710. 1967.
- 2792 Ellis, J. G., D. F. Acton, and H. C. Moss. The soils of the Willow Bunch Lake map area, 72H, Saskatchewan. Rep. Sask. Soil Surv., Sask. Inst. Pedology Publ. S2. 1967.
- 2793 Erh, K. T., D. E. Elrick, R. L. Thomas, and C. T. Corke. Dynamics of nitrification in soils using a miscible displacement technique. *Soil Sci. Soc. Amer. Proc.* 31:585-591. 1967.
- 2794 Evans, E. J., and A. J. Dekker. The effect of soil organic matter content on the Cs¹³⁷ concentration in crops. *Can. J. Soil Sci.* 47:7-13. 1967.
- 2795 Evans, E. J., and A. J. Dekker. Use of soil contaminated by Sr⁹⁰ for seed production. *Can. J. Plant Sci.* 47:319-320. 1967.
- 2796 Ferguson, W. S. Growth and development of wheat, p. 193-206. In K. F. Nielsen [ed.] *Canadian Centennial Wheat Symposium*. Western Coop. Fert. Ltd.; Modern Press, Saskatoon. 1967.
- 2797 Ferguson, W. S. Effect of repeated applications of straw on grain yields and on some soil properties. *Can. J. Soil Sci.* 47:117-122. 1967.
- 2798 Ferguson, W. S., and B. J. Gorby. The effect of soil catena and phosphorus on the yield of wheat in western Manitoba. *Can. J. Soil Sci.* 47:39 - 48. 1967.
- 2799 Fessenden, R. J. Microbial activity in selected Ontario forest soils. M.Sc. Thesis, Univ. Guelph. 1967.
- 2800 Forman, S. A., H. Kodama, and S. Abbey. A reexamination of xanthophyllite (clintonite) from the type locality. *Can. Mineral.* 9:25-30. 1967.
- 2801 Forman, S. A., H. Kodama, and J. A. Maxwell. The trioctahedral brittle micas. *Amer. Mineral.* 52:1122-1128. 1967.
- 2802 Fox, C. J. S. Effects of several chlorinated hydrocarbon insecticides on the springtails and mites of grassland soil. *J. Econ. Entomol.* 60:77 - 79. 1967.
- 2803 Fulton, J. M. Stomatal aperture and evapotranspiration from field-grown potatoes. *Can. J. Plant Sci.* 47:109-111. 1967.

- 2804 Gardner, E. H. Potassium relationships in some British Columbia soils. *Can. J. Soil Sci.* 47:49 - 53. 1967.
- 2805 Gardner, P. J. The microbiology of Alberta peat bogs. M.Sc. Thesis, Univ. Alberta. 1967.
- 2806 Gillespie, J. E., R. E. Wicklund, and B. C. Matthews. The soils of Frontenac County. *Ont. Soil Surv. Rep. No. 39.* 1967.
- 2807 Gupta, U. C. A simplified method for determining hot-water-soluble boron in Podzol soils. *Soil Sci.* 103:424-428. 1967.
- 2808 Gupta, U. C. Carbohydrates. In McLaren and Peterson (ed.) *Soil biochemistry*, Chap. 4. Marcel Dekker, Inc., N.Y. 1967.
- 2809 Gupta, U. C. The boron determination of some plant materials as determined with and without adding CaO before ashing. *Plant Soil* 26:202-204. 1967.
- 2810 Gupta, U. C., and H. W. Reuszer. Effect of plant species on the amino acid content and nitrification of soil organic matter. *Soil Sci.* 104:395-400. 1967.
- 2811 Halm, B. J. Fertility aspects of tomatoes grown under irrigation. M.Sc. Thesis, Univ. Saskatchewan. 1967.
- 2812 Halstead, R. L. Chemical availability of native and applied phosphorus in soils and their textural fractions. *Soil Sci. Soc. Amer. Proc.* 31:414 - 419. 1967.
- 2813 Hamid, A., and B. P. Warkentin. Retention of I^{131} used as tracer in water-movement studies. *Soil Sci.* 104:279-282. 1967.
- 2814 Hamid, A., and B. P. Warkentin. Lateral water movement in Ste. Rosalie clay subsoil. *Can. J. Soil Sci.* 47:139. 1967.
- 2815 Hansen, E. H., and M. Schnitzer. Nitric acid oxidation of Danish illuvial organic matter. *Soil Sci. Soc. Amer. Proc.* 31:79-85. 1967.
- 2816 Harris, C. R. Further studies on the influence of soil moisture on the toxicity of insecticides in soil. *J. Econ. Entomol.* 60:41-44. 1967.
- 2817 Harris, C. R., and W. W. Sans. Absorption of organochlorine insecticide residues from agricultural soils by root crops. *J. Agr. Food Chem.* 15:861-863. 1967.

- 2818 Hedlin, R. A. Manitoba's agricultural land resource. Pub. Fac. Agr. and Home Econ., Univ. Manitoba. 1967.
- 2819 Hobbs, E. H., and G. E. Laliberte. Mole irrigation. *Can. Agr. Eng. J.* 9:64-65. 1967.
- 2820 Hobbs, E. H., and G. C. Russell. Salt accumulation as influenced by irrigation method. *Can. J. Soil Sci.* 47:73. 1967.
- 2821 Hoyt, P. B. Chlorophyll-type compounds in soil: III. Their significance in arable soils. *Plant Soil* 26:5-13. 1967.
- 2822 Hoyt, P. B., A. M. F. Hennig, and J. L. Dobb. Response of barley and alfalfa to liming of Solonetzic, Podzolic, and Gleysolic soils of the Peace River region. *Can. J. Soil Sci.* 47:15-21. 1967.
- 2823 Hubbard, W. A. Sprinkler irrigation on ranches in the southern interior of British Columbia. *Can. Dep. Agr. Publ.* 1256. 1967.
- 2824 Hubbard, W. A., and J. L. Mason. Residual effects of ammonium nitrate and ammonium phosphate on some native ranges of British Columbia. *J. Range Manage.* 29 (1) :1-5. 1967.
- 2825 Hubert, G. Comportement de divers engrais magnésiens dans le sol. M.Sc. Thesis, Laval Univ. 1967.
- 2826 Hubert, G., et G. J. Ouellette. Comportement de divers engrais magnésiens dans le sol. *Natur. Can.* 94:727-733. 1967.
- 2827 Ivarson, K. C., and U. C. Gupta. Effect of freezing on the free sugars in soil. *Can. J. Soil Sci.* 47:74-75. 1967.
- 2828 John, M. K., A. L. van Ryswyk, and J. L. Mason. Effect of soil order, pH, texture and organic matter on the correlation between phosphorus in alfalfa and soil-test values. *Can. J. Soil Sci.* 47:157-161. 1967.
- 2829 Johnston, A., S. Smoliak, A. D. Smith, and L. E. Lutwick. Improvement of southeastern Alberta range with fertilizers. *Can. J. Plant Sci.* 47:671- 678. 1967.
- 2830 Jungerius, P. D. The influence of Pleistocene climatic changes on the development of polygenetic pediments in the Cypress Hills area, Alberta. *Geogr. Bull., Ottawa* 9:218-231. 1967.

- 2831 Kay, B. D., and D. E. Elrick. Adsorption and movement of lindane in soils. *Soil Sci.* 104:314 - 322. 1967.
- 2832 Ketcheson, J. W. A design for controlled-temperature growth bins. *Can. J. Soil Sci.* 47:257-260. 1967.
- 2833 Khan, S. U. Some aspects of equilibrium solutions for a solonetzic and a chernozemic soil. Ph.D. Thesis, Univ. Alberta. 1967.
- 2834 Knutti, H. J., and M. Hidioglou. The effect of cutting and nitrogen treatments on yield, protein content and certain morphological characteristics of timothy and smooth brome grass. *J. Brit. Grassland Soc.* 22:35-41. 1967.
- 2835 Kodama, H., J. E. Brydon, and B. C. Stone. X-ray spectrochemical analysis of silicates using synthetic standards with a correction for interelemental effects by a computer method. *Geochim. Cosmochim. Acta* 31:649-659. 1967.
- 2836 Kodama, H., and M. Schnitzer. X-ray studies of fulvic acid, a soil humic compound. *Fuel* 46:87 - 94. 1967.
- 2837 Korven, H. C., and W. L. Pelton. Advection in southwest Saskatchewan. *Can. Agr. Eng. J.* 9:88 - 90. 1967.
- 2838 Kowall, R. C. Soils and soil capability classification for forestry of the Mission tree farm. M.S.A. Thesis, Univ. British Columbia. 1967.
- 2839 Krogman, K. K. Evapotranspiration by irrigated grass as related to fertilizer. *Can. J. Plant Sci.* 47:281-288. 1967.
- 2840 Krogman, K. K., and W. E. Torfason. The influence of sprinkler vs. surface methods of irrigation on yields of tomatoes, potatoes, and peas. *Can. Agr. Eng. J.* 9:54-57. 1967.
- 2841 LaFlamme, Y. Influence of molybdenum on the development of some forest tree elements. *Contrib. Fonds Rech., Univ. Laval* 12:3-17. 1967.
- 2842 LaFrance, J. The life history of *Agriotes mancus* (Say) (Coleoptera: Elateridae) in the organic soils of southwestern Quebec. *Phytoprotection* 48:53-57. 1967.
- 2843 Laganière, J., and W. E. Sackston. Effects on flax of various levels of boron and calcium. *Phytoprotection* 48:4-13. 1967.

- 2844 Laganière, J., and W. E. Sackston. Some effects of boron and calcium deficiencies on anatomy and water utilization of flax plants. *Phytoprotection* 48:14-22. 1967.
- 2845 Lajoie, P. G. Etude pédologique des comtés de Hull, Labelle et Papineau, Québec. Que. Soil Surv. Rep. 1967.
- 2846 Laliberte, G. E., and R. H. Brooks. Hydraulic properties of disturbed soil materials affected by porosity. *Soil Sci. Soc. Amer. Proc.* 31:451 - 454. 1967.
- 2847 Laliberte, G. E., and A. T. Corey. Hydraulic properties of disturbed and undisturbed soils. *Amer. Soc. Test. Mater.* 56-71. 1967.
- 2848 Laliberte, G. E., E. Rapp, and N. Paziuk. Seepage control in concrete-lined irrigation ditches. *Can. Agr. Eng. J.* 9:71-73. 1967.
- 2849 Lavkulich, L. M. Soluble aluminum in soils and some factors affecting its magnitude. *Diss. Abstr.* 28B(1):19. 1967.
- 2850 Lea, J. W. Site variability of a Harriston loam. M.Sc. Thesis, Univ. Guelph. 1967.
- 2851 Leahey, A. Soil classification and system of taxonomic units in Canada. *Pochvovedenie* 6:21 - 30. 1967.
- 2852 Lebeau, J. B. Soil warming and winter survival of turfgrass. *J. Sports Turf Res. Inst.* 43:511. 1967.
- 2853 Lee, C. C., and F. W. Sosulski. Relationship of ash content and stage of growth to radiostrontium uptake by wheat. *Can. J. Plant Sci.* 47:320-322. 1967.
- 2854 Levesque, M. The effect of soil temperature on native and added phosphorus in some northern Ontario soils. *Can. J. Soil Sci.* 47:123-130. 1967.
- 2855 Levesque, M., et. H. A. Hamilton. L'efficacité d'un système de drainage souterrain avec remplissage poreux dans un sol argileux de Kapuskasing. *Can. J. Soil Sci.* 47:55-63. 1967.
- 2856 Levesque, M., and M. Schnitzer. The extraction of soil organic matter by base and chelating resin. *Can. J. Soil Sci.* 47:76-78. 1967.
- 2857 Levesque, M., and M. Schnitzer. Organo-metallic interactions in soils: 6. Preparation and properties of fulvic acid - metal phosphates. *Soil Sci.* 103:183-190. 1967.

- 2858 Lister, G. R., V. Slankis, G. Krotkov, et al. Physiology of *Pinus strobus* L. seedlings grown under high or low soil moisture conditions. *Ann. Bot.* 31:121-131. 1967.
- 2859 Longley, R. W. Temperature increases under snow during a mild spell. *Soil Sci.* 104:379-382. 1967.
- 2860 Maas, E. F. The chemical composition of *Sphagnum* species and the influence of drainage on its location. *Soil Sci. Soc. Amer. Proc.* 31:577. 1967.
- 2861 Mackenzie, A. F., W. A. DeLong, and I. S. Ghanem. Total sulfur, acetate-extractable sulfur and isotopically exchangeable sulfate in some eastern Canadian soils. *Plant Soil* 27:408-414. 1967.
- 2862 MacLean, A. J., and B. J. Finn. Amendments for oats in soil contaminated with magnesium lime dust. *Can. J. Soil Sci.* 47:253-254. 1967.
- 2863 MacLean, A. J., J. J. Jasmin, and R. L. Halstead. Effect of lime on potato crops and on properties of a sphagnum peat soil. *Can. J. Soil Sci.* 47:89 - 94. 1967.
- 2864 MacLeod, L. B., and L. P. Jackson. Water-soluble and exchangeable aluminum in acid soils as affected by liming and fertilization. *Can. J. Soil Sci.* 47:203-210. 1967.
- 2865 MacLeod, L. B., and L. P. Jackson. Aluminum tolerance of two barley varieties in nutrient solution, peat and soil culture. *Agron. J.* 59:359 - 363. 1967.
- 2866 MacLeod, L. B., and M. Suzuki. Effect of potassium on the content of amino acids in alfalfa and orchardgrass with NO_3^- and NH_4^+ -nitrogen in nutrient solution culture. *Crop Sci.* 7:599-605. 1967.
- 2867 Maldague, M. E. Rate of decomposition of different types of forest litter. In *Progress in soil biology*, p. 409-416. Friedr. Vieweg and Sohn, Braunschweig. 1967.
- 2868 Mathur, S. P., and E. A. Paul. Microbial utilization of soil humic acids. *Can. J. Microbiol.* 13:573 - 580. 1967.
- 2869 Mathur, S. P., and E. A. Paul. Partial characterization of soil humic acids through biodegradation. *Can. J. Microbiol.* 13:581-586. 1967.

- 2870 McKeague, J. A. An evaluation of the 0.1 M pyrophosphate and pyrophosphate-dithionite in comparison with oxalate as extractants of the accumulation products in podzols and some other soils. *Can. J. Soil Sci.* 47:95-100. 1967.
- 2871 McKeague, J. A., G. A. Bourbeau, and D. B. Cann. Properties and genesis of a bisequa soil from Cape Breton Island. *Can. J. Soil Sci.* 47:101 - 110. 1967.
- 2872 McKeague, J. A., M. Schnitzer, and P. K. Heringa. Properties of an ironpan humic podzol from Newfoundland. *Can. J. Soil Sci.* 47:23-32. 1967.
- 2873 Molberg, E. S., E. V. McCurdy, A. Wenhardt, D. A Dew, and R. D. Dryden. Minimum tillage requirements for summerfallow in Western Canada. *Can. J. Soil Sci.* 47:211-216. 1967.
- 2874 Morita, H. Some aspects of the organic chemistry of humus. *Proc. Roy. Aust. Chem. Inst.* 34:25. 1967.
- 2875 Morris, G. F., and M. Schnitzer. Rapid determination of carbon in soil organic matter extracts by dry combustion. *Can. J. Soil Sci.* 47:143-144. 1967.
- 2876 Moss, H. C. Saskatchewan soils - Their productivity and management. *Sask. Inst. Pedology Publ. M5 (Ext. Publ. 201) Univ. Saskatchewan.* 1967.
- 2877 Neal, J. L., Jr. Rhizosphere microfloras associated with mycorrhizal and non-mycorrhizal roots of Douglas fir and red alder. Ph.D. Thesis, Oregon State Univ. 1967.
- 2878 Nicholaichuk, W. Comparative watershed studies in southern Saskatchewan. *Trans. Amer. Soc. Agr. Eng.* 10:502-504. 1967.
- 2879 Nicholaichuk, W., and K. Pohjakas. A wind-operated automatic powder dispenser for evaporation suppressants. *Can. J. Soil Sci.* 47:79-80. 1967.
- 2880 Nielsen, K. F., R. L. Halstead, and A. J. MacLean. Ion interactions in oats as affected by additions of nitrogen, phosphorus, potassium, chlorine and sulfur. *Soil Sci.* 104:35-39. 1967.
- 2881 Nielsen, K. F., F. G. Warder, and W. C. Hinman. Effect of chemical inhibition of nitrification on phosphorus absorption by wheat. *Can. J. Soil Sci.* 47:65-71. 1967.

- 2882 Nuttall, W. F., A. L. Carter, and B. P. Warkentin. Counting emissions from potassium-42 in plant tissue with a liquid scintillation spectrometer. *Plant Soil* 26:385-388. 1967.
- 2883 Nuttall, W. F., B. P. Warkentin, and A. L. Carter. "A" values of potassium related to other indexes of soil potassium availability. *Soil Sci. Soc. Amer. Proc.* 31:344-348. 1967.
- 2884 Ogilvie, R. T., and B. Baptie. A permafrost profile in the Rocky Mountains of Alberta. *Can. J. Earth Sci.* 4:744-745. 1967.
- 2885 Osler, J. C. The influence of depth of frost penetration on the frost susceptibility of soils. *Can. Geotechnol. J.* 4:334-346. 1967.
- 2886 Otinkorang, E. S. Irrigation scheduling for tomatoes. M.Sc. Thesis, Univ. Saskatchewan. 1967.
- 2887 Parkinson, D., and R. Pearson. Studies on fungi in the root region. VI. The occurrence of sterile dark fungi on root surfaces. *Plant Soil* 27:113 - 119. 1967.
- 2888 Parkinson, D., and R. Pearson. Studies on fungi in the root region. VII. Competitive ability of sterile dark fungi. *Plant Soil* 27:120-130. 1967.
- 2889 Paul, E. A., and S. P. Mathur. Cleavage of humic acids by *Penicillium frequentans*. *Plant Soil* 27:297-299. 1967.
- 2890 Pelton, W. L. The effect of a windbreak on wind travel, evaporation and wheat yield. *Can. J. Plant Sci.* 47:209-214. 1967.
- 2891 Penner, E. Heaving pressure in soils during unidirectional freezing. *Can. Geotechnol. J.* 4:398-408. 1967.
- 2892 Pesant, A. R. Influence de l'eau utilisé du sol sur le rendement et composition chimique de certaines plantes. M.Sc. Thesis, Laval Univ. 1967.
- 2893 Peterson, E. A., and J. W. Rouatt. Soil microorganisms associated with flax roots. *Can. J. Microbiol.* 13:199-203. 1967.
- 2894 Piening, L. J. The effect of N, P, and K in several Alberta soils on the resistance of Gateway barley to the net blotch disease. *Can. J. Plant Sci.* 47:713-715. 1967.

- 2895 Pohjakas, K., and E. Rapp. Performance of some canal and dugout linings on the Canadian prairies. *Can. J. Agr. Eng.* 9:58-63. 1967.
- 2896 Pohjakas, K., D. W. L. Read, and H. C. Korven. Consumptive use of water by crops at Swift Current, Saskatchewan. *Can. J. Soil Sci.* 47:131-138. 1967.
- 2897 Presant, E. W., R. E. Wicklund, and B. C. Matthews. The soils of Wentworth County. *Ont. Soil Surv. Rep. No. 32.* 1967.
- 2898 Pringle, W. L., and A. L. van Ryswyk. Pre-drying increases initial productivity of two sedge-peat soils. *Can. J. Plant Sci.* 47:217-218. 1967.
- 2899 Pringle, W. L., and A. L. van Ryswyk. Response of reed canarygrass on sedge-organic soil to fertility levels and temperature in the growth room. *Can. J. Plant Sci.* 47:305-310. 1967.
- 2900 Protz, R., E. DeKalb, and F. F. Riecken. Determination of magnesium in HCl solutions of HF-HClO₄ digests of soil clays by atomic absorption spectroscopy. *Soil Sci. Soc. Amer. Proc.* 31:726 - 727. 1967.
- 2901 Racz, G. J., and R. J. Soper. Reaction products of orthophosphates in soils containing varying amounts of calcium and magnesium. *Can. J. Soil Sci.* 47:223-230. 1967.
- 2902 Rana, S. K., and G. J. Ouellette. Cobalt status in Quebec soils. *Can. J. Soil Sci.* 47:83-88. 1967.
- 2903 Reeder, S. W., M. A. Arshad, and W. Odynsky. The relationship between structural stability and chemical criteria of some Solonetzic soils of northwestern Alberta. *Can. J. Soil Sci.* 47:231 - 237. 1967.
- 2904 Rennie, D. A., and J. S. Clayton. The soil resource. *Agr. Inst. Rev.* 22 (4) :17-23. 1967.
- 2905 Rennie, D. A., and J. S. Clayton. An evaluation of techniques used to characterize the comparative productivity of soil profile types in Saskatchewan. *Int. Soc. Soil Sci., Trans. Comm. II and IV (Aberdeen, 1966)* 365-376. 1967.
- 2906 Rice, W. A., E. A. Paul, and L. R. Wetter. The role of anaerobiosis in asymbiotic nitrogen fixation. *Can. J. Microbiol.* 13:829-836. 1967.

- 2907 Roberge, M. R., and R. Knowles. Sterilization, by gamma irradiation, of humus from a *Picea mariana* stand. *Natur. Can.* 94:221-227. 1967.
- 2908 Rosha, N. S. Use of densimetric techniques for fractionating soil organic constituents. M.Sc. Thesis, Univ. Saskatchewan. 1967.
- 2909 Roslycky, E. B. Bacteriocin production in the rhizobia bacteria. *Can. J. Microbiol.* 13:431 - 432. 1967.
- 2910 Ross, G. J. Kinetics of acid dissolution of an orthochlorite mineral. *Can. J. Chem.* 45:3031 - 3034. 1967.
- 2911 Ross, G. J., and H. Kodama. Properties of a synthetic magnesium-aluminum carbonate hydroxide and its relationships to magnesium-aluminum double hydroxide, manasseite and hydrotalcite. *Amer. Mineral.* 52:1036-1047. 1967.
- 2912 Rouatt, J. W. Nutritional classification of soil bacteria and their value in ecological studies. *In The ecology of soil bacteria*, p. 360-370. 1967.
- 2913 Rutherford, G. E. A micropedological study of the genesis of a Gray-Brown Podzolic soil in southeastern Ontario, Canada. *Geoderma* 1:227 -287. 1967.
- 2914 Sadler, J. M. The effect of time and rate of nitrogen fertilization of corn on the nitrogen balance in some Quebec soils. M.Sc. Thesis, McGill Univ. 1967.
- 2915 Saha, J. G., and H. McDonald. Insecticide residues in wheat grown in soil treated with aldrin and endrin. *J. Agr. Food Chem.* 15:205-207. 1967.
- 2916 Saini, G. R., and A. A. MacLean. The effect of stones on potato yield, soil temperature and moisture. *Amer. Potato J.* 44:209-213. 1967.
- 2917 Saini, G. R., and A. I. Stewart. Comparison of rapid methods of soil moisture determination based on Archimedes principle. *Can. J. Soil Sci.* 47:145 - 147. 1967.
- 2918 Salenius, P. O., J. B. Robinson, and F. E. Chase. A comparison of autoclaved and gamma-irradiated soil as media for microbial colonization experiments. *Plant Soil* 27:239-248. 1967.
- 2919 Schnitzer, M. Humic-fulvic acid relationships in organic soils and humification of the organic matter in these soils. *Can. J. Soil Sci.* 47:245 - 250. 1967.

- 2920 Schnitzer, M., and I. Hoffman. Thermogravimetric analysis of the salts and metal complexes of a soil fulvic acid. *Geochim. Cosmochim. Acta* 31:715. 1967.
- 2921 Schnitzer, M., and I. Hoffman. Significance of cellulose components in the thermogravimetry of organic soils. *Soil Sci. Soc. Amer. Proc.* 31:708 - 709. 1967.
- 2922 Schnitzer, M., and H. Kodama. Reactions between a Podzol fulvic acid and Na-montmorillonite. *Soil Sci. Soc. Amer. Proc.* 31:632-636. 1967.
- 2923 Schnitzer, M., and P. A. Poapst. Effects of a soil humic compound on root initiation. *Nature (London)* 213:598-599. 1967.
- 2924 Schnitzer, M., and S. I. M. Skinner. Organo-metallic interactions in soils: 7. Stability constants of Pb^{2+} -, Ni^{2+} -, Mn^{2+} -, Co^{2+} -, Ca^{2+} - and Mg^{2+} - fulvic acid complexes. *Soil Sci.* 103:247-252. 1967.
- 2925 Scott, A. D., and T. E. Bates. Changes in exchangeable potassium observed on drying soils after treatment with organic compounds: II. Reversion. *Soil Sci. Soc. Amer. Proc.* 31:481 - 485. 1967.
- 2926 Singh, S. S. Sulfate ions and ion activity product $(Al)(OH)^3$ in Wyoming bentonite suspensions. *Soil Sci.* 104:433-438. 1967.
- 2927 Singh, S. S., and J. E. Brydon. Precipitation of aluminum by calcium hydroxide in the presence of Wyoming bentonite and sulphate ions. *Soil Sci.* 103:162-167. 1967.
- 2928 Smeltzer, G. G. Fertilizing pastures and hayland in the Maritime Provinces. *Can. Dep. Agr. Publ.* 1221. 1967.
- 2929 Smid, A. E. Effect of coating corn seed with fertilizer on subsequent growth. M.Sc. Thesis, Univ. Guelph. 1967.
- 2930 Smith, R. E., and W. A. Ehrlich. Soils of the Lac du Bonnet area (Manitoba). *Man. Soil Surv. Rep. No.* 15. 1967.
- 2931 Soper, R. J., and G. J. Racz. Chemical factors of soil, p. 133-172. *In* K. F. Nielsen [ed.] *Canadian Centennial Wheat Symposium*. Western Coop. Fert. Ltd., Modern Press, Saskatoon. 1967.

- 2932 Sowden, F. J., and M. Schnitzer. Nitrogen distribution in illuvial organic matter. *Can. J. Soil Sci.* 47:111-116. 1967.
- 2933 Staple, W. J. Evaluation of flow parameters. In *Soil moisture, 6th Hydrol. Symp. Nat. Res. Counc. Ass. Comm. Geod. Geophys.* 1967.
- 2934 Stevenson, D. S. Effective soil volume and its importance to root and top growth of plants. *Can. J. Soil Sci.* 47:163-174. 1967.
- 2935 Stevenson, D. S., and J. C. van Schaik. Some relations between changing barometric pressure and water movement into lysimeters having controlled water tables. *J. Hydrol.* 5:187-196. 1967.
- 2936 Stewart, J. A. Magnesium relationships in plants and soils. In *Mineral nutrition of plants. Publ. Cent., Univ. Brit. Columbia.* 1967.
- 2937 Tardif, L. Pedology of the Madeleine Islands. *Div. Sols Que. Min. Agr. Bull. tech.* 13. 1967.
- 2938 Thong, J. K. C. Effect of aeration on the characteristics of soil phosphorus in selected Quebec and Malayan soils. M.Sc. Thesis, McGill Univ. 1967.
- 2939 Topp, G. C., A. Klute, and D. B. Peters. Comparison of water content - pressure head data obtained by equilibrium, steady state and unsteady state methods. *Soil Sci. Soc. Amer. Proc.* 31:312-314. 1967.
- 2940 Townsend, L. R. Effect of ammonium nitrogen and nitrate nitrogen, separately and in combination, on the growth of the highbush blueberry. *Can. J. Plant Sci.* 47:555-562. 1967.
- 2941 Turley, R. H. Lawns for coastal British Columbia. *Can. Dep. Agr. Publ.* 1306. 1967.
- 2942 Turley, R. H. Effect of frequency of irrigation on soil moisture and turf quality. *Can. J. Plant Sci.* 47:89-97. 1967.
- 2943 Turner, R. C. Aluminum removed from solution by montmorillonite. *Can. J. Soil Sci.* 47:217-222. 1967.
- 2944 Turner, R. C., and J. E. Brydon. Effect of length of time of reaction on some properties of suspensions of Arizona bentonite, illite and kaolinite in which aluminum hydroxide is precipitated. *Soil Sci.* 103:111-117. 1967.

- 2945 Turner, R. C., and J. E. Brydon. Removal of interlayer aluminum hydroxide from montmorillonite by seeding the suspension with gibbsite. *Soil Sci.* 104:332-335. 1967.
- 2946 Vaartaja, O. Reinfestation of sterilized nursery seedbeds by fungi. *Can. J. Microbiol.* 13:771 - 776. 1967.
- 2947 van Ryswyk, A. L., and W. L. Pringle. Near-neutral organic soils found in interior British Columbia. *Can. J. Soil Sci.* 47:81. 1967.
- 2948 van Schaik, J. C. Influence of adsorbed sodium and gypsum content on permeability of glacial till soils. *J. Soil Sci.* 18:42-46. 1967.
- 2949 van Schaik, J. C., and R. A. Milne. Leaching studies on sloping land with deep tile drains. *Can. Agr. Eng.* 9:69-70, 73, 76. 1967.
- 2950 van Schaik, J. C., and D. S. Stevenson. Water movement above shallow water tables in southern Alberta. *J. Hydrol.* 5:179-186. 1967.
- 2951 Vincent, J. A nitrogen-fixing sub-arctic soil species (Laboratory No. G-15). M.Sc. Thesis, Univ. Manitoba. 1967.
- 2952 Wallen, V. P., S. I. Wong, and J. Jeun. Isolation, incidence and virulence of *Ascochyta* spp. of peas from the soil. *Can. J. Bot.* 45:2243-2247. 1967.
- 2953 Ward, G. M. Growth and nutrient absorption in greenhouse tomato and cucumber. *Proc. Amer. Soc. Hort. Sci.* 90:335-341. 1967.
- 2954 Ward, G. M., and D. E. Hawkins. The influence of fertilization with KNO_3 on some nitrogen fractions in tomato plants. *Can. J. Bot.* 45:2091-2102. 1967.
- 2955 Webber, L. R., and D. W. Hoffman. Origin, classification and use of Ontario soils. *Ont. Dep. Agr. and Food Publ. No. 51.* 1967.
- 2956 Webster, G. R., S. U. Khan, and A. W. Moore. Poor growth of alfalfa (*Medicago sativa*) on some Alberta soils. *Agron. J.* 59:37 - 41. 1967.
- 2957 Wilcox, J. C. Effects of soil texture, net evapotranspiration and other factors on irrigation requirements of orchards as determined by a scheduling procedure. *Can. J. Soil Sci.* 47:149 - 156. 1967.

- 2958 Wilcox, J. C. Effect of scheduling of irrigation of orchards on water and labor requirements. *Can. J. Agr. Eng.* 1-3. 1967.
- 2959 Wilcox, J. C. Credit to give for rain when scheduling irrigations. *Can. Agr. Eng.* 9:103 - 108. 1967.
- 2960 Wort, D. J. Foliar application of nutrients and other substances. In *Mineral nutrition of plants Publ. Cent., Univ. Brit. Columbia.* 1967.
- 2961 Wu, L. Y. Three new species of the genus *Tylenchorhynchus* Cobb, 1913 (Tylenchidae: Nematoda) from Canada. *Can. J. Zool.* 47:563-567. 1967.
- 2962 Yule, W. N., M. Chiba, and H. V. Morley. Fate of insecticide residues: Decomposition of lindane in soil. *J. Agr. Food Chem.* 15:1000-1004. 1967.
- 2963 Alexander, T. G., and J. A. Robertson. Ascorbic acid as a reductant for total phosphorus determination in soils. *Can. J. Soil Sci.* 48:217 - 218. 1968.
- 2964 Alexander, T. G., and J. A. Robertson. Inorganic phosphorus forms in some Alberta soils as related to soil development, parent material and available phosphorus. *Can. J. Soil Sci.* 48:289-295. 1968.
- 2965 Anderson, C. H. A comparison of annual crops for seed and residue in the semiarid region of Western Canada. *Can. J. Plant Sci.* 48:287-292. 1968.
- 2966 Anderson, C. H., and A. G. Kusch. Response of rapeseed to applied nitrogen, phosphorus, potassium and sulphur when grown above 57 degrees north latitude. *Can. J. Plant Sci.* 48:611-616. 1968.
- 2967 Anderson, D. T. Some qualitative effects of tillage machines on plant residues used for erosion control. *Can. Agr. Eng.* 10:53-56. 1968.
- 2968 Ayres, H. D. Role of soil moisture in the hydrological cycle. In *Soil moisture, Proc. Hydrol. Symp.* (1967) 6:3-21. 1968.
- 2969 Baier, W. Relationships between soil moisture, actual and potential evapotranspiration. In *Soil moisture, Proc. Hydrol. Symp.* (1967) 6:155-199. 1968.
- 2970 Baier, W., and G. W. Robertson. The performance of soil moisture estimates as compared with the direct use of climatological data for estimating crop yields.

Agr. Meteorol. 5:17-31. 1968.

- 2971 Ballantyne, A. K. Water-soluble salts in the parent material of solonetzic and chernozemic soils in Saskatchewan. *Can. J. Soil Sci.* 48:43-48. 1968.
- 2972 Beaton, J. D., R. C. Speer, and J. T. Harapiak. Response of red clover to Kimberly electric furnace iron slag and other liming materials. *Can. J. Plant Sci.* 48:455-466. 1968.
- 2973 Beauchamp, E. G., and R. Crete. Effects of dimethyl sulfoxide incorporated into a mineral and an organic soil. *Soil Sci.* 106:421-428. 1968.
- 2974 Bisal, F. Influence of plant residue on sand flow in a wind tunnel. *Can. J. Soil Sci.* 48:49-52. 1968.
- 2975 Bisal, F., and W. S. Ferguson. Monthly and yearly changes in aggregate size of surface soil. *Can. J. Soil Sci.* 48:159-164. 1968.
- 2976 Bishop, R. F., C. R. MacEachern, J. S. Leefe, and H. B. Cannon. Effect of nitrogen, phosphorus and potassium on yields and nutrient levels in the leaves of processing peas. *Can. J. Soil Sci.* 48:225-233. 1968.
- 2977 Bitton, G., et G. J. Ouellette. Contenu en magnésium total et échangeable des sols du Québec. *Extract de Science du Sol (Supplement au Bull. de l'Ass. Française pour l'Etude du Sol)* 1:11-17. 1968.
- 2978 Blatt, C. R. Response of Acadia strawberry to two forms and three rates of nitrogen at two pH levels. *Proc. Amer. Soc. Hort. Sci.* 46:1013-1024. 1968.
- 2979 Bolton, E. F., and J. W. Aylesworth. Effect of soil physical condition and fertility on yield of sugar beets on a Brookston clay soil. *J. Amer. Soc. Sugar Beet Tech.* 14:664-670. 1968.
- 2980 Bonin, S. G., and D. C. Tomlin. Effects of nitrogen on herbage yields of timothy harvested at various developmental stages. *Can. J. Plant Sci.* 48:501 - 510. 1968.
- 2981 Bonin, S. G., and D. C. Tomlin. Effects of nitrogen on herbage yields of reed canarygrass harvested at various developmental stages. *Can. J. Plant Sci.* 48:511-518. 1968.

- 2982 Bourget, S. J. Ultrasonic vibration for particle size analyses. *Can. J. Soil Sci.* 48:372-373. 1968.
- 2983 Brinkmann, W. A. R. Some comments on the paper by R. U. Longley entitled "Temperature increase under snow during a mild spell" (*Soil Sci.* 104:379 - 382). *Soil Sci.* 106:469-470. 1968.
- 2984 Brouzes, R. P. Factors influencing the incorporation of nitrogen into some Canadian soils. M.Sc. Thesis, McGill Univ. 1968.
- 2985 Bryan, R. B. Development of laboratory instrumentation for the study of soil erodibility. *Can. J. Earth Sci.* 2:38-50. 1968.
- 2986 Bryan, R. B. The development, use and efficiency of indices of soil erodibility. *Geoderma* 2:5 - 26. 1968.
- 2987 Brydon, J. E., H. Kodama, and G. J. Ross. Mineralogy and weathering of the clay in Orthic Podzols and other podzolic soils in Canada. *Trans. 9th Int. Congr. Soil Sci.* (Adelaide, 1968) III:41-51. 1968.
- 2988 Cairns, R. R. Various forms of nitrogen fertilizer for bromegrass on a Solonetz soil. *Can. J. Soil Sci.* 48:297-300. 1968.
- 2989 Cairns, R. R., and W. E. Bowser. The solonetzic soils of the prairies. *Agr. Inst. Rev.* 23(1):21 - 22. 1968.
- 2990 Cairns, R. R., and J. C. van Schaik. Solonetzic soils and their physical properties as influenced by different cations. *Can. J. Soil Sci.* 48:165 - 172. 1968.
- 2991 Calder, F. W., and L. B. MacLeod. In vitro digestibility of forage species as affected by fertilizer application, stage of development and harvest dates. *Can. J. Plant Sci.* 48:17-24. 1968.
- 2992 Canada Department of Agriculture. What you should know about soil. *Can. Dep. Agr. Publ.* 1338. 1968.
- 2993 Capel, M. J. Characterization of the organic matter in a well- to poorly-drained sequence of soils. M.Sc. Thesis, Univ. Manitoba. 1968.

- 2994 Cescas, M. P., E. H. Tyner, and L. J. Gray. The electron microprobe X-ray analyzer and its use in soil investigations. *Adv. Agron.* 20:153-198. 1968.
- 2995 Chalupa, V., and D. A. Fraser. Effect of soil and air temperature on soluble sugars and growth of white spruce (*Picea glauca*) seedlings. *Can. J. Bot.* 46:65-69. 1968.
- 2996 Chamberland, E., and A. Scott. N-P-K experiments with potatoes in the Lower St. Lawrence region of Quebec. *Amer. Potato J.* 45:93-102. 1968.
- 2997 Chang, R. K. Component potentials and hysteresis in water retention by compacted clay soil aggregates. *Soil Sci.* 105:172-176. 1968.
- 2998 Chang, R. K., and B. P. Warkentin. Volume change of compacted clay soil aggregates. *Soil Sci.* 105:106 - 111. 1968.
- 2999 Chaudhry, G. H., and B. P. Warkentin. Studies on exchange of sodium from soils by leaching with calcium sulphate. *Soil Sci.* 105:190-197. 1968.
- 3000 Cheng, B. T., and G. J. Ouellette. Effect of various anions on manganese toxicity in *Solanum tuberosum*. *Can. J. Soil Sci.* 48:109-116. 1968.
- 3001 Chiang, Lin-Ying, and J. A. Robertson. Growth and yield of progeny of nitrogen and phosphorus fertilized barley plants. *Can. J. Plant Sci.* 48:57-66. 1968.
- 3002 Chiba, M., and H. V. Morley. Studies on factors influencing the extraction of aldrin and dieldrin residues from different soil types. *J. Agr. Food Chem.* 16:916-922. 1968.
- 3003 Chinn, S. H. F., and R. J. Ledingham. Mechanisms contributing to the eradication of spores of *Helminthosporium sativum* from amended soil. *Can. J. Bot.* 39:739-748. 1968.
- 3004 Chu, T.-H. D. Microbial nitrogen transformation in humus. M.Sc. Thesis, McGill Univ. 1968.
- 3005 Clark, J. S., and R. G. Hill. Vessel for long term soil-solution equilibration. *Can. J. Soil Sci.* 48:221. 1968.
- 3006 Clark, J. S., and W. E. Nichol. Estimation of the inorganic and organic pH-dependent cation exchange capacity of the B horizons of podzolic and brunisolic soils. *Can. J. Soil Sci.* 48:53-63. 1968.

- 3007 Clark, J. S., and W. E. Nichol. Reactions of iron hydrous oxide with Wyoming bentonite. *Can. J. Soil Sci.* 48:173-184. 1968.
- 3008 Clark, J. S., and W. E. Nichol. Discrepancies between calculated and determined base saturation in some strongly acid soils. *Can. J. Soil Sci.* 48:211-214. 1968.
- 3009 Cooke, D. A., S. E. Beacom, and W. K. Dawley. Response of six-year-old grass-alfalfa pastures to nitrogen fertilizer in northeastern Saskatchewan. *Can. J. Plant Sci.* 48:167-174. 1968.
- 3010 Cressman, D. R. An approach to rural land resource planning. M.Sc. Thesis, Univ. Guelph. 1968.
- 3011 Cressman, D. R., and D. W. Hoffman. Classifying land for recreation. *J. Soil Water Conserv.* 23:91-93. 1968.
- 3012 Crete, R., et E. G. Beauchamp. Efficacité relative de deux fongicides de sol en l'absence et présence du diméthyle sulfoxyde contre la hernie des crucifères, *Plasmodiophora brassicae* Wor., en sols minéral et organique. *Phytoprotection* 49:41 - 48. 1968.
- 3013 Crosson, L. S. Reaction of hydronium ion with micas and feldspars with special reference to potassium release. M.Sc. Thesis, Univ. Saskatchewan. 1968.
- 3014 Crown, P. H. Some morphological features indicative of soil moisture. M.Sc. Thesis, Univ. Guelph. 1968.
- 3015 Cutcliffe, J. A., D. C. Munro, and D. C. MacKay. Effect of nitrogen, phosphorus, potassium and manure on terminal, lateral and total yields and maturity of broccoli. *Can. J. Plant Sci.* 48:439 - 446. 1968.
- 3016 D'Aoust, M. J., and R. S. Tayler. The interaction between nitrogen and water in the growth of grass swards: I. Methods and dry matter results. *J. Agr. Soc. Camb.* 70:11-17. 1968.
- 3017 Day, J. H. Making of soil monoliths. *Can. Dep. Agr. Publ.* 1372. 1968.
- 3018 Day, J. H. Soils of the upper Mackenzie River area, Northwest Territories. *Can. Dep. Agr., Ottawa.* 1968.

- 3019 Day, J. H. The classification of organic soils in Canada. Proc. 3rd Int. Peat Congr. (Quebec) 80-84. 1968.
- 3020 de Jong, E. Applications of thermodynamics to soil moisture. In Soil moisture, Proc. Hydrol. Symp. (1967) 6:25-47. 1968.
- 3021 DeKimpe, C. R., and J. J. Fripiat. Kaolinite crystallization from H-exchanged zeolites. Amer. Mineral. 53:216-230. 1968.
- 3022 DeKimpe, C. R., et Y. Tardy. Etude de l'alteration d'une biotite en kaolinite par spectroscopie infrarouge. Bull. Group. Fr. Argiles. 18:81-85. 1968.
- 3023 Dew, D. A. Effect of summerfallow tillage on soil physical properties and yield of wheat. Can. J. Soil Sci. 48:21-26. 1968.
- 3024 Doane, J. F., and R. K. Allan. A chamber for studying the effect of relative humidity and soil moisture on insect eggs. Can. Entomol. 100:358 - 362. 1968.
- 3025 Dormaar, J. F. Extraction of organic phosphorus in Chernozemic soils. Plant Soil 28:268-279. 1968.
- 3026 Dubetz, S., E. U. Thurston, and H. J. Bergen. Automatic rain shelter for small outdoor plots. Can. Agr. Eng. 10:40-41. 1968.
- 3027 Dubetz, S., and S. A. Wells. Reaction of barley varieties to nitrogen fertilizer. J. Agr. Sci. 70:253-256. 1968.
- 3028 Dudas, M. J. Clay-organo studies of selected Chernozems. M.Sc. Thesis, Univ. Alberta. 1968.
- 3029 Dular, R. The microbiology of cryopedogenic soils of sub-arctic with particular reference to the Churchill region. Ph.D. Thesis, Univ. Manitoba. 1968.
- 3030 Elliot, J. M. Effect of applied potassium on certain agronomic, chemical and physical characteristics of flue-cured tobacco. Tobacco Sci. 12: 151-157. 1968; Tobacco 167(9):24-30. 1968.
- 3031 Elrick, D. E., and J. H. M. Aalders. Mechanics of the movement of moisture and chemical substances in soils. In Soil moisture, Proc. Hydrol. Symp. (1967) 6:51-76. 1968.

- 3032 Emmond, G. S. The distribution of radioactive phosphorus in several potato varieties. *Amer. Potato J.* 45:217-219. 1968.
- 3033 Emmond, G. S. Equipment for the safe application of radioactive phosphorus to potatoes. *Can. J. Soil Sci.* 48:222-224. 1968.
- 3034 Esenther, G. R., and D. E. Gray. Subterranean termite studies in southern Ontario. *Can. Entomol.* 100:827-834. 1968.
- 3035 Evans, E. J., and A. J. Dekker. Comparative Cs¹³⁷ content of agricultural crops grown in a contaminated soil. *Can. J. Plant Sci.* 48:183 - 188. 1968.
- 3036 Evans, E. J., A. R. Mack, and A. J. Dekker. Influence of temperature on the availability of iron to an oat crop. *Can. J. Soil Sci.* 48:185 - 192. 1968.
- 3037 Fraser, J. W. A method of constructing and installing thermocouples for measuring soil temperatures. *Can. J. Soil Sci.* 48:366-368. 1968.
- 3038 Fulton, J. M. Growth and yield of oats as influenced by soil temperature, ambient temperature and soil moisture supply. *Can. J. Soil Sci.* 48:1-5. 1968.
- 3039 Gillespie, J. E., and D. E. Elrick. Micromorphological characteristics of an Oneida soil profile. *Can. J. Soil Sci.* 48:133-142. 1968.
- 3040 Gillham, R. W. Characteristics of ground water near a barnyard. M.Sc. Thesis, Univ. Guelph. 1968.
- 3041 Gordon, A. G. Ecology of *Picea chihuahuana* Martinez. *Ecology* 49:880-896. 1968.
- 3042 Gray, D. M., and D. I. Norum. The effect of soil moisture on infiltration as related to runoff and recharge. In *Soil moisture, Proc. Hydrol. Symp.* (1967) 6:133-150. 1968.
- 3043 Greenlee, G. M., S. Pawluk, and W. E. Bowser. Occurrence of soil salinity in the dry lands of southwestern Alberta. *Can. J. Soil Sci.* 48:65 - 75. 1968.
- 3044 Grover, R. Influence of soil properties on phytotoxicity of 4-amino-3,5,6-trichloropicolinic acid (picloram). *Weed Res.* 8:226-232. 1968.
- 3045 Gupta, U. C. Studies on the o-phenanthroline method of determining Fe in plant materials. *Plant Soil* 28:298-305. 1968.

- 3046 Gupta, U. C. Relationship of total and hot-water-soluble boron, and fixation of added boron, to properties of Podzol soils. *Soil Sci. Soc. Amer. Proc.* 32:45-48. 1968.
- 3047 Gupta, U. C., and J. A. Cutcliffe. Influence of phosphorus on molybdenum content of Brussels spouts under field and greenhouse conditions and on recovery of added molybdenum in soil. *Can. J. Soil Sci.* 48:117-124. 1968.
- 3048 Gupta, U. C., and D. C. MacKay. Crop responses to applied molybdenum and copper on Podzol soils. *Can. J. Soil Sci.* 48:235-242. 1968.
- 3049 Halstead, E. H., and S. A. Barber. Manganese uptake attributed to diffusion from soil. *Soil Sci. Soc. Amer. Proc.* 32:540-542. 1968.
- 3050 Halstead, E. H., S. A. Barber, D. D. Warncke, and J. B. Bole. Supply of Ca, Sr, Mn, and Zn to plant roots growing in soil. *Soil Sci. Soc. Amer. Proc.* 32:69-72. 1968.
- 3051 Halstead, R. L. Effect of different amendments on yield and composition of oats grown on a soil derived from serpentine material. *Can. J. Soil Sci.* 48:301-305. 1968.
- 3052 Halstead, R. L., and F. J. Sowden. Effect of long term additions of organic matter on crop yields and soil properties. *Can. J. Soil Sci.* 48:341 - 348. 1968.
- 3053 Hamilton, J. K. Moisture extraction patterns of irrigated crops. M.Sc. Thesis, Univ. Saskatchewan. 1968.
- 3054 Harcourt, D. G., and L. M. Cass. Persistence of a granulosis virus of *Pieris rapae* in soil. *J. Invertebr. Pathol.* 11:142-143. 1968.
- 3055 Harris, C. R., and H. J. Svec. Toxicological studies on cutworms: III. Laboratory investigations on the toxicity of insecticides to the black cutworm with special reference to the influence of soil type, soil moisture, method of application and formulation on insecticide activity. *J. Econ. Entomol.* 61:965-969. 1968.
- 3056 Helgeland, D. J. Hydrolysis of homionic clays. OM.Sc. Thesis, Univ. Alberta. 1968.
- 3057 Henry, J. L. Illuvial horizons of selected chernozemic and podzolic soils. M.Sc. Thesis, Univ. Saskatchewan. 1968.

- 3058 Herath, H. M. E., and G. W. Eaton. Some effects of water table, pH, and nitrogen fertilization upon growth and nutrient-element content of highbush blueberry plants. *Proc. Amer. Soc. Hort. Sci.* 92:274-283. 1968.
- 3059 Hergert, G. B., and G. S. Emmond. A fertilizer placement seeder for horticultural crops. *Can. J. Plant Sci.* 48:630-633. 1968.
- 3060 Heywood, R. T. Reducing the oxygen demand of cannery waste by land disposal. M.Sc. Thesis, Univ. Guelph. 1968.
- 3061 Hinman, W. C., and F. Bisal. Alterations of soil structure upon freezing and thawing and subsequent drying. *Can. J. Soil Sci.* 48:193-198. 1968.
- 3062 Hobbs, E. H., and K. K. Krogman. Observed and estimated evapotranspiration in southern Alberta. *Trans. Amer. Soc. Agr. Eng.* 11:502-503, 507. 1968.
- 3063 Hoffman, D. W., M. H. Miller, and R. E. Wicklund. Soil survey of Lanark County, Ontario. *Ont. Soil Surv. Rep. No.* 40. 1968.
- 3064 Hogue, E. J. The effect of linuron on P^{32} and Ca^{45} uptake in tomato and parsnip. *Weed Sci.* 16:185 - 187. 1968.
- 3065 Hoyt, P. B. The effect of soil conditioners on the growth of sugarbeet in a sandy loam soil. *Exp. Husb.* 16:70-72. 1968.
- 3066 Huang, P. M., L. S. Crosson, and D. A. Rennie. Chemical dynamics of potassium release from potassium minerals common in soils. *Trans. 9th Int. Congr. Soil Sci.* (Adelaide, 1968) 2:705-712. 1968.
- 3067 Hurd, E. A. Growth of roots of seven varieties of spring wheat at high and low moisture levels. *Agron. J.* 60:201-205. 1968.
- 3068 Jeffrey, W. W., L. A. Bayrock, L. E. Lutwick, and J. F. Dormaar. Land-vegetation typology in the Upper Oldman River basin, Alberta. *Can. Dep. Forest. Publ.* 1202. 1968.
- 3069 Johnston, A., L. M. Bezeau, A. D. Smith, and L. E. Lutwick. Nutritive value and digestibility of fertilized rough fescue. *Can. J. Plant Sci.* 48:351-356. 1968.
- 3070 Johnston, A., A. D. Smith, L. E. Lutwick, and S. Smoliak. Fertilizer response of native and seeded ranges. *Can. J. Plant Sci.* 48:467-472. 1968.

- 3071 Jones, R. W. Laboratory studies on the behaviour of mineral nitrogen in three Manitoba soil materials. M.Sc. Thesis, Univ. Manitoba. 1968.
- 3072 Kadirgamathaiyah, S. Soil nitrogen fractions and their relationship to nitrogen fertilizer yield response and nitrogen uptake of sudan-sorghum hybrid grass on twenty Quebec soils. M.Sc. Thesis, McGill Univ. 1968.
- 3073 Kalra, Y. P., and R. J. Soper. Efficiency of rape, oats, soybeans and flax in absorbing soil and fertilizer phosphorus at seven stages of growth. *Agron. J.* 60:209-212. 1968.
- 3074 Ketcheson, J. W. Effect of controlled air and soil temperature and starter fertilizer on growth and nutrient composition of corn (*Zea mays* L.). *Soil Sci. Soc. Amer. Proc.* 32:531-534. 1968.
- 3075 Ketcheson, J. W., and M. Jakovljevic. Transformation of NO_3^- and NH_4^+ in soils. In *Isotopes and radiation in soil organic matter studies. Proc. Symp. FAO/IAEA Vienna (1968):* 125-129. 1968.
- 3076 Kevan, D. K. McE. Soil fauna and humus formation. *Trans. 9th Int. Congr. Soil Sci. (Adelaide, 1968)* 2:1-10. 1968.
- 3077 Keys, C. B., and H. A. Friesen. Persistence of picloram activity in soil. *Weed Sci.* 16:341-343. 1968.
- 3078 Khan, M. F. A., and A. W. Moore. Losses of added nitrogen from some Alberta soils. *Soil Sci.* 106:232-234. 1968.
- 3079 Khan, M. F. A., and A. W. Moore. Denitrifying capacity of some Alberta soils. *Can. J. Soil Sci.* 48:89-91. 1968.
- 3080 Khan, S. U., A. W. Moore, and G. R. Webster. Influence of partial soil sterilization on nodulation of alfalfa. *Plant Soil* 28:476-477. 1968.
- 3081 Khan, S. U., and G. R. Webster. Sulphate distribution in solonchic soil with a water table. *J. Soil Sci.* 19:20-24. 1968.
- 3082 Khan, S. U., and G. R. Webster. An electrometric method for determining water-extractable sulphate in soils. *Soil Sci.* 105:87-91. 1968.
- 3083 Khan, S. U., and G. R. Webster. Determination of gypsum in solonchic soils by an X-ray technique. *Analyst (London)* 93:400-402. 1968.

- 3084 King, K. M. Soil moisture--instrumentation, measurement and general principles of network design. In Soil moisture, Proc. Hydrol. Symp. (1967) 6:269-285. 1968.
- 3085 Knight, H. The effect of logging and slash-burning on the nutrient content of Douglas fir. Plant Soil 28:471-475. 1968.
- 3086 Kodama, H., and J. E. Brydon. Dehydroxylation of microcrystalline muscovite--its kinetics, mechanism and energy change. Trans. Faraday Soc. 64:1-8. 1968.
- 3087 Kodama, H., and J. E. Brydon. A study of clay minerals in Podzol soils in New Brunswick, Eastern Canada. Clay Mineral. 7:295-309. 1968.
- 3088 Kodama, H., and M. Schnitzer. Effects of interlayer cations on the adsorption of a soil humic compound by montmorillonite. Soil Sci. 106:73-74. 1968.
- 3089 Korven, H. C. An evaluation of three coefficients as a measure of uniformity of water application by sprinklers. Can. Agr. Eng. 10:83-84. 1968.
- 3090 Krause, H. H., and W. Batsch. Movement of fall applied nitrogen in sandy soil. Can. J. Soil Sci. 48:363-365. 1968.
- 3091 Krishnarajah, P. Rate of wetting and soil aggregate stability. M.Sc. Thesis, McGill Univ. 1968.
- 3092 Krogman, K. K., and R. A. Milne. Productivity indicators for a Brown Solonetz and associated soils under irrigation. Can. J. Soil Sci. 48:143 - 150. 1968.
- 3093 Lafrance, J. The seasonal movement of wireworms (Coleoptera: Elateridae) in relation to soil moisture and temperature in the organic soils of southwestern Quebec. Can. Entomol. 100:801 - 807. 1968.
- 3094 Lake, E. B. Soil moisture deficits and surpluses in southwestern Quebec. M.Sc. Thesis, McGill Univ. 1968.
- 3095 Laliberte, G. E., A. T. Corey, R. H. Brooks, et al. Similitude for partially saturated flow systems. In Soil moisture, Proc. Hydrol. Symp. (1967) 6:101-115. 1968.
- 3096 Lambert, J. D. H., and P. F. Maycock. The ecology of terricolous lichens of the northern conifer-hardwood forests of central Eastern Canada. Can. J. Bot. 46:1043-1078. 1968.

- 3097 Langille, J. E., L. B. MacLeod, and F. S. Warren Influence of harvesting management on yield, carbohydrate reserves, etiolated regrowth and potassium uptake of birdsfoot trefoil. *Can. J. Plant Sci.* 48:575-580. 1968.
- 3098 Langmaid, K. K. Age of the Tantramar Marsh, New Brunswick. *Can. J. Soil Sci.* 48:366. 1968.
- 3099 Lawrence, T., and D. H. Heinrichs. Long-term effects of row spacing and fertilizer on the productivity of Russian wild ryegrass. *Can. J. Plant Sci.* 48:75-84. 1968.
- 3100 Lawrence, T., F. G. Warder, and R. Ashford. Nitrate accumulation in intermediate wheatgrass. *Can. J. Plant Sci.* 48:85-88. 1968.
- 3101 Leahey, A. The Canadian soil classification. *World Soil Resour. Rep.* 32:37-52. 1968.
- 3102 Lee, C. R. Growth of flax and soybeans in a high zinc media. Ph.D. Thesis, Clemson Univ. 1968.
- 3103 Lee, S.-Y. Weathering transformations of polycomponent mineral colloids in prairie soils. M.Sc. Thesis, Univ. Saskatchewan. 1968.
- 3104 Leefe, J. S. Effect of soil pH on the phytotoxicity of simazine to strawberries. *Can. J. Plant Sci.* 48:424-425. 1968.
- 3105 LeLacheur, K. E., and D. C. MacKay. Effect of dolomitic limestone treatments on yield, quality and cation content of flue-cured tobacco. *Can J. Plant Sci.* 48:519-525. 1968.
- 3106 LeSann, J. A. Nitrogen-potassium relationships in barley and oats as influenced by mode of fertilization. M.Sc. Thesis, Univ. Manitoba. 1968.
- 3107 Lessard, J. R., M. Hidioglou, R. B. Carson, and P. Dermine. Intra-seasonal variations in the selenium content of various forage crops at Kapuskasing, Ontario. *Can. J. Plant Sci.* 48:581 - 585. 1968.
- 3108 Lewis, E. T. Phosphorus movement in some calcareous and non-calcareous Manitoba soils. M.Sc. Thesis, Univ. Manitoba. 1968.
- 3109 Lindsay, J. D., W. Odymsky, T. W. Peters, and W. E. Bowser. Soil survey of the Buck Lake and Wabamum Lake areas, Alberta. *Alberta Soil Surv. Rep. No.* 24. 1968.

- 3110 Logan, L. A. The flux equation for vertical soil column transient drainage. M.Sc. Thesis, Univ. Guelph. 1968.
- 3111 Look-kin, W. Influence of time and rate of application of N, P and K on the yield and quality of bromegrass and natural pastures on different soils. M.Sc. Thesis, McGill Univ. 1968.
- 3112 Lowe, L. E. Soluble polysaccharide fractions in selected Alberta soils. Can. J. Soil Sci. 48:215 - 217. 1968.
- 3113 Lowe, L. E., and M. E. Turnbull. Removal of interference in the determination of uronic acids in soil hydrolysates. Soil Sci. 106:312-313. 1968.
- 3114 Lutwick, L. E., and J. F. Dormaar. Productivity of a soil biosequence of the fescue prairie - aspen transition. J. Range Manage. 21:24-27. 1968.
- 3115 Luttmending, H. A., and P. N. Sprout. Soil survey of Mission area. B.C. Soil Surv. Rep. No. 9 (preliminary). 1968.
- 3116 Maas, E. F. Nitrogen deficiency of potatoes in organic soil. Amer. Potato J. 45:378-382. 1968.
- 3117 Mack, A. R., and W. S. Ferguson. A moisture stress index for wheat by means of a modulated soil moisture budget. Can. J. Plant Sci. 48:535-544. 1968.
- 3118 MacLean, A. J. Fixation of potassium added to soils and its recovery by plants. Can. J. Soil Sci. 48:307-313. 1968.
- 3119 MacLean, K. S., H. A. L. McLaughlin, and M. H. Brown. The application of tissue analysis to the production of commercial greenhouse tomatoes. Proc. Amer. Soc. Hort. Sci. 92:531-536. 1968.
- 3120 MacLeod, J. A. Phosphorus fertilizer placement methods and uptake of phosphorus by corn (*Zea mays*). M.Sc. Thesis, McGill Univ. 1968.
- 3121 MacMillan, K. A. Methods of seedbed preparation and their effects on soil temperature and corn (*Zea mays*) yield. M.Sc. Thesis, McGill Univ. 1968.
- 3122 Marshall, V. G. Micro-arthropods from two Quebec woodland humus forms. III. The *Sarcoptiformes* (Acarina). Annu. Entomol. Soc. Que. 13:65-68. 1968.

- 3123 Maurer, A. R., D. P. Ormrod, and H. F. Fletcher. Response of peas to environment: IV. Effect of five soil-water regimes on growth and development of peas. *Can. J. Plant Sci.* 48:129-138. 1968.
- 3124 McKeague, J. A. Humic-fulvic acid ratio, Al, Fe and C in pyrophosphate extracts as criteria of : A and B horizons. *Can. J. Soil Sci.* 48:27-35. 1968.
- 3125 McKeague, J. A., A. W. H. Damman, and P. K. Heringa. Iron-manganese and other pans in some soils of Newfoundland. *Can. J. Soil Sci.* 48:243-253. 1968.
- 3126 McKercher, R. B. Studies on soil organic phosphorus. *Trans. 9th Int. Congr. Soil Sci. (Adelaide, 1968)* 3:547-553. 1968.
- 3127 McKercher, R. B., and G. Anderson. Content of inositol penta- and hexa-phosphates in some Canadian soils. *J. Soil Sci.* 19:47-55. 1968.
- 3128 McKercher, R. B., and G. Anderson. Characterization of the inositol penta- and hexa-phosphate fractions of a number of Canadian and Scottish soils. *J. Soil Sci.* 19:302-310. 1968.
- 3129 McKercher, R. B., and G. Anderson. Observations on the accuracy of an ignition and an extraction method for measuring organic phosphate in some Canadian soils. *Soil Sci.* 105:198-200. 1968.
- 3130 Miles, J. R. W. Arsenic residues in agricultural soils of southwestern Ontario. *J. Agr. Food Chem.* 16:620-622. 1968.
- 3131 Milne, R. A., and E. Rapp. Soil salinity and drainage problems. *Can. Dep. Agr. Publ.* 1314. 1968.
- 3132 Molberg, E. S., and J. R. Hay. Chemical weed control on summerfallow. *Can. J. Soil Sci.* 48:255-263. 1968.
- 3133 Morgan, G. T., and A. A. MacLean. Influence of soil pH on an introduced population of *Pratylenchus penetrans*. *Nematologica* 14:311-312. 1968.
- 3134 Morita, H. Polyphenols in the extractives of an organic soil. *Proc. 3rd Int. Peat Congr. (Quebec)* 28-31. 1968.
- 3135 Morrall, R. A. A. Two new species of *Oidiodendron* from boreal forest soils. *Can. J. Bot.* 46:203 - 206. 1968.

- 3136 Morrall, R. A. A., and T. C. Vanterpool. The soil microfungi of upland boreal forest at Candle Lake, Saskatchewan. *Mycologia* 60:642-654. 1968.
- 3137 Morris, G. F., R. B. Carson, D. A. Shearer, et al. Comparison of the automatic Dumas (Coleman Model 29A nitrogen analyser II) and Kjeldahl methods for the determination of total nitrogen in agricultural materials. *J. Ass. Offic. Anal. Chem.* 51:216-219. 1968.
- 3138 Moyer, J. R. High molecular weight organic phosphorus and inositol phosphates in soil. M.Sc. Thesis, Univ. Guelph. 1968.
- 3139 Munro, D. C., and D. C. MacKay. Effects of sources of phosphorus on yields and phosphorus content of perennial ryegrass and Brussels sprouts grown on Podzol soils in the greenhouse. *Can. J. Plant Sci.* 48:487-494. 1968.
- 3140 Myers, R. J. K., and E. A. Paul. Nitrate ion electrode method for soil nitrate nitrogen determination. *Can. J. Soil Sci.* 48:369-371. 1968.
- 3141 Norum, D. I., and J. N. Luthin. The effects of entrapped air and barometric fluctuations on the drainage of porous mediums. *Water Resour. Res.* 4:417-424. 1968.
- 3142 Nyborg, M. Sulfur deficiency in cereal grains. *Can. J. Soil Sci.* 48:37-41. 1968.
- 3143 Panter, C. Iron-reducing bacteria of soil. M.Sc. Thesis, Univ. Alberta. 1968.
- 3144 Parkinson, D., I. Balasooriya, and K. Winterhalder. Studies on fungi in a pinewood soil: III. Fungal growth and total microbial activity. *Rev. Ecol. Biol. Sol* 5:637-645. 1968.
- 3145 Paul, E. A. The nitrogen-supplying power of prairie soils. In *Soil plant nutrient research report*, Sask. Inst. Pedology Rep. No. M7. 1968.
- 3146 Pawluk, S., T. W. Peters, and J. A. Carson. Soils of the Porcupine Hills region of Alberta. *Can. J. Soil Sci.* 48:77-88. 1968.
- 3147 Pelton, W. L., C. A. Campbell, and W. Nickolaichuk. The influence of freezing and thawing on soil moisture. In *Soil moisture*, Proc. Hydrol. Symp. (1967) 6:241-263. 1968.

- 3148 Pissarides, A., J. W. B. Stewart, and D. A. Rennie. Influence of cation saturation on phosphorus adsorption by selected clay minerals. *Can. J. Soil Sci.* 48:151-158. 1968.
- 3149 Pissart, A. Frost fissure polygons of Prince Patrick Island (Canadian Arctic, lat. 76° N.). *Biul. peryglac.* 17:171-180. 1968.
- 3150 Portch, S., A. F. MacKenzie, and H. A. Stepler. Effect of fertilizers, soil drainage class and year upon protein yield and content of oats. *Agron. J.* 60:672-674. 1968.
- 3151 Pringle, W. L., and A. L. van Ryswyk. Carry-over effects of high fertilizer rates on native sedge bog vegetation in interior British Columbia. *Can. J. Plant Sci.* 48:49-55. 1968.
- 3152 Protz, R., R. W. Arnold, and E. W. Presant. The approximation of the true modal profile with the use of the high-speed computer and landscape control. *Trans. 9th Int. Congr. Soil Sci. (Adelaide, 1968)* 4:193-204. 1968.
- 3153 Protz, R., E. W. Presant, and R. W. Arnold. Establishment of the modal profile and measurement of variability within a soil landform unit. *Can. J. Soil Sci.* 48:7-19. 1968.
- 3154 Protz, R., and F. F. Riecken. Profile distribution of nonexchangeable Mg in the <math><1\mu</math> clay in seven loess-derived soils. *Soil Sci. Soc. Amer. Proc.* 32:861-865. 1968.
- 3155 Racz, G. J., and R. J. Soper. Solubility of dimagnesium phosphate trihydrate and trimagnesium phosphate. *Can. J. Soil Sci.* 48:265-269. 1968.
- 3156 Ramakrishnan, P. S. Nutritional requirements of the edaphic ecotypes in *Melilotus alba* Medic. 2. Aluminium and manganese. *New Phytol.* 67:301 - 308. 1968.
- 3157 Rana, S. K., and G. J. Ouellette. Correlation between plant uptake and different methods of extraction of soil cobalt. *J. Indian Soc. Soil Sci.* 16:89-91. 1968.
- 3158 Rapp, E. Performance of shallow subsurface drains in glacial till soils. *Trans. Amer. Soc. Agr. Eng.* 11:214-217. 1968.
- 3159 Rapp, E., and G. E. Laliberte. Performance of tile drains in an irrigated area, Vauxhall, Alberta. *Can. Agr. Eng.* 10:64-69. 1968.

- 3160 Rashid, M. A., and L. H. King. Molecular weight distribution measurements on humic and fulvic acid fractions from marine clays on the Scotian shelf. *Geochim. Cosmochim. Acta* 33:147-151. 1968.
- 3161 Read, D. W. L., and R. Ashford. Effect of varying levels of soil and fertilizer phosphorus and soil temperature on the growth and nutrient content of brome grass and reed canary grass. *Agron. J.* 60:680-682. 1968.
- 3162 Remacle, J., and J. W. Rouatt. Mixed culture effects of *A. chroococcum* and pectinolytic organisms in the barley rhizosphere. *Ann. Inst. Pasteur (Paris)* 115:745-754. 1968.
- 3163 Rennie, E. A., and J. B. Bole. The migration and mechanism of phosphorus movement from ammonium phosphate pellets using autoradiographic techniques. *Trans. 9th Int. Congr. Soil Sci. (Adelaide, 1968)* 2:775-786. 1968.
- 3164 Ridley, A. O., and R. A. Hedlin. Soil organic matter and crop yields as influenced by the frequency of summerfallowing. *Can. J. Soil Sci.* 48:315-322. 1968.
- 3165 Robey, M. R., and R. Knowles. Factors affecting urease activity in a black spruce humus sterilized by gamma radiation. *Can. J. Soil Sci.* 48:355 - 361. 1968.
- 3166 Ross, G. J. Structural decomposition of an orthochlorite mineral during its acid dissolution. *Can. Mineral.* 9:522-530. 1968.
- 3167 Ross, G. J., and H. Kodama. Magnesium aluminum carbonate hydroxide tetrahydrate: A reply. *Amer. Mineral.* 53:1059-1060. 1968.
- 3168 Rostad, H. P. W. Nature and distribution of carbonate minerals in soils. M.Sc. Thesis, Univ. Saskatchewan. 1968.
- 3169 Saha, J. G. Comparison of several methods for extracting dieldrin-C¹⁴ from soil. *Bull. Environ. Contam. Toxicol.* 3:26-36. 1968.
- 3170 Saha, J. G., C. H. Craig, and W. K. Janzen. Organochlorine insecticide residues in agricultural soil and legume crops in northeastern Saskatchewan. *J. Agr. Food Chem.* 16:617-619. 1968.
- 3171 Schnitzer, M. Reactions between organic matter and inorganic soil constituents. *Trans. Int. Congr. Soil Sci. (Adelaide, 1968)* 1:635-644. 1968.

- 3172 Schnitzer, M., and S. I. M. Skinner. Alkali versus acid extraction of soil organic matter. *Soil Sci.* 105:392-396. 1968.
- 3173 Schnitzer, M., and S. I. M. Skinner. Gel filtration of fulvic acid, a soil humic compound. *Proc. IAEA-FAO (Vienna)* 41-56. 1968.
- 3174 Shaykewich, C. F. Availability of water for plant growth in three Quebec soils. Ph.D. Thesis, McGill Univ. 1968.
- 3175 Shaykewich, C. F., and M. A. Zwarich. Relationships between soil physical constants and soil physical components of some Manitoba soils. *Can. J. Soil Sci.* 48:199-204. 1968.
- 3176 Shields, J. A., E. A. Paul, R. J. St. Arnaud, and W. K. Head. Spectrophotometric measurement of soil color and its relationship to moisture and organic matter. *Can. J. Soil Sci.* 48:271-280. 1968.
- 3177 Siitam, P. Gaseous losses of soil nitrogen under laboratory conditions. M.Sc. Thesis, Univ. Guelph. 1968.
- 3178 Sippola, J. M. Nitrogen and carbon in some molecular size fractions of soil organic matter. M.Sc. Thesis, Univ. Guelph. 1968.
- 3179 Skyring, G. W., and C. Quadling. Comparison of populations of soil bacteria by numerical (principal component) methods. *Bacteriol. Proc.* 4. 1968.
- 3180 Smith, A. D., A. Johnston, L. E. Lutwick, and S. Smoliak. Fertilizer response of fescue grassland vegetation. *Can. J. Soil Sci.* 48:125-132. 1968.
- 3181 Smoliak, S., and A. Johnston. Germination and early growth of grasses at four root-zone temperatures. *Can. J. Plant Sci.* 48:119-128. 1968.
- 3182 Sowden, F. J. Effect of longterm annual additions of various organic amendments on the nitrogenous components of a clay and a sand. *Can. J. Soil Sci.* 48:331-339. 1968.
- 3183 Sowden, F. J., and H. J. Atkinson. Effect of longterm additions of various organic amendments on the organic matter of a clay and a sand. *Can. J. Soil Sci.* 48:323-330. 1968.

- 3184 Sowden, F. J., and K. C. Ivarson. Determination of asparagine, glutamine and citrulline in aqueous soil extracts with an automatic amino acid analyzer. *Can. J. Soil Sci.* 48:349-354. 1968.
- 3185 Spratt, E. D. The utilization of fertilizer nitrogen by spring wheat. Ph.D. Thesis, Univ. London. 1968.
- 3186 Staple, W. J. Evaluation of flow parameters. In *Soil moisture, Proc. Hydrol. Symp.* (1967) 6:81-96. 1968.
- 3187 Stevenson, C. K., and T. E. Bates. Effect of nitrogen to phosphorus atom ratio of ammonium phosphates on emergence of wheat (*Triticum vulgare*). *Agron. J.* 60:493-495. 1968.
- 3188 Thompson, F. R. Persistence and effects of selected herbicides on microbiological processes in soil. M.Sc. Thesis, Univ. Guelph. 1968.
- 3189 Thompson, J. L., V. W. Case, and F. W. Bigsby. A precision plot seeder and fertilizer applicator. *Can. J. Agr. Eng.* 10:38-39, 46. 1968.
- 3190 Tu, C. M., J. R. W. Miles, and C. R. Harris. Soil microbial degradation of aldrin. *Life Sci.* 7:311 - 322. 1968.
- 3191 Turner, R. C. Conditions in solution during the formation of gibbsite in dilute Al salt solutions: I. Theoretical treatment of the effect of the formation of mono- and poly-nuclear hydroxyaluminum ions, precipitations and crystallization curves representing the titration of $AlCl_3$ with a base. *Soil Sci.* 106:291-296. 1968.
- 3192 Turner, R. C. Conditions in solution during the formation of gibbsite in dilute Al salt solutions: II. Effect of length of time of reaction on the formation of poly-nuclear hydroxyaluminum cations, the substitution of other anions for OH^- in amorphous $Al(OH)_3$ and the crystallization of gibbsite. *Soil Sci.* 106:338-344. 1968.
- 3193 Vaartaja, O. *Pythium* and *mortierella* in soils of Ontario forest nurseries. *Can. J. Microbiol.* 14:265-269. 1968.
- 3194 Van den Driessche, R. A comparison of growth responses of Douglas fir and Sitka spruce to different nitrogen, phosphorus and potassium levels in sand culture. *Can. J. Bot.* 46:531-537. 1968.

- 3195 van Groenewoud, H., and H. H. Weegar. Effect of different methods of installation of fiberglass soil moisture units on discrepancies between field and laboratory calibrations. *Can. J. Soil Sci.* 48:97-108. 1968.
- 3196 van Schaik, J. C. Conductance of adsorbed sodium ions in bentonite, silt and sand mixtures. *Can. J. Soil Sci.* 48:205-210. 1968.
- 3197 van Schaik, J. C., and K. K. Krogman. Water uptake by orchardgrass and evaporation from bare soil in the presence of shallow water tables. *Can. J. Soil Sci.* 48:281-288. 1968.
- 3198 Verma, T. R. Moisture balance in soils of the Edmonton area. Ph.D. Thesis, Univ. Alberta. 1968.
- 3199 Walker, P. H., G. F. Hall, and R. Protz. Relation between landform parameters and soil properties. *Soil Sci. Soc. Amer. Proc.* 32:101-104. 1968.
- 3200 Wallen, V. R., and J. Jeun. Factors limiting the survival of *Ascochyta* spp. of peas in soil. *Can. J. Bot.* 46:1279-1286. 1968.
- 3201 Wellman, R. P., F. D. Cook, and H. R. Krouse. Nitrogen¹⁵: microbiological alteration of abundance. *Science (Washington)* 161:269-270. 1968.
- 3202 White, R. P. Residual phosphorus in the soil due to fertilization. Ph.D. Thesis, Michigan State Univ. 1968.
- 3203 Williams, I. H. Recovery of cis- and trans-dichloropropene residues from two types of soil and their detection and determination by electron capture gas chromatography. *J. Econ. Entomol.* 61:1432-1435. 1968.
- 3204 Williams, L. A. Variability of the responses to phosphorus fertilizer of some corn inbreds and their resulting hybrids and also some common commercial varieties. M.Sc. Thesis, McGill Univ. 1968.
- 3205 Williams, P. J. Ice distribution in permafrost profiles. *Can. J. Earth Sci.* 5:1381-1386. 1968.
- 3206 Wu, L.Y. *Dactyloctenychus crassacuticulus*, a new genus and new species (Tylenchinae: Nematoda). *Can. J. Zool.* 46:831-834. 1968.
- 3207 Zandstra, H. G. Automated determination of phosphorus in sodium bicarbonate extracts. *Can. J. Soil Sci.* 48:219-220. 1968.

- 3208 Zandstra, H. G., and A. F. MacKenzie. Potassium exchange equilibria and yield responses of oats, barley, and corn on selected Quebec soils. *Soil Sci. Soc. Amer. Proc.* 32:76-79. 1968.
- 3209 Anderson, C. H., and F. Bisal. Snow cover effect on the erodible soil fraction. *Can. J. Soil Sci.* 49:287-296. 1969.
- 3210 Asamoah, G. K. Discontinuity location and micromorphological analysis in a genesis study of the soils of the Honeywood catena. M.Sc. Thesis, Univ. Guelph. 1969.
- 3211 Ashby, D. L. Controlled release of magnesium, zinc, boron and nitrogen from polyethylene capsules. *Can. J. Plant Sci.* 49:555-566. 1969.
- 3212 Ashby, D. L., and J. A. Stewart. Magnesium deficiency in tree fruits as related to leaf content of magnesium, potassium and calcium. *Proc. Amer. Soc. Hort. Sci.* 94:310-313. 1969.
- 3213 Babiuk, L. A. B. Bacteria of a grassland soil. M.Sc. Thesis, Univ. Saskatchewan. 1969.
- 3214 Baier, W. Concepts of soil moisture availability and their effect on soil moisture estimates from a meteorological budget. *Agr. Meteorol.* 6:165 - 178. 1969.
- 3215 Baier, W. Observed and estimated seasonal soil water variations under nonirrigated sod. *Can. J. Soil Sci.* 49:181-188. 1969.
- 3216 Baier, W., G. W. Robertson, and M. F. Clarke. A climatological analysis of irrigation requirements in the lower Fraser Valley, B.C. *Can. Dep. Agr. Publ.* 1318. 1969.
- 3217 Bailey, R. E. The influence of climate and soil on the efficiency of irrigation water application. *Int. Comm. Irrig. Drain.* 7th Congr., Mexico 1969, R15:229-250. 1969.
- 3218 Baril, R., et G. Bitton. Teneurs élevées de fer libre et identification taxonomique de certains sols du Québec de la magnétite. *Can. J. Soil Sci.* 49:1-9. 1969.
- 3219 Barnett, G. Rates and methods of phosphorus placement for corn (*Zea mays*). M.Sc. Thesis, McGill Univ. 1969.
- 3220 Barron, G. L. Isolation and maintenance of endoparasitic nematophagous *Hyphomycetes*. *Can. J. Bot.* 47:1899-1902. 1969.

- 3221 Bartha, R., and L. M. Bordeleau. Cell-free peroxidases in soil. *Soil Biol. Biochem.* 1:139 - 143. 1969.
- 3222 Beaton, J. D., and W. A. Hubbard. High-analysis granular sulphur assemblages as sources of sulphur for lucerne. *Plant Soil* 30:373-390. 1969.
- 3223 Beaton, J. D., W. A. Hubbard, R. C. Speer, and R. T. Gardner. Ammonium phosphate-sulphur and sulphur gypsum: New granular sulphur sources for alfalfa. *Sulphur Inst. J.* 4(4):4-8. 1969.
- 3224 Beauchamp, E. G., and J. K. Torrance. Temperature gradients within young maize plant stalks as influenced by aerial and root zone temperatures. *Plant Soil* 30:241-251. 1969.
- 3225 Beke, G. Soils of three experimental watersheds. Ph.D. Thesis, Univ. Alberta. 1969.
- 3226 Bell, R. G. Studies on the decomposition of organic matter in flooded soil. *Soil Biol. Biochem.* 1:105-116. 1969.
- 3227 Bhoojedhur, S. Genesis of a Podzol sequence on the west coast of Vancouver Island. M.Sc. Thesis, Univ. British Columbia. 1969.
- 3228 Biederbeck, V. O. Microbial degradation of the nitrogenous moiety of soil humic acids. Ph.D. Thesis, Univ. Saskatchewan. 1969.
- 3229 Bishop, R. F., E. W. Chipman, and C. R. MacEachern. Effect of nitrogen, phosphorus and potassium on yields and nutrient levels in laminae and petioles 254 of pickling cucumbers. *Can. J. Soil Sci.* 49:297 - 304. 1969.
- 3230 Bishop, R. F., L. B. MacLeod, C. R. MacEachern, and L. P. Jackson. Effect of surface-applied limestone and superphosphate on herbage production and on some chemical properties of a dykeland soil. *Can. J. Soil Sci.* 49:47-51. 1969.
- 3231 Bordeleau, L. M., H. A. B. Linke, and R. Bartha. Pathway of chloroazobenzene formation from chloroaniline-based herbicides in soil. *Bacteriol. Proc.* (1969): 4. 1969.
- 3232 Bourgeois, W. W. Soils and leachates from two forest sites using tension lysimeters. M.Sc. Thesis, Univ. British Columbia. 1969.

- 3233 Bowren, K. E., D. A. Cooke, and R. K. Downey. Yield of dry matter and nitrogen from tops and roots of sweetclover, alfalfa and red clover at five stages of growth. *Can. J. Plant Sci.* 49:61-68. 1969.
- 3234 Brach, E. J., and A. R. Mack. A technique for calibrating heat flux sensors. *Can. J. Soil Sci.* 49:173-176. 1969.
- 3235 Brassard, G. R. *Mielichhoferia elongata*, a copper moss new to North America, found in Arctic Canada. *Nature (London)* 222:584-585. 1969.
- 3236 Brouzes, R., J. Lasik, and R. Knowles. The effect of organic amendment, water content and oxygen on the incorporation of $^{15}\text{N}_2$ by some agricultural and forest soils. *Can. J. Microbiol.* 15:899-905. 1969.
- 3237 Brunelle, A. Profile development in some solonetzic soils. M.Sc. Thesis, Univ. Alberta. 1969.
- 3238 Bryan, R. B. Aggregation characteristics and maturity of Peak District soils. *Earth Sci. J.* 3:1 - 12. 1969.
- 3239 Brydon, J. E., and S. S. Singh. The nature of the synthetic crystalline basic aluminum sulphates as compared with basaluminite. *Can. Mineral.* 9:644-654. 1969.
- 3240 Burger, D. Calcium release from 11 minerals of fine-sand size by dilute sulfuric acid. *Can. J. Soil Sci.* 49:11-20. 1969.
- 3241 Burger, D. Relative weatherability of calcium-containing minerals. *Can. J. Soil Sci.* 49:21 - 28. 1969.
- 3242 Buttery, B. R. Effects of plant population and fertilizer on the growth and yield of soybeans. *Can. J. Plant Sci.* 49:659-674. 1969.
- 3243 Buttery, B. R. Analysis of the growth of soybeans as affected by plant population and fertilizer. *Can. J. Plant Sci.* 49:675-684. 1969.
- 3244 Cairns, R. R. Relationship of the distribution of Solonetz soils and groundwater conditions in Canada. *Agrokém. Talajt.* 18:159-166. 1969.
- 3245 Cairns, R. R. Infiltration and capillarity in solonetzic soil columns. *Agrokém. Talajt.* 18:167 - 172. 1969.

- 3246 Cairns, R. R., and W. E. Bowser. Solonetzic soils and their management. Can. Dep. Agr. Publ. 1391. 1969.
- 3247 Cameron, D. R. Comparative analysis and mapping of soil test data. M.Sc. Thesis, Univ. Alberta. 1969.
- 3248 Campbell, C. A., and W. S. Ferguson. Influence of air temperature, light intensity, soil moisture stress and soil aeration on moisture use by wheat. Can. J. Plant Sci. 49:129-138. 1969.
- 3249 Campbell, C. A., D. S. McBean, and D. G. Green. Influence of moisture stress, relative humidity and oxygen diffusion rate on seed set and yield of wheat. Can. J. Plant Sci. 49:29-38. 1969.
- 3250 Campbell, C. A., W. L. Pelton, and K. F. Nielsen. Influence of solar radiation and soil moisture on growth and yield of Chinook wheat. Can. J. Plant Sci. 49:685-700. 1969.
- 3251 Campbell, F. R. Fertilization of Canal Lake by agricultural resources. M.Sc. Thesis, Univ. Guelph. 1969.
- 3252 Cescas, M. Rate of rock phosphate disappearance for the Morrow plots and electron microprobe analysis of soil concretions and mineral inclusions. Ph.D. Thesis, Univ. Illinois. 1969.
- 3253 Chamberland, E. Le bicarbonate de potassium, un nouvel engrais pour la culture de la pomme de terre. M.Sc. Thesis, Laval Univ. 1969.
- 3254 Chamberland, E., et E. Campagna. Effet de différentes doses de N, P et K sur le rendement et la qualité de la pomme de terre. Can. J. Soil Sci. 49:247-256. 1969.
- 3255 Chan, W. T. Effect of light intensity on crop response to N fertilizers. Ph.D. Thesis, McGill Univ. 1969.
- 3256 Chapman, F. M., and J. L. Mason. Effect of phosphorus and potassium fertilizers on the agronomic characteristics of spring wheat and their interaction on grain yield. Can. J. Soil Sci. 49:343-348. 1969.
- 3257 Cheng, B.-T. Influence of steam sterilization, organic amendments and nitrogen fertilizers on manganese toxicity. D.Sc. Thesis, Laval Univ. 1969.

- 3258 Clark, J. S., and G. J. Ross. Reaction of mixed calcium-aluminum and magnesium-aluminum hydroxides with Wyoming bentonite. *Can. J. Earth Sci.* 6:47-53. 1969.
- 3259 Clark, J. S., and R. C. Turner. An examination of the resin exchange method for the determination of stability constants of metal - soil organic matter complexes. *Soil Sci.* 107:8-11. 1969.
- 3260 Cullimore, D. R. Initial studies on the effect of 2,4-D on the soil's microflora. *Soil Biol.* 11:24-26. 1969.
- 3261 Dasani, U. The non-symbiotic nitrogen-fixing organisms in prairie soil. M.Sc. Thesis, Univ. Manitoba. 1969.
- 3262 de Jong, E., and D. A. Rennie. Effect of soil profile type and fertilizer on moisture use by wheat grown on fallow or stubble land. *Can. J. Soil Sci.* 49:189-197. 1969.
- 3263 deKimpe, C. R. Crystallization of kaolinite at low temperature from an alumino-silicic gel. *Clays and Clay Minerals* 17:37-38. 1969.
- 3264 Dessureaux, L. Effect of aluminum on alfalfa seedlings. *Plant Soil* 30(1):93-98. 1969.
- 3265 de Vries, J. *In situ* determination of physical properties of the surface layer of field soils. *Soil Sci. Soc. Amer. Proc.* 33:349-353. 1969.
- 3266 Dionne, J. L. Comportement différentiel du lotier en regard du chaulage. *Can. J. Soil Sci.* 49:111 - 119. 1969.
- 3267 Dormaar, J. F. Reductive cleavage of humic acids of chernozemic soils. *Plant Soil* 31(1):182-184. 1969.
- 3268 Dormaar, J. F., et L. E. Lutwick. Sols fossiles enterrés en Alberta du sud, Canada. VIIIe Congr. INQUA, Paris. p. 83. 1969.
- 3269 Dormaar, J. F., and L. E. Lutwick. Infrared spectra of humic acids and opal phytoliths as indicators of palaeosols. *Can. J. Soil Sci.* 49:29-37. 1969.
- 3270 Dryden, R. D., and P. Braun. Crops and soil management for the Wabowden area of northern Manitoba. *Can. Dep. Agr. Publ.* 1164. 1969.

- 3271 Dubetz, S., and P. S. Mahalle. Effect of soil water stress on bush beans, *Phaseolus vulgaris* L. Proc. Amer. Soc. Hort. Sci. 94:479-481. 1969.
- 3272 Dubetz, S., and D. B. Wilson. Growing irrigated crops on the Canadian prairies. Can. Dep. Agr. Publ. 1400. 1969.
- 3273 Dudas, M. J., and S. Pawluk. Naturally-occurring organo-clay complexes of orthic black chernozems. Geoderma 3:5-18. 1969.
- 3274 Dudas, M. J., and S. Pawluk. Chernozem soils of the Alberta Parklands. Geoderma 3:19-36. 1969.
- 3275 Edwards, J. B. Changes in composition of aerated liquid poultry manure with special reference to nitrogen loss. M.Sc. Thesis, Univ. Guelph. 1969.
- 3276 Elliot, J. M. Effect of applied manganese, sulphur and phosphorus on the manganese content of oats and flue-cured tobacco. Can. J. Soil Sci. 49:277 - 286. 1969.
- 3277 Etter, H. M. Growth, metabolic components and drought survival of lodgepole pine seedlings at three nitrate levels. Can. J. Plant Sci. 49:393 - 402. 1969.
- 3278 Evans, E. J., and A. J. Dekker. Effect of nitrogen on cesium¹³⁷ in soils and its uptake by oat plants. Can. J. Soil Sci. 49:349-356. 1969.
- 3279 Evans, E. J., and A. J. Dekker. The fixation and plant recovery of Cs¹³⁷. Soil Sci. 107:175-180. 1969.
- 3280 Fletcher, K., and V. C. Brink. Content of certain trace elements in range forages from south-central British Columbia. Can. J. Plant Sci. 49:517-520. 1969.
- 3281 Foscolos, A. E., and I. Barshad. Equilibrium constants between both freshly-prepared and aged H-montmorillonites and chloride salt solutions. Soil Sci. Soc. Amer. Proc. 33:242-247. 1969.
- 3282 Freyman, S., and A. L. van Ryswyk. Effect of fertilizer on pinegrass in southern British Columbia. J. Range Manage. 22:390-395. 1969.
- 3283 Gagnon, J. D. Soil improvement trials using scarification and fertilization in stagnant white spruce plantations, Quebec, Canada. Plant Soil 30(1):23-33. 1969.
- 3284 Garcia, M. M., and D. C. Jordan. Action of 2,4-DB and dalapon on the symbiotic properties of *Lotus corniculatus* (birdsfoot trefoil). Plant Soil 30:317-334. 1969.

- 3285 Gillespie, J. E., and R. Protz. Evidence for the residual character of two soils, one on granite, the other on limestone in Peterborough County, Ontario. *Can. J. Earth Sci.* 6:1217-1225. 1969.
- 3286 Gillespie, J. E., and R. E. Wicklund. Soil survey of Leeds County, Ontario. *Ont. Soil Surv. Rep. No. 41.* 1969.
- 3287 Green, D. G., and J. B. Beard. Some relationships between nitrogen nutrition and soluble carbohydrates in the leaves of *Agrostis palustris* and *Poa pratensis*. *Agron. J.* 61:107-111. 1969.
- 3288 Grover, R., and R. J. Hance. Adsorption of some herbicides by soil and roots. *Can. J. Plant Sci.* 49:378-380. 1969.
- 3289 Gumbs, F. A. The effect of fabric and initial moisture content on infiltration in Ste.-Rosalie clay. M.Sc. Thesis, McGill Univ. 1969.
- 3290 Gupta, U. C. S X Mo interaction in plant nutrition. *Sulphur Inst. J.* 5:4-6. 1969.
- 3291 Gupta, U. C. Effect and interaction of molybdenum and limestone on growth and molybdenum content of cauliflower, alfalfa and bromegrass on acid soils. *Soil Sci. Soc. Amer. Proc.* 33:929-932. 1969.
- 3292 Gupta, U. C., and D. C. Munro. The boron content of tissues and roots of rutabagas and of soil as associated with brown-heart condition. *Soil Sci. Soc. Amer. Proc.* 33:424-426. 1969.
- 3293 Gupta, U. C., and D. C. Munro. Influence of sulfur, molybdenum and phosphorus on chemical composition and yields of Brussels sprouts and of molybdenum on sulfur contents of several plant species grown in the greenhouse. *Soil Sci.* 107:114-118. 1969.
- 3294 Halstead, R. L., B. J. Finn, and A. J. MacLean. Extractability of nickel added to soils and its concentration in plants. *Can. J. Soil Sci.* 49:335 - 342. 1969.
- 3295 Hamm, W. J. Nitrogen and sulphur mineralization of several Manitoba soils and N:S ratios in rape and barley. M.Sc. Thesis, Univ. Manitoba. 1969.
- 3296 Hance, R. J. Influence of pH, exchangeable cation and the presence of organic matter on the adsorption of some herbicides by montmorillonite. *Can. J. Soil Sci.* 49:357-364. 1969.

- 3297 Hansen, E. H., and M. Schnitzer. Molecular weight measurements of polycarboxylic acids in water by vapor pressure osmometry. *Anal. Chem. Acta* 46:247-254. 1969.
- 3298 Hansen, E. H., and M. Schnitzer. Zn-dust distillation of soil humic compounds. *Fuel* 48:41 - 46. 1969.
- 3299 Hansen, E. H., and M. Schnitzer. Zn-dust distillation and fusion of a soil humic and fulvic acid. *Soil Sci. Soc. Amer. Proc.* 33:29-36. 1969.
- 3300 Harris, C. R. Laboratory studies on the persistence of biological activity of some insecticides in soils. *J. Econ. Entomol.* 62:1437-1441. 1969.
- 3301 Harris, C. R., and W. W. Sans. Absorption of organochlorine insecticide residues from agricultural soils by crops used for animal feed. *Pestic. Monit. J.* 3:182-185. 1969.
- 3302 Heringa, P. K. Method for regulated soil leaching. *Can. J. Soil Sci.* 49:414-415. 1969.
- 3303 Heywood, R. T., T. Stevens, and L. R. Webber. Cannery waste disposal on land. *Can. J. Soil Sci.* 49:211-218. 1969.
- 3304 Horricks, J. S. Influence of rape residue on cereal production. *Can. J. Plant Sci.* 49:632-634. 1969.
- 3305 Huang, P. M., and S. Y. Lee. Effect of drainage in weathering transformation of mineral colloid of some Canadian prairie soils. *Proc. Int. Clay Conf. (Tokyo)* 1:541-552. 1969.
- 3306 Hunsigi, G., and J. W. Ketcheson. Effect of soil temperature on phosphorus fertilizer reaction in soil and subsequent availability to plants. *Agron. J.* 61:481-483. 1969.
- 3307 Hutchinson, T. C. Lime chlorosis as a factor in seedling establishment on calcareous soils: II. The development of leaf water deficits in plants showing lime chlorosis. *New Phytol.* 96:143-157. 1969.
- 3308 Ivarson, K. C., and F. J. Sowden. Free amino acid composition of the plant root environment under field conditions. *Can. J. Soil Sci.* 49:121-127. 1969.

- 3309 John, M. K., L. M. Lavkulich, J. R. Jungen, and J. L. Leigh. interpretation of soil data by computer. *Can. J. Soil Sci.* 49:177-179. 1969.
- 3310 Johnson, W. E. The land resource for forage production--Manitoba, Saskatchewan and Alberta, p. 73-88. *In* K. F. Nielsen [ed.] Canadian Forage Crops Symposium. Western Coop. Fert. Ltd., Modern Press, Saskatoon. 1969.
- 3311 Johnston, A., S. Smoliak, A. D. Smith, and L. E. Lutwick. Seasonal precipitation, evaporation, soil moisture and yield of fertilized range vegetation. *Can. J. Plant Sci.* 49:123-128. 1969.
- 3312 Kadirgamathaiyah, S. Role of aluminum and iron hydroxy compounds in the adsorption of organic matter by montmorillonite clay. Ph.D. Thesis, McGill Univ. 1969.
- 3313 Kakebeeke, M. G. Osmotic flow in soils. M.Sc. Thesis, Univ. Guelph. 1969.
- 3314 Kay, B. D. The heat of compression of Na-montmorillonite systems. Ph.D. Thesis, Purdue Univ. 1969.
- 3315 Keser, N. Soils and forest growth in Sayward Forest, British Columbia. Ph.D. Thesis, Univ. British Columbia. 1969.
- 3316 Khan, S. U. Some chemical characteristics of humic acid extracted from a solonetz-solod-black soil sequence at Vegreville, Alberta. *Can. J. Soil Sci.* 49:168-170. 1969.
- 3317 Khan, S. U. Some carbohydrate fractions of a Gray Wooded soil as influenced by cropping systems and fertilizers. *Can. J. Soil Sci.* 49:219-224. 1969.
- 3318 Khan, S. U. Interaction between the humic acid fraction of soils and certain metallic cations. *Soil Sci. Soc. Amer. Proc.* 33:851-854. 1969.
- 3319 Khan, S. U. The effect of moisture variation on some characteristics of a Black Solonetz soil. *Z. Pflanzenernaehr. Bodenk.* 124:253-258. 1969.
- 3320 Khan, S. U., and G. R. Webster. Effect of moisture on certain equilibrium ion ratios for a solonetzic and a chernozemic soil. *Can. J. Soil Sci.* 49:164 - 167. 1969.
- 3321 Knowles, R., and D. T.-H. Chu. Survival and mineralization and immobilization of ¹⁵N-labelled *Serratia* cells in a boreal forest raw humus. *Can. J. Microbiol.* 15:223-228. 1969.

- 3322 Kodama, H., and M. Schnitzer. Thermal analysis of a fulvic acid - montmorillonite complex. Proc. Int. Clay Conf. (Tokyo) 1:765-774. 1969.
- 3323 Kodama, H., S. Shimoda, and T. Sudo. Hydrous mica complexes: their structure and chemical composition. Proc. Int. Clay Conf. (Tokyo) 1:185 - 196. 1969.
- 3324 Krogman, K. K., and E. H. Hobbs. Field evapotranspiration as affected by soil variability. Int. Comm. Irrig. Drain. 7th Congr., Mexico 1969, R25, Quest. 23:406-415. 1969.
- 3325 Krupp, H. K., and D. E. Elrick. Density effects in miscible displacement experiments. Soil Sci. 107:372-380. 1969.
- 3326 Laliberte, G. E. A mathematical function for describing capillary pressure-desaturation data. Bull. Int. Ass. Sci. Hydrol. 14(2):131-149. 1969.
- 3327 Lawrence, T., and R. Ashford. Effect of nitrogen fertilizer and clipping frequency on the dry matter yield and persistency of intermediate wheatgrass. Can. J. Plant Sci. 49:435-446. 1969.
- 3328 Lee, C. C., and F. W. Sosulski. Varietal differences in the uptake of strontium-85 and calcium⁴⁵ by wheat. Can. J. Plant Sci. 49:93-94. 1969.
- 3329 Leeson, B. F. An organic soil capability classification for agriculture. M.Sc. Thesis, Univ. Guelph. 1969.
- 3330 Levesque, M. Characterization of model and soil organic matter metal-phosphate complexes. Can. J. Soil Sci. 49:365-374. 1969.
- 3331 Lewis, E. T., and G. J. Racz. Phosphorus movement in some calcareous and non-calcareous Manitoba soils. Can. J. Soil Sci. 49:305-312. 1969.
- 3332 Lowe, L. E. Distribution and properties of organic fractions in selected Alberta soils. Can. J. Soil Sci. 49:129-141. 1969.
- 3333 Lowe, L. E. Aspects of infrared spectra of humic acids in relation to methods of preparation. Can. J. Soil Sci. 49:257-258. 1969.
- 3334 Lowe, L. E. Sulphur fractions of selected Alberta profiles of the Gleysolic order. Can. J. Soil Sci. 49:375-382. 1969.
- 3335 Lutwick, L. E. Identification of phytoliths in soils. Pedol. Quaternary Res. May, 1969.

- 3336 Lutwick, L. E., and A. Johnston. Cumulic soils of the rough fescue prairie-poplar transition region. *Can. J. Soil Sci.* 49:119-203. 1969.
- 3337 Maas, E. F. Irrigation requirements of grass-clover pasture on Vancouver Island, British Columbia. *Can. J. Soil Sci.* 49:171-173. 1969.
- 3338 MacDougall, J. I., J. L. Nowland, and J. D. Hilchey. Soil survey of Annapolis County, Nova Scotia. *N.S. Soil Surv. Rep. No. 16.* 1969.
- 3339 MacLean, A. J., R. L. Halstead, and B. J. Finn. Extractability of added lead in soils and its concentration in plants. *Can. J. Soil Sci.* 49:327 - 334. 1969.
- 3340 MacLeod, L. B. Effects of N, P, and K and their interactions on the yield and kernel weight of barley in hydroponic culture. *Agron. J.* 61:26 - 29. 1969.
- 3341 MacLeod, L. B., and R. B. Carson. Effects of N, P, and K and their interactions on the nitrogen metabolism of vegetative barley tissue and on the chemical composition of grain in hydroponic culture. *Agron. J.* 61:275-278. 1969.
- 3342 Mahendrappa, M. K. Determination of nitrate nitrogen in soil extracts using a specific ion activity electrode. *Soil Sci.* 108:132-136. 1969.
- 3343 Makhan, D. S. The behaviour of copper in organic Land mineral soils. M.Sc. Thesis, McGill Univ. 1969.
- 3344 Mason, J. L. Effect of cultivation and nitrogen on fruit quality, yield and color of McIntosh apples grown in irrigated grass sod cover crop. *Can. J. Plant Sci.* 49:149-154. 1969.
- 3345 Mason, J. L. Effect of cultivation and nitrogen levels on storage quality, yield and color grade of starking 'Red Delicious' apple grown under grass sod. *J. Amer. Soc. Hort. Sci.* 94:78-80. 1969.
- 3346 Mason, J. L., and J. E. Miltimore. Yield increases from nitrogen on native range in southern British Columbia. *J. Range Manage.* 22:128-131. 1969.
- 3347 Massey, L. D. Availability of applied phosphorus to alfalfa and bromegrass. M.Sc. Thesis, Univ. Guelph. 1969.
- 3348 Mathur, S. P. Microbial use of podzol Bh fulvic acids. *Can. J. Microbiol.* 15:677-680. 1969.

- 3349 Maurer, A. R., D. P. Ormrod, and N. J. Scott. Effect of five soil water regimes on growth and composition of snap beans. *Can. J. Plant Sci.* 49:271-278. 1969.
- 3350 Maxwell, C. W., and E. C. Parsons. Relationships between hour-degree F soil temperature summations and apple maggot adult emergence. *J. Econ. Entomol.* 62:1310-1313. 1969.
- 3351 McGill, W. B. The quantity of nitrogen mineralized during the growing season, its effect on crop growth and factors affecting the nitrogen mineralization-immobilization relationship. M.Sc Thesis, Univ. Manitoba. 1969.
- 3352 McKeague, J. A., and D. B. Cann. Chemical and physical properties of some soils derived from reddish brown materials in the Atlantic Provinces. *Can. J. Soil Sci.* 49:65-78. 1969.
- 3353 McKeague, J. A., and J. H. Day. Oxalate-extractable Al as a criterion for identifying Podzol B horizons. *Can. J. Soil Sci.* 49:161-163. 1969.
- 3354 McKeague, J. A., J. I. MacDougall, K. K. Langmaid, and G. A. Bourbeau. Macro- and micromorphology of ten reddish brown soils from the Atlantic Provinces. *Can. J. Soil Sci.* 49:53-63. 1969.
- 3355 McKeague, J. A., and R. J. St. Arnaud. Pedotranslocation: eluviation-illuviation in soils during the Quaternary. *Soil Sci.* 107:428-434. 1969.
- 3356 Miles, J. R. W., C. M. Tu, and C. R. Harris. Metabolism of heptachlor and its degradation 264 products by soil microorganisms. *J. Econ. Entomol.* 62:1334-1338. 1969.
- 3357 Mullin, R. E. Soil acidification with sulphur in a forest tree nursery. *Sulphur Inst. J.* 5:2-3. 1969.
- 3358 Mulvey, R. H. Soil-inhabiting nematodes of the orders Araeolaimida, Chromadoria, Enoplida, and Monhysterida from the Canadian high Arctic. *Can. J. Zool.* 47:365-382. 1969.
- 3359 Mulvey, R. H. Nematodes of the genus *Tylenchorhynchus* (Tylenchoidea: Nematoda) from the Canadian high Arctic. *Can. J. Zool.* 47:1245 - 1248. 1969.
- 3360 Mulvey, R. H. Nematodes of the family Neotylenchidea (Tylenchida: Nematoda) from the Canadian high Arctic. *Can. J. Zool.* 47:1261-1268. 1969.

- 3361 Munro, D. C. Relationship of yield and total nitrogen uptake of Brussels sprouts plants grown in the greenhouse to available soil nitrogen. *Can. J. Soil Sci.* 49:313-318. 1969.
- 3362 Neal, J. L., Jr. Inhibition of nitrifying bacteria by grass and forb root extracts. *Can. J. Microbiol.* 15:633-635. 1969.
- 3363 Nyborg, M. Fixation of gaseous ammonia by soils. *Soil Sci.* 107:131-136. 1969.
- 3364 Nyborg, M., and A. M. F. Hennig. Field experiments with different placements of fertilizers for barley, flax and rapeseed. *Can. J. Soil Sci.* 49:79-88. 1969.
- 3365 Omanwar, P. K., and J. A. Robertson. Modification of the ascorbic acid method for determining phosphorus in dilute solutions. *Can. J. Soil Sci.* 49:259-261. 1969.
- 3366 Padhye, A. A. Isolation of *Trichophyton vanbreuseghemii* from soil in Alberta, Canada. *Mycologia* 61:414-415. 1969.
- 3367 Parasher, C. D. The distribution and characterization of organo-clay complexes in selected Lower Fraser Valley soils. M.Sc. Thesis, Univ. British Columbia. 1969.
- 3368 Parkinson, D., and R. Crouch. Studies on fungi in a pinewood soil: V. Root mycofloras of seedlings of *Pinus nigra* var. *laricio*. *Revue Ecol. Biol. Sol* 6:263-275. 1969.
- 3369 Parkinson, D., and A. Thomas. Quantitative study of fungi in the rhizosphere. *Can. J. Microbiol.* 15:875-878. 1969.
- 3370 Parkinson, D., and A. Thomas. Studies on the fungi in the root region: VIII. Qualitative studies on fungi in the rhizosphere of dwarf bean plants. *Plant Soil* 31:299-310. 1969.
- 3371 Pelton, W. L. Influence of low seeding rates on wheat yield in southwestern Saskatchewan. *Can. J. Plant Sci.* 49:607-614. 1969.
- 3372 Pelton, W. L., and H. C. Korven. Evapotranspiration estimates from atmometers and pans. *Can. J. Plant Sci.* 49:615-621. 1969.
- 3373 Pelton, W. L., and H. C. Korven. Evapotranspiration estimates in a semiarid climate. *Can. Agr. Eng.* 11:50-53. 1969.

- 3374 Peterson, L. K. Pesticide residues, p. 157-169. *In* K. F. Nielsen [ed.] Canadian Forage Crops Symposium. Western Coop. Fert. Ltd., Modern Press, Saskatoon. 1969.
- 3375 Piening, L., R. Edwards, and D. R. Walker. Effects of some cultural practices on root rot of barley in central Alberta. *Can. Plant Dis. Surv.* 49:95 - 97. 1969.
- 3376 Rand, A. T., R. Protz, and R. L. Thomas. Determination of Na-dithionite and NH₄-oxalate extractable Fe, Al and Mn in soils by atomic absorption spectroscopy. *Can. J. Soil Sci.* 49:89 - 94. 1969.
- 3377 Rapp, E., J. C. van Schaik, and N. N. Khanal. A hydrologic budget for a southern Alberta irrigation district. *Can. Agr. Eng.* 11:54-57. 1969.
- 3378 Read, D. C. Persistence of some newer insecticides in mineral soils measured by bioassay. *J. Econ. Entomol.* 62:1338-1342. 1969.
- 3379 Read, D. W. L. Residual effects from fertilizer on native range in southwestern Saskatchewan. *Can. J. Soil Sci.* 49:225-230. 1969.
- 3380 Reid, A. S. J., and G. R. Webster. The manganese status of some Alberta soils. *Can. J. Soil Sci.* 49:143-150. 1969.
- 3381 Reid, A. S. J., G. R. Webster, and H. R. Krouse. Nitrogen movement and transformation in soils. *Plant Soil* 31:224-237. 1969.
- 3382 Ripley, P. O. Crop rotation and productivity. *Can. Dep. Agr. Publ.* 1376. 1969.
- 3383 Rochefort, B. Evolution pédogénétique du profil à fragipan de la catena des sols: Arago, Garneau, Lafontaine. M.Sc. Thesis, Laval Univ. 1969.
- 3384 Ross, G. J. Acid dissolution of chlorites: Release of magnesium, iron and aluminum and mode of acid attack. *Clays and Clay Minerals* 17:347-354. 1969.
- 3385 Saha, J. G., B. Bhavaraju, and Y. W. Lee. Validity of using soil fortification with dieldrin to measure solvent extraction efficiency. *J. Agr. Food Chem.* 17:874-876. 1969.
- 3386 Saha, J. G., B. Bhavaraju, Y. W. Lee, and R. L. Randell. Factors affecting extraction of dieldrin^{14C} from soil. *J. Agr. Food Chem.* 17:877-882. 1969.

- 3387 Saini, G. R. Effect of colloidal silica on mean weight diameter of soil aggregates. *Can. J. Soil Sci.* 49:159-161. 1969.
- 3388 Saini, G. R., and P. A. Salenius. Relation between Staudinger indices and precipitabilities of polysaccharides extracted from forest soils. *Soil Sci. Soc. Amer. Proc.* 33:693-695. 1969.
- 3389 Schnitzer, M. Reactions between fulvic acid, a soil humic compound and inorganic soil constituents. *Soil Sci. Soc. Amer. Proc.* 33:75 - 81. 1969.
- 3390 Schnitzer, M., and J. G. Desjardins. Chemical characteristics of a natural soil leachate from a Humic Podzol. *Can. J. Soil Sci.* 49:151-158. 1969.
- 3391 Schnitzer, M., and H. Kodama. Reactions between fulvic acid, a soil humic compound and montmorillonite. *Israel J. Chem.* 7:141-147. 1969.
- 3392 Schnitzer, M., and S. I. M. Skinner. Free radicals in soil humic compounds. *Soil Sci.* 108:383-390. 1969.
- 3393 Shrivastava, N. C. Observations of soil moisture changes in flat land soils in Quebec. M.Sc. Thesis, McGill Univ. 1969.
- 3394 Singh, B., and D. J. Wort. Effect of vanadium on growth, chemical composition and metabolic processes of mature sugar beet (*Beta vulgaris* L.) plants. *Plant Physiol., Kutztown* 44:1321 - 1327. 1969.
- 3395 Singh, S. S. Basic aluminum sulphate formed as a metastable phase and its transformation to gibbsite. *Can. J. Soil Sci.* 49:383-388. 1969.
- 3396 Singh, S. S. Neutralization of dilute aqueous aluminum sulphate solutions with a base. *Can. J. Chem.* 47:663-667. 1969.
- 3397 Singh, S. S., and J. E. Brydon. Solubility of basic aluminum sulfates at equilibrium in solution and in the presence of montmorillonite. *Soil Sci.* 107:12-16. 1969.
- 3398 Skyring, G. W., and C. Quadling. Soil bacteria: principal component analysis of descriptions of named cultures. *Can. J. Microbiol.* 15:141-158. 1969.
- 3399 Skyring, G. W., and C. Quadling. Soil bacteria comparisons of rhizosphere and non-rhizosphere populations. *Can. J. Microbiol.* 15:473-488. 1969.

- 3400 Smith, A. E. Estimation of S-2,3-dichloroallyl N,N-diisopropylthiolcarbamate (diallate) residues in soils by electron-capture gas chromatography. *J. Agr. Food Chem.* 17:1052-1053. 1969.
- 3401 Smith, A. E. Factors affecting the loss of triallate from soils. *Weed Res.* 9:306-313. 1969.
- 3402 Soper, R. J., and Y. P. Ralra. Effect of mode of application and source of fertilizer on phosphorus utilization by buckwheat, rape, oats and flax. *Can. J. Soil Sci.* 49:319-326. 1969.
- 3403 Sowden, F. J. Effect of hydrolysis time and iron and aluminum removal on the determination of amino compounds in soil. *Soil Sci.* 107:364-371. 1969.
- 3404 Staple, W. J. Comparison of computed and measured moisture redistribution following infiltration. *Soil Sci. Soc. Amer. Proc.* 33:840-847. 1969.
- 3405 Stephenson, G. R., and S. R. Ries. Metabolism of pyrazon in sugarbeet and soil. *Weed Sci.* 17:327 - 331. 1969.
- 3406 Stevenson, C. K., and C. S. Baldwin. Effect of time and method of nitrogen application and source of nitrogen on the yield and nitrogen content of corn (*Zea mays* L.). *Agron. J.* 61:381-384. 1969.
- 3407 Strzelczyk, E., J. W. Rouatt, and E. A. Peterson. Studies on actinomycetes from soils of Baffin Island. *Arctic* 22:130-139. 1969.
- 3408 Tahir, M. Some effects of the incorporation of organic matter on the uptake of nutrients by cereal crops. M.Sc. Thesis, Univ. Saskatchewan. 1969.
- 3409 Thompson, F. R., and C. T. Corke. Persistence and effects of some chlorinated anilines on nitrification in soil. *Can. J. Microbiol.* 15:791 - 796. 1969.
- 3410 Topp, G. C. Soil-water hysteresis measured in a sandy loam and compared with the hysteretic domain model. *Soil Sci. Soc. Amer. Proc.* 33:645-650. 1969.
- 3411 Townsend, L. R. Influence of form of nitrogen and pH on growth and nutrient levels in the leaves and roots of the lowbush blueberry. *Can. J. Plant Sci.* 49:333-338. 1969.
- 3412 Tu, C. K.-w. The effect of depth and spacing of subsurface drains on the rate of water removal from two Quebec soils. M.Sc. Thesis, McGill Univ. 1969.

- 3413 Tu, C. M. Effects of four organophosphorus insecticides on the activity of microorganisms in soil. *Bacteriol. Proc.* (1969):3. 1969.
- 3414 Turner, R. C. Three forms of aluminum in aqueous systems determined by 8-quinolinolate extraction methods. *Can. J. Chem.* 47:2521-2527. 1969.
- 3415 Turner, R. C., and G. J. Ross. Conditions in solution during the formation of gibbsite in dilute aluminum salt solutions: III. Hydroxyaluminum products of reactions during the neutralization of aluminum chloride solutions with sodium hydroxide. *Can. J. Soil Sci.* 49:389 - 396. 1969.
- 3416 Twardy, A. Comparative study of till in west-centra: Alberta. M.Sc. Thesis, Univ. Alberta. 1969.
- 3417 Ukrainetz, H. Forage crop fertilization--eastern prairies, p. 189-221. *In* K. F. Nielsen [ed.] *Canadian Forage Crops Symposium*. Western Coop. Fert. Ltd., Modern Press, Saskatoon. 1969.
- 3418 Vaartaja, O., and V. P. Agnihotri. Interaction of nutrients and four antifungal antibiotics in their effects on *Pythium* species in vitro and in soil. *Plant Soil* 30:49-61. 1969.
- 3419 Valentine, K. W. G. A placic Humic Podzol on Vancouver Island, British Columbia. *Can. J. Soil Sci.* 49:411-413. 1969.
- 3420 Valentine, K. W. G., and J. F. G. Millette. Significant particle size variation and weathering in Orthic Podzol profiles. *J. Soil Sci.* 20:11 - 22. 1969.
- 3421 Valentine, P. R. Water balance of an organic soil. M.Sc. Thesis, Univ. Guelph. 1969.
- 3422 Vanden Born, W. H. Picloram residues and crop production. *Can. J. Plant Sci.* 49:628-629. 1969.
- 3423 van Ryswyk, A. L. Forest and alpine soils of south-central British Columbia. Ph.D. Thesis, Washington State Univ. 1969.
- 3424 van Schaik, J. C., and R. R. Cairns. Salt and water movement into solonetzic soils. *Can. J. Soil Sci.* 49:205-210. 1969.
- 3425 van Schaik, J. C., and D. P. Graham. Improved outflow barriers for permeability measurements. *Can. J. Soil Sci.* 49:261-262. 1969.

- 3426 van Schaik, J. C., and G. E. Laliberte. Soil hydraulic properties affected by saturation technique. *Can. J. Soil Sci.* 49:95-102. 1969.
- 3427 Verma, T. R., and J. A. Toogood. Infiltration rates in soils of the Edmonton area and rainfall intensities. *Can. J. Soil Sci.* 49:103-109. 1969.
- 3428 Verma, T. R., and J. A. Toogood. Moisture balance in soils of the Edmonton area. *Can. J. Soil Sci.* 49:403-407. 1969.
- 3429 Walker, D. R. Sulphur in precipitation in central Alberta. *Can. J. Soil Sci.* 49:409-410. 1969.
- 3430 Walker, D. R. Fertilizing for forage production in Alberta and northern British Columbia, p. 173 - 186. *In* K. F. Nielsen (ed.) *Canadian Forage Crops Symposium*. Western Coop. Fert. Ltd., Modern Press, Saskatoon. 1969.
- 3431 Wall, G. J. An investigation of two Podzol-like profiles developed on calcareous materials. M.Sc. Thesis, Univ. Guelph. 1969.
- 3432 Ward, G. M. A study of the rate and efficiency of nutrient absorption (KNO_3) by tomato seedlings. *Proc. Amer. Soc. Hort. Sci.* 94:128-130. 1969.
- 3433 Ward, G. M., and M. J. Miller. Magnesium deficiency in greenhouse tomatoes. *Can. J. Plant Sci.* 49:53 - 60. 1969.
- 3434 Ward, G. M., and J. R. Rainforth. Fertilizer schedules for greenhouse tomatoes in southwestern Ontario. *Can. Dep. Agr. Publ.* 1237. Revised. 1969.
- 3435 Ward, G. M., and J. R. Rainforth. Fertilizer schedule for greenhouse cucumbers in southwestern Ontario. *Can. Dep. Agr. Publ.* 1394. 1969.
- 3436 Webber, M. D., and J. S. Clark. Reactions of phosphate with aluminum and Wyoming bentonite. *Can. J. Soil Sci.* 49:231-240. 1969.
- 3437 White, R. P. Hydroxylamine hydrochloride as a reducing agent for atomic absorption determinations of manganese in dry-ashed plant tissue. *Soil Sci. Soc. Amer. Proc.* 33:478-479. 1969.
- 3438 Wilcox, J. C. Peak flow requirements for sprinkler irrigation of orchards as affected by soil texture and peak evapotranspiration. *Can. J. Soil Sci.* 49:39-45. 1969.

- 3439 Wilcox, J. C., and C. H. Brownlee. Scheduling of irrigations in orchards. Summerland Irrigation Tech. Bull. 5. 1969.
- 3440 Williams, J., and C. F. Shaykewich. An evaluation of polyethylene glycol (P.E.G.) 6000 and P.E.G. 20,000 in the osmotic control of soil water matric potential. Can. J. Soil Sci. 49:397-402. 1969.
- 3441 Wilson, D. B., and R. D. Clark. Irrigated pastures, p. 309-323. *In* K. F. Nielsen (ed.) Canadian Forage Crops Symposium. Western Coop. Fert. Ltd., Modern Press, Saskatoon. 1969.
- 3442 Yu, S. J., and F. O. Morrison. Mevinphos and phosphamidon: influence of plant nutrition on uptake and effectiveness. J. Econ. Entomol. 62:1296-1304. 1969.
- 3443 Zandstra, H. G., R. H. Anderson, and W. K. Dawley. Effects of fertilizer on yield and quality of Norland potatoes in northeastern Saskatchewan. Amer. Potato J. 46:69-74. 1969.
- 3444 Zwarich, M. A., and C. F. Shaykewich. An evaluation of several methods of measuring bulk density of soils. Can. J. Soil Sci. 49:241-245. 1969.

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