

## **Appendix A. LIST OF PUBLICATIONS and PATENT by John M. Bremner.**

Bremner, J. M., Heintze, S. G., Mann, P. J. G. and Lees, H. Metalloorganic complexes. In soil. *Nature* 158:770 (1946).

Bremner, J. M. Studies on soil organic matter. I. The chemical nature of soil organic nitrogen. *J. Agr. Sci.* 39:183-193 (1949).

Bremner, J. M. and Lees, H. Studies on soil organic matter. II. The extraction of organic matter from soil by neutral reagents. *J. Agr. Sci.* 39:274-279 (1949).

Bremner, J. M. Studies on soil organic matter. III. The extraction of organic carbon and nitrogen from soil. *J. Agr. Sci.* 39:280-282 (1949).

Bremner, J. M. Use of the Van Slyke-Neil manometric apparatus for the determination of organic and inorganic carbon in soil and of organic carbon in soil extracts. *Analyst* 74:492-498 (1949).

Bremner, J. M. Some observations on the oxidation of soil organic matter in the presence of alkali. *J. Soil Sci.* 1:198-204 (1950).

Bremner, J. M. Amino acids in soil. *Nature* 165:367 (1950).

Bremner, J. M. The amino-acid composition of the protein material in soil. *Biochem. J.* 47:538-542 (1950).

Bremner, J. M. A review of recent work on soil organic matter. I. *J. Soil Sci.* 2:67-82 (1951).

Bremner, J. M. Alkaline decomposition of amino acids. *Nature* 168:518 (1951).

Bremner, J. M. and Kenten, R. H. Paper chromatography of amines. *Biochem. J.* 49:651-655 (1951).

Bremner, J. M. The nature of soil-nitrogen complexes. *J. Sci. Food Agr.* 3:497-500 (1952).

Bremner, J. M. Identification of hydroxylamine and hydrazine by paper chromatography. *Analyst* 79:198-201 (1954).

Bremner, J. M. A review of recent work on soil organic matter. II. *J. Soil Sci.* 5:214-232 (1954).

Bremner, J. M. and Shaw, K. Studies on the estimation and decomposition of amino sugars in soil. *J. Agr. Sci.* 44:152-159 (1954).

- Bremner, J. M. Nitrogen transformations during the biological decomposition of straw composted with inorganic nitrogen. *J. Agr. Sci.* 45:469-475 (1955).
- Bremner, J. M. Recent work on soil organic matter at Rothamsted. *Z. PflErnahr. DUng. Bodenk.* 69:32-38 (1955).
- Bremner, J. M. Studies on soil humic acids. I. The chemical nature of humic nitrogen. *J. Agr. Sci.* 46:247-256 (1955).
- Bremner, J. M. and Shaw, K. Determination of ammonia and nitrate in soil. *J. Agr. Sci.* 46:320-328 (1955).
- Bremner, J. M., Flaig, W. and Kuster, E. Zur Kenntnis der Huminsäuren. IX. Mitteilung. Der Gehalt an Aminosäuren in Steptomyceten-Huminsäuren. *Z. PflErnahr. DUng. Bodenk.* 71:58-63 (1955).
- Bremner, J. M. Nitrogen distribution and amino-acid composition of fractions of a humic acid from a chernozem soil. (Hildesheimer Schwarzerde). *Z. PflErnahr. DUng. Bodenk.* 71:63-66 (1955).
- Bremner, J. M. and Shaw, K. Reduction of nitrate by ferrous hydroxide under various conditions of alkalinity. *Analyst* 80:626-627 (1955).
- Bremner, J. M. Some soil organic-matter problems. *Soils and Fertilizers* 19:115-123 (1956).
- Bremner, J. M. Alkaline decomposition of p-hydroxy-o-amino acids. *Biochim. Biophys. Acta* 20:579-581 (1956).
- Bremner, J. M. Studies on soil humic acids. II. Observations on the estimation of free amino groups. Reactions of humic acid and lignin preparations with nitrous acid. *J. Agr. Sci.* 48:352-360 (1957).
- Bremner, J. M. and Shaw, K. The mineralization of some nitrogenous materials in soil. *J. Sci. Food Agr.* 8:341-347 (1957).
- Bremner, J. M. and Shaw, K. Denitrification in soil. I. Methods of investigation. *J. Agr. Sci.* 51:22-39 (1958).
- Bremner, J. M. and Shaw, K. Denitrification in soil. II. Factors affecting denitrification. *J. Agr. Sci.* 51:40-52 (1958).
- Bremner, J. M. Amino sugars in soil. *J. Sci. Food Agr.* 9:528-532 (1958).

Bremner, J. M., and Harada, T. Release of ammonium and organic matter from soil by hydrofluoric acid and effect of hydrofluoric acid treatment on extraction of soil organic matter by neutral and alkaline reagents. *J. Agr. Sci.* 52:137-146 (1959).

Bremner, J. M. Determination of fixed ammonium in soil. *J. Agr. Sci.* 52:147-160 (1959).

Bremner, J. M., Stevenson, F. J. and McDonnell, P. M. Release of fixed ammonium from soil by ball milling. *Nature* 183:1414-1415 (1959).

Scott, A. D., Edwards, A. P. and Bremner, J. M. Removal of fixed ammonium from clay minerals by cation exchange resins. *Nature* 785:792 (1960).

Bremner, J. M. Determination of nitrogen in soil by the Kjeldahl method. *J. Agr. Sci.* 55:11-33 (1960).

Bremner, J. M. and Jenkinson, D. S. Determination of organic carbon in soil. I. Oxidation by dichromate of organic matter in soil and plant materials. *J. Soil Sci.* 11:394-402 (1960).

Bremner, J. W. and Jenkinson, D. S. Determination of organic carbon in soil. II. Effect of carbonized materials. *J. Soil Sci.* 11:403-408 (1960).

Bremner, J. M., and Frederick, L. R. Laboratory evaluation of new nitrogen fertilizers. *Proceedings of Nitrogen Research Symposium, Tennessee Valley Authority, Wilson Dam.* pp. 58-63 (1964).

Waring, S. A. and Bremner, J. M. Some problems in the development of incubation techniques for the estimation of nitrogen availability in soils. *Australian Plant Nutrition Conference 1964, Section B(d)*, pp. 10-11. CSIRO, Melbourne (1964).

Waring, S. A. and Bremner, J. M. A rapid method for the estimation of nitrogen availability in soils. *Australian Plant Nutrition Conference 1964, Section B(d)*, pp. 11-12. CSIRO, Melbourne (1964).

Edwards, A. P. and Bremner, J. M. Use of sonic vibration for separation of soil particles. *Can. J. Soil Sci.* 44:366 (1964).

Fuhr, F. and Bremner, J. M. Untersuchungen Zur Fixierung des Nitrit-Stickstoffs durch die organische Masse des Bodens. *Landw. Forsch.* 18:43-51 (1964).

Fuhr, F. and Bremner, J. M. Beeinflussende Faktoren in der Fixierung des Nitrit-Stickstoffs durch die organische Masse des Bodens. *Atompraxis* 10:109-113 (1964).

Hauck, R. D. and Bremner, J. M. The methodology of N<sup>15</sup> research. Proceedings of Nitrogen Research Symposium, Tennessee Valley Authority, Wilson Dam. pp. 97-110 (1964).

Keeney, D. R. and Bremner, J. M. Effect of cultivation on the nitrogen distribution in soils. Proc. Soil Sci. Soc. Am. 28:653-656 (1964).

Waring, S. A. and Bremner, J. H. Ammonium production in soil under waterlogged conditions as an index of nitrogen availability. Nature 201:951-952 (1964).

Waring, S. A. and Bremner, J. M. Effect of soil mesh-size on the estimation of mineralizable nitrogen in soils. Nature 202:1141 (1964).

Cheng, H. H., Bremner, J. M. and Edwards, A. P. Variations of nitrogen-15 abundance in soils. Science 146:1574-1575 (1964).

Bremner, J. M. and Keeney, D. R. Steam distillation methods for determination of ammonium, nitrate, and nitrite. Anal. Chim. Acta 32:485-495 (1965).

Bremner, J. M. Total nitrogen. In Methods of Soil Analysis, edited by C. A. Black. Part 2, pp. 1149-1178. American Society of Agronomy, Madison (1965).

Bremner, J. M. Inorganic forms of nitrogen. In, Methods of Soil Analysis, edited by C. A. Black. Part 2, pp. 1179-1237. American Society of Agronomy, Madison (1965).

Bremner, J. M. Isotope-ratio analysis of nitrogen in nitrogen-15 tracer investigations. In, Methods of Soil Analysis, edited by C. A. Black. Part 2, pp. 1256-1286. American Society of Agronomy, Madison (1965).

Bremner, J. M. Organic forms of nitrogen. In, Methods of Soil Analysis, edited by C. A. Black. Part 2, pp. 1238-1255. American Society of Agronomy, Madison (1965).

Bremner, J. M. Nitrogen availability indexes, In Methods of Soil Analysis, edited by C. A. Black. Part 2, pp. 1324-1345. American Society of Agronomy, Madison (1965).

Cheng, H. H. and Bremner, J. M. Gaseous forms of nitrogen. In, Methods of Soil Analysis, edited by C. A. Black. Part 2, pp. 1287-1323. American Society of Agronomy, Madison (1965).

Edwards, A. P. and Bremner, J. M. Dispersion of mineral colloids in soils using cation exchange resins. Nature 205:208-209 (1965).

Bremner, J. M. Organic nitrogen in soils. In, Soil Nitrogen, edited by W. V. Bartholomew and F. E. Clark, pp. 93-149. American Society of Agronomy, Madison (1965).

Bremner, J. M. and Edwards, A. P. Determination and isotope-ratio analysis of different forms of nitrogen in soils. 1. Apparatus and procedure for distillation and determination of ammonium. *Proc. Soil Sci. Soc. Am.* 29:504-507 (1965).

Bremner, J. M. Cheng, H. H., and Edwards, A. P. Assumptions and errors, in N-15 tracer research. In, *The Use of Isotopes In Soil Organic Matter Studies (Report of FAO-IAEA Technical Meeting, Brunswick-Volkenrode, 1963)*. pp. 429-445. Pergamon Press, New York (1966).

Bremner, J. M. and Fuhr, F. Tracer studies of the reaction of soil organic matter with nitrite. In, *The Use of Isotopes In Soil Organic Matter Studies (Report of FAO-IAEA Technical Meeting, Brunswick-Volkenrode, 1963)*. pp. 347-348. Pergamon Press, New York (1966).

Edwards, A. P. and Bremner, J. M. Formation of methyl nitrite in reaction of lignin with nitrous acid. In, *The Use of Isotopes in Soil Organic Matter Studies (Report of FAO-IAEA Technical Meeting, Brunswick-Volkenrode, 1963)*. pp. 347-348. Pergamon Press, New York.

Cheng, H. H. and Bremner, J. M. Determination and isotope-ratio analysis of different forms of nitrogen in soils. 2. A simplified procedure for isotope-ratio analysis of soil nitrogen. *Proc. Soil Sci. Soc. Am.* 30:450-453 (1966).

Keeney, D. R. and Bremner, J. M. A chemical index of soil nitrogen availability. *Nature* 211:892-893 (1966).

Bremner, J. M. and Keeney, D. R. Determination and isotope-ratio analysis of different forms of nitrogen in soils. 3. Exchangeable ammonium, nitrate, and nitrite by extraction-distillation methods. *Proc. Soil Sci. Soc. Am.* 30:577-582 (1966).

Nelson, D. W. and Bremner, J. M. An evaluation of Mogilevkina's method of estimating fixed ammonium in soils. *Proc. Soil Sci. Soc. Am.* 30:409-411 (1966).

Keeney, D. R. and Bremner, J. M. Determination and isotope-ratio analysis of different forms of nitrogen in soils. 4. Exchangeable ammonium, nitrate, and nitrite by direct distillation methods. *Proc. Soil Sci. Soc. Am.* 30:583-587 (1966).

Bremner, J. M. and Salomon, M. Reaction of  $\alpha$ -amino acids with peri-haphthindan-2,3,4-trione hydrate. *Anal. Biochem.* 16:179-181 (1966).

Keeney, D. R. and Bremner, J. M. Characterization of mineralizable nitrogen in soils. *Proc. Soil Sd. Soc. Am.* 30:714-719 (1966).

Silva, J. A. and Bremner, J. M. Determination and isotope-ratio analysis of different forms of nitrogen in soils. 5. Fixed ammonium. *Proc. Soil Sci. Soc. Am.* 30:587-594 (1966).

Keeney, D. R. and Bremner, J. M. Comparison and evaluation of laboratory methods of obtaining an index of soil nitrogen availability. *Agron. J.* 58:498-503 (1966).

Edwards, A. P. and Bremner, J. M. Dispersion of soil particles by sonic vibration. *J. Soil Sci.* 18:47-63 (1967).

Bremner, J. M. Nitrogenous compounds. In, *Soil Biochemistry*, edited by A. D. McLaren and G. H. Peterson, pp. 19-66. Marcel Dekker, New York (1967).

Keeney, D. R. and Bremner, J. M. Determination and isotope-ratio analysis of different forms of nitrogen in soils. 6. Mineralizable nitrogen. *Proc. Soil Sci. Soc. Am.* 31:34-39 (1967).

Edwards, A. P. and Bremner, J. M. Microaggregate formation in soils. *J. Soil Sci.* 18:64-73 (1967).

Keeney, D. R. and Bremner, J. M. Determination and isotope-ratio analysis of different forms of nitrogen in soils. 7. Urea. *Proc. Soil Sci. Soc. Am.* 31:317-321 (1967).

Keeney, D. R. and Bremner, J. M. A simple steam distillation method of estimating *Beta*-hydroxy-*alpha*-amino acids. *Anal. Biochem.* 18:274-285 (1967).

Bremner, J. M., Nelson, D. W. and Silva, J. A. Comparison and evaluation of methods of determining fixed ammonium in soils. *Proc. Soil Sci. Soc. Am.* 31:466-472 (1967).

Keeney, D. R. and Bremner, J. M. Use of the Coleman Model 29A Analyzer for total nitrogen analysis of soils. *Soil Sci.* 104:358-363 (1967).

Bremner, J. M. and Nelson, D. W. Chemical decomposition of nitrite in soils. *Trans. 9th Internat. Cong. Soil Sci.* 2:495-503 (1968).

Bremner, J. M., Bundy, L. G. and Agarwal, A. S. Use of a selective ion electrode for determination of nitrate in soils. *Anal. Letter* 1:837-844 (1968).

Bremner, J. M. The nitrogenous constituents of soil organic matter and their role in soil fertility, In, *Organic Matter and Soil Fertility*, pp. 143-158. Pontifical Academy of Sciences, Vatican City (1968).

Hauck, R. D. and Bremner, J. M. Significance of the nitrification reaction in nitrogen balances. In, *Biology and Ecology of Nitrogen*, pp. 31-39. National Academy of Sciences, Washington, D. C. (1969).

Keeney, D. R. and Bremner, J. M. Determination of soil cation exchange capacity by a simple micro-technique. *Soil Sci.* 107:334-336 (1969).

Nelson, D. W., and Bremner, J. M. Factors affecting chemical transformations of nitrite in soils. *Soil Biol. Biochem.* 1:229-239 (1969).

Tabatabai, M. A. and Bremner, J. M. Use of *p*-nitrophenyl phosphate for assay of soil phosphatase activity. *Soil Biol. Biochem.* 1:301-307 (1969)

Tabatabai, H. A. and Bremner, J. M. Comparison of some methods for determination of total sulfur in soils. *Proc. Soil Sci. Soc. Am.* 34:417-420 (1970).

Tabatabai, M. A. and Bremner, J. M. An alkaline oxidation method for determination of total sulfur in soils. *Proc. Soil Sci. Soc. Am.* 34:62-65 (1970).

Tabatabai, M. A. and Bremner, J. M. Arylsulfatase activity of soils. *Proc. Soil Sci. Soc. Am.* 34:225-229 (1970).

Nelson, D. W. and Bremner, J. M. Role of soil minerals and metallic cations in nitrite decomposition and chemo denitrification in soils. *Soil Biol. Biochem.* 2:1-8 (1970).

Tabatabai, M. A. and Bremner, J. M. Factors affecting soil arylsulfatase activity. *Proc. Soil Sci. Soc. Am.* 34:427-429 (1970).

Douglas, L. A. and Bremner, J. M. Colorimetric determination of microgram quantities of urea. *Anal. Letters* 3:79-87 (1970).

Tabatabai, M. A. and Bremner, J. M. Use of the Leco automatic 70-second carbon analyzer for total carbon analysis of soils. *Proc. Soil Sci. Soc. Am.* 34:608-610 (1970).

Nelson, D. W. and Bremner, J. M. Gaseous products of nitrite decomposition in soils. *Soil Biol. Biochem.* 2:203-215 (1970).

Tabatabai, M. A. and Bremner, J. M. A simple turbidimetric method of determining total sulfur in plant materials. *Agron. J.* 62:805-806 (1970).

Douglas, L. A. and Bremner, J. M. Extraction and colorimetric determination of urea in soils. *Proc. Soil Sci. Soc. Am.* 34:859-862 (1970).

Douglas, L. A. and Bremner, J. M. An evaluation of the barium peroxide method of maintaining aerobic conditions and determining carbon dioxide evolved during incubation of soils treated with organic materials. *Soil Biol. Biochem.* 3:209-219 (1971).

Bremner, J. H. and Douglas, L. A. Decomposition of urea phosphate in soils. *Proc. Soil Sci. Soc. Am.* 35:575-578 (1971).

Douglas, L. A. and Bremner, J. M. A rapid method of evaluating different compounds as inhibitors of urease activity In soils. *Soil Biol. Biochem.* 3:309-315 (1971).

- Bremner, J. M. and Douglas, L. A. Use of plastic films for aeration in soil incubation experiments. *Soil Biol. Biochem.* 3:289-296 (1971).
- Bremner, J. M. and Douglas, L. A. Inhibition of urease activity in soils. *Soil Biol. Biochem.* 3:297-307 (1971).
- Tabatabai, M. A. and Bremner, J. M. Michaelis constants of soil enzymes. *Soil Biol. Biochem.* 3:317-324 (1971).
- Bremner, J. M. and Tabatabai, M. A. Use of automated combustion techniques for total carbon, total nitrogen, and total sulfur analysis of soils. In, *Instrumental Methods for Analysis of Soils and Plant Tissue*, edited by L. M. Walsh. Special Publication Series, No. 2, Part 3, pp. 1-15. Soil Science Society of America, Madison (1971).
- Tabatabai, M. A. and Bremner, J. M. Distribution of total and available sulfur in selected soils and soil profiles. *Agron. J.* 64:40-44 (1972).
- Nelson, D. W. and Bremner, J. M. Preservation of soil samples for inorganic nitrogen analyses. *Agron. J.* 64:196-199 (1972).
- Bundy, L. G. and Bremner, J. M. A simple titrimetric method for determination of inorganic carbon in soils. *Proc. Soil Sci. Soc. Am.* 36:273-275 (1972).
- Burford, J. R. and Bremner, J. M. Gas chromatographic determination of carbon dioxide evolved from soils in closed systems. *Soil Biol. Biochem.* 4:191-197 (1972).
- Bremner, J. M. and Tabatabai, M. A. Use of an ammonia electrode for determination of ammonium in Kjeldahl analysis of soils. *Comm. Soil Sci. Plant Anal.* 3:159-165 (1972).
- Burford, J. R. and Bremner, J. M. Is phosphate reduced to phosphine. In, *waterlogged soils*. *Soil Biol. Biochem.* 4:489-495 (1972).
- Tabatabai, M. A. and Bremner, J. M. Sulphur in Iowa soils. *Sulphur Inst. J.* 8:10-13 (1972).
- Tabatabai, M. A. and Bremner, J. M. Assay of urease activity in soils. *Soil Biol. Biochem.* 4:479-487 (1972).
- Tabatabai, M. A. Bremner, J. M., and Storrier, R. R. Extraction and colorimetric determination of nitrilotriacetic acid (NTA) in soils. *Comm. Soil Sci. Plant Anal.* 3:57-64 (1972).
- Banwart, W. L., Tabatabai, M. A. and Bremner, J. M. Determination of ammonium in soil extracts and water samples by an ammonia electrode. *Comm. Soil Sci. Plant Anal.* 3:449-458 (1972).

Hauck, R. D., Bartholomew, W. V., Bremner, J. M., Broadbent, F. B., Cheng, H. H., Edwards, A. P., Keeney, D. R., Legg, J. O., Olsen, S. R., and Porter, L. K. Use of variations in natural nitrogen isotope abundance for environmental studies: a questionable approach. *Science* 177:453-454 (1972).

Genrich, D. A. and Bremner, J. M. A reevaluation of the ultrasonic vibration method of dispersing soils. *Proc. Soil Sci. Soc. Am.* 36:944-947 (1972).

Genrich, D. A. and Bremner, J. M. Effect of probe condition on ultrasonic dispersion of soils by probe-type vibrators. *Proc. Soil Sci. Soc. Am.* 37:975-976 (1972).

Tabatabai, M. A. and Bremner, J. M. Forms of sulfur, and carbon, nitrogen, and sulfur relationships in Iowa soils. *Soil Sci.* 114:380-386 (1972).

Bremner, J. M. and Tabatabai, M. A. Effects of some inorganic substances on TTC assay of dehydrogenase activity in soils. *Soil Biol. Biochem.* 5:385-386 (1973).

Bremner, J. M. and Douglas, L. A. Effects of some urease inhibitors on urea hydrolysis in soils. *Proc. Soil Sci. Soc. Am.* 37:225-226 (1973).

Bremner, J. M. and Tabatabai, M. A. Nitrogen-15 enrichment of soils and soil-derived nitrate. *J. Environ. Qual.* 2:363-365 (1973).

Bundy, L. G. and Bremner, J. M. Inhibition of nitrification in soils. *Proc. Soil Sci. Soc. Am.* 37:396-398 (1973).

Bremner, J. M. and Bundy, L. G. Use of ferrous hydroxide for determination of nitrate in soil extracts. *Comm. Soil Sci. Plant Anal.* 4:285-291 (1973).

Bundy, L. G. and Bremner, J. M. Effects of substituted *p*-benzoquinones on urease activity in soils. *Soil Biol. Biochem.* 5:847-853 (1973).

Smith, K. A. Bremner, J. M., and Tabatabai, M. A. Sorption of gaseous atmospheric pollutants by soils. *Soil Sci.* 116:313-319 (1973).

Bundy, L. G. and Bremner, J. H. Determination of ammonium N and nitrate N in acid permanganate solution used to absorb ammonia, nitric oxide, and nitrogen dioxide evolved from soils. *Comm. Soil Sci. Plant Anal.* 4:179-184 (1973).

Bundy, L. G. and Bremner, J. M. Effects of urease inhibitors on nitrification in soils. *Soil Biol. Biochem.* 6:27-30 (1974).

Banwart, W. L. and Bremner, J. M. Gas chromatographic Identification of sulfur gases in soil atmospheres. *Soil Biol. Biochem.* 6:113-115 (1974).

- Bremner, J. M. and Bundy, L. G. Inhibition of nitrification in soils by volatile sulfur compounds. *Soil Biol. Biochem.* 6:161-165 (1974).
- Bremner, J. M. and Hauck, R. D. Perspectives in soil and fertilizer nitrogen research. *Trans. 10th Internat. Cong. Soil Sci., Moscow* 9:13-29 (1974).
- Bremner, J. M. and Bundy, L. G. Effects of organic sulfur compounds on methods of determining inorganic forms of nitrogen. *Soil Biol. Biochem.* 6:97-99 (1974).
- Bundy, L. G. and Bremner, J. M. Effects of nitrification inhibitors on transformations of urea nitrogen in soils. *Soil Biol. Biochem.* 6:367-376 (1974).
- Bremner, J. M. and Banwart, W. L. Identifying volatile S compounds by gas chromatography. *Sulphur Inst. J.* 10:6-11 (1974).
- Genrich, D. A. and Bremner, J. M. Isolation of soil particle-size fractions. *Soil Sci. Soc. Am. Proc* 38:222-225 (1974)
- Tabatabai, M. A. and Bremner, J. M. Decomposition of nitrilotriacetate (NTA) in soils. *Soil Biol. Biochem.* 6:103-106 (1975).
- Zantua, M. I. and Bremner, J. M. Comparison of methods of assaying urease activity in soils. *Soil Biol. Biochem.* 7:291-295 (1975).
- Zantua, M. I. and Bremner, J. M. Preservation of soil samples for assay of urease activity. *Soil Biol. Biochem.* 7:297-299 (1975).
- Bremner, J. M. and Zantua, M. I. Enzyme activity in soils at subzero temperatures. *Soil Biol. Biochem.* 7:383-387 (1975).
- Banwart, W. L. and Bremner, J. M. Identification of sulfur gases evolved from animal manures. *J. Environ. Qual.* 4:363-366 (1975).
- Burford, J. R. and Bremner, J. M. Relationships between the denitrification capacities of soils and total, water-soluble, and readily decomposable soil organic matter. *Soil Biol. Biochem.* 7:389-394 (1975).
- Banwart, W. L. and Bremner, J. M. Formation of volatile sulfur compounds by microbial decomposition of sulfur-containing amino acids in soils. *Soil Biol. Biochem.* 7:359-364 (1975).
- Banwart, W. L. and Bremner, J. M. Volatilization of sulfur from unamended and sulfate-treated soils. *Soil Biol. Biochem.* 8:19-22 (1976).
- Bremner, J. M. and Bundy, L. G. Effects of potassium azide on transformations of urea nitrogen in soils. *Soil Biol. Biochem.* 8:131-133 (1976).

- Bremner, J. M. and Banwart, W. L. Sorption of sulfur gases by soils. *Soil Biol. Biochem.* 8:79-83 (1976).
- Banwart, W. L. and Bremner, J. H. Evolution of volatile sulfur compounds from soils treated with sulfur-containing organic materials. *Soil Biol. Biochem.* 8:439-443 (1976).
- Hauck, R. O. and Bremner, J. M. Use of tracers for soil and fertilizer nitrogen research. *Adv. Agron.* 28:219-266 (1976).
- Zantua, M. I. and Bremner, J. M. Production and persistence of urease activity in soils. *Soil Biol. Biochem.* 8:369-374 (1976).
- Blackmer, A. M., and Bremner, J. M. Potential of soil as a sink for atmospheric nitrous oxide. *Geophys. Res. Letters* 3:739-742 (1976).
- Blackmer, A. M. and Bremner, J. M. Nitrogen isotope discrimination in denitrification of nitrate in soils. *Soil Biol. Biochem.* 9:73-77 (1977).
- Zantua, M. I. and Bremner, J. M. Stability of urease in soils. *Soil Biol. Biochem.* 9:135-140 (1977).
- Blackmer, A. M. and Bremner, J. M. Denitrification of nitrate in soils under different atmospheres. *Soil Biol. Biochem.* 9:141-142 (1977)
- Blackmer, A. M. and Bremner, J. M. Gas chromatographic analysis of soil atmospheres. *Soil Sci. Soc. Am. J.* 41:908-912 (1977).
- Zantua, M. I., Dumenil, L. C. and Bremner, J. M. Relationships between soil urease activity and other soil properties. *Soil Sci. Soc. Am. J.* 41:350-352 (1977).
- Mulvaney, R. L. and Bremner, J. M. Evaluation of antimetabolites for retardation of urea hydrolysis in soils. *Soil Sci. Soc. Am. J.* 41:1024-1027 (1977).
- Bremner, J. M. Role of organic matter in volatilization of sulfur and nitrogen from soils. In, *Proceedings of International Symposium on soil Organic Matter Studies*, Braunschweig, September 1976, Vol. II, pp. 229-240. International Atomic Energy Agency, Vienna (1977).
- Blackmer, A. M. and Bremner, J. M. The nitrogen fertilizer-ozone connection. In, *Proceedings of the 30th Annual Fertilizer and AG Chemical Dealers Conference*, Des Moines, EC 1270. Iowa State University, Ames (1978).
- Bremner, J. M. and Blackmer, A. M. Nitrous oxide: Emission from soils during nitrification of fertilizer nitrogen. *Science* 199:295-296 (1978).

- Bremner, J. M. Use of nitrogen-tracer techniques for research on nitrogen fixation. In, *Biological Nitrogen Fixation in Farming Systems of the Tropics* (A. Ayanaba & P. J. Dart, eds.) pp. 335-352. Wiley & Sons, New York (1978).
- Bremner, J. M. Effects of soil processes on the atmospheric concentration of nitrous oxide. In, *Nitrogen in the Environment* (D. R. Nielsen and J. G. McDonald, eds.), Vol. 1, pp. 477-491. Academic Press, New York (1978).
- Blackmer, A. M. and Bremner, J. M. Inhibitory effect of nitrate on reduction of N<sub>2</sub>O and N<sub>2</sub> by soil microorganisms. *Soil Biol. Biochem.* 10:187-191 (1978).
- Bremner, J. M. Blackmer, A. M., and Bundy, L. G. Problems in use of nitrapyrin (N-Serve) to inhibit nitrification in soils. *Soil Biol. Biochem.* 10:441-442 (1978).
- Mulvaney, R. L. and Bremner, J. M. Use of *p*-benzoquinone and hydroquinone for retardation of urea hydrolysis in soils. *Soil Biol. Biochem.* 10:297-302 (1978).
- Bremner, J. M. and Mulvaney, R. L. Urease activity. In, *Soil Enzymes* (R. G. Burns, ed.) pp. 149-196. Academic Press, New York (1978).
- Bremner, J. M. and Steele, C. G. Role of microorganisms in the atmospheric sulfur cycle. In, *Advances in Microbial Ecology*, Vol. 2, pp. 155-201. Plenum Press, New York (1978).
- Blackmer, A. M. and Bremner, J. M. Stimulatory effect of nitrate on reduction of N<sub>2</sub>O to N<sub>2</sub> by soil microorganisms. *Soil Biol. Biochem.* 11:313-315 (1979).
- Matthias, A. D., Blackmer, A. M. and Bremner, J. M. Diurnal variability in the concentration of nitrous oxide in surface air. *Geophys. Res. Lett.* 6:441-443 (1979).
- Mulvaney, R. L. and Bremner, J. M. A modified diacetyl monoxime method for colorimetric determination of urea in soil extracts. *Comm. Soil Sci. Plant Anal.* 10:1163-1170 (1979).
- Cihacek, L. J. and Bremner, J. M. A simplified ethylene glycol monoethyl ether method for assessment of soil surface area. *Soil Sci. Soc. Am. J.* 43:821-822 (1979).
- Bremner, J. M. and Blackmer, A. M. Effects of acetylene and soil water content on emission of nitrous oxide from soil. *Nature* 280:380-381 (1979).
- Breitenbeck, G. A., Blackmer, A. M. and Bremner, J. M. Effects of different nitrogen fertilizers on emission of nitrous oxide from soil. *Geophys. Res. Lett.* 7:85-88 (1980).

Patten, D. K., Bremner, J. M. and Blackmer, A. M. Effects of drying and air-dry storage of soils on their capacity for denitrification of nitrate. *Soil Sci. Soc. Am. J.* 44:67-70 (1980).

Bremner, J. M. and Blackmer, A. M. Mechanisms of nitrous oxide production in soils. In, *Biochemistry of Ancient and Modern Environments* (P. A. Trudinger, M. R. Walter, and R. J. Ralph, eds.) pp. 279-291. Australian Academy of Science, Canberra (1980).

Bremner, J. M., Blackmer, A. M. and Waring, S. A. Formation of nitrous oxide and dinitrogen by chemical decomposition of hydroxylamine in soils. *Soil Biol. Biochem.* 12:263-269 (1980).

Blackmer, A. M., Bremner, J. M. and Schmidt, E. L. Production of nitrous oxide by ammonia-oxidizing chemoautotrophic microorganisms in soil. *Appl. Environ. Microbiol.* 40:1060-1066 (1980).

Bremner, J. M. and Blackmer, A. M. Natural and fertilizer-induced emissions of nitrous oxide from soils. In, *Biogenic Emissions of Sulfur, Hydrocarbons, and Nitrogen Gases into the Atmosphere* pp. 1-12. APCA Special Publication. Air Pollution Control Association, Pittsburgh (1980).

Matthias, A. D. Blackmer, A. M., and Bremner, J. M. A simple chamber technique for field measurement of emissions of nitrous oxide from soils. *J. Environ. Qual.* 9:251-256 (1980).

Tan, K. H. and Bremner, J. M. Studies on urease activity in some rubber growing soils of peninsular Malaysia. *Sci. J. Rubber Res. Inst. Malaysia* 4:26-36 (1980).

Bremner, J. M., Robbins, S. G. and Blackmer, A. M. Seasonal variability in emission of nitrous oxide from soil. *Geophys. Res. Lett.* 7:641-644 (1980).

Bremner, J. M., Breitenbeck, G. A. and Blackmer, A. M. Effect of anhydrous ammonia fertilization on emission of nitrous oxide from soils. *J. Environ. Qual.* 10:77-80 (1981).

Bremner, J. M., Breitenbeck, G. A. and Blackmer, A. M. Effect of nitrapyrin on emission of nitrous oxide from soil fertilized with anhydrous ammonia. *Geophys. Res. Lett.* 8:353-356 (1981).

Mulvaney, R. L. and Bremner, J. M. Control of urea transformations in soils. In, *Soil Biochemistry*, Vol. 5 (J. N. Ladd and E. A. Paul, eds.) pp. 153-196. Marcel Dekker, New York (1981).

Bremner, J. M. and Blackmer, A. M. Terrestrial nitrification as a source of atmospheric nitrous oxide. In, *Denitrification, Nitrification, and Atmospheric Nitrous Oxide* (C. C. Delwiche, ed.) pp. 151-170. John Wiley & Sons, Inc., New York (1981).

Bremner, J. M. and Hauck, R. D. Advances in methodology for research on nitrogen transformations in soils. In, Nitrogen in Agricultural Soils (F. J. Stevenson, ed.). pp. 467-502. American Society of Agronomy, Madison (1982).

Blackmer, A. M., Robbins, S. G. and Bremner, J. M. Diurnal variability in rate of emission of nitrous oxide from soils. *Soil Sci. Soc. Am.J.* 46:937-942 (1982).

Tabatabai, M. A. and Bremner, J. M. Automated instruments for determination of total carbon, total nitrogen, and total sulfur in soils by combustion techniques. In, *Modern Instrumental Techniques in Soil Analysis* (K. A. Smith, ed.) pp. 171-194. Marcel Dekker, New York (1982).

Bremner, J. M. Nitrogen - Urea. In, *Methods of Soil Analysis* (A. L. Page et al., eds.), 2nd edn., Part 2, pp. 699-709. American Society of Agronomy, Madison (1982).

Bremner, J. M. and Mulvaney, C. S. Nitrogen - Total, In, *Methods of Soil Analysis* (A. L. Page et al., eds.). 2nd edn. Part 2, pp. 595-624. American Society of Agronomy, Madison (1982).

Bremner, J. M. and Blackmer, A. M. Composition of soil atmospheres. In, *Methods of Soil Analysis* (A. L. Page et al., eds.), 2nd edn., Part 2, pp. 873-901. American Society of Agronomy, Madison (1982).

Tan, K. H. and Bremner, J. M. Studies on nitrogen in Malaysian soils. III. Denitrification. *J. Rubber Res. Inst. Malaysia* 30:102-109 (1982).

Martens, D. A. and Bremner, J. M. Determination of phenylphosphorodiamidate in soil extracts and urea fertilizer solutions. *Commun. Soil Sci. Plant Anal.* 14:915-924 (1983).

Bremner, J. M. and Breitenbeck, G. A. A simple method for determination of ammonium in semimicro-Kjeldahl analysis of soils and plant materials using a block digester. *Commun. Soil Sci. Plant Anal.* 14:905-914 (1983).

Martens, D. A. and Bremner, J. M. Effectiveness of phosphoroamides for retardation of urea hydrolysis in soils. *Soil Sci. Soc. Am. J.* 48:302-305 (1984).

Martens, D. A. and Bremner, J. M. Urea hydrolysis in soil: Factors influencing the effectiveness of phenylphosphorodiamidate as a retardant. *Soil Biol. Biochem.* 16:481-489 (1984).

Breitenbeck, G. A. and Bremner, J. M. Use of a flat surface combination pH electrode for measurement of soil pH. *Commun. Soil Sci. Plant Anal.* 15:87-98 (1984).

Bremner, J. M. Determination and isotope-ratio analysis of different forms of nitrogen in soils. *J. Assoc. Offic. Anal. Chem.* 68:155-159 (1985).

- Yeomans, J. C. and Bremner, J. M. Denitrification in soils: Effects of herbicides. *Soil Biol. Biochem.* 17:447-452 (1985).
- Yeomans, J. C. and Bremner, J. H. Denitrification in soils: Effects of insecticides and fungicides. *Soil Biol. Biochem.* 17:453-456 (1985).
- Gianello, C. and Bremner, J. M. A simple chemical method of assessing potentially available organic nitrogen in soil. *Commun. Soil Sci. Plant Anal.* 17:195-214 (1986).
- Gianello, C. and Bremner, J. M. Comparison of chemical methods of assessing potentially available organic nitrogen in soil. *Commun. Soil Sci. Plant Anal.* 17:215-236 (1986).
- Bremner, J. H. and Chai, H. S. Evaluation of *N*-butyl phosphorothioic triamide for retardation of urea hydrolysis in soil. *Commun. Soil Sci. Plant. Anal.* 17:337-351 (1986).
- Yeomans, J. C. and Bremner, J. M. Effects of urease inhibitors on denitrification in soil. *Commun. Soil Sci. Plant Anal.* 17:63-73 (1986).
- McCarty, G. W. and Bremner J. M. Effects of phenolic acids on nitrification In soil. *Soil Sci. Soc. Am. J.* 50:920-923 (1986).
- Bremner, J. M., McCarty, G. W., Yeomans, J. C. and Chai, H. S. Effects of phosphoroamides on nitrification, denitrification, and mineralization of organic nitrogen in soil. *Commun. Soil Sci. Plant Anal.* 17:369-384 (1986).
- Bremner, J. M. and Yeomans, J. C. Effects of nitrification inhibitors on denitrification of nitrate in soil. *Biol. Fert. Soils* 2:173-179 (1986).
- Breitenbeck, G. A. and Bremner, J. M. Effects of various nitrogen fertilizers on emission of nitrous oxide from soils. *Biol. Fert. Soils* 2:195-199 (1986).
- Bremner, J. M. and Yeomans, J. C. Effects of pesticides on denitrification of nitrate by soil microorganisms. In, *Agricultural Impacts on Ground Water*, pp. 445-456. National Water Well Association, Dublin, OH. (1986).
- Bremner, J. M., McCarty, G. W. and Gianello, C. Reduction of nitrate pollution of ground water by nitrogen fertilizers. In, *Agricultural Impacts on Ground Water*, pp. 467-481. National Water Well Association, Dublin, OH. (1986).
- Bremner, J. M. Inhibition of nitrogen transformations in soil. *Trans. Fourth International Symposium on Microblal Ecology*, Ljubljana, Yugoslavia, pp 337-342 (1986).
- McCarty, G. W. and Bremner, J. M. Inhibition of nitrification in soil by acetylenic compounds. *Soil Sci. Soc. Am. J.* 50:1198-1201 (1986).

Bremner, J. M. and McCarty, G. W. Inhibition of nitrification in soil. Trans. 13th Cong. Internat. Soc. Soil Sci., Hamburg, Germany, Vol. 2, pp. 251-252 (1986).

Breitenbeck, G. A. and Bremner, J. M. Effects of rate and depth of fertilizer application on emission of nitrous oxide from soil fertilized with anhydrous ammonia. Biol. Fert. Soils 2:201-204 (1986).

Yeomans, J. C. and Bremner, J. M. Effects of dalapon, atrazine, and simazine on denitrification in soil. Soil Biol. Biochem. 19:31-34 (1987).

Chai, H. S. and Bremner, J. M. Evaluation of some phosphoroamides as soil urease inhibitors. Biol. Fert. Soils 3:189-194 (1987).

Breitenbeck, G. A. and Bremner, J. M. Effects of storing soils at various temperatures on their capacity for denitrification. Soil Biol. Biochem. 19:377-380 (1987).

Bremner, J. H. and Genrich, D. R. Characterization of the sand, silt, and clay fractions of some Mollisols. In, Soil Colloids and Their Associations in Soil Aggregates (M. Hayes, M. De Boodt, and A. Herbillon, eds.). Reidel Publishing Co., Holland. (1987).

Joo, Y. K., Christians, N. E. and Bremner, J. M. Effect of *N*-(*n*-butyl)thiophosphoric triamide (NBPT) on growth response and ammonia volatilization following fertilization of Kentucky bluegrass (*Poa pratensis* L.) with urea. J. Fertil. Issues (1987)

Bremner, J. M. and Yeomans, J. C. Advances in nitrogen methodology: Laboratory techniques for determination of different forms of nitrogen. In Advances in Nitrogen Cycling in Agricultural Ecosystems 77. R. Wilson, ed.) pp 399-414. C. A. B. International, Wallingford, U. K. (1988)

Gianello, C. and Bremner, J. M. A rapid steam distillation method of assessing potentially available organic nitrogen in soil. Commun. Soil Sci. Plant Anal. 19:1551-1568 (1988)

Yeomans, J. C. and Bremner, J. M. A rapid and precise method for routine determination of organic carbon in soil. Commun. Soil Sci. Plant Anal. 19:1467-1476 (1988).

Cihacek, L. J. and Bremner, J. M. Capacity of soils for sorption of sulfur dioxide. Commun. Sol Sci. Plant Anal. 19:1945-1964 (1988).

Bremner, J. M. and Krogmeier, M. J. Elimination of the adverse effects of urea fertilizer on seed germination, seedling growth, and early plant growth in soil. Proc. Natl. Acad. Sci. USA 85:4601-4604 (1988).

Bremner, J. M. and McCarty, G. W. effects of terpenoids on nitrification in soil. Soil Sci. Soc. Am. J. 52:1630-1633 (1988).

- Krogmeier, M. J., McCarty, G. W. and Bremner, J. M. Potential phytotoxicity associated with the use of urease inhibitors. Proc. Natl. Acad. Sci. USA. 86:1110-1112 (1989).
- Breitenbeck, G. A. and Bremner, J. M. Ability of free-living *Bradyrhizobium japonicum* to denitrify nitrate in soils. Biol. Fert. Soils 7:219-224 (1989).
- Yeomans, J. C. and Bremner, J. M. Effects of organic solvents on denitrification in soil. Biol. Fert. Soils 7:336-340 (1989).
- McCarty, G. W., Bremner, J. M. and Chai, H. S. Effect of *N*-(*n*-butyl) thiophosphoric triamide on hydrolysis of urea by plant, microbial, and soil urease. Biol. Fert. Soils 8:123-127 (1989).
- Krogmeier, M. J. and Bremner, J. M. Effects of water-soluble constituents of plant extracts on water uptake by seeds. Commun. Soil Sci. Plant Anal. 20:1321-1334 (1989).
- Martens, D. A. and Bremner, J. M. Soil properties affecting volatilization of ammonia from soils treated with urea. Commun. Soil Sci. Plant Anal. 20:1645-1657 (1989).
- Krogmeier, M. J. and Bremner, J. M. Effects of phenolic acids on seed germination and seedling growth in soil. Biol. Fert. Soils 0:116-122 (1989).
- Joo, Y. K., Christians, N. E. and Bremner, J. M. Effectiveness of urease inhibitors and cationic materials for reduction of ammonia volatilization from turfgrass treated with urea. Proc. 6th International Turfgrass Research Conference, Tokyo, Chapter 30, pp. 209-211 (1989).
- McCarty, G. W. and Bremner, J. M. Formation of phosphoryl triamide by decomposition of thiophosphoryl triamide in soil. Biol. Fert. Soils 8:290-292 (1989).
- McCarty, G. W. and Bremner, J. M. Laboratory evaluation of dicyandiamide as a soil nitrification inhibitor. Commun. Soil Sci. Plant Anal. 20:2049-2065 (1989).
- Bremner, J. M. and Krogmeier, M. J. Effects of nitrification inhibitors on germination of various seeds in soil. Biol. Fert. Soils 8:369-372 (1989).
- Bremner, J. M. and Krogmeier, M. J. Evidence that the adverse effect of urea fertilizer on seed germination in soil is due to ammonia formed through hydrolysis of urea by soil urease. Proc. Natl. Acad. Sci. USA 86:8185-8188 (1989).
- Krogmeier, M. J., McCarty, G. W. and Bremner, J. M. Phytotoxicity of foliar-applied urea. Proc. Natl. Acad. Sci. USA 86:8189-8191(1989).
- McCarty, G. V. and Bremner, J. M. Inhibition of nitrification in soil by heterocyclic nitrogen compounds. Biol. Fert. Soils. 8:204-211(1989).

- Bremner, J. M. and Chai, H. S. Effects of phosphoroamides on ammonia volatilization and nitrite accumulation in soils treated, with urea. *Biol. Fert. Soils* 8:227-230 (1989).
- Bremner, J. M. and Krogmeier, M. J. Effects of urease inhibitors on seed germination in soil. *Commun. Soil Sci. Plant Anal.* 21:311-321 (1990).
- Cihacek, L. J. and Bremner, J. M. Capacity of soils for sorption of hydrogen sulfide. *Commun. Soil Sci. Plant Anal.* 21:351-363 (1990).
- McCarty, G. W. and Bremner, J. M. Persistence of the effects of nitrification inhibitors added to soils. *Biol. Fert. Soils.* 21:639-648 (1990).
- Krogmeier, M. J. and Bremner, J. M. Effects of aliphatic acids on seed germination and seedling growth in soil in soil. *Commun. Soil Sci. Plant Anal.* 21:547-555 (1990).
- Tabatabai, M. A. and Bremner, J. M. Automated instruments for determination of total carbon, nitrogen, and sulfur in soils by combustion techniques. In, *Soil Analysis: Modern Instrumental Techniques*, 2nd edn. (K. A. Smith, ed.) pp. 261-289. Marcel Dekker, New York (1990).
- McCarty, G. W. and Bremner, J. M. Evaluation of 3-methylpyrazole-1-carboxamide as a soil nitrification inhibitor. *Biol. Fert. Soils* 9:252-256 (1990).
- Bremner, J. M. Problems in the use of urea as a nitrogen fertilizer. *Soil Use and Management* 6:70-71 (1990).
- McCarty, G. W. and Bremner, J. M. Evaluation of 2-ethynylpyridine as a soil nitrification inhibitor. *Soil Sci. Soc. Am. J.* 54:1017-1021 (1990).
- McCarty, G. W., Bremner, J. M. and Lee, J. S. Inhibition of plant and microbial ureases by phosphoroamides. *Plant and Soil* 127:269-283 (1990).
- Hussain, F., Bremner, J. M., and Malik, K. Urease activity in some Pakistani soils. *Pakist. J. Agric. Res.* 11: 59-64 (1990).
- Bremner, J. M. and McCarty, G. W. Reply to "Comments on 'Effects of terpenoids on nitrification in soil'". *Soil Sci. Soc. Am. J.* 54:297-298 (1990)
- Hussain, F., Bremner, J. M. and Malik, K. Measurement of denitrification in Pakistani soils by the acetylene blockage technique. *Pakist. J. Agric. Res.* 11: 211-215(1990).
- McCarty, G. W. Bremner, J. M. and Lee, J. S. Inhibition of plant and microbial ureases by phosphoramides. *Plant and Soil.* 127:269-283 (1990)
- McCarty, G. W. and Bremner, J. M. Evaluation of ammonium thiosulfate as a soil urease inhibitor. *Fert. Res.* 24:135-139 (1990).

Bremner, J. M. and Genrich, D. R. Characterization of the sand, silt and clay fractions of some Mollisols. In, *Soil Colloids and Their Association in Aggregates* (M. De Boodt, M. B. H. Hayes and A. Herbillon, eds) pp. 423-438. Plenum Press, New York (1990).

Tabatabai, M. A. and Bremner, J. M. Automated instruments for determination of total carbon, nitrogen, and sulfur in soils by combustion techniques. *In, Soil Analysis: Modern Instrumental Techniques*. 2nd edn. (K. A. Smith, ed), pp. 261-289. Marcel Dekker, New York (1991).

Joo, Y. K., Christians, N. E. and Bremner, J. M. Turf response to urease inhibitors and cationic materials applied in combination with urea. *Hort. Sci.* 26:537-539(1991)

Yeomans, J. C. and Bremner, J. M. Carbon and nitrogen analysis of soils by automated combustion techniques. *Commun. Soil Sci. Plant Anal.* 22:843-850(1991).

McCarty, G. W. and Bremner, J. M. Inhibition of nitrification in soil by gaseous hydrocarbons. *Biol. Fert. Soils.* 11:231-234(1991).

Krogmeier, M. J., McCarty, G. W., Shogren, D. R. and Bremner, J. M. Effect of nickel deficiency in soybeans on the phytotoxicity of foliar-applied urea. *Plant and Soil* 135:283-286).

McCarty, G. W., Bremner, J. M. and Krogmeier, M. J. Effects of thiosulfate and tetrathionate on urease activity and seedling growth. *Commun. Soil Sci. Plant Anal.* 22:755-768(1991).

McCarty, G. W., Bremner, J. M. and Schmidt, E. L. Effects of phenolic acids on ammonia oxidation by terrestrial autotrophic nitrifying microorganisms. *FEM Microbial Ecology.* 85:345-349(1991).

McCarty, G. W. and Bremner, J. M. Production of urease by microbial activity in soils under aerobic and anaerobic conditions. *Biol. Fert. Soil.* 11:228-230(1991).

Flowers, T. H. and Bremner, J. M. A rapid dichromate procedure for routine estimation of total nitrogen in soils. *Commun. Soil Sci. Plant Anal.* 22:1409-1416(1991).

Flowers, T. H. and Bremner, J. M. Evaluation of a rapid chromic acid method for determination of total nitrogen in soils. *Commun. Soil Sci. Plant Anal.* 22:1417-1422(1991).

Bremner, J. M., McCarty, G. W. and Higuchi, T. Persistence of the inhibitory effects of phosphoroamides on urea hydrolysis in soils. *Commun. Soil Sci Plant Anal.* 11: 1519-1526(1991)

McCarty, G. W. and Bremner, J. M. Regulation of assimilatory nitrate reductase activity in soil by microbial assimilation of ammonium. *Proc. Natl. Acad. Sci. USA* 89:453-456(1992).

McCarty, G. W., Shogren, D. R. and Bremner, J. M. Regulation of urease production in soil by microbial assimilation of nitrogen. *Biol. Fert. Soils*. 12:261-264(1992).

Cihacek, L. J. and Bremner, J. M. Characterization of the sulfur retained by soils exposed to sulfur dioxide. *Commun., Soil Sci. Plant Anal.* 23: 803-826(1992).

Yeomans, J. C. Bremner, J. M. and McCarty, G. W. Denitrification capacity and denitrification potential of subsurface soils. *Commun. Soil Sci. Plant Anal.* 23:919-927(1992)

Gross, P. J. and Bremner, J. M. Acetone problem in use of the acetylene blockage method for assessment of denitrifying activity in soil. *Commun. Sol Sci. Plant Anal.* 23:1345-1358(1992).

McCarty, G. W. and Bremner, J. M. Inhibition of assimilatory nitrated reductase activity in soil by glutamine and ammonium analogs. *Proc. Natl. Acad. Sci. USA.* 89:5834-5836(1992).

McCarty, G. W. and Bremner, J. M. Availability of organic carbon for denitrification of nitrate in subsoils. *Biol.Fertil. Soils.* 14:219-222(1992).

Cihacek, L. J. and Bremner, J. M. Characterization of the sulfur retained by soils exposed to hydrogen sulfide. *Commun. Soil Sci. Plant Anal.* 24:85-92 (1993).

Joo, Y. K., Christians, N. E., Spear, G. T. and Bremner, J. M. Evaluation of urease inhibitors as urea amendments for use on Kentucky bluegrass turf. *Crop Sci.* 32:1397-1401(1993).

McCarty, G. W. and Bremner, J. M. Factors affecting the availability of organic carbon for denitrification of nitrate in subsoils. *Biol. Fertil. Soils.* 15:132-136 (1993).

Martens, D. A. and Bremner, J. M. Influence of herbicides on transformation of urea nitrogen in soils. *J. Environ. Sci. & Health.* B28:377-395 (1993).

Bremner, J. M. and McCarty, G. W. Inhibition of nitrification in soil by allelochemicals derived from plants and plant residues. In, *Soil Biochemistry* (J. M. Bollag and G. Stotzky, eds.), Vol. 8, pp. 181-218. Marcel Dekker, Inc., New York (1993).

McCarthy, G. W. and Bremner, J. M. Effects of  $Mn^{2+}$  and  $Mg^{2+}$  on assimilation of  $NO_3$  and  $NH_4$  by soil microorganisms. *Proc. Natl. Acad. Sci. USA* 90:9403-9407 (1993).

Martens, D. A. and Bremner, J. M. Effects of preemergence and postemergence herbicides on urea hydrolysis and nitrification of urea nitrogen in soil. *Biol. Fertil. Soil.* 17:309-313 (1994).

Bremner, J. M. Recent research on problems in the use of urea as a nitrogen fertilizer. *Fert. Res.* 42:321-329 (1995).

Bremner, J. M. Nitrogen - Total. In, *Methods of Soil Analysis, Part 3, Chemical Methods*, 3rd edn. pp. 1035-1122. SSSA Book Ser. 5. Soil Science Society of America and American Society of Agronomy, Madison, Wisconsin (1996).

Bremner, J. M. Sources of nitrous oxide in soils. *Nutrient Cycling in Agroecosystems*. Volume 49:7-16 (1997).

### **Patent**

Bremner, J. M. Method of inhibiting nitrification of ammonium nitrogen. U.S. Patent No. 4,552,581 (1985).